

| Sequence Name | 21nt-U-RNA Sequence    | Chromosome | Starting Position | Ending Position | Strand | 21U-RNA motif? |
|---------------|------------------------|------------|-------------------|-----------------|--------|----------------|
| 2585699_adh   | TTCAACAGAGAAGCCAGGGAA  | Chr.1      | 14615             | 14595           | -      | No             |
| 2043316_adh   | TCTCTTCTGTGGAACAAATCC  | Chr.1      | 15102             | 15082           | -      | No             |
| 2741477_adh   | TTTTGAGTGTATAGGTCTCGA  | Chr.1      | 15876             | 15896           | +      | No             |
| 2692407_adh   | TTTAATTGACGACATTTAGCA  | Chr.1      | 22425             | 22445           | +      | No             |
| 2729055_adh   | TTTGTGCGTTTTTCTATAAAT  | Chr.1      | 26718             | 26698           | -      | No             |
| 2239115_adh   | TGAGGCTTATTATTTTGTCTGG | Chr.1      | 26731             | 26711           | -      | No             |
| 2137681_adh   | TGAATACGAGTAGACGTAATT  | Chr.1      | 37120             | 37100           | -      | No             |
| 2629632_adh   | TTGAATACGAGTAGACGTAAT  | Chr.1      | 37121             | 37101           | -      | No             |
| 1863981_adh   | TAGGAGGAGACAAGACAAATA  | Chr.1      | 86513             | 86533           | +      | No             |
| 1975641_adh   | TCATTTTTGCAGTAGCCTGGT  | Chr.1      | 91746             | 91726           | -      | No             |
| 2312296_adh   | TGCTTTTTTGTGGAACACG    | Chr.1      | 92893             | 92873           | -      | No             |
| 2659436_adh   | TTGGAGACTCAGGCGTCGGAA  | Chr.1      | 109947            | 109927          | -      | No             |
| 2694101_adh   | TTTACGTTTCGATTTTATGGGT | Chr.1      | 110657            | 110637          | -      | No             |
| 1960125_adh   | TCAGATCAACAACGGAGTGTT  | Chr.1      | 111778            | 111798          | +      | No             |
| 2010234_adh   | TCGGAACAGAGAAGATCAAA   | Chr.1      | 112178            | 112198          | +      | No             |
| 2304817_adh   | TGCGTTGAGTCGGCCGTATTG  | Chr.1      | 117742            | 117762          | +      | No             |
| 2590441_adh   | TTCAGAATGAGCGAACAAGCA  | Chr.1      | 117995            | 117975          | -      | No             |
| 2671494_adh   | TTGGTGTTGCCTGTCGTCACC  | Chr.1      | 128452            | 128472          | +      | No             |
| 2732092_adh   | TTTGTTGGAGCGCGTTTGCAT  | Chr.1      | 166886            | 166866          | -      | No             |
| 2615244_adh   | TTCTATAGATTTGTCGTAGAC  | Chr.1      | 182875            | 182855          | -      | No             |
| 2702686_adh   | TTTCACTCTTTTTCCGTTGA   | Chr.1      | 215573            | 215553          | -      | No             |
| 2741830_adh   | TTTTGATGCGCGGTAATTTG   | Chr.1      | 215629            | 215609          | -      | No             |
| 2714572_adh   | TTTGAATTTTGATGCGCGGTA  | Chr.1      | 215635            | 215615          | -      | No             |
| 2740974_adh   | TTTTGAATTTTGATGCGCGGT  | Chr.1      | 215636            | 215616          | -      | No             |
| 2738411_adh   | TTTTCGCTCGATTTTCACACA  | Chr.1      | 215971            | 215991          | +      | No             |
| 2041423_adh   | TCTCGTCGAGCAGAATCGCTT  | Chr.1      | 216425            | 216405          | -      | No             |
| 2556443_adh   | TTACCTTACAACCAACACCAA  | Chr.1      | 217302            | 217322          | +      | No             |
| 2480314_adh   | TGTAAAAAAGTGTAGGAAAAT  | Chr.1      | 217865            | 217885          | +      | No             |
| 1994921_adh   | TCGAAAGGACATTGGCGACGG  | Chr.1      | 218904            | 218924          | +      | No             |
| 2308686_adh   | TGCTGCGGACATTTTTTACGA  | Chr.1      | 220757            | 220737          | -      | No             |
| 2381975_adh   | TGGAGGACGCGCGATCGAAC   | Chr.1      | 231312            | 231292          | -      | No             |
| 1996069_adh   | TCGAAGACTTGATAGACGACA  | Chr.1      | 232704            | 232684          | -      | No             |
| 2740962_adh   | TTTTGAATTTTCGATGCGCGGT | Chr.1      | 251727            | 251707          | -      | No             |
| 2738411_adh   | TTTTCGCTCGATTTTCACACA  | Chr.1      | 252062            | 252082          | +      | No             |
| 2041423_adh   | TCTCGTCGAGCAGAATCGCTT  | Chr.1      | 252518            | 252498          | -      | No             |
| 1994921_adh   | TCGAAAGGACATTGGCGACGG  | Chr.1      | 254078            | 254098          | +      | No             |
| 2259626_adh   | TGATACGGATTTTACTAAATT  | Chr.1      | 272916            | 272936          | +      | No             |
| 2323372_adh   | TGGAAGCCTGAAGCACGTGCG  | Chr.1      | 285502            | 285522          | +      | No             |
| 1914063_adh   | TATGGAGAGAGTAGAATAGAG  | Chr.1      | 289201            | 289221          | +      | No             |
| 1981061_adh   | TCCCCGCGGGCCTGCGAAAAA  | Chr.1      | 323500            | 323480          | -      | No             |
| 2700917_adh   | TTTCAAAAAACAACGTGCGTC  | Chr.1      | 337187            | 337167          | -      | No             |
| 2689375_adh   | TTTAAAGTTAAGTAGGAGTTT  | Chr.1      | 354050            | 354070          | +      | No             |
| 1900876_adh   | TATGAAAAACAGATTTTTCAA  | Chr.1      | 364017            | 363997          | -      | No             |
| 2546570_adh   | TTAACTTGCAGAAAACTTAA   | Chr.1      | 367608            | 367628          | +      | No             |
| 2032721_adh   | TCTAGCTTGCGGTGATTTTTC  | Chr.1      | 382426            | 382406          | -      | No             |
| 2033284_adh   | TCTAGTCTAGCTTGCGGTGAT  | Chr.1      | 382431            | 382411          | -      | No             |
| 2721938_adh   | TTTGCGAGATTTGAACGCGAT  | Chr.1      | 382452            | 382432          | -      | No             |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2649768_adh | TTGCAGTAGAATTTCTAGAAA  | Chr.1 | 396866  | 396846  | - | No |
| 2025859_adh | TCGTGAATAGAGAAAACTCGG  | Chr.1 | 420186  | 420166  | - | No |
| 2734166_adh | TTTTACGCAAGTCGGAAGTCG  | Chr.1 | 420226  | 420206  | - | No |
| 2640577_adh | TTGAGCACTGAGAAGTTTCAC  | Chr.1 | 421526  | 421546  | + | No |
| 1939630_adh | TCAAGGAGTGAGAAATGGAAT  | Chr.1 | 443436  | 443416  | - | No |
| 2746094_adh | TTTTTCGGCCTATTTTTTCAG  | Chr.1 | 461805  | 461825  | + | No |
| 2070838_adh | TGAAAATTTTCAAAAAATCAA  | Chr.1 | 473168  | 473148  | - | No |
| 2296236_adh | TGCGACAAACAGGAAAACTCA  | Chr.1 | 485794  | 485774  | - | No |
| 2623973_adh | TTCTTTTTCCGTCGTTTTATA  | Chr.1 | 519843  | 519823  | - | No |
| 2736948_adh | TTTTATTTCTTTTTCCGTCGT  | Chr.1 | 519849  | 519829  | - | No |
| 2634610_adh | TTGAATTTTAGTCGTCGAAAA  | Chr.1 | 519991  | 519971  | - | No |
| 2685685_adh | TTGTTGATTTCCGAAGAGCGT  | Chr.1 | 520607  | 520627  | + | No |
| 2032360_adh | TCTAGAATAAGTAGTAATGGG  | Chr.1 | 535600  | 535620  | + | No |
| 1938573_adh | TCAAGACTGTCTGAAGAGGACG | Chr.1 | 536272  | 536292  | + | No |
| 2297094_adh | TGCGAGCTGTTATAGATTTTT  | Chr.1 | 536935  | 536955  | + | No |
| 2524107_adh | TGTTATCAGTTGGAAATCGAT  | Chr.1 | 536971  | 536991  | + | No |
| 1893615_adh | TATCAGTTGGAAATCGATCGA  | Chr.1 | 536974  | 536994  | + | No |
| 2741942_adh | TTTTGATTGGCATATTCTGGT  | Chr.1 | 581254  | 581234  | - | No |
| 2061041_adh | TCTTTCGCGACTGTATATTTA  | Chr.1 | 629673  | 629653  | - | No |
| 1925985_adh | TATTGATCGATGACACATGGT  | Chr.1 | 636864  | 636884  | + | No |
| 2269802_adh | TGATCGATGACACATGGTTTC  | Chr.1 | 636867  | 636887  | + | No |
| 2627312_adh | TTGAAGACCAGAAAAATGATT  | Chr.1 | 653995  | 653975  | - | No |
| 2682834_adh | TTGTTAAGAAAGTCGTCGTTT  | Chr.1 | 656724  | 656744  | + | No |
| 1782177_adh | TAAGCATTTTCATGTACGCGCC | Chr.1 | 772744  | 772764  | + | No |
| 2582299_adh | TTATTGATTGGAGGTTTACGG  | Chr.1 | 781582  | 781562  | - | No |
| 2539370_adh | TTAAACACAGCGGCGCGCGGA  | Chr.1 | 788730  | 788750  | + | No |
| 2517259_adh | TGTGGTATCATAGGCGTGTTT  | Chr.1 | 836555  | 836535  | - | No |
| 2381003_adh | TGGAGCACAATAGGATGCATC  | Chr.1 | 889372  | 889352  | - | No |
| 2748874_adh | TTTTTTCGATTTTATCCCAGA  | Chr.1 | 895190  | 895210  | + | No |
| 2747721_adh | TTTTTGATAGATCACAAACCGC | Chr.1 | 907061  | 907041  | - | No |
| 1990086_adh | TCCTCCCTGGATCAGTCGGTA  | Chr.1 | 973859  | 973879  | + | No |
| 2271535_adh | TGATGATGATGATGGTGTGGA  | Chr.1 | 986096  | 986116  | + | No |
| 2283545_adh | TGCAATCTGCTTGAAGGAGGT  | Chr.1 | 1016989 | 1017009 | + | No |
| 2749043_adh | TTTTTCTGAATTTTCGCATA   | Chr.1 | 1022826 | 1022806 | - | No |
| 1967122_adh | TCAGTGTCGGCATCACATTTG  | Chr.1 | 1025158 | 1025178 | + | No |
| 1927055_adh | TATTGGATTCAAACGGCGTGA  | Chr.1 | 1029586 | 1029566 | - | No |
| 2547531_adh | TTAAGCAGGATTTTGACTGAA  | Chr.1 | 1033576 | 1033556 | - | No |
| 2738255_adh | TTTTCGAGATTTAAGCAGGAT  | Chr.1 | 1033586 | 1033566 | - | No |
| 2738382_adh | TTTTCGCCCCAAAATCGTCGTT | Chr.1 | 1038406 | 1038426 | + | No |
| 1758993_adh | TAAAGTGCGAAAAATGTCGGA  | Chr.1 | 1041168 | 1041188 | + | No |
| 1930577_adh | TATTTGTGCATTTTATCGGA   | Chr.1 | 1044713 | 1044693 | - | No |
| 1867284_adh | TAGGCGAGGAAAATTCGGGAA  | Chr.1 | 1049252 | 1049232 | - | No |
| 1833677_adh | TACTGTAGATCAGAGGTTGGC  | Chr.1 | 1053572 | 1053552 | - | No |
| 2606562_adh | TTCGCGACGAATTTTGAGGGG  | Chr.1 | 1067177 | 1067197 | + | No |
| 2737439_adh | TTTTCAGAAGCGACACAGACA  | Chr.1 | 1145864 | 1145844 | - | No |
| 1930577_adh | TATTTGTGCATTTTATCGGA   | Chr.1 | 1174715 | 1174735 | + | No |
| 1827206_adh | TACGGTACCAAGGTTGTCCGT  | Chr.1 | 1206478 | 1206458 | - | No |
| 1874318_adh | TAGTAGAATTTCCGGCAAAATC | Chr.1 | 1209884 | 1209904 | + | No |
| 2608133_adh | TTCGGATAGATGCGGCACAGA  | Chr.1 | 1225976 | 1225996 | + | No |
| 2705378_adh | TTCCCGCTTTTTTCGCAGGTA  | Chr.1 | 1226831 | 1226811 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1972985_adh | TCATGTGAACTAACTCGGAAA  | Chr.1 | 1263874 | 1263854 | - | No |
| 2110417_adh | TGAAATGTAAATGGTTTTTTA  | Chr.1 | 1314388 | 1314408 | + | No |
| 2424674_adh | TGGGAGTGGGAGGGGGAGGGA  | Chr.1 | 1331293 | 1331313 | + | No |
| 2065211_adh | TGAAAAAATAAGAGATTTTCGG | Chr.1 | 1340080 | 1340060 | - | No |
| 1827225_adh | TACGGTAGATTTTGGACAGGT  | Chr.1 | 1340129 | 1340109 | - | No |
| 2607897_adh | TTCGGAGCATCGTTGTAACATA | Chr.1 | 1394453 | 1394473 | + | No |
| 1929257_adh | TATTTAGCTATGCTTGGTAAG  | Chr.1 | 1432081 | 1432061 | - | No |
| 2183931_adh | TGAGACGAGATTTTCAAGAAC  | Chr.1 | 1435624 | 1435604 | - | No |
| 2113602_adh | TGAAATTAATAAAGGATTTAA  | Chr.1 | 1469837 | 1469817 | - | No |
| 2450415_adh | TGGGCGACTTGGAGTGC GGCT | Chr.1 | 1558631 | 1558611 | - | No |
| 2591790_adh | TTCAGCGGCAGCAGCGAATAA  | Chr.1 | 1558914 | 1558894 | - | No |
| 2607300_adh | TTCGGACAGATGCGACACGGA  | Chr.1 | 1572836 | 1572816 | - | No |
| 2733928_adh | TTTTACAAC TAGAATCGAGCC | Chr.1 | 1612394 | 1612374 | - | No |
| 2472963_adh | TGGTGTCAAAAATTGGACGACC | Chr.1 | 1673366 | 1673346 | - | No |
| 2707037_adh | TTTCGAGCGAAATAACTCAGA  | Chr.1 | 1701841 | 1701821 | - | No |
| 2733569_adh | TTTTAAGTCAATTTATCGCGT  | Chr.1 | 1701977 | 1701997 | + | No |
| 2565501_adh | TTAGATGTAAAACTGAATGTA  | Chr.1 | 1725891 | 1725871 | - | No |
| 2635620_adh | TTGACGACAAATTGCACACAT  | Chr.1 | 1751163 | 1751143 | - | No |
| 1981988_adh | TCCCTACTTGTGCTACAATTA  | Chr.1 | 1798694 | 1798674 | - | No |
| 1973761_adh | TCATCCCTACTTGTGCTACA   | Chr.1 | 1798698 | 1798678 | - | No |
| 2701012_adh | TTTCAAACAAGTTTGGTGGCA  | Chr.1 | 1812900 | 1812920 | + | No |
| 2746811_adh | TTTTTGAGTTTTTTCAGCATT  | Chr.1 | 1832784 | 1832804 | + | No |
| 2533031_adh | TGTTTGCAAGCCGGCGGCGAG  | Chr.1 | 1835511 | 1835531 | + | No |
| 2514794_adh | TGTGGACAAAAAGAAATGGTT  | Chr.1 | 1841909 | 1841929 | + | No |
| 2626557_adh | TTGAACTAGATATGAGCATAT  | Chr.1 | 1858293 | 1858273 | - | No |
| 2376314_adh | TGGACGGCAAGATTTGGTAAA  | Chr.1 | 1898680 | 1898660 | - | No |
| 2710028_adh | TTTCTCGATTTTTTCGTCGGAA | Chr.1 | 1958643 | 1958663 | + | No |
| 2744703_adh | TTTTTAAAGTCGATGGACGGC  | Chr.1 | 1964529 | 1964509 | - | No |
| 2664809_adh | TTGGATTTGTTCTGTTGGGGCA | Chr.1 | 1979249 | 1979229 | - | No |
| 2711763_adh | TTTCTTGATTTTTCGGCAATTT | Chr.1 | 2018031 | 2018051 | + | No |
| 2600777_adh | TTCTGAGTAGAATTGGCTAT   | Chr.1 | 2039287 | 2039307 | + | No |
| 1808979_adh | TACAAGCTTTGGATTCATTAA  | Chr.1 | 2055012 | 2054992 | - | No |
| 2061324_adh | TCTTTCTGGAAACGACCGCAG  | Chr.1 | 2059253 | 2059273 | + | No |
| 2421323_adh | TGGGACACTGCAGAGCGTCAA  | Chr.1 | 2059533 | 2059513 | - | No |
| 2738274_adh | TTTTCGATAAATATGCTGCTT  | Chr.1 | 2062229 | 2062249 | + | No |
| 2317936_adh | TGGAAATCAAAGAGATCTGGC  | Chr.1 | 2065078 | 2065098 | + | No |
| 1980315_adh | TCCCACGAGGCTGAGCAAAAAG | Chr.1 | 2069782 | 2069762 | - | No |
| 2169729_adh | TGACTGCACCAAGCTTGGATA  | Chr.1 | 2070081 | 2070061 | - | No |
| 2065205_adh | TGAAAAAAGTGTGTGATCTGG  | Chr.1 | 2070787 | 2070767 | - | No |
| 2740261_adh | TTTTCTTGATTTTCATCGGA   | Chr.1 | 2081549 | 2081569 | + | No |
| 2029212_adh | TCTAAAAACGGCGTCTGAAT   | Chr.1 | 2082045 | 2082065 | + | No |
| 2537473_adh | TTAAAAAACTTGAATTCGGCG  | Chr.1 | 2084049 | 2084069 | + | No |
| 2738881_adh | TTTTCGTTGCTTTTATCGGTT  | Chr.1 | 2091441 | 2091461 | + | No |
| 2709266_adh | TTTCGTTGCTTTTATCGGTTT  | Chr.1 | 2091442 | 2091462 | + | No |
| 2705775_adh | TTTCCGCTGGAATTGAATCGA  | Chr.1 | 2097043 | 2097023 | - | No |
| 2259331_adh | TGATACACTGGAGAATTGGAT  | Chr.1 | 2102459 | 2102479 | + | No |
| 2732938_adh | TTTTAAAACTGAATTCGGCG   | Chr.1 | 2104787 | 2104807 | + | No |
| 2732938_adh | TTTTAAAACTGAATTCGGCG   | Chr.1 | 2104911 | 2104931 | + | No |
| 2585233_adh | TTCAAAC TTTAACGATGATCG | Chr.1 | 2108912 | 2108892 | - | No |
| 2732938_adh | TTTTAAAACTGAATTCGGCG   | Chr.1 | 2122140 | 2122160 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1788539_adh | TAAGTGCAGAAGGAGTACGA   | Chr.1 | 2132835 | 2132855 | + | No |
| 2658146_adh | TTGGACCATATGATAAGAATT  | Chr.1 | 2138934 | 2138954 | + | No |
| 2449910_adh | TGGGCAGAAGAGGTAGATGTC  | Chr.1 | 2147484 | 2147504 | + | No |
| 1770357_adh | TAACTCAAATCGTAGGGGTCA  | Chr.1 | 2156142 | 2156122 | - | No |
| 1851468_adh | TAGATGGCTGAAAAAACAAAT  | Chr.1 | 2210233 | 2210213 | - | No |
| 2728306_adh | TTTGTAGCTAGAGGATTCAAA  | Chr.1 | 2210810 | 2210830 | + | No |
| 1745736_adh | TAAAAAATTTGCAAATCCAAT  | Chr.1 | 2234933 | 2234913 | - | No |
| 2074657_adh | TGAAACTTGTGATCAATGGA   | Chr.1 | 2268037 | 2268017 | - | No |
| 2747992_adh | TTTTTGTTTAATGATGACGGA  | Chr.1 | 2272212 | 2272192 | - | No |
| 1914950_adh | TATGGATATGAAGAAGAGAAA  | Chr.1 | 2297661 | 2297681 | + | No |
| 2127841_adh | TGAAGACGAAAAGAAGATTATC | Chr.1 | 2304094 | 2304114 | + | No |
| 2744142_adh | TTTTGTTCATCTTTTCGAAAA  | Chr.1 | 2306845 | 2306825 | - | No |
| 2745119_adh | TTTTTAGGCGAATTTCTGGGA  | Chr.1 | 2307204 | 2307184 | - | No |
| 1758046_adh | TAAAGGCATCGGCACGACTTT  | Chr.1 | 2307285 | 2307305 | + | No |
| 2585615_adh | TTCAAATTTTCAGGACAAATTT | Chr.1 | 2309337 | 2309317 | - | No |
| 2566714_adh | TTAGCGCGAACCAGGCAAAAA  | Chr.1 | 2313082 | 2313062 | - | No |
| 2689980_adh | TTTAACGCCTCGATCGGATAA  | Chr.1 | 2316259 | 2316279 | + | No |
| 2740932_adh | TTTTGAATGTAAAATGCTGGA  | Chr.1 | 2318806 | 2318786 | - | No |
| 2647215_adh | TTGCAAAAGCACACTTTTCCG  | Chr.1 | 2318852 | 2318832 | - | No |
| 1829412_adh | TACTAATAAATAGTAGACTCA  | Chr.1 | 2327281 | 2327261 | - | No |
| 2480589_adh | TGTAAACGGTTCTTGTTAAAT  | Chr.1 | 2327466 | 2327486 | + | No |
| 1762885_adh | TAAATTTTCAGGATATTTTGA  | Chr.1 | 2334630 | 2334650 | + | No |
| 2487921_adh | TGTAGATATGGAACAGATTAA  | Chr.1 | 2335635 | 2335655 | + | No |
| 2697875_adh | TTTATAATATTGTTGGGAAGC  | Chr.1 | 2339811 | 2339791 | - | No |
| 1745443_adh | TAAAAAAGACTTTCTGATTGG  | Chr.1 | 2401603 | 2401583 | - | No |
| 1822769_adh | TACGACTTCAAAGGGAGGCGC  | Chr.1 | 2411800 | 2411820 | + | No |
| 2706739_adh | TTTCGAATAGTGACAAAGATA  | Chr.1 | 2417805 | 2417785 | - | No |
| 2706645_adh | TTTCGAAGAAGACATGAGCTG  | Chr.1 | 2420769 | 2420789 | + | No |
| 2602090_adh | TTCAAGAAGACATGAGCTGA   | Chr.1 | 2420770 | 2420790 | + | No |
| 1810512_adh | TACACACACATGACTCATGAA  | Chr.1 | 2421826 | 2421806 | - | No |
| 2703231_adh | TTTCAGGCTATAAAACACAAA  | Chr.1 | 2421925 | 2421945 | + | No |
| 1979025_adh | TCCAGTCCATTTATTATCTGA  | Chr.1 | 2433821 | 2433841 | + | No |
| 1999780_adh | TCGACATCAGCTGACGAAATT  | Chr.1 | 2485614 | 2485594 | - | No |
| 1921983_adh | TATTATAGAAAAATACGATCG  | Chr.1 | 2493390 | 2493410 | + | No |
| 1921983_adh | TATTATAGAAAAATACGATCG  | Chr.1 | 2493585 | 2493565 | - | No |
| 1833637_adh | TACTGTAGAAAAGGTTGGTAA  | Chr.1 | 2518496 | 2518476 | - | No |
| 2589723_adh | TTACGGCGTAAATGGTTCAC   | Chr.1 | 2567740 | 2567760 | + | No |
| 1953287_adh | TCACGGCGTAAATGGTTCACG  | Chr.1 | 2567741 | 2567761 | + | No |
| 1878332_adh | TAGTGCAGCTGGATTGAAAAT  | Chr.1 | 2572117 | 2572097 | - | No |
| 2376317_adh | TGGACGGCAAGATTTGGTGAA  | Chr.1 | 2584742 | 2584722 | - | No |
| 2707688_adh | TTTCGGAGATTTCTTTTTCAT  | Chr.1 | 2620556 | 2620576 | + | No |
| 2749048_adh | TTTTTTCTGATTTTCTCGGCC  | Chr.1 | 2620576 | 2620596 | + | No |
| 2003995_adh | TCGATGACAGAAAATGAACGG  | Chr.1 | 2628351 | 2628371 | + | No |
| 2259222_adh | TGATAATTGGACGGTGACTC   | Chr.1 | 2682038 | 2682058 | + | No |
| 2463037_adh | TGGTAGATCTCGGCCTTCATC  | Chr.1 | 2686988 | 2687008 | + | No |
| 2688970_adh | TTTAAATTTTCAGATTGCGGC  | Chr.1 | 2687987 | 2687967 | - | No |
| 2161038_adh | TGACGATACCTGAAGAATGTG  | Chr.1 | 2688746 | 2688766 | + | No |
| 1814502_adh | TACATTGTGGAATATGTTGGT  | Chr.1 | 2689084 | 2689104 | + | No |
| 2557788_adh | TTACGGTCAGCAGATGCATAG  | Chr.1 | 2689104 | 2689124 | + | No |
| 1819444_adh | TACCGAAGAAGTTCTCGTTTG  | Chr.1 | 2700445 | 2700465 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2668437_adh | TTGGGTGAACGAGGAAGATCA  | Chr.1 | 2701574 | 2701594 | + | No  |
| 2382012_adh | TGGAGGAGAAGCAGAAGTAAA  | Chr.1 | 2702064 | 2702084 | + | No  |
| 2739149_adh | TTTTCTAGTCGATTTGAATCG  | Chr.1 | 2723524 | 2723504 | - | No  |
| 2534351_adh | TGTTTTCGGTGTATTTTTGGT  | Chr.1 | 2724581 | 2724601 | + | No  |
| 2733001_adh | TTTTAAAAGACGGCGTAAATG  | Chr.1 | 2728637 | 2728617 | - | No  |
| 1895764_adh | TATCCGGAAAACGGCAAACCG  | Chr.1 | 2737827 | 2737807 | - | No  |
| 2240381_adh | TGAGGGTACAAGCAGAGAACA  | Chr.1 | 2761141 | 2761161 | + | No  |
| 1999515_adh | TCGACAAAATGCAGGAAATGA  | Chr.1 | 2762809 | 2762829 | + | No  |
| 2179790_adh | TGAGAAGACGGTTTGAACACA  | Chr.1 | 2778896 | 2778916 | + | No  |
| 1805839_adh | TAATTTTATCGCCGAAGCTGA  | Chr.1 | 2790064 | 2790044 | - | No  |
| 2701634_adh | TTTCAAGTTGAACAGTTCATA  | Chr.1 | 2822125 | 2822105 | - | No  |
| 2257902_adh | TGAGTTTTGAAGAATTTTAAC  | Chr.1 | 2828823 | 2828803 | - | No  |
| 1794972_adh | TAATAGCTGTAGAAGAGGTTA  | Chr.1 | 2831660 | 2831680 | + | No  |
| 1858815_adh | TAGCTGTAGAAGAGGTTAAAA  | Chr.1 | 2831663 | 2831683 | + | No  |
| 2382012_adh | TGGAGGAGAAGCAGAAGTAAA  | Chr.1 | 2854071 | 2854051 | - | No  |
| 2668437_adh | TTGGGTGAACGAGGAAGATCA  | Chr.1 | 2854561 | 2854541 | - | No  |
| 2275034_adh | TGATTATTACCGAAGAAGTTA  | Chr.1 | 2855731 | 2855711 | - | No  |
| 2694371_adh | TTTACTCTTTTCATCTCTAAA  | Chr.1 | 2861957 | 2861977 | + | No  |
| 2720914_adh | TTTGCAAAAGTCACGGATCGA  | Chr.1 | 2870252 | 2870232 | - | No  |
| 2534351_adh | TGTTTTCGGTGTATTTTTGGT  | Chr.1 | 2873738 | 2873718 | - | No  |
| 2127087_adh | TGAAGAAGAACTGGCAGAACG  | Chr.1 | 2875505 | 2875485 | - | No  |
| 2739645_adh | TTTTCTGTAGATTTTTGGATA  | Chr.1 | 2876451 | 2876431 | - | No  |
| 2746286_adh | TTTTCTGTAGATTTTTGGAT   | Chr.1 | 2876452 | 2876432 | - | No  |
| 1762683_adh | TAAATTTATACATACACACAC  | Chr.1 | 2878336 | 2878356 | + | No  |
| 1759104_adh | TAAAGTGTGGAATTACAAGCA  | Chr.1 | 2900520 | 2900500 | - | No  |
| 1988958_adh | TCCGTTTGATGCGCAGGTTTC  | Chr.1 | 2901087 | 2901067 | - | No  |
| 2733575_adh | TTTTAAGTGGAATTGACATA   | Chr.1 | 2901150 | 2901170 | + | No  |
| 2070774_adh | TGAAAATTGAGGAAAATGGAG  | Chr.1 | 2901180 | 2901200 | + | No  |
| 2624994_adh | TTGAAAGAGACTGAAAAAATC  | Chr.1 | 2925205 | 2925225 | + | No  |
| 2690187_adh | TTTAAGAAAGAAGAATACAAC  | Chr.1 | 2929675 | 2929655 | - | No  |
| 2688950_adh | TTTAAATGAAACAGGAAACA   | Chr.1 | 2980476 | 2980456 | - | No  |
| 2308088_adh | TGCTGAAAATAGAATTAGAAA  | Chr.1 | 2983076 | 2983096 | + | No  |
| 1963434_adh | TCAGGAACAAGTAGTATACAT  | Chr.1 | 2985349 | 2985369 | + | No  |
| 2673858_adh | TTGTAACCTCTGGCACGGTTTT | Chr.1 | 3029553 | 3029533 | - | No  |
| 2609822_adh | TTCCGTAATTTTCGGGCAGAA  | Chr.1 | 3037958 | 3037938 | - | No  |
| 2708306_adh | TTTCGGTAATTTTCGGGCAGA  | Chr.1 | 3037959 | 3037939 | - | No  |
| 2692406_adh | TTTAATTGACGACACTTTCTT  | Chr.1 | 3038000 | 3037980 | - | No  |
| 1800306_adh | TAATGGAACGTAGAGGAGACA  | Chr.1 | 3096418 | 3096438 | + | No  |
| 2320803_adh | TGGAACGTAGAGGAGACAAAA  | Chr.1 | 3096421 | 3096441 | + | No  |
| 1996473_adh | TCGAAGCTAAAGATGTCGGTT  | Chr.1 | 3098370 | 3098350 | - | No  |
| 2485557_adh | TGTAATTGAAAATTTCCGGCA  | Chr.1 | 3107171 | 3107191 | + | No  |
| 2272347_adh | TGATGGCATTGTAGTTTCTAC  | Chr.1 | 3109667 | 3109687 | + | No  |
| 2683455_adh | TTGTTCAAGGAGAAAAGCTAA  | Chr.1 | 3131768 | 3131788 | + | Yes |
| 2740670_adh | TTTTGAACAGATTGGTGTTTT  | Chr.1 | 3152098 | 3152078 | - | No  |
| 2697674_adh | TTTAGTTTTGAACAGATTGGT  | Chr.1 | 3152103 | 3152083 | - | No  |
| 2599045_adh | TTCCGCTTCTTCTCTACGGTT  | Chr.1 | 3162564 | 3162544 | - | No  |
| 2304173_adh | TGCGTGCTGAATTCACCTCTC  | Chr.1 | 3162589 | 3162569 | - | No  |
| 2709828_adh | TTTCTATTGAAATATATGGGA  | Chr.1 | 3162738 | 3162758 | + | No  |
| 2273549_adh | TGATGTGAGTCTGGAACCTGA  | Chr.1 | 3200451 | 3200431 | - | No  |
| 1834671_adh | TACTTATTACAGGACCACAAA  | Chr.1 | 3276167 | 3276147 | - | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2721285_adh | TTTGCAGAATTTTGTGTGGT   | Chr.1 | 3278955 | 3278935 | - | No |
| 2723068_adh | TTTGGAAGTAGAAAATCACGG  | Chr.1 | 3286342 | 3286362 | + | No |
| 2659379_adh | TTGGAGACAGAGGAACGTAAA  | Chr.1 | 3311821 | 3311801 | - | No |
| 1853671_adh | TAGCAATCGAAACAGAGAGAC  | Chr.1 | 3332816 | 3332796 | - | No |
| 2133288_adh | TGAAGGCTCTGAGAGACTGGC  | Chr.1 | 3334517 | 3334537 | + | No |
| 2746015_adh | TTTTTCGCAGAAAATCGTTGA  | Chr.1 | 3338873 | 3338853 | - | No |
| 2300230_adh | TGCGCGTAGAATATGGTGTTT  | Chr.1 | 3338882 | 3338902 | + | No |
| 2159422_adh | TGACCAAGTAGACAGCAATCA  | Chr.1 | 3348130 | 3348150 | + | No |
| 2039593_adh | TCTCGATGGAAAGGAGACGGA  | Chr.1 | 3350077 | 3350097 | + | No |
| 2316670_adh | TGGAAAGGAGACGGAGAAAACG | Chr.1 | 3350083 | 3350103 | + | No |
| 1929858_adh | TATTCGCCGAAAGATGAGCC   | Chr.1 | 3350558 | 3350538 | - | No |
| 2727104_adh | TTTGTAAGAGAGATTCCTGAA  | Chr.1 | 3363009 | 3363029 | + | No |
| 2566689_adh | TTAGCGATTGAAATAAACAAA  | Chr.1 | 3365937 | 3365917 | - | No |
| 2043625_adh | TCTGAAAAGTGGACGGAAT    | Chr.1 | 3368826 | 3368806 | - | No |
| 1873517_adh | TAGTAATTCGATCGTACCAGG  | Chr.1 | 3409145 | 3409165 | + | No |
| 2604849_adh | TTCGATCGTACCAGGACCCCA  | Chr.1 | 3409151 | 3409171 | + | No |
| 2725917_adh | TTTGGTAGATTATCTCGCGGA  | Chr.1 | 3411923 | 3411943 | + | No |
| 2725917_adh | TTTGGTAGATTATCTCGCGGA  | Chr.1 | 3412060 | 3412040 | - | No |
| 2555394_adh | TTACATTTTTTCAGTCGACAT  | Chr.1 | 3439090 | 3439110 | + | No |
| 2745501_adh | TTTTTATTGTAAACAAGCAC   | Chr.1 | 3466221 | 3466201 | - | No |
| 2286001_adh | TGCACAGAGCCATGACGCAAA  | Chr.1 | 3466851 | 3466831 | - | No |
| 2223096_adh | TGAGATGGATGGATTACAAAC  | Chr.1 | 3471168 | 3471188 | + | No |
| 2543434_adh | TTAAATCTGAAGCTAATAACG  | Chr.1 | 3481486 | 3481466 | - | No |
| 1933942_adh | TCAAAGTGAAGATGGAGAAAC  | Chr.1 | 3482533 | 3482553 | + | No |
| 2725917_adh | TTTGGTAGATTATCTCGCGGA  | Chr.1 | 3515006 | 3515026 | + | No |
| 2517872_adh | TGTGGTGTCAAAAAGAATATA  | Chr.1 | 3584795 | 3584775 | - | No |
| 2725917_adh | TTTGGTAGATTATCTCGCGGA  | Chr.1 | 3591640 | 3591660 | + | No |
| 2133703_adh | TGAAGGTTGTGGATGGTTTTG  | Chr.1 | 3594636 | 3594616 | - | No |
| 1767818_adh | TAACGACGGAAAAAGGCTTCT  | Chr.1 | 3594936 | 3594916 | - | No |
| 2396065_adh | TGGATTTGATGAATACGACGA  | Chr.1 | 3642026 | 3642006 | - | No |
| 2250991_adh | TGAGTACTTTTGAAGATGAA   | Chr.1 | 3677055 | 3677075 | + | No |
| 2617820_adh | TTCTGAAGTTGCACTCGACAG  | Chr.1 | 3680525 | 3680505 | - | No |
| 2004256_adh | TCGATGGGAAGAAAATCAAAC  | Chr.1 | 3683860 | 3683840 | - | No |
| 1967645_adh | TCAGTTGTGAAGAATCCGGTG  | Chr.1 | 3689862 | 3689882 | + | No |
| 1748766_adh | TAAACTGTAGAGATTGTTCA   | Chr.1 | 3722520 | 3722540 | + | No |
| 2700817_adh | TTTATTTTAGGCCTTTGACTG  | Chr.1 | 3726839 | 3726859 | + | No |
| 2734802_adh | TTTTAGGCCTTTGACTGAAAC  | Chr.1 | 3726843 | 3726863 | + | No |
| 2742696_adh | TTTTGGACAGAGGACAGGGGG  | Chr.1 | 3738246 | 3738266 | + | No |
| 2736870_adh | TTTTATTAAATACTAATTTA   | Chr.1 | 3742103 | 3742123 | + | No |
| 1931342_adh | TATTTTTCGTCTAATTCTATC  | Chr.1 | 3754785 | 3754765 | - | No |
| 1822135_adh | TACGACATCTCTGAAACAGAC  | Chr.1 | 3757940 | 3757920 | - | No |
| 2736968_adh | TTTTATTTGATTGTATACCGA  | Chr.1 | 3761558 | 3761578 | + | No |
| 2736968_adh | TTTTATTTGATTGTATACCGA  | Chr.1 | 3762320 | 3762300 | - | No |
| 1809244_adh | TACAATAAGAATGATGCGAAA  | Chr.1 | 3774707 | 3774727 | + | No |
| 1983969_adh | TCCGAATAAACTGGCGAGCTG  | Chr.1 | 3781301 | 3781321 | + | No |
| 2534588_adh | TGTTTTGCAGGACGAAATGAG  | Chr.1 | 3781692 | 3781712 | + | No |
| 1886279_adh | TATAATTAAATTTTATTTAAA  | Chr.1 | 3783779 | 3783799 | + | No |
| 1956529_adh | TCACTTTTGACGCTCCTCTTC  | Chr.1 | 3783950 | 3783970 | + | No |
| 2613618_adh | TTCGTTTGTTGTTGGTAAGT   | Chr.1 | 3788932 | 3788912 | - | No |
| 2624150_adh | TTCTTTTTTGCTCTGAAGAA   | Chr.1 | 3806213 | 3806233 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2705948_adh | TTTCCTAATTTGCGTGGATCG  | Chr.1 | 3817493 | 3817513 | + | No |
| 2189530_adh | TGAGAGTTGTTAGATTTTTGA  | Chr.1 | 3817515 | 3817535 | + | No |
| 1866986_adh | TAGGCACTTTTCTAGTCTCCT  | Chr.1 | 3826142 | 3826162 | + | No |
| 2710544_adh | TTTCTGATTCTTGGACAACAA  | Chr.1 | 3829394 | 3829374 | - | No |
| 2042571_adh | TCTCTCGTCAGATGATATCAT  | Chr.1 | 3829438 | 3829418 | - | No |
| 2654230_adh | TTGCTCAAAGACTCATGAAAA  | Chr.1 | 3833434 | 3833454 | + | No |
| 2281379_adh | TGCAACATATCTGACGCGCAA  | Chr.1 | 3835045 | 3835025 | - | No |
| 1919070_adh | TATGTGGATCGTGGAAGACAG  | Chr.1 | 3839163 | 3839143 | - | No |
| 2045803_adh | TCTGACGTCAGCAGTTCTGTA  | Chr.1 | 3863069 | 3863089 | + | No |
| 2047693_adh | TCTGATTTTTAGGCTTTGATT  | Chr.1 | 3866569 | 3866549 | - | No |
| 1995160_adh | TCGAAAGTATAGAAAGCATGC  | Chr.1 | 3866723 | 3866703 | - | No |
| 2272304_adh | TGATGGATGAAGTTGTCAAGG  | Chr.1 | 3868766 | 3868786 | + | No |
| 2051185_adh | TCTGGTGTGGAAATACGCGTT  | Chr.1 | 3876910 | 3876890 | - | No |
| 2550975_adh | TTAATGAAGCTATCTGGACGG  | Chr.1 | 3897610 | 3897630 | + | No |
| 2299986_adh | TGCGCACTATTTGACGACGAA  | Chr.1 | 3908603 | 3908583 | - | No |
| 2149378_adh | TGACAACAAGTAGAAAACATT  | Chr.1 | 3930613 | 3930633 | + | No |
| 2694824_adh | TTTAGAAATTACCAGGTCGGA  | Chr.1 | 3930633 | 3930653 | + | No |
| 2657093_adh | TTGGAAGATCTTTTGGGTATA  | Chr.1 | 3934893 | 3934913 | + | No |
| 2389706_adh | TGGATCGAAACGAAGAATGGT  | Chr.1 | 3941309 | 3941289 | - | No |
| 2653008_adh | TTGCGGTAGAAAATTTGGTCA  | Chr.1 | 3982871 | 3982851 | - | No |
| 1804401_adh | TAATTGTTGAATTTAAGGCTG  | Chr.1 | 3987221 | 3987201 | - | No |
| 2494178_adh | TGTC AAGGTACTGTAGTGTTA | Chr.1 | 3997301 | 3997321 | + | No |
| 1819454_adh | TACCGACAAGGACGGAGAGCA  | Chr.1 | 4060279 | 4060299 | + | No |
| 2739876_adh | TTTTCTGTTGAGTCGTCTGCT  | Chr.1 | 4066084 | 4066104 | + | No |
| 2727176_adh | TTTGTAAGAATGGATGATGGT  | Chr.1 | 4070557 | 4070577 | + | No |
| 2701743_adh | TTTCAATCGTTCCAGACAAA   | Chr.1 | 4079766 | 4079746 | - | No |
| 2617753_adh | TTCTGAACTCCATCTCAAAAG  | Chr.1 | 4121905 | 4121925 | + | No |
| 2628457_adh | TTGAAGATGGAACCGAAAAGT  | Chr.1 | 4133567 | 4133587 | + | No |
| 2646251_adh | TTGATTGAAAAGCAGTATGTA  | Chr.1 | 4134427 | 4134447 | + | No |
| 2011274_adh | TCGGACACTATAGAGACGGCA  | Chr.1 | 4138288 | 4138268 | - | No |
| 2738375_adh | TTTTCGCATTTTTCCTATCGAC | Chr.1 | 4139412 | 4139392 | - | No |
| 1775350_adh | TAAGACATGCGGAAGAAGAAT  | Chr.1 | 4172533 | 4172553 | + | No |
| 1748887_adh | TAAAAGAAAAAGAGATTGGTG  | Chr.1 | 4177196 | 4177176 | - | No |
| 2693066_adh | TTTAATTTTTGCAGGAGCTTC  | Chr.1 | 4178547 | 4178527 | - | No |
| 2665833_adh | TTGGCGGCCAATTGACGCGAC  | Chr.1 | 4178671 | 4178691 | + | No |
| 2701542_adh | TTTCAAGATCTGATGGGATTC  | Chr.1 | 4185995 | 4185975 | - | No |
| 2529942_adh | TGTTGGCAAGCTTATGAAGGA  | Chr.1 | 4232212 | 4232232 | + | No |
| 1925815_adh | TATTGAGACTAGTCATCCGGA  | Chr.1 | 4236789 | 4236769 | - | No |
| 1860254_adh | TAGGAAACGCATTCTCAATTC  | Chr.1 | 4254243 | 4254263 | + | No |
| 2577669_adh | TTATCGATTTTTTGGTGAACC  | Chr.1 | 4254768 | 4254748 | - | No |
| 2713205_adh | TTTGAACGAGTGCGTTGCAAT  | Chr.1 | 4254877 | 4254897 | + | No |
| 2712121_adh | TTTCTTTGGCGTTCTCCAATT  | Chr.1 | 4270462 | 4270442 | - | No |
| 2700834_adh | TTTATTTTATTTTCCAGATAT  | Chr.1 | 4270491 | 4270471 | - | No |
| 2694683_adh | TTTACTTGAATTCGTTTGCCG  | Chr.1 | 4274937 | 4274957 | + | No |
| 2481774_adh | TGTAAGAATAGTGGTGACTCT  | Chr.1 | 4274965 | 4274985 | + | No |
| 2124932_adh | TGAACTGAAGAACGATGTCGG  | Chr.1 | 4341504 | 4341524 | + | No |
| 2618465_adh | TTCTGATCTCGACAACAAGAT  | Chr.1 | 4343185 | 4343205 | + | No |
| 2645469_adh | TTGATGTAGACGCCGAGCAAA  | Chr.1 | 4343274 | 4343294 | + | No |
| 2008632_adh | TCGCTGAAGATTTGGATAACA  | Chr.1 | 4343556 | 4343576 | + | No |
| 1940417_adh | TCAAGTCGGACGATTTGAAGA  | Chr.1 | 4343703 | 4343723 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2618465_adh | TTCTGATCTCGACAACAAGAT  | Chr.1 | 4346225 | 4346245 | + | No |
| 2645469_adh | TTGATGTAGACGCCGAGCAAA  | Chr.1 | 4346314 | 4346334 | + | No |
| 2008632_adh | TCGCTGAAGATTTGGATAACA  | Chr.1 | 4346596 | 4346616 | + | No |
| 1940417_adh | TCAAGTCGGACGATTTGAAGA  | Chr.1 | 4346743 | 4346763 | + | No |
| 2124932_adh | TGAACTGAAGAACGATGTCGG  | Chr.1 | 4347431 | 4347451 | + | No |
| 2618465_adh | TTCTGATCTCGACAACAAGAT  | Chr.1 | 4349112 | 4349132 | + | No |
| 2645469_adh | TTGATGTAGACGCCGAGCAAA  | Chr.1 | 4349201 | 4349221 | + | No |
| 2008632_adh | TCGCTGAAGATTTGGATAACA  | Chr.1 | 4349483 | 4349503 | + | No |
| 1940417_adh | TCAAGTCGGACGATTTGAAGA  | Chr.1 | 4349630 | 4349650 | + | No |
| 2124932_adh | TGAACTGAAGAACGATGTCGG  | Chr.1 | 4350318 | 4350338 | + | No |
| 2618465_adh | TTCTGATCTCGACAACAAGAT  | Chr.1 | 4351999 | 4352019 | + | No |
| 2645469_adh | TTGATGTAGACGCCGAGCAAA  | Chr.1 | 4352088 | 4352108 | + | No |
| 2008632_adh | TCGCTGAAGATTTGGATAACA  | Chr.1 | 4352370 | 4352390 | + | No |
| 1940417_adh | TCAAGTCGGACGATTTGAAGA  | Chr.1 | 4352517 | 4352537 | + | No |
| 2124932_adh | TGAACTGAAGAACGATGTCGG  | Chr.1 | 4353205 | 4353225 | + | No |
| 2618465_adh | TTCTGATCTCGACAACAAGAT  | Chr.1 | 4354886 | 4354906 | + | No |
| 2645469_adh | TTGATGTAGACGCCGAGCAAA  | Chr.1 | 4354975 | 4354995 | + | No |
| 2008632_adh | TCGCTGAAGATTTGGATAACA  | Chr.1 | 4355257 | 4355277 | + | No |
| 1940417_adh | TCAAGTCGGACGATTTGAAGA  | Chr.1 | 4355404 | 4355424 | + | No |
| 2124932_adh | TGAACTGAAGAACGATGTCGG  | Chr.1 | 4356092 | 4356112 | + | No |
| 2652215_adh | TTGCGCACTTTTCGGACGGCCA | Chr.1 | 4367939 | 4367919 | - | No |
| 1968518_adh | TCATAATTTTAGGTCTAAAAAC | Chr.1 | 4373238 | 4373258 | + | No |
| 2733230_adh | TTTTAACAGTACGAAATTCTA  | Chr.1 | 4375058 | 4375078 | + | No |
| 2584956_adh | TTCAAAACGGATGAATAATGC  | Chr.1 | 4381788 | 4381768 | - | No |
| 1883813_adh | TATAAAAAACAAACGTGGACG  | Chr.1 | 4386365 | 4386385 | + | No |
| 2055604_adh | TCTTCAGACGACTATTTGAAA  | Chr.1 | 4389450 | 4389470 | + | No |
| 1958257_adh | TCAGACGACTATTTGAAAAAG  | Chr.1 | 4389453 | 4389473 | + | No |
| 2254507_adh | TGAGTGTGGATCTTGTTGGAA  | Chr.1 | 4393326 | 4393346 | + | No |
| 1770847_adh | TAAGTGAAGAAGAACGTGAAT  | Chr.1 | 4396146 | 4396166 | + | No |
| 2037060_adh | TCTCACATTTTAGACCCTGGC  | Chr.1 | 4402095 | 4402075 | - | No |
| 2597135_adh | TTCCATAATTTGTAGAAGTCG  | Chr.1 | 4431156 | 4431136 | - | No |
| 2712127_adh | TTTCTTTGTAGATTTCTTATA  | Chr.1 | 4435903 | 4435883 | - | No |
| 2689532_adh | TTTAAATGTATAACGCTCGGT  | Chr.1 | 4451057 | 4451037 | - | No |
| 2374069_adh | TGGACAGCAGTACAAGATGAC  | Chr.1 | 4457004 | 4457024 | + | No |
| 2374069_adh | TGGACAGCAGTACAAGATGAC  | Chr.1 | 4459828 | 4459848 | + | No |
| 1973831_adh | TCATTCGAGATGTTAGAAGAC  | Chr.1 | 4464672 | 4464652 | - | No |
| 2580691_adh | TTATTACTGTAGATCTAAGGC  | Chr.1 | 4468660 | 4468640 | - | No |
| 2659713_adh | TTGGAGCATATTTTGACAAT   | Chr.1 | 4478017 | 4477997 | - | No |
| 2584966_adh | TTCAAAACTCGGGAAGACGA   | Chr.1 | 4480935 | 4480915 | - | No |
| 2047922_adh | TCTGCAGGTTGACGTGATGGT  | Chr.1 | 4511240 | 4511260 | + | No |
| 2710103_adh | TTTCTCTCAGAATTTGCGGAT  | Chr.1 | 4537021 | 4537001 | - | No |
| 2709336_adh | TTTCGTTTATATGGACAACCT  | Chr.1 | 4575105 | 4575125 | + | No |
| 2291044_adh | TGCATTAGTCGGAAGAATTC   | Chr.1 | 4584797 | 4584777 | - | No |
| 2600554_adh | TTCTCAGTGGAAAGGCACTC   | Chr.1 | 4585453 | 4585473 | + | No |
| 2736000_adh | TTTTATGCCGGCTTTCTTTCC  | Chr.1 | 4602997 | 4602977 | - | No |
| 2693567_adh | TTTACCATTTTTATGCCGGCT  | Chr.1 | 4603005 | 4602985 | - | No |
| 2665198_adh | TTGGCACTATTCTGAAGAATT  | Chr.1 | 4603105 | 4603125 | + | No |
| 2697723_adh | TTTATAAATTCGGCAATTAA   | Chr.1 | 4613833 | 4613853 | + | No |
| 2374005_adh | TGGACAGAACTCTGAAGGCTTT | Chr.1 | 4620738 | 4620718 | - | No |
| 2145116_adh | TGAATTAAAGAAAATCGGTCG  | Chr.1 | 4621359 | 4621339 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2258388_adh | TGATAACAACAAAAAATGGAG  | Chr.1 | 4635479 | 4635459 | - | No |
| 1959113_adh | TCAGAGCTCCAAAGAAGAACC  | Chr.1 | 4645871 | 4645851 | - | No |
| 2616311_adh | TTCTCCCGCATCATCCGTTCC  | Chr.1 | 4645911 | 4645891 | - | No |
| 1883803_adh | TATAAAAAAGATTTTCGGTGA  | Chr.1 | 4647158 | 4647138 | - | No |
| 2285922_adh | TGCACAATCAAAGAATACAAC  | Chr.1 | 4655462 | 4655482 | + | No |
| 2683630_adh | TTGTTCCCAAACTTTCCAAA   | Chr.1 | 4659570 | 4659590 | + | No |
| 1772143_adh | TAAC TTACATGAACAAGACGA | Chr.1 | 4666394 | 4666414 | + | No |
| 2308233_adh | TGCTGAAGCGGGTTATAGTAA  | Chr.1 | 4694716 | 4694696 | - | No |
| 2537525_adh | TTAAAAAATTTTCGAACACAA  | Chr.1 | 4708759 | 4708739 | - | No |
| 1919070_adh | TATGTGGATCGTGGAAGACAG  | Chr.1 | 4710152 | 4710132 | - | No |
| 1812661_adh | TACAGTAGACAGTGTGCGCTC  | Chr.1 | 4747089 | 4747069 | - | No |
| 2712624_adh | TTTGAAACTTCCACGCAAGCA  | Chr.1 | 4765342 | 4765362 | + | No |
| 2693259_adh | TTTACACGGAAGGGGACGCG   | Chr.1 | 4766005 | 4766025 | + | No |
| 2693259_adh | TTTACACGGAAGGGGACGCG   | Chr.1 | 4768135 | 4768155 | + | No |
| 2259797_adh | TGATACGTGAGTGGAGACGGA  | Chr.1 | 4788629 | 4788609 | - | No |
| 2739925_adh | TTTTCTTAATTTTCGTCAGAT  | Chr.1 | 4789797 | 4789777 | - | No |
| 2585756_adh | TTCAACCAACGCTACGCGAAT  | Chr.1 | 4790099 | 4790119 | + | No |
| 2700843_adh | TTTATTTTCTCGTTTGCCGTT  | Chr.1 | 4790128 | 4790148 | + | No |
| 2481283_adh | TGTAACAGATGGAGTAGGTAA  | Chr.1 | 4790592 | 4790572 | - | No |
| 2591924_adh | TTCAGGAAACTCTGACAGCAT  | Chr.1 | 4790838 | 4790818 | - | No |
| 2524438_adh | TGTTATCTTGTGATTTCAGGAA | Chr.1 | 4790851 | 4790831 | - | No |
| 2590248_adh | TTCAGAAACTCGTACAGCTGC  | Chr.1 | 4791067 | 4791087 | + | No |
| 2113954_adh | TGAAATTACGGTATGTGCAAC  | Chr.1 | 4791708 | 4791688 | - | No |
| 2744734_adh | TTTTTAACAGTAGAAGAAAAT  | Chr.1 | 4791894 | 4791874 | - | No |
| 1806111_adh | TAATTTTAAACAGTAGAAGAA  | Chr.1 | 4791897 | 4791877 | - | No |
| 1954596_adh | TCACTGAGTTTTGAAGTTTTG  | Chr.1 | 4818171 | 4818151 | - | No |
| 2625619_adh | TTGAAATTACAGAAGTCTGTA  | Chr.1 | 4845620 | 4845600 | - | No |
| 2653055_adh | TTGCGGTGTGTGGATTTACGG  | Chr.1 | 4895934 | 4895954 | + | No |
| 1973130_adh | TCATTAATAATGAGCTCTTCGG | Chr.1 | 4895996 | 4896016 | + | No |
| 1983280_adh | TCCCTGATTGTTGTAAAGAAA  | Chr.1 | 4903452 | 4903472 | + | No |
| 1929256_adh | TATTTAGCTACATTTTAAATC  | Chr.1 | 4917952 | 4917932 | - | No |
| 2729246_adh | TTTGTGAAATCGGTTTCTCTC  | Chr.1 | 4959451 | 4959471 | + | No |
| 1921586_adh | TATTAGCATTGAAAGAGCATT  | Chr.1 | 4960326 | 4960346 | + | No |
| 1941106_adh | TCAATAGAATTCAGAGATGAT  | Chr.1 | 4967291 | 4967271 | - | No |
| 2028082_adh | TCGTTCTCGATTTCGGCAGTTA | Chr.1 | 4967402 | 4967382 | - | No |
| 2742836_adh | TTTTGGATGTTTGTAGAGGTT  | Chr.1 | 4995129 | 4995149 | + | No |
| 2000883_adh | TCGAGAAACTCGGCCTGAAAC  | Chr.1 | 4997047 | 4997067 | + | No |
| 2003966_adh | TCGATGAAGAAGGATTCAAAT  | Chr.1 | 5005997 | 5005977 | - | No |
| 1982115_adh | TCCCTCATTTTCGTCTGTTAAA | Chr.1 | 5006044 | 5006024 | - | No |
| 2598382_adh | TTCCCTCATTTTCGTCTGTTAA | Chr.1 | 5006045 | 5006025 | - | No |
| 1932952_adh | TCAAAGAAATCGCCGATGACC  | Chr.1 | 5019130 | 5019110 | - | No |
| 2599053_adh | TTCCGGAAAGCTCGAGTTTGA  | Chr.1 | 5019338 | 5019318 | - | No |
| 1934400_adh | TCAATCATGCATGGAATGGA   | Chr.1 | 5019823 | 5019803 | - | No |
| 2654515_adh | TTGCTGAAATCGACGGATCCC  | Chr.1 | 5019970 | 5019950 | - | No |
| 1939120_adh | TCAAGCACAAAGGTACAGTTC  | Chr.1 | 5024934 | 5024914 | - | No |
| 2449208_adh | TGGGATTTAATACTATTAGAG  | Chr.1 | 5040100 | 5040120 | + | No |
| 2449208_adh | TGGGATTTAATACTATTAGAG  | Chr.1 | 5040511 | 5040531 | + | No |
| 1821539_adh | TACGAAATCGTAGAAGCTTCT  | Chr.1 | 5040753 | 5040773 | + | No |
| 2486429_adh | TGTACAGAGAAGAACAGGTTA  | Chr.1 | 5048542 | 5048522 | - | No |
| 2740608_adh | TTTTGAACAAGGACGGAATCG  | Chr.1 | 5060056 | 5060036 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1932383_adh | TCAAAATATGACAGAAGCATC  | Chr.1 | 5103411 | 5103391 | - | No  |
| 1933324_adh | TCAAAGATTTGCACGGACAAC  | Chr.1 | 5105063 | 5105083 | + | No  |
| 2749012_adh | TTTTTTCTCACTGTACCAAAC  | Chr.1 | 5118889 | 5118869 | - | No  |
| 1985244_adh | TCCGCAGTTGAAATTCTAGGC  | Chr.1 | 5118956 | 5118936 | - | No  |
| 2601883_adh | TTCGAACAGCTAAAGACAATT  | Chr.1 | 5119048 | 5119068 | + | No  |
| 1945463_adh | TCACAGTAGAACAGTTCGGAG  | Chr.1 | 5122794 | 5122814 | + | No  |
| 2589429_adh | TTCACCTAAAGAAAGAGCAAA  | Chr.1 | 5124699 | 5124679 | - | No  |
| 2605096_adh | TTCGATGACATTTTCTCGGCA  | Chr.1 | 5127533 | 5127513 | - | No  |
| 2655221_adh | TTGCTTCAGACTTATTATCC   | Chr.1 | 5138187 | 5138207 | + | No  |
| 2653325_adh | TTGCGTACTCCTCTTGACAA   | Chr.1 | 5142718 | 5142738 | + | No  |
| 2623183_adh | TTCTTGTTGAAATCTTCATAT  | Chr.1 | 5162428 | 5162408 | - | No  |
| 1975079_adh | TCATTTCCGTGCACGATTTTT  | Chr.1 | 5162455 | 5162435 | - | No  |
| 2703861_adh | TTTCATCAAGCAGTAGATCTA  | Chr.1 | 5162952 | 5162972 | + | No  |
| 2568607_adh | TTAGGCTTTTTACGTTTTGAG  | Chr.1 | 5164947 | 5164927 | - | No  |
| 2694369_adh | TTTACTCTTGGACCGGCAGGT  | Chr.1 | 5176094 | 5176074 | - | No  |
| 1807662_adh | TACAACGATTGTCGCGAATAC  | Chr.1 | 5176271 | 5176251 | - | No  |
| 1953226_adh | TCACGGATGGATCGTTGTGCA  | Chr.1 | 5177125 | 5177145 | + | No  |
| 1939024_adh | TCAAGATTAGAAGATGTACTT  | Chr.1 | 5194788 | 5194768 | - | No  |
| 2704787_adh | TTTCATTTTTCGTTGGTTTTTC | Chr.1 | 5344526 | 5344546 | + | No  |
| 1975624_adh | TCATTTTTCGTTGGTTTTCT   | Chr.1 | 5344528 | 5344548 | + | No  |
| 2712659_adh | TTTGAAAGCACTTGGAAGGT   | Chr.1 | 5353995 | 5354015 | + | No  |
| 2114070_adh | TGAAATTATAAGGCATCTGGT  | Chr.1 | 5357350 | 5357370 | + | No  |
| 2738020_adh | TTTTCCGGTTTCTTCGTCTGT  | Chr.1 | 5368046 | 5368066 | + | No  |
| 2585038_adh | TTCAAAATGAAGGACGGAAAT  | Chr.1 | 5369748 | 5369768 | + | No  |
| 1931464_adh | TATTTTTTAAAGATTGTGGG   | Chr.1 | 5411164 | 5411184 | + | No  |
| 1976007_adh | TCCAACATAGTAGAGGAAGAG  | Chr.1 | 5424209 | 5424189 | - | No  |
| 2010371_adh | TCGGAAGTCTGGACAAAAGC   | Chr.1 | 5428931 | 5428911 | - | No  |
| 2414757_adh | TGGCTGAGAACGGACGTCTGA  | Chr.1 | 5429263 | 5429243 | - | No  |
| 2592732_adh | TTCAGTAGAGCGCATTTGGTG  | Chr.1 | 5429947 | 5429967 | + | No  |
| 2625340_adh | TTGAAATAAAATAAAAAATTCA | Chr.1 | 5449090 | 5449110 | + | No  |
| 1995400_adh | TCGAACAAATGGACGACGTAC  | Chr.1 | 5452901 | 5452921 | + | No  |
| 2745671_adh | TTTTTCACTTTTCGCTAGGCC  | Chr.1 | 5455217 | 5455237 | + | No  |
| 2607239_adh | TTCGGAATCGGATAAAGGTAC  | Chr.1 | 5464009 | 5464029 | + | No  |
| 1828826_adh | TACGTGTAAGATAATAGCTCA  | Chr.1 | 5470609 | 5470589 | - | No  |
| 2707006_adh | TTTCGAGACGAATGGAGAAAT  | Chr.1 | 5472167 | 5472187 | + | No  |
| 2150433_adh | TGACAAGAACAAGGAGAGCCG  | Chr.1 | 5484941 | 5484921 | - | No  |
| 1938241_adh | TCAAGAAGAAGACTGAGAACA  | Chr.1 | 5485094 | 5485074 | - | No  |
| 2586413_adh | TTCAAGAAGAAGACTGAGAAC  | Chr.1 | 5485095 | 5485075 | - | No  |
| 2714113_adh | TTTGAATAAAATTTTCGGGGG  | Chr.1 | 5486073 | 5486093 | + | No  |
| 2593836_adh | TTCATATTTTTTGGACATTTA  | Chr.1 | 5486112 | 5486132 | + | No  |
| 2487594_adh | TGTAGACAGAAGATAGTTTTT  | Chr.1 | 5487575 | 5487595 | + | No  |
| 2591771_adh | TTCAGCGCGACAGAAAACACG  | Chr.1 | 5511697 | 5511677 | - | No  |
| 1944385_adh | TCACAATTATCCGGCACATAA  | Chr.1 | 5511774 | 5511794 | + | No  |
| 2675238_adh | TTGTAGTAAAAGCGGTGACAT  | Chr.1 | 5547467 | 5547447 | - | No  |
| 2706480_adh | TTTCCTTTTATTTATCGTTGT  | Chr.1 | 5550557 | 5550537 | - | No  |
| 2036667_adh | TCTCAATGATGGTAGTGATAA  | Chr.1 | 5560028 | 5560008 | - | No  |
| 1781688_adh | TAAGCAGAAATTTTGGACAAA  | Chr.1 | 5560257 | 5560277 | + | Yes |
| 2309444_adh | TGCTGTGCGAAGTAGATGAGCA | Chr.1 | 5572900 | 5572880 | - | No  |
| 2469017_adh | TGGTATTTGCAGAGCGAACGC  | Chr.1 | 5573205 | 5573225 | + | No  |
| 1930275_adh | TATTTGCAGAGCGAACGCATA  | Chr.1 | 5573208 | 5573228 | + | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2609990_adh | TTCGGTCGACTATCGGAGCAA  | Chr.1 | 5579153 | 5579133 | - | No |
| 2144774_adh | TGAATGTCGCTCGAAGAAGAA  | Chr.1 | 5579183 | 5579163 | - | No |
| 1810674_adh | TACACAGAATAAGAGGGATAG  | Chr.1 | 5585539 | 5585519 | - | No |
| 2317863_adh | TGGAAATATAAGTTTGATGAT  | Chr.1 | 5585713 | 5585733 | + | No |
| 2374102_adh | TGGACAGGAGAGGACAAGCCA  | Chr.1 | 5599511 | 5599491 | - | No |
| 2285886_adh | TGCACAACTGGAACACGGTG   | Chr.1 | 5608744 | 5608724 | - | No |
| 2062602_adh | TCTTTTCGTCAAATTTGTATC  | Chr.1 | 5619249 | 5619229 | - | No |
| 2606057_adh | TTCGATTTTGCAGCTTGAAGT  | Chr.1 | 5619384 | 5619404 | + | No |
| 2706983_adh | TTTCGACTTTAGTTTTGGTTA  | Chr.1 | 5619455 | 5619475 | + | No |
| 1938943_adh | TCAAGATAAGACAACGCCAAG  | Chr.1 | 5619679 | 5619699 | + | No |
| 2512289_adh | TGTGATTGCAACCGTAGGAGA  | Chr.1 | 5644787 | 5644767 | - | No |
| 2500167_adh | TGTCTTCTCGGCTTTCTAAAC  | Chr.1 | 5659093 | 5659073 | - | No |
| 1797782_adh | TAATCAATTATTATGAAATTA  | Chr.1 | 5671427 | 5671447 | + | No |
| 2001567_adh | TCGAGCTGAATACACGTGTTG  | Chr.1 | 5678767 | 5678747 | - | No |
| 2618970_adh | TTCTGGAGCTCTTTTGACGAC  | Chr.1 | 5691676 | 5691656 | - | No |
| 2270478_adh | TGATCTGGATATCAAGTAGAT  | Chr.1 | 5699321 | 5699301 | - | No |
| 1761454_adh | TAAATGATAGGTCTGAGCCAA  | Chr.1 | 5707103 | 5707123 | + | No |
| 2716918_adh | TTTGAGGCGCATAGAAAATCA  | Chr.1 | 5709545 | 5709565 | + | No |
| 1931373_adh | TATTTTGTATCTTGCTGGAAA  | Chr.1 | 5734657 | 5734677 | + | No |
| 1797402_adh | TAATCAAAATTTACGGCTAT   | Chr.1 | 5735534 | 5735554 | + | No |
| 2334214_adh | TGGAATCGAAAAGAATCAA    | Chr.1 | 5738396 | 5738416 | + | No |
| 2060649_adh | TCTTTATCATTTACTGAAGGC  | Chr.1 | 5744027 | 5744007 | - | No |
| 2125499_adh | TGAACTGGGAAGCGAAGAAAAG | Chr.1 | 5762550 | 5762570 | + | No |
| 1893205_adh | TATCACTTTTCAAGTGTTTGT  | Chr.1 | 5774590 | 5774610 | + | No |
| 2584473_adh | TTATTTTAATGTGGAACACGG  | Chr.1 | 5785890 | 5785870 | - | No |
| 2645141_adh | TTGATGGATTAGTAAAAGAAG  | Chr.1 | 5807122 | 5807102 | - | No |
| 1758402_adh | TAAAGTAGAAGAATTCAAGAA  | Chr.1 | 5817527 | 5817507 | - | No |
| 2169412_adh | TGACTGACAAGTTTCAGAATG  | Chr.1 | 5818146 | 5818126 | - | No |
| 2740275_adh | TTTTCTTGTTTCGCGGACGTTT | Chr.1 | 5818194 | 5818174 | - | No |
| 1943310_adh | TCAATTTCTGAGCAATGCTT   | Chr.1 | 5827990 | 5828010 | + | No |
| 2617653_adh | TTCTGAAAACGAGTCTGAAAG  | Chr.1 | 5847587 | 5847567 | - | No |
| 2557209_adh | TTACGGAAGAAGATCGCGTGT  | Chr.1 | 5851815 | 5851795 | - | No |
| 2161083_adh | TGACGATAGAGTGGGAGACAA  | Chr.1 | 5866099 | 5866119 | + | No |
| 1757644_adh | TAAAGCTGAAGCCATTCAAAC  | Chr.1 | 5876395 | 5876375 | - | No |
| 2541518_adh | TTAAAGCTGAAGCCATTCAAA  | Chr.1 | 5876396 | 5876376 | - | No |
| 2062585_adh | TCTTTTCGAGCAAAGAAATTCT | Chr.1 | 5878373 | 5878353 | - | No |
| 2435439_adh | TGGGATGCAAAGAAAAATCAA  | Chr.1 | 5879262 | 5879282 | + | No |
| 1883975_adh | TATAAAATGATTCTGCAACCT  | Chr.1 | 5883428 | 5883408 | - | No |
| 2254425_adh | TGAGTGTATTTTGTATTTTAG  | Chr.1 | 5900864 | 5900884 | + | No |
| 1830940_adh | TACTCATTGGACTATGTACGG  | Chr.1 | 5936959 | 5936939 | - | No |
| 2689092_adh | TTTAAACGGCTTGCAATTTCTC | Chr.1 | 5937169 | 5937189 | + | No |
| 2539967_adh | TTAAACGGCTTGCAATTTCTCC | Chr.1 | 5937170 | 5937190 | + | No |
| 1837197_adh | TAGAAAGACAAAGGTAACGCT  | Chr.1 | 5964155 | 5964135 | - | No |
| 2480314_adh | TGTAAAAAAGTGTAGGAAAAT  | Chr.1 | 5978955 | 5978935 | - | No |
| 2480314_adh | TGTAAAAAAGTGTAGGAAAAT  | Chr.1 | 5982992 | 5983012 | + | No |
| 2746626_adh | TTTTTGACGCATTTTCATCAA  | Chr.1 | 6003066 | 6003046 | - | No |
| 1943299_adh | TCAATTTCAACCGTTTTTA    | Chr.1 | 6011987 | 6012007 | + | No |
| 2308845_adh | TGCTGGAGATCAAGGAACAAC  | Chr.1 | 6026080 | 6026100 | + | No |
| 2458272_adh | TGGGTCTTGGTGATCGTCATC  | Chr.1 | 6032403 | 6032423 | + | No |
| 1797906_adh | TAATCATAGAGCTTGTGCAGA  | Chr.1 | 6055301 | 6055281 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1797906_adh | TAATCATAGAGCTTGTGCAGA  | Chr.1 | 6057705 | 6057685 | - | No |
| 2688729_adh | TTTAAAAATGTTTGTCTGACA  | Chr.1 | 6061306 | 6061286 | - | No |
| 2574441_adh | TTATACGGTGAACCTAGGGGA  | Chr.1 | 6063780 | 6063760 | - | No |
| 2072730_adh | TGAAACCGTAGAAAACCTTCAA | Chr.1 | 6068198 | 6068178 | - | No |
| 2747930_adh | TTTTTGTTGCGTTTGACATT   | Chr.1 | 6080542 | 6080522 | - | No |
| 2150413_adh | TGACAAGAAAAGTATGATGGCT | Chr.1 | 6082759 | 6082739 | - | No |
| 2691514_adh | TTTAATGAATTCTAAGACCAA  | Chr.1 | 6091080 | 6091060 | - | No |
| 2493618_adh | TGTATTTGAGAAGGCTCGTAT  | Chr.1 | 6093852 | 6093872 | + | No |
| 1996986_adh | TCGAATAATGTGAAGACTCAG  | Chr.1 | 6097572 | 6097552 | - | No |
| 2029610_adh | TCTAACCCCTCGTCTTCTCTAC | Chr.1 | 6098960 | 6098980 | + | No |
| 2706208_adh | TTTCCTCCGAAACATACTTTT  | Chr.1 | 6109712 | 6109692 | - | No |
| 2422785_adh | TGGGAGAATTAGAGAAATCGA  | Chr.1 | 6115119 | 6115099 | - | No |
| 2693097_adh | TTTACAAAGGTAGTTCTAGGT  | Chr.1 | 6115253 | 6115233 | - | No |
| 2309022_adh | TGCTGGCGGCAAACCTCTTTTT | Chr.1 | 6163483 | 6163463 | - | No |
| 1973339_adh | TCATTAGAACTTATAGGCATT  | Chr.1 | 6166666 | 6166686 | + | No |
| 1922470_adh | TATTATGATTGCCTGACGTTT  | Chr.1 | 6176320 | 6176300 | - | No |
| 2658788_adh | TTGGACTCGATGTCGCCGAGC  | Chr.1 | 6207847 | 6207827 | - | No |
| 1873185_adh | TAGTAAGAAGGTACGTGTTTT  | Chr.1 | 6210265 | 6210245 | - | No |
| 2053647_adh | TCTTAAAGGCGCGTAGGAATC  | Chr.1 | 6215612 | 6215592 | - | No |
| 1821995_adh | TACGACAAAGAGACCACTAAT  | Chr.1 | 6219977 | 6219997 | + | No |
| 2487386_adh | TGTAGAAAACAGAAGAGGAGG  | Chr.1 | 6220949 | 6220969 | + | No |
| 2679275_adh | TTGTGAACTGGTTGGTGAATT  | Chr.1 | 6221101 | 6221121 | + | No |
| 1891543_adh | TATCAAGCCGTTCAAGACTTC  | Chr.1 | 6224200 | 6224220 | + | No |
| 1990768_adh | TCCTCTCGGACGATTAATTAA  | Chr.1 | 6224851 | 6224871 | + | No |
| 1934040_adh | TCAAATACAAGTAGACGTAAT  | Chr.1 | 6228705 | 6228685 | - | No |
| 1931519_adh | TATTTTTTGTGAACTGGGGTT  | Chr.1 | 6230189 | 6230169 | - | No |
| 2616069_adh | TTCTCACTTGAACATTAACAT  | Chr.1 | 6232118 | 6232098 | - | No |
| 2616069_adh | TTCTCACTTGAACATTAACAT  | Chr.1 | 6234723 | 6234743 | + | No |
| 2319843_adh | TGGAACCTGAGAAATTAATAG  | Chr.1 | 6238146 | 6238126 | - | No |
| 1896767_adh | TATCGAATATTGAACGGTGTG  | Chr.1 | 6258026 | 6258006 | - | No |
| 2580429_adh | TTATGTTTTTGAATATTGCAA  | Chr.1 | 6261713 | 6261693 | - | No |
| 1974070_adh | TCATTGCAGACATTTGACAAC  | Chr.1 | 6265246 | 6265266 | + | No |
| 2702963_adh | TTTCAGATGATAGTTTTTGTA  | Chr.1 | 6268823 | 6268803 | - | No |
| 2692329_adh | TTTAATTCTCGTCTTGTCTAC  | Chr.1 | 6275291 | 6275271 | - | No |
| 2607136_adh | TTCGGAAATTTGGCGGAATAA  | Chr.1 | 6277250 | 6277270 | + | No |
| 2049141_adh | TCTGGAGGTGTTGCTCGGCGT  | Chr.1 | 6285220 | 6285240 | + | No |
| 2378953_adh | TGGACTTGACAGTTTGAGCGG  | Chr.1 | 6316915 | 6316935 | + | No |
| 1978564_adh | TCCAGCTTCCCGGTATATTCC  | Chr.1 | 6317825 | 6317805 | - | No |
| 2616069_adh | TTCTCACTTGAACATTAACAT  | Chr.1 | 6329540 | 6329560 | + | No |
| 1746068_adh | TAAAACTCTAGTCGGCATT    | Chr.1 | 6338183 | 6338203 | + | No |
| 1941082_adh | TCAATAGAAGAACGGTACACA  | Chr.1 | 6340247 | 6340227 | - | No |
| 2737906_adh | TTTTCCATTTTCTCGGCGTTA  | Chr.1 | 6341964 | 6341984 | + | No |
| 2740705_adh | TTTTGAACCGTGATGGTACTC  | Chr.1 | 6342993 | 6343013 | + | No |
| 1848167_adh | TAGAGCTCAACGACAGCAGCC  | Chr.1 | 6343015 | 6343035 | + | No |
| 2590104_adh | TTCACTTGCATGTCGTTGGGT  | Chr.1 | 6348065 | 6348085 | + | No |
| 2579716_adh | TTATGGTAAAGGATCGATTGG  | Chr.1 | 6356018 | 6356038 | + | No |
| 2601895_adh | TTCAACATTTATTAGTAGAG   | Chr.1 | 6366224 | 6366204 | - | No |
| 2600525_adh | TTCTCAATTGTAGAGACAAT   | Chr.1 | 6366282 | 6366262 | - | No |
| 2502878_adh | TGTGAATGACGAAGAGACGCA  | Chr.1 | 6412451 | 6412471 | + | No |
| 1973662_adh | TCATTATTGTAGAAGAATAAC  | Chr.1 | 6413898 | 6413918 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2654236_adh | TTGCTCAAGAATTAGTTAGAA  | Chr.1 | 6460848 | 6460828 | - | No  |
| 2712539_adh | TTTGAAACAAATGTTGACTGT  | Chr.1 | 6467187 | 6467167 | - | No  |
| 2529784_adh | TGTTGGACTATGGCTATAAAT  | Chr.1 | 6470531 | 6470511 | - | No  |
| 2161540_adh | TGACGGAAGCAGCTCTCCATT  | Chr.1 | 6472554 | 6472534 | - | No  |
| 2702691_adh | TTTCACTGACGGAAGCAGCTC  | Chr.1 | 6472560 | 6472540 | - | No  |
| 2381796_adh | TGGAGCTTGGCATTCTGAAAA  | Chr.1 | 6473235 | 6473215 | - | No  |
| 2499371_adh | TGTCTCGCTGGAGCTTGGCAT  | Chr.1 | 6473243 | 6473223 | - | No  |
| 2274906_adh | TGATTATAGATTATGGAACAG  | Chr.1 | 6498226 | 6498246 | + | No  |
| 2583314_adh | TTATTGTGGAAGATCAGCGG   | Chr.1 | 6498484 | 6498504 | + | No  |
| 1901330_adh | TATGAAAGAATATGGAATACC  | Chr.1 | 6498985 | 6499005 | + | No  |
| 2553217_adh | TTACAAATCAGACGACAACTT  | Chr.1 | 6501369 | 6501349 | - | No  |
| 1975551_adh | TCATTTTGAAGCAAACCTTTGG | Chr.1 | 6525048 | 6525068 | + | No  |
| 2277360_adh | TGATTGTTCTATTCGTCGTCT  | Chr.1 | 6530095 | 6530075 | - | No  |
| 1926102_adh | TATTGATTGTTCTATTCGTCG  | Chr.1 | 6530098 | 6530078 | - | No  |
| 1923367_adh | TATTCAAGAAGAAAACCTGCGT | Chr.1 | 6553465 | 6553445 | - | No  |
| 2646696_adh | TTGATTGTTGTGCCACGTTGC  | Chr.1 | 6554589 | 6554569 | - | No  |
| 2745024_adh | TTTTTACTTGATTGTTGTGCC  | Chr.1 | 6554596 | 6554576 | - | No  |
| 2240117_adh | TGAGGGCACTCGGCTGACATC  | Chr.1 | 6554758 | 6554778 | + | No  |
| 2015777_adh | TCGGCTGACATCAGAGAAGAA  | Chr.1 | 6554767 | 6554787 | + | No  |
| 2258741_adh | TGATAAGAATTGATTGATGGA  | Chr.1 | 6556269 | 6556289 | + | No  |
| 1852019_adh | TAGATTCCTGTAGAATTTGCA  | Chr.1 | 6558330 | 6558350 | + | No  |
| 2527049_adh | TGTTCTGTTGGCATTTCCTCAT | Chr.1 | 6562567 | 6562587 | + | No  |
| 2737897_adh | TTTTCCATGCGTCGAATTTCT  | Chr.1 | 6562580 | 6562600 | + | No  |
| 1880588_adh | TAGTTCCTTTCTTTCTGTCTAA | Chr.1 | 6565947 | 6565927 | - | No  |
| 1745986_adh | TAAAAACGGAAATGGACGTCT  | Chr.1 | 6570515 | 6570535 | + | No  |
| 1933909_adh | TCAAAGTCAACGAAAAATAGA  | Chr.1 | 6573123 | 6573103 | - | No  |
| 2558143_adh | TTACGTTGAATTTGTGTTTTTC | Chr.1 | 6573936 | 6573956 | + | No  |
| 2148991_adh | TGACAAAAGGACGACAGTTGT  | Chr.1 | 6587264 | 6587284 | + | No  |
| 1908519_adh | TATGACTCACCGGTCGGAAGA  | Chr.1 | 6593475 | 6593455 | - | Yes |
| 1931922_adh | TCAAAAATGGATCGTCAATTG  | Chr.1 | 6600940 | 6600920 | - | No  |
| 2499003_adh | TGTCTAATTAGATCGGGGACA  | Chr.1 | 6609592 | 6609572 | - | No  |
| 1763942_adh | TAACAATAAAAGAAAGTGGAA  | Chr.1 | 6682244 | 6682264 | + | No  |
| 1989314_adh | TCCTACGATTTCTGTTGTTCAA | Chr.1 | 6682294 | 6682314 | + | No  |
| 2696652_adh | TTTAGGATAAGAAAGACGACG  | Chr.1 | 6705673 | 6705653 | - | No  |
| 2716327_adh | TTTGAGAACGAGAATGCGGAA  | Chr.1 | 6717653 | 6717633 | - | No  |
| 2541811_adh | TTAAAGTTAGGAGACGTAGAG  | Chr.1 | 6721630 | 6721650 | + | No  |
| 2578307_adh | TTATGAACTTTTAAAAACGGA  | Chr.1 | 6724638 | 6724658 | + | No  |
| 2012775_adh | TCGGAGCTACGTGTCATTTCT  | Chr.1 | 6741292 | 6741312 | + | No  |
| 1908660_adh | TATGACTGGATTTCGGACAGCC | Chr.1 | 6763573 | 6763553 | - | No  |
| 2499898_adh | TGTCTGTAGTTGACCTTTTTTC | Chr.1 | 6780338 | 6780358 | + | No  |
| 1824954_adh | TACGCGATTAAGTATCTTGTA  | Chr.1 | 6787511 | 6787491 | - | No  |
| 2587979_adh | TTCAATGAACGATTTAAAAAA  | Chr.1 | 6789135 | 6789115 | - | No  |
| 2702975_adh | TTTCAGCAAAGAGCACTTTCA  | Chr.1 | 6790213 | 6790233 | + | No  |
| 1886637_adh | TATAATTTTTCTTAGAACTA   | Chr.1 | 6798462 | 6798482 | + | No  |
| 2655935_adh | TTGCTTTCTAGATTGACATG   | Chr.1 | 6799741 | 6799761 | + | No  |
| 2542113_adh | TTAAATACAACGAATAAAGGC  | Chr.1 | 6814262 | 6814242 | - | No  |
| 2551668_adh | TTAATTAAATACAACGAATAA  | Chr.1 | 6814266 | 6814246 | - | No  |
| 2259028_adh | TGATAAGTTCGGAAATTTGGC  | Chr.1 | 6833489 | 6833509 | + | No  |
| 2624576_adh | TTGAAAATTACTAAAGAAAAT  | Chr.1 | 6835882 | 6835862 | - | No  |
| 1994646_adh | TCGAAACAGTAGAAATTTCGA  | Chr.1 | 6835968 | 6835988 | + | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2673666_adh | TTGTAAATTTCTTCGTCATGG  | Chr.1 | 6836059 | 6836079 | + | No |
| 2678224_adh | TTGTCGCTGGATACGGAGATG  | Chr.1 | 6837207 | 6837227 | + | No |
| 2133073_adh | TGAAGGATGGAAAAGACGCTA  | Chr.1 | 6847070 | 6847050 | - | No |
| 1954424_adh | TCACTGAAGGATGGAAAAGAC  | Chr.1 | 6847074 | 6847054 | - | No |
| 2043674_adh | TCTGAAACAAACTCAAGTTCG  | Chr.1 | 6849985 | 6850005 | + | No |
| 2701542_adh | TTTCAAGATCTGATGGGATTC  | Chr.1 | 6854627 | 6854607 | - | No |
| 1919300_adh | TATGTTCAATTGCAGACTTCG  | Chr.1 | 6858371 | 6858351 | - | No |
| 2717444_adh | TTTGATACTTTTGGAAACATGC | Chr.1 | 6882492 | 6882472 | - | No |
| 2734337_adh | TTTTACTGTAGAATGCAAGGT  | Chr.1 | 6884654 | 6884634 | - | No |
| 2279125_adh | TGATTTTACTGTAGAATGCAA  | Chr.1 | 6884657 | 6884637 | - | No |
| 2041953_adh | TCTCTAATTACATTCGGATTG  | Chr.1 | 6893594 | 6893574 | - | No |
| 1924035_adh | TATTCCGAATTTTTAATATTT  | Chr.1 | 6897287 | 6897307 | + | No |
| 2539156_adh | TTAAAATTTGTTTCGTCTTTC  | Chr.1 | 6913866 | 6913846 | - | No |
| 2174527_adh | TGACTTTGAAGGATGTGCTCA  | Chr.1 | 6915156 | 6915176 | + | No |
| 2650907_adh | TTGCATTTGTTTCGTCGCCCAT | Chr.1 | 6923912 | 6923892 | - | No |
| 1773709_adh | TAAGAACATTGATAAGAAGAA  | Chr.1 | 6943077 | 6943057 | - | No |
| 2735532_adh | TTTTATCCGGAATGGTCTCGC  | Chr.1 | 6950793 | 6950813 | + | No |
| 1853753_adh | TAGCAATTTTCCTTCCCAAAG  | Chr.1 | 6955372 | 6955352 | - | No |
| 2741661_adh | TTTTGATCGTTCCTCGAAGTT  | Chr.1 | 6970250 | 6970230 | - | No |
| 2616216_adh | TTCTCCACAATTTTGATCGTT  | Chr.1 | 6970260 | 6970240 | - | No |
| 2513351_adh | TGTGCAGAGAAAACGGTCGGT  | Chr.1 | 6970280 | 6970260 | - | No |
| 2033316_adh | TCTAGTGA CTTGATGTGCAGA | Chr.1 | 6970293 | 6970273 | - | No |
| 2701727_adh | TTTCAATCGGAAAATCGTTGC  | Chr.1 | 6973694 | 6973674 | - | No |
| 2526302_adh | TGTTCCCTTAAGAGGGAAGCTT | Chr.1 | 6992615 | 6992595 | - | No |
| 2636231_adh | TTGACGGTAATTCAAATTGGA  | Chr.1 | 7002435 | 7002455 | + | No |
| 1812687_adh | TACAGTAGGCCGCAAAAATTA  | Chr.1 | 7014412 | 7014392 | - | No |
| 1944131_adh | TCACAAGCAGAATTTTTCGAT  | Chr.1 | 7015706 | 7015686 | - | No |
| 2258922_adh | TGATAAGGATGTGCTCATTGA  | Chr.1 | 7016879 | 7016859 | - | No |
| 1799304_adh | TAATGAAGGAAAGTATCCAAT  | Chr.1 | 7017135 | 7017115 | - | No |
| 2122953_adh | TGAACGACGTGTTTTTGGCTC  | Chr.1 | 7021441 | 7021421 | - | No |
| 2552934_adh | TTAATTTTGTCTGGTTTTTTAA | Chr.1 | 7021943 | 7021963 | + | No |
| 1924104_adh | TATTCCGTACCAGTTCAAGTA  | Chr.1 | 7028988 | 7029008 | + | No |
| 2712824_adh | TTTGAAATTGAACTGCAAAGG  | Chr.1 | 7029690 | 7029670 | - | No |
| 1919752_adh | TATGTTTTAATTCTAGACGGT  | Chr.1 | 7052543 | 7052563 | + | No |
| 2667773_adh | TTGGGGAGTACTGTAAAGAAA  | Chr.1 | 7056630 | 7056610 | - | No |
| 1876825_adh | TAGTCGTGGAACACAGAATGG  | Chr.1 | 7067769 | 7067749 | - | No |
| 2623454_adh | TTCTTTCCTAAATCGAGGCCA  | Chr.1 | 7069369 | 7069389 | + | No |
| 1821574_adh | TACGAACATAAGAAGAACATA  | Chr.1 | 7075863 | 7075883 | + | No |
| 1810667_adh | TACACACTTTATTTTCATTGGA | Chr.1 | 7079601 | 7079621 | + | No |
| 2377771_adh | TGGACTGCGAAGATATTATCA  | Chr.1 | 7080845 | 7080825 | - | No |
| 1957584_adh | TCAGAAGACACTGTTATTCTG  | Chr.1 | 7084672 | 7084692 | + | No |
| 1925023_adh | TATTCTGGTCTGCTTGAGAG   | Chr.1 | 7084686 | 7084706 | + | No |
| 1921983_adh | TATTATAGAAAAATACGATCG  | Chr.1 | 7086447 | 7086427 | - | No |
| 2728446_adh | TTTGTATATTTTGAAGCAGA   | Chr.1 | 7086772 | 7086792 | + | No |
| 2624330_adh | TTGAAAACAGATGATTAACAA  | Chr.1 | 7090572 | 7090592 | + | No |
| 1755966_adh | TAAACTTTGTTTTCTGTCTGT  | Chr.1 | 7098387 | 7098407 | + | No |
| 1755966_adh | TAAACTTTGTTTTCTGTCTGT  | Chr.1 | 7099683 | 7099663 | - | No |
| 2544223_adh | TTAAATGTGGATGAAGATGAG  | Chr.1 | 7118380 | 7118360 | - | No |
| 2716934_adh | TTTGAGGGAAAAGTGTAGACG  | Chr.1 | 7128488 | 7128508 | + | No |
| 1806704_adh | TACAAAGAATGCCAAGATTAC  | Chr.1 | 7136669 | 7136649 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1756594_adh | TAAAGACGTCAGTGGACAAAA  | Chr.1 | 7144589 | 7144569 | - | No |
| 1766211_adh | TAACATGTAAGATTCTTTAAA  | Chr.1 | 7148517 | 7148537 | + | No |
| 2042912_adh | TCTCTGCATACCACTCTAACT  | Chr.1 | 7149605 | 7149585 | - | No |
| 2615958_adh | TTCTCAATAATGTTTGTAGAC  | Chr.1 | 7176441 | 7176421 | - | No |
| 1814404_adh | TACATTCTGGTGTGAGTTGGA  | Chr.1 | 7185698 | 7185718 | + | No |
| 2658422_adh | TTGGACGAGTTGAAGATTTCA  | Chr.1 | 7185714 | 7185734 | + | No |
| 2155026_adh | TGACATACAAGTAGAGAACTG  | Chr.1 | 7188311 | 7188291 | - | No |
| 2386726_adh | TGGATAAATTGCAGAAAAAGG  | Chr.1 | 7193645 | 7193625 | - | No |
| 2674670_adh | TTGTAGAACAAATTCGTCATT  | Chr.1 | 7195672 | 7195652 | - | No |
| 1745979_adh | TAAAAACGCAGAAAGTTCAAAT | Chr.1 | 7218185 | 7218165 | - | No |
| 2567524_adh | TTAGGAACAATTCTACGGAGA  | Chr.1 | 7221867 | 7221847 | - | No |
| 2688381_adh | TTGTTTTTATGCCGCCTCTGA  | Chr.1 | 7235133 | 7235153 | + | No |
| 1925250_adh | TATTCTTTTTCGTCGGCAATA  | Chr.1 | 7235177 | 7235197 | + | No |
| 2639104_adh | TTGACTTGGAAGCAGCTCTAG  | Chr.1 | 7238948 | 7238928 | - | No |
| 2140342_adh | TGAATCACAGAAGCTCATTCA  | Chr.1 | 7245416 | 7245436 | + | No |
| 1882922_adh | TAGTTTCGAAATCGACGGATC  | Chr.1 | 7251490 | 7251470 | - | No |
| 2070791_adh | TGAAAATTGGGCGGTGCTTTA  | Chr.1 | 7251663 | 7251643 | - | No |
| 2702609_adh | TTTCACGTCTCCAATGAACTC  | Chr.1 | 7251842 | 7251862 | + | No |
| 2648972_adh | TTGCACATTCGTTTTGTTTCA  | Chr.1 | 7255406 | 7255426 | + | No |
| 1975964_adh | TCCAAATTCGACAGATCCAA   | Chr.1 | 7259578 | 7259558 | - | No |
| 1957794_adh | TCAGAAGTCTAAGGCTAAGAT  | Chr.1 | 7262175 | 7262155 | - | No |
| 1824695_adh | TACGCAGAAAGAACAATGACC  | Chr.1 | 7262230 | 7262210 | - | No |
| 2719119_adh | TTTGATGGCTTTGAAGATTTG  | Chr.1 | 7286277 | 7286297 | + | No |
| 2043830_adh | TCTGAAATTTTGCAGGATCGG  | Chr.1 | 7299457 | 7299437 | - | No |
| 2708297_adh | TTTCGGTAACGCTCTTTCAGC  | Chr.1 | 7304763 | 7304743 | - | No |
| 2161216_adh | TGACGCAGTTGATGATGATCG  | Chr.1 | 7318027 | 7318007 | - | No |
| 1958013_adh | TCAGACAAAACAAGCAACTCT  | Chr.1 | 7318874 | 7318894 | + | No |
| 2722884_adh | TTTGGAACAACATGAGCATA   | Chr.1 | 7330774 | 7330754 | - | No |
| 2605697_adh | TTCGATTCTTTGGTTCCGCGT  | Chr.1 | 7347471 | 7347491 | + | No |
| 1812536_adh | TACAGGCAGATACTCTCTCAT  | Chr.1 | 7352601 | 7352621 | + | No |
| 2007329_adh | TCGCCAAGTTGGAGACCAGAA  | Chr.1 | 7377966 | 7377946 | - | No |
| 1972090_adh | TCATGAGGAACAAGAACACTC  | Chr.1 | 7378094 | 7378074 | - | No |
| 2124652_adh | TGAACTCGAGGAATGCAAGAC  | Chr.1 | 7378352 | 7378332 | - | No |
| 2032386_adh | TCTAGACTGAAGAAGAAGTAC  | Chr.1 | 7378665 | 7378645 | - | No |
| 2723176_adh | TTTGGAATCTGATAGAGGACT  | Chr.1 | 7407271 | 7407251 | - | No |
| 1874738_adh | TAGTAGGATACGGTAAAATTG  | Chr.1 | 7445045 | 7445065 | + | No |
| 1821475_adh | TACGAAACTCGAGCAGACATG  | Chr.1 | 7466741 | 7466721 | - | No |
| 2259546_adh | TGATACGAAACTCGAGCAGAC  | Chr.1 | 7466744 | 7466724 | - | No |
| 1969755_adh | TCATATGGAGAAGAACACGTG  | Chr.1 | 7472453 | 7472433 | - | No |
| 2719722_adh | TTTGATTCAACGATGGAAGGA  | Chr.1 | 7475460 | 7475480 | + | No |
| 1919113_adh | TATGTGGTACTTTCCAGTTGA  | Chr.1 | 7488145 | 7488125 | - | No |
| 2132106_adh | TGAAGCTGTGAAGAAAGTACA  | Chr.1 | 7492613 | 7492633 | + | No |
| 2646009_adh | TTGATTCCAGAAGTAGAGCAA  | Chr.1 | 7493008 | 7493028 | + | No |
| 2596680_adh | TTCCAGAAGTAGAGCAATTCT  | Chr.1 | 7493012 | 7493032 | + | No |
| 2048064_adh | TCTGCATTCCTGTGGAAGTCG  | Chr.1 | 7493777 | 7493797 | + | No |
| 1753056_adh | TAAAATTATCATTTATCGTCA  | Chr.1 | 7509106 | 7509086 | - | No |
| 2160709_adh | TGACGACGGCAACTGTAATGA  | Chr.1 | 7518166 | 7518146 | - | No |
| 2287983_adh | TGCAGATGGTAATATCGTAGA  | Chr.1 | 7542974 | 7542994 | + | No |
| 2003195_adh | TCGATAGTGC GTGACGATATA | Chr.1 | 7548705 | 7548725 | + | No |
| 2037310_adh | TCTCAGAATTTCTGTGCTCTCG | Chr.1 | 7553370 | 7553350 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2703548_adh | TTTCAGTCGATTTGACCTTTT  | Chr.1 | 7554852 | 7554872 | + | No  |
| 2058078_adh | TCTTGATCTAGAAGAGTGGA   | Chr.1 | 7567761 | 7567781 | + | No  |
| 2380104_adh | TGGAGACCACTTGGAGACTGA  | Chr.1 | 7573835 | 7573815 | - | No  |
| 2459351_adh | TGGGTTCAAACCTCGACGTGGT | Chr.1 | 7588125 | 7588145 | + | No  |
| 2740564_adh | TTTTGAAACTGTAAATTAATT  | Chr.1 | 7588494 | 7588474 | - | No  |
| 2286609_adh | TGCACTCATCTGTTCGGTTTTG | Chr.1 | 7588510 | 7588490 | - | No  |
| 2649141_adh | TTGCACTCATCTGTTCGGTTTT | Chr.1 | 7588511 | 7588491 | - | No  |
| 2729141_adh | TTTGTCTGCAAGAAACGTATT  | Chr.1 | 7588675 | 7588695 | + | No  |
| 1815439_adh | TACCAGCTGAAGATGCTCCAC  | Chr.1 | 7590651 | 7590671 | + | No  |
| 2382145_adh | TGGAGGCAGAAGAACCCTCAT  | Chr.1 | 7592233 | 7592213 | - | No  |
| 1979779_adh | TCCATGGAAGGGATCTTTGAG  | Chr.1 | 7595459 | 7595439 | - | No  |
| 1849557_adh | TAGATAAAAAGATTGGAAATC  | Chr.1 | 7595984 | 7595964 | - | No  |
| 2272200_adh | TGATGGACTTGTAAGGTATA   | Chr.1 | 7599616 | 7599636 | + | No  |
| 2265568_adh | TGATATGTAGAGAGGTCAAGT  | Chr.1 | 7614872 | 7614852 | - | No  |
| 2172231_adh | TGACTGTGGAGATGGTTCCGA  | Chr.1 | 7621449 | 7621469 | + | No  |
| 1911590_adh | TATGATGGAAGTATGAAGAC   | Chr.1 | 7621579 | 7621599 | + | No  |
| 1936100_adh | TCAACAGGATTGTGATGATGG  | Chr.1 | 7621818 | 7621838 | + | No  |
| 2608305_adh | TTCGGATGTACTAGTGGAAGA  | Chr.1 | 7621855 | 7621875 | + | No  |
| 2323172_adh | TGGAAGATGTGCTCGTGACTT  | Chr.1 | 7622173 | 7622193 | + | No  |
| 2008629_adh | TCGCTGAAGAGTGTGTCTGTT  | Chr.1 | 7643277 | 7643257 | - | No  |
| 2566382_adh | TTAGCAGATATTGGATAACGA  | Chr.1 | 7643368 | 7643388 | + | No  |
| 2705274_adh | TTTCCCATGTTGAATTGAGGT  | Chr.1 | 7660262 | 7660242 | - | No  |
| 2278604_adh | TGATTTGCATGAGGCTTTTCA  | Chr.1 | 7695278 | 7695258 | - | No  |
| 2740132_adh | TTTTCTTCGTTTGTTCCTTTA  | Chr.1 | 7699443 | 7699463 | + | No  |
| 2393737_adh | TGGATTGAAGAGTGGAGACAA  | Chr.1 | 7704027 | 7704047 | + | No  |
| 2030915_adh | TCTAATTAAGAAACGCGTCTC  | Chr.1 | 7723599 | 7723619 | + | No  |
| 2129085_adh | TGAAGAGACGGATTGTTTTAC  | Chr.1 | 7765899 | 7765919 | + | No  |
| 2717129_adh | TTTGAGTTGAAATTTTGGTAA  | Chr.1 | 7805041 | 7805061 | + | No  |
| 2602662_adh | TTCGAATTTGGAACGGCAGC   | Chr.1 | 7813489 | 7813509 | + | No  |
| 2417923_adh | TGGGAAATTCGGTAATAACTT  | Chr.1 | 7835633 | 7835613 | - | No  |
| 2046804_adh | TCTGATCAGTGGAGAGCAACT  | Chr.1 | 7838853 | 7838873 | + | No  |
| 2626324_adh | TTGAACGACTGAACGACGACT  | Chr.1 | 7841888 | 7841908 | + | No  |
| 2679405_adh | TTGTGAAGTTAGAATAGGTTA  | Chr.1 | 7862652 | 7862672 | + | No  |
| 2548496_adh | TTAAGGCTTTAAAATTGTTAT  | Chr.1 | 7914693 | 7914673 | - | No  |
| 2279250_adh | TGATTTTCTTCGAGATTAGAT  | Chr.1 | 7914848 | 7914868 | + | No  |
| 2702912_adh | TTTCAGAGAGACGATGAAATC  | Chr.1 | 7918874 | 7918854 | - | No  |
| 2124023_adh | TGAAGTAGAAGATGCTCTCCA  | Chr.1 | 7928499 | 7928479 | - | No  |
| 2552900_adh | TTAATTTTCCTGCATTCAACG  | Chr.1 | 7936204 | 7936224 | + | No  |
| 1801026_adh | TAATGTAAGAACAACGGTTCC  | Chr.1 | 7985226 | 7985246 | + | No  |
| 2375919_adh | TGGACGAAGAAGGACACGTTA  | Chr.1 | 8015189 | 8015209 | + | No  |
| 1929212_adh | TATTTAGAACGTCTATTCAAA  | Chr.1 | 8018762 | 8018782 | + | No  |
| 2122702_adh | TGAACCTGTAGTGATTGTCAT  | Chr.1 | 8019258 | 8019278 | + | No  |
| 2596199_adh | TTCCACGAACGAAGACAGCGC  | Chr.1 | 8019769 | 8019789 | + | No  |
| 2635636_adh | TTGACGACTATTGTGGAAGAA  | Chr.1 | 8020649 | 8020629 | - | No  |
| 2720420_adh | TTTGATTGTGAAAGGAAGATG  | Chr.1 | 8027083 | 8027063 | - | No  |
| 1847982_adh | TAGAGCAGACTGCATTATTGC  | Chr.1 | 8040658 | 8040678 | + | No  |
| 2708656_adh | TTTCGTAATGTAGGGTAGGTT  | Chr.1 | 8044436 | 8044416 | - | Yes |
| 2353195_adh | TGGAATGGGACGGAGAAGGCT  | Chr.1 | 8046062 | 8046042 | - | No  |
| 2722917_adh | TTTGGAAAGATTGAAAGCAT   | Chr.1 | 8207674 | 8207694 | + | No  |
| 2530143_adh | TGTTGGTGATTGTATACAAAT  | Chr.1 | 8220654 | 8220634 | - | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2541677_adh | TTAAAGGTGTCATTTTTATTT  | Chr.1 | 8223043 | 8223023 | - | No |
| 2537563_adh | TTAAAAACGGATTCTTATTGA  | Chr.1 | 8223297 | 8223317 | + | No |
| 2018360_adh | TCGGTACATTTTCGTTGGAGA  | Chr.1 | 8224067 | 8224047 | - | No |
| 2605477_adh | TTCGATTATAGAGTTGAGGGA  | Chr.1 | 8226410 | 8226430 | + | No |
| 2513228_adh | TGTGCAAGGATGAAAAAGAAC  | Chr.1 | 8259492 | 8259472 | - | No |
| 2532352_adh | TGTTTCCGCGTGACGAAGACA  | Chr.1 | 8288868 | 8288888 | + | No |
| 2602785_adh | TTCGACAGAAAACTGCTGGAG  | Chr.1 | 8291121 | 8291101 | - | No |
| 2389309_adh | TGGATATTTTCGTTGGAGTTA  | Chr.1 | 8299546 | 8299526 | - | No |
| 2561589_adh | TTAGAAGTTCGTGGCATGTGT  | Chr.1 | 8309421 | 8309401 | - | No |
| 2713741_adh | TTTGAAGACTTTATACAGGAA  | Chr.1 | 8312762 | 8312782 | + | No |
| 1901557_adh | TATGAACAGTACACGACGATA  | Chr.1 | 8317386 | 8317406 | + | No |
| 2657160_adh | TTGGAAGCTGGCAGTGAATTT  | Chr.1 | 8323278 | 8323298 | + | No |
| 2260585_adh | TGATAGATTTTTATCTCGTCG  | Chr.1 | 8324045 | 8324025 | - | No |
| 2704745_adh | TTTCATTTGTCGGGATTTCTT  | Chr.1 | 8324086 | 8324066 | - | No |
| 2737811_adh | TTTTCATTTGTCGGGATTTCT  | Chr.1 | 8324087 | 8324067 | - | No |
| 2529430_adh | TGTTGCCAACAAAGATCGGATT | Chr.1 | 8329133 | 8329113 | - | No |
| 2623832_adh | TTCTTTTCGCGATTTTCGTCG  | Chr.1 | 8330035 | 8330015 | - | No |
| 2301528_adh | TGCGGCATCTCCTGATTGGCT  | Chr.1 | 8370149 | 8370169 | + | No |
| 1861015_adh | TAGGAAGAATCGCGGAAGATG  | Chr.1 | 8381547 | 8381567 | + | No |
| 2556150_adh | TTACCGGGTAAAAGATCTTGA  | Chr.1 | 8386190 | 8386170 | - | No |
| 2584411_adh | TTATTTGTTGGGTGTAAAAAT  | Chr.1 | 8386666 | 8386646 | - | No |
| 2295290_adh | TGCCTTTGGATGCTCAACTCG  | Chr.1 | 8397595 | 8397615 | + | No |
| 2052311_adh | TCTGTCCTGAAAGACGACGAA  | Chr.1 | 8408299 | 8408279 | - | No |
| 2646892_adh | TTGATTTCTCGTATTCACATT  | Chr.1 | 8412721 | 8412741 | + | No |
| 2500012_adh | TGTCTGTTTTCTCGGCGTCTCT | Chr.1 | 8412995 | 8412975 | - | No |
| 2692438_adh | TTTAATTGCGGAACGCTTAGT  | Chr.1 | 8413105 | 8413125 | + | No |
| 2552217_adh | TTAATTGCGGAACGCTTAGTA  | Chr.1 | 8413106 | 8413126 | + | No |
| 1810385_adh | TACAATTTAGAGCCCAACAAA  | Chr.1 | 8416207 | 8416187 | - | No |
| 1834767_adh | TACTTCACAGGATTTACGAAC  | Chr.1 | 8416381 | 8416401 | + | No |
| 1851270_adh | TAGATGAACAGAAGATATTTA  | Chr.1 | 8426323 | 8426303 | - | No |
| 1925246_adh | TATTCTTTTAGCTCGTTTTCA  | Chr.1 | 8434324 | 8434304 | - | No |
| 2740429_adh | TTTTGAAAACTGCTTCTACA   | Chr.1 | 8438718 | 8438738 | + | No |
| 2622012_adh | TTCTTCTCGTAAAAATGGCTA  | Chr.1 | 8440477 | 8440457 | - | No |
| 2698169_adh | TTTATAGTTATTATTCTGAAT  | Chr.1 | 8463781 | 8463761 | - | No |
| 2321805_adh | TGGAAGAAGCATTATCGACAC  | Chr.1 | 8475706 | 8475686 | - | No |
| 2712429_adh | TTTGAAAAGCTTGAAAACCGA  | Chr.1 | 8487364 | 8487344 | - | No |
| 1931322_adh | TATTTTCAATGGATTTGGTT   | Chr.1 | 8487530 | 8487550 | + | No |
| 2651361_adh | TTGCCGTGATCTTCGAATATT  | Chr.1 | 8487566 | 8487586 | + | No |
| 2713977_adh | TTTGAAGGATTTATTCGGCGA  | Chr.1 | 8490551 | 8490571 | + | No |
| 2743863_adh | TTTTGTGAAATTTAAACAGTT  | Chr.1 | 8531526 | 8531506 | - | No |
| 2420084_adh | TGGGAATATATACAAAGAATG  | Chr.1 | 8538307 | 8538327 | + | No |
| 1932062_adh | TCAAAACGGGCAAGATTTTAT  | Chr.1 | 8569306 | 8569326 | + | No |
| 2063285_adh | TCTTTTTGTTGAAGAGGCGCA  | Chr.1 | 8590674 | 8590654 | - | No |
| 2008591_adh | TCGCTCTGAAATACGGATTAA  | Chr.1 | 8595951 | 8595971 | + | No |
| 1799852_adh | TAATGCAAAAGATTGCAACAA  | Chr.1 | 8597018 | 8597038 | + | No |
| 2613718_adh | TTCTAAACTGAATACCGCATA  | Chr.1 | 8605381 | 8605401 | + | No |
| 1926701_adh | TATTGCTGGACAAGACAAAGC  | Chr.1 | 8607186 | 8607166 | - | No |
| 1958337_adh | TCAGACGGTAGTTGGGATGAA  | Chr.1 | 8624826 | 8624806 | - | No |
| 1932694_adh | TCAAACCGGCAGTTTTCTCCC  | Chr.1 | 8637393 | 8637373 | - | No |
| 2624759_adh | TTGAAACCCAAAAACAGGACA  | Chr.1 | 8648507 | 8648487 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2732944_adh | TTTTAAAAAGCAAAATTGACA  | Chr.1 | 8648538 | 8648518 | - | No |
| 2721528_adh | TTTGCCAATAACGAAAACGAC  | Chr.1 | 8648637 | 8648657 | + | No |
| 1829145_adh | TACGTTTGAAGCCGAAAATG   | Chr.1 | 8648666 | 8648686 | + | No |
| 2747792_adh | TTTTTGTAATTTTCGTTTC    | Chr.1 | 8657334 | 8657314 | - | No |
| 2490736_adh | TGTATATTGGCACTTGTTTTC  | Chr.1 | 8657999 | 8658019 | + | No |
| 1973132_adh | TCATTAAACACACAAAATATT  | Chr.1 | 8664280 | 8664300 | + | No |
| 2410520_adh | TGGCCACCTGGTAGACGAGCA  | Chr.1 | 8667137 | 8667157 | + | No |
| 2271495_adh | TGATGATCGGTAGACAAGGCT  | Chr.1 | 8677272 | 8677292 | + | No |
| 2143474_adh | TGAATGAGCACTCATGGGCAA  | Chr.1 | 8692777 | 8692797 | + | No |
| 2308155_adh | TGCTGAACACGATCTCTGGCA  | Chr.1 | 8703045 | 8703065 | + | No |
| 2091036_adh | TGAAATCAGAAGAACAAATGT  | Chr.1 | 8724317 | 8724297 | - | No |
| 2373989_adh | TGGACAGAAGACAAAAGTTCCG | Chr.1 | 8727308 | 8727328 | + | No |
| 2622007_adh | TTCTTCTCGATTCAATTTTAC  | Chr.1 | 8735977 | 8735997 | + | No |
| 1790297_adh | TAATAACGCAATAAAGAGCAT  | Chr.1 | 8758113 | 8758133 | + | No |
| 2739913_adh | TTTTCTTAAATTTTCGTCCC   | Chr.1 | 8760317 | 8760337 | + | No |
| 2152976_adh | TGACACCGTAGAAGGACTCAA  | Chr.1 | 8763953 | 8763973 | + | No |
| 2526621_adh | TGTTTCGTGACTTGGAGACATC | Chr.1 | 8764307 | 8764327 | + | No |
| 2693525_adh | TTTACATTTTGACGGTGAGCT  | Chr.1 | 8765468 | 8765448 | - | No |
| 1915830_adh | TATGGCTGAAAGCGAAGAGAG  | Chr.1 | 8787139 | 8787159 | + | No |
| 2665346_adh | TTGGCATTTCGGAAGATTGAA  | Chr.1 | 8803952 | 8803972 | + | No |
| 2533384_adh | TGTTTGTAAGCGATGAAGGCGA | Chr.1 | 8813492 | 8813512 | + | No |
| 2675046_adh | TTGTAGCGATGAAGGCGAGCA  | Chr.1 | 8813495 | 8813515 | + | No |
| 2647022_adh | TTGATTTTATTGATTTTGGC   | Chr.1 | 8813540 | 8813560 | + | No |
| 2309625_adh | TGCTGTGTAGAAGAATGGTAA  | Chr.1 | 8815270 | 8815290 | + | No |
| 2007942_adh | TCGCGGACTCAAGAGAAAGCA  | Chr.1 | 8815948 | 8815928 | - | No |
| 2235408_adh | TGAGCTGAAGAAGAAGAGAAC  | Chr.1 | 8816149 | 8816129 | - | No |
| 2008719_adh | TCGCTGAGCTGAAGAAGAAGA  | Chr.1 | 8816153 | 8816133 | - | No |
| 2746108_adh | TTTTTCGGGCGCTGATAAACGG | Chr.1 | 8816626 | 8816646 | + | No |
| 2681274_adh | TTGTGCATTTCCGTTGTTTAA  | Chr.1 | 8839179 | 8839159 | - | No |
| 2575033_adh | TTATAGGCGGAGTTTTTTGTT  | Chr.1 | 8852304 | 8852284 | - | No |
| 2617951_adh | TTCTGAATTTATAGGCGGAGT  | Chr.1 | 8852312 | 8852292 | - | No |
| 2710449_adh | TTTCTGAATTTATAGGCGGAG  | Chr.1 | 8852313 | 8852293 | - | No |
| 2717186_adh | TTTGATAAAGAACGTTTCGGAT | Chr.1 | 8855290 | 8855310 | + | No |
| 2724888_adh | TTTGGGCTTGTTACGGAAAAA  | Chr.1 | 8907767 | 8907747 | - | No |
| 2001276_adh | TCGAGAGATGGAAGTTGGCTA  | Chr.1 | 8910965 | 8910945 | - | No |
| 2374410_adh | TGGACCAACTCCAGATAAAAA  | Chr.1 | 8915307 | 8915287 | - | No |
| 2048452_adh | TCTGCTCGATTAGTAGACAAA  | Chr.1 | 8923242 | 8923222 | - | No |
| 2513632_adh | TGTGCCAAGAATCGTAAGACG  | Chr.1 | 8948514 | 8948494 | - | No |
| 2742449_adh | TTTTGCGAGTTGGACAGAATT  | Chr.1 | 8950106 | 8950126 | + | No |
| 2742449_adh | TTTTGCGAGTTGGACAGAATT  | Chr.1 | 8952190 | 8952170 | - | No |
| 2042014_adh | TCTCTAGAGATTGAAGTTGGA  | Chr.1 | 8965545 | 8965525 | - | No |
| 1747211_adh | TAAAAATGGAAGATGATGCTC  | Chr.1 | 8970068 | 8970048 | - | No |
| 2603417_adh | TTGAGAAGAAGGAATGGGAA   | Chr.1 | 8975531 | 8975551 | + | No |
| 1988711_adh | TCCGTTACGGAATCCTTCTT   | Chr.1 | 8978330 | 8978310 | - | No |
| 2627128_adh | TTGAAGAACGGAGCTCAAATT  | Chr.1 | 8980337 | 8980317 | - | No |
| 2007351_adh | TCGCCAGAAGAATTCAAGTTT  | Chr.1 | 8980525 | 8980505 | - | No |
| 2413624_adh | TGGCGTGTTTGCCTATATTCG  | Chr.1 | 9014093 | 9014073 | - | No |
| 2546519_adh | TTAACTTCAAAATAATATGTA  | Chr.1 | 9034392 | 9034412 | + | No |
| 2704342_adh | TTTCATGTGTCTCGTGTTTAC  | Chr.1 | 9042819 | 9042799 | - | No |
| 2715115_adh | TTTGACGAGAAGAGGTCTGAA  | Chr.1 | 9049324 | 9049344 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2127047_adh | TGAAGAACTACCAGCAGAGAC  | Chr.1 | 9056547 | 9056527 | - | No |
| 2674823_adh | TTGTAGAGAAGATAAAACGAG  | Chr.1 | 9057841 | 9057821 | - | No |
| 2601842_adh | TTCGAAATTTGGAAAAAGGCT  | Chr.1 | 9058846 | 9058866 | + | No |
| 1995385_adh | TCGAAATTTGGAAAAAGGCTC  | Chr.1 | 9058847 | 9058867 | + | No |
| 2695911_adh | TTTAGCAGGAGGTAGCCAAGA  | Chr.1 | 9059165 | 9059145 | - | No |
| 2147577_adh | TGAATTGGTTTAGCAGGAGGT  | Chr.1 | 9059173 | 9059153 | - | No |
| 1967672_adh | TCAGTTGTTCTGCGAAATTAA  | Chr.1 | 9065037 | 9065057 | + | No |
| 2743960_adh | TTTTGTGGATCAGAGACAACG  | Chr.1 | 9081428 | 9081408 | - | No |
| 2391177_adh | TGGATGCGAATAGAATCAGAC  | Chr.1 | 9086341 | 9086321 | - | No |
| 1999479_adh | TCGAATTTTTAGTTGGCTTAT  | Chr.1 | 9106357 | 9106337 | - | No |
| 2552894_adh | TTAATTTTCAGCATTTTCCA   | Chr.1 | 9111854 | 9111874 | + | No |
| 2686825_adh | TTGTTTACTTCCTTCGAAGAC  | Chr.1 | 9122370 | 9122390 | + | No |
| 2733799_adh | TTTTAATTAGTTCGTTGGATA  | Chr.1 | 9125998 | 9125978 | - | No |
| 2683552_adh | TTGTTTCAGTCAGAATTATGGC | Chr.1 | 9141852 | 9141872 | + | No |
| 1957975_adh | TCAGAATTATGGCATTTCCTCA | Chr.1 | 9141860 | 9141880 | + | No |
| 2561395_adh | TTAGAACTTTTGAAGTAGAAG  | Chr.1 | 9146460 | 9146480 | + | No |
| 2737133_adh | TTTTCAAAGTGATCGTCTCTT  | Chr.1 | 9154730 | 9154710 | - | No |
| 2747985_adh | TTTTTGTTGTTGTATCTGAAG  | Chr.1 | 9163603 | 9163623 | + | No |
| 2041462_adh | TCTCGTCTGAAGTTACTGCTG  | Chr.1 | 9164351 | 9164371 | + | No |
| 1964230_adh | TCAGGCTATTGCTGAGCGTAT  | Chr.1 | 9164451 | 9164471 | + | No |
| 2010286_adh | TCGGAAACGTCGGATTCGGAT  | Chr.1 | 9164690 | 9164710 | + | No |
| 1938506_adh | TCAAGACCAAGAAGTGGAGCA  | Chr.1 | 9164874 | 9164894 | + | No |
| 2341835_adh | TGGAATGAAGGCTCGCATTCA  | Chr.1 | 9165328 | 9165348 | + | No |
| 2527516_adh | TGTTGAACAGAAGAAGAGGAC  | Chr.1 | 9166398 | 9166418 | + | No |
| 2625950_adh | TTGAACAGAAGAAGAGGACAC  | Chr.1 | 9166400 | 9166420 | + | No |
| 2617884_adh | TTCTGAATCAGGAACTGCTGT  | Chr.1 | 9175457 | 9175477 | + | No |
| 2480656_adh | TGTAAAGATGAAGCTGACGGC  | Chr.1 | 9176854 | 9176834 | - | No |
| 2618826_adh | TTCTGGAAAAATGCGAAACGA  | Chr.1 | 9186993 | 9186973 | - | No |
| 1830758_adh | TACTATTGATAGAATATTTTA  | Chr.1 | 9187365 | 9187345 | - | No |
| 2743527_adh | TTTTGTAGAAAATGGGAAGAC  | Chr.1 | 9214052 | 9214072 | + | No |
| 1961775_adh | TCAGATTGGAAAGCATATGCG  | Chr.1 | 9222033 | 9222013 | - | No |
| 2055481_adh | TCTTCAAAACATGTAGAAACG  | Chr.1 | 9236554 | 9236534 | - | No |
| 2613105_adh | TTCGTTCTCCCAGCTGAGCGG  | Chr.1 | 9249378 | 9249358 | - | No |
| 2042307_adh | TCTCTCACATTTGTAGACGTT  | Chr.1 | 9273995 | 9273975 | - | No |
| 2617036_adh | TTCTCTCACATTTGTAGACGT  | Chr.1 | 9273996 | 9273976 | - | No |
| 2548759_adh | TTAAGTAAGAAAGAGACCGGT  | Chr.1 | 9274531 | 9274511 | - | No |
| 2308524_adh | TGCTGATCTGATGTTCCGGTGT | Chr.1 | 9274657 | 9274637 | - | No |
| 2290221_adh | TGCATCATGTAGAATTGTCAC  | Chr.1 | 9284468 | 9284448 | - | No |
| 1931281_adh | TATTTTATAGATATCTGATGAC | Chr.1 | 9359960 | 9359980 | + | No |
| 2594607_adh | TTCATGAGAGATGGCGTTGTT  | Chr.1 | 9382558 | 9382538 | - | No |
| 2470455_adh | TGGTCTTGTTTAATTTTGGCT  | Chr.1 | 9390714 | 9390734 | + | No |
| 2482174_adh | TGTAAGCTCTACAGAACGGTG  | Chr.1 | 9393457 | 9393437 | - | No |
| 1839650_adh | TAGAAGGGCAATAGAAGAACC  | Chr.1 | 9411972 | 9411952 | - | No |
| 1829382_adh | TACTAAGAACTCACGAGAAGA  | Chr.1 | 9421243 | 9421223 | - | No |
| 2318976_adh | TGGAACAGATGAAGACGTATT  | Chr.1 | 9431794 | 9431814 | + | No |
| 2022032_adh | TCGTAGAAAATGAGACGACGA  | Chr.1 | 9447492 | 9447512 | + | No |
| 2658411_adh | TTGGACGAGAAAAAGAGAAAA  | Chr.1 | 9449921 | 9449901 | - | No |
| 1939031_adh | TCAAGATTGCGGAGTTAAGCC  | Chr.1 | 9458907 | 9458887 | - | No |
| 2704937_adh | TTTCCACGTTTTTCGCATTCAA | Chr.1 | 9488338 | 9488358 | + | No |
| 2628459_adh | TTGAAGATGGACGAACAAAAA  | Chr.1 | 9494802 | 9494822 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2182461_adh | TGAGACACGGTACCGTATTCT  | Chr.1 | 9501699 | 9501679 | - | No |
| 2573722_adh | TTATAAATAAATTTGTCGGAA  | Chr.1 | 9501885 | 9501905 | + | No |
| 1942049_adh | TCAATGCATTTAATCTGACGC  | Chr.1 | 9506210 | 9506230 | + | No |
| 1898729_adh | TATCGTCCCAATTTTCGCGAT  | Chr.1 | 9512498 | 9512518 | + | No |
| 2144776_adh | TGAATGTCGCTCGTAGAAGAA  | Chr.1 | 9512518 | 9512538 | + | No |
| 2022087_adh | TCGTAGAAGAAGTGGCCTGTT  | Chr.1 | 9512528 | 9512548 | + | No |
| 1844983_adh | TAGACAGAAGGACATTGAAGA  | Chr.1 | 9516176 | 9516196 | + | No |
| 2251129_adh | TGAGTAGAAGAATGTACATGC  | Chr.1 | 9516608 | 9516628 | + | No |
| 2739434_adh | TTTTCTGAAC TTGCATCCGGC | Chr.1 | 9519043 | 9519063 | + | No |
| 1992208_adh | TCCTGTCCGTGTACGGAAG    | Chr.1 | 9583164 | 9583144 | - | No |
| 2712826_adh | TTTGAAATTGAATACGAGCGC  | Chr.1 | 9585282 | 9585302 | + | No |
| 2160778_adh | TGACGAGACGCATGAAATGTT  | Chr.1 | 9609901 | 9609921 | + | No |
| 2579056_adh | TTATGCAGAACATGGATCAGA  | Chr.1 | 9610347 | 9610327 | - | No |
| 2025856_adh | TCGTGAAGTGTTGACAAAATA  | Chr.1 | 9611721 | 9611741 | + | No |
| 2046608_adh | TCTGATAAGCGGATTGAACGT  | Chr.1 | 9619194 | 9619214 | + | No |
| 2698684_adh | TTTATCGGTCTTCTACAGTTT  | Chr.1 | 9619923 | 9619903 | - | No |
| 2282882_adh | TGCAATAGAATGATCATTCAA  | Chr.1 | 9622400 | 9622380 | - | No |
| 2695848_adh | TTTAGATGTAGAAAAGCGGAA  | Chr.1 | 9624594 | 9624574 | - | No |
| 2048876_adh | TCTGGACAACAAGCCTAAACA  | Chr.1 | 9625115 | 9625095 | - | No |
| 2746512_adh | TTTTTGAACAGCGGGGGCGGG  | Chr.1 | 9626109 | 9626129 | + | No |
| 2734176_adh | TTTTACGCTTAAAATGGCAAA  | Chr.1 | 9626191 | 9626211 | + | No |
| 2549649_adh | TTAATACATTGTTTCGGAAATA | Chr.1 | 9631225 | 9631245 | + | No |
| 2687300_adh | TTGTTTCTGTGATAAAAACGA  | Chr.1 | 9689008 | 9689028 | + | No |
| 1977907_adh | TCCAGAAGACTCAATGGGCCA  | Chr.1 | 9689794 | 9689814 | + | No |
| 1807117_adh | TACAAATAGCAGTTGAACTCA  | Chr.1 | 9690406 | 9690426 | + | No |
| 2487901_adh | TGTAGATAATCTTACTGTAGA  | Chr.1 | 9691411 | 9691431 | + | No |
| 2639396_adh | TTGAGAAAAACAATCGCGTAC  | Chr.1 | 9693589 | 9693609 | + | No |
| 2687610_adh | TTGTTTGTACTCTCGACGGCC  | Chr.1 | 9698955 | 9698935 | - | No |
| 2381840_adh | TGGAGGAAAAGAGAGATGGCA  | Chr.1 | 9699837 | 9699857 | + | No |
| 1921661_adh | TATTAGGATTTAGAAGAGGAT  | Chr.1 | 9705498 | 9705478 | - | No |
| 2624814_adh | TTGAAACTACAGTACTCGTTA  | Chr.1 | 9709883 | 9709863 | - | No |
| 1883463_adh | TAGTTTTTCGTTTTGATTTTC  | Chr.1 | 9730362 | 9730342 | - | No |
| 2090022_adh | TGAAATATTTTCAGAGATCGTC | Chr.1 | 9741349 | 9741369 | + | No |
| 2470975_adh | TGGTGAATGTGAAAAGGTATG  | Chr.1 | 9744296 | 9744316 | + | No |
| 2653515_adh | TTGCGTCGACGATCAAGTAAT  | Chr.1 | 9744404 | 9744384 | - | No |
| 2414390_adh | TGGCTCAAACTTGAAAAAA    | Chr.1 | 9751884 | 9751864 | - | No |
| 2748211_adh | TTTTTTACCTGATTTTCGACAT | Chr.1 | 9772622 | 9772602 | - | No |
| 1855085_adh | TAGCATATGACAGGAGGAAGC  | Chr.1 | 9774094 | 9774074 | - | No |
| 2693142_adh | TTTACAAGTAGACTAGGCCAC  | Chr.1 | 9779601 | 9779621 | + | No |
| 2483533_adh | TGTAATCGGAGGAATCAACAG  | Chr.1 | 9785011 | 9784991 | - | No |
| 2315685_adh | TGGAAAGAAGTCGAAGCTGGA  | Chr.1 | 9786841 | 9786821 | - | No |
| 1866422_adh | TAGGATTGGGAGATGGCTGTC  | Chr.1 | 9788568 | 9788548 | - | No |
| 2701542_adh | TTTCAAGATCTGATGGGATTC  | Chr.1 | 9793547 | 9793527 | - | No |
| 1918992_adh | TATGTGGAGATGCATGGTTAT  | Chr.1 | 9813779 | 9813759 | - | No |
| 2644842_adh | TTGATGAGTGGAAGTTTTAAA  | Chr.1 | 9823123 | 9823103 | - | No |
| 2516249_adh | TGTGGCTTGAGATGAAGAAAA  | Chr.1 | 9830589 | 9830609 | + | No |
| 2601609_adh | TTCGAAAACAGATTGTAAAAT  | Chr.1 | 9853536 | 9853556 | + | No |
| 2513249_adh | TGTGCAATGCGGATTCAACA   | Chr.1 | 9862154 | 9862174 | + | No |
| 2548100_adh | TTAAGCTGAAAACATTATTTA  | Chr.1 | 9901050 | 9901030 | - | No |
| 2706767_adh | TTTCGAATTAAGCTGAAAACA  | Chr.1 | 9901057 | 9901037 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2618551_adh | TTCTGCAATTTTGAATTAAGC  | Chr.1 | 9901065  | 9901045  | - | No |
| 1939170_adh | TCAAGCATCGTGGAGCGAAGA  | Chr.1 | 9904173  | 9904153  | - | No |
| 2302298_adh | TGCGGTAGAACAAGTAGCAGA  | Chr.1 | 9920998  | 9921018  | + | No |
| 2470201_adh | TGGTCTGATAATATATGGTGT  | Chr.1 | 9929636  | 9929656  | + | No |
| 2738626_adh | TTTTCGGCTACGGTTTTCAAA  | Chr.1 | 9937509  | 9937489  | - | No |
| 2039305_adh | TCTCCTTTGACCTTTCTCAAC  | Chr.1 | 9955950  | 9955930  | - | No |
| 2593423_adh | TTCAGTTTTTAGAATATATGA  | Chr.1 | 9956051  | 9956071  | + | No |
| 2652711_adh | TTGCGGATTTACGACAGATTT  | Chr.1 | 9962097  | 9962077  | - | No |
| 2053354_adh | TCTGTTGTAGAGGATTTGAGT  | Chr.1 | 9977768  | 9977788  | + | No |
| 2144656_adh | TGAATGTAGAAGAGAGAGAGA  | Chr.1 | 9985098  | 9985118  | + | No |
| 2421919_adh | TGGGACGTATGCAATAAACGA  | Chr.1 | 9987937  | 9987957  | + | No |
| 2124637_adh | TGAAGTGAAGCTTCTGGCAC   | Chr.1 | 9988083  | 9988063  | - | No |
| 2626613_adh | TTGAACTCGAAGCTTCTGGCA  | Chr.1 | 9988084  | 9988064  | - | No |
| 2553217_adh | TTACAAATCAGACGACAACTT  | Chr.1 | 10021031 | 10021011 | - | No |
| 1981180_adh | TCCCCGTAATTTTTCGTTAGA  | Chr.1 | 10051347 | 10051327 | - | No |
| 2602653_adh | TTCGAATTTACGAAGGACGAC  | Chr.1 | 10074383 | 10074363 | - | No |
| 2706785_adh | TTTCGAATTTACGAAGGACGA  | Chr.1 | 10074384 | 10074364 | - | No |
| 2002336_adh | TCGAGTGAATAAATCGATCGG  | Chr.1 | 10078811 | 10078791 | - | No |
| 2710869_adh | TTTCTGTATCGGCGGGAAAAT  | Chr.1 | 10078889 | 10078869 | - | No |
| 2503794_adh | TGTGACCGTAGTAGAAGCGCC  | Chr.1 | 10079128 | 10079148 | + | No |
| 1843963_adh | TAGAATTGAAGAAAACGTTTT  | Chr.1 | 10079591 | 10079571 | - | No |
| 2664138_adh | TTGGATTTCAGGAGACGATGAC | Chr.1 | 10080345 | 10080365 | + | No |
| 2744347_adh | TTTTGTTGGGTAAATCGTTAT  | Chr.1 | 10090515 | 10090535 | + | No |
| 2732179_adh | TTTGTTGGGTAAATCGTTATT  | Chr.1 | 10090516 | 10090536 | + | No |
| 2742785_adh | TTTTGGATAATCGTTTGAAA   | Chr.1 | 10114749 | 10114769 | + | No |
| 2723872_adh | TTTGGATAATCGTTTGAAAT   | Chr.1 | 10114750 | 10114770 | + | No |
| 2730064_adh | TTTGTGTCGTGTAAATAAAAT  | Chr.1 | 10118092 | 10118112 | + | No |
| 2396534_adh | TGGATTTTTTCAGGTGGAAATC | Chr.1 | 10122103 | 10122083 | - | No |
| 2704784_adh | TTTCATTTTTTCAGGCTTCGGA | Chr.1 | 10178486 | 10178506 | + | No |
| 2471501_adh | TGGTGATTTGTAGCTGGCAGC  | Chr.1 | 10184737 | 10184757 | + | No |
| 2055594_adh | TCTTCACTGCTCATCATGCGT  | Chr.1 | 10185450 | 10185430 | - | No |
| 1933899_adh | TCAAAGTAGAAAACTCGTAT   | Chr.1 | 10191123 | 10191103 | - | No |
| 2706785_adh | TTTCGAATTTACGAAGGACGA  | Chr.1 | 10200722 | 10200742 | + | No |
| 2050356_adh | TCTGGGCAAAGTTATGACGGA  | Chr.1 | 10202605 | 10202585 | - | No |
| 2644842_adh | TTGATGAGTGGAAGTTTTAAA  | Chr.1 | 10203955 | 10203975 | + | No |
| 2593292_adh | TTCAGTTGACAATGGTTTCTT  | Chr.1 | 10205273 | 10205253 | - | No |
| 2593292_adh | TTCAGTTGACAATGGTTTCTT  | Chr.1 | 10206206 | 10206186 | - | No |
| 2593298_adh | TTCAGTTGACAATGGTTTTTT  | Chr.1 | 10209430 | 10209410 | - | No |
| 2404164_adh | TGGCAGTAGCAGCAGCACAGA  | Chr.1 | 10235210 | 10235230 | + | No |
| 2139072_adh | TGAATAGTGTATGAACGGAAG  | Chr.1 | 10235295 | 10235275 | - | No |
| 1936062_adh | TCAACAGCAAAAAATGTAGAC  | Chr.1 | 10244047 | 10244067 | + | No |
| 1930190_adh | TATTTGACGTTTTAACTGGCA  | Chr.1 | 10249936 | 10249956 | + | No |
| 2681080_adh | TTGTGATGGAGGAGACAGAGA  | Chr.1 | 10273646 | 10273626 | - | No |
| 2681080_adh | TTGTGATGGAGGAGACAGAGA  | Chr.1 | 10276422 | 10276402 | - | No |
| 2720723_adh | TTTGATTTCTGTAAGTTAGGC  | Chr.1 | 10284856 | 10284876 | + | No |
| 2503853_adh | TGTGACGACAGAACAAGATGA  | Chr.1 | 10303129 | 10303149 | + | No |
| 1838746_adh | TAGAACTCTAAAAGAGAAAAT  | Chr.1 | 10303957 | 10303977 | + | No |
| 2292614_adh | TGCCAGTAGAAAGTATTATGG  | Chr.1 | 10305474 | 10305454 | - | No |
| 2503853_adh | TGTGACGACAGAACAAGATGA  | Chr.1 | 10319024 | 10319004 | - | No |
| 2411141_adh | TGGCCTACGACGATTTTTTCT  | Chr.1 | 10330667 | 10330687 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2042859_adh | TCTCTGAGATCGAGAAGCAAG  | Chr.1 | 10330925 | 10330945 | + | No |
| 1974007_adh | TCATTGACTTGGAGACCAACG  | Chr.1 | 10330958 | 10330978 | + | No |
| 2026073_adh | TCGTGAGTTGGAGAAGAAGTT  | Chr.1 | 10331190 | 10331210 | + | No |
| 2256831_adh | TGAGTTGGAGAAGAAGTTTGG  | Chr.1 | 10331193 | 10331213 | + | No |
| 2027548_adh | TCGTGTGAAGTTGGACGGAAA  | Chr.1 | 10331433 | 10331453 | + | No |
| 2748038_adh | TTTTTTAAAACATACATTTTT  | Chr.1 | 10333122 | 10333102 | - | No |
| 2177665_adh | TGAGAAATTGTTGAAGGAAGG  | Chr.1 | 10337291 | 10337311 | + | No |
| 1809320_adh | TACAATAGAAAAAATTATGTA  | Chr.1 | 10367602 | 10367582 | - | No |
| 2117949_adh | TGAAATTTAAAAAATATTTTT  | Chr.1 | 10375948 | 10375968 | + | No |
| 2044360_adh | TCTGAAGTTGTGACGTCGCAA  | Chr.1 | 10392244 | 10392224 | - | No |
| 2134068_adh | TGAAGTAGGAGACAGAGTCTT  | Chr.1 | 10398862 | 10398882 | + | No |
| 2715218_adh | TTTGACGCTGAATTGAGATGG  | Chr.1 | 10400847 | 10400867 | + | No |
| 1822924_adh | TACGAGAAGACTGATCCAGCA  | Chr.1 | 10419338 | 10419318 | - | No |
| 2705454_adh | TTTCCCTATAATTTTGTGCTT  | Chr.1 | 10422080 | 10422060 | - | No |
| 2743741_adh | TTTTGTCAGCAGCCAAGAAGC  | Chr.1 | 10422109 | 10422089 | - | No |
| 1799882_adh | TAATGCAGAAAAATTGAATTA  | Chr.1 | 10430247 | 10430267 | + | No |
| 2625899_adh | TTGAACACAGGAATTCGACTA  | Chr.1 | 10432429 | 10432409 | - | No |
| 2039257_adh | TCTCCTGGCTCTGAGCAAAAG  | Chr.1 | 10435785 | 10435765 | - | No |
| 2615904_adh | TTCTCAACGGAAAGGCTAAGC  | Chr.1 | 10436553 | 10436573 | + | No |
| 2288569_adh | TGCAGGGATTGTGAGAAGCAT  | Chr.1 | 10438044 | 10438064 | + | No |
| 2685795_adh | TTGTTGCATTATCGGATTTTC  | Chr.1 | 10446334 | 10446354 | + | No |
| 2731151_adh | TTTGTTGACGGTTTTTCATTA  | Chr.1 | 10446357 | 10446377 | + | No |
| 2405632_adh | TGGCATGAAAAATAGAAAAACA | Chr.1 | 10454191 | 10454211 | + | No |
| 1877082_adh | TAGTGAAACTGTGCTCACGGA  | Chr.1 | 10469346 | 10469366 | + | No |
| 2074194_adh | TGAAACTGTGCTCACGGATTG  | Chr.1 | 10469349 | 10469369 | + | No |
| 1993550_adh | TCCTTGCCGTCTTGTCTTTAT  | Chr.1 | 10474706 | 10474686 | - | No |
| 1924907_adh | TATTCTGAATAACAGAACTGC  | Chr.1 | 10485119 | 10485139 | + | No |
| 2044611_adh | TCTGAATAACAGAACTGCTGA  | Chr.1 | 10485122 | 10485142 | + | No |
| 2676544_adh | TTGTATGAAGAAATTTGTGAA  | Chr.1 | 10485156 | 10485176 | + | No |
| 2048783_adh | TCTGGAAGATGGAAATGTGAA  | Chr.1 | 10485187 | 10485207 | + | No |
| 2273549_adh | TGATGTGAGTCTGGAACCTTGA | Chr.1 | 10500021 | 10500001 | - | No |
| 2677756_adh | TTGTCATTGGATCCGTTGGAC  | Chr.1 | 10516859 | 10516839 | - | No |
| 1804272_adh | TAATTGTCAAGGACTAAAAGA  | Chr.1 | 10518035 | 10518015 | - | No |
| 2550028_adh | TTAATATTAATTGTCAAGGAC  | Chr.1 | 10518042 | 10518022 | - | No |
| 2074041_adh | TGAAACTGGAAGATAAAGCTG  | Chr.1 | 10549766 | 10549746 | - | No |
| 2624865_adh | TTGAAACTGGAAGATAAAGCT  | Chr.1 | 10549767 | 10549747 | - | No |
| 2520033_adh | TGTGTGGAGTTGAAACTGGAA  | Chr.1 | 10549776 | 10549756 | - | No |
| 1847287_adh | TAGAGAATGCGCAGGAATAGA  | Chr.1 | 10553063 | 10553083 | + | No |
| 2117953_adh | TGAAATTTAAAAAATTAGGAT  | Chr.1 | 10553651 | 10553671 | + | No |
| 2062543_adh | TCTTTTCACTTGCGTTGCTCG  | Chr.1 | 10553851 | 10553831 | - | No |
| 1926142_adh | TATTGCAAGACCTGATATTGA  | Chr.1 | 10555943 | 10555963 | + | No |
| 2573757_adh | TTATAAATGTGTCACAAATTA  | Chr.1 | 10565432 | 10565452 | + | No |
| 2054196_adh | TCTTACTCGCGACGACTATCC  | Chr.1 | 10566249 | 10566269 | + | No |
| 2568663_adh | TTAGGGAAGACAGATCTACTT  | Chr.1 | 10567927 | 10567947 | + | No |
| 1946705_adh | TCACCAAGGAAGATCTCGGAG  | Chr.1 | 10568237 | 10568257 | + | No |
| 1977270_adh | TCCACCACAGAACACTGGAAT  | Chr.1 | 10568337 | 10568357 | + | No |
| 1824140_adh | TACGATGATGGAACCCCTCTAC | Chr.1 | 10568590 | 10568610 | + | No |
| 2723104_adh | TTTGGAAGAGACGGAGAAACT  | Chr.1 | 10585356 | 10585336 | - | No |
| 2612086_adh | TTCGTCTGCAGCATCGGTTCC  | Chr.1 | 10589637 | 10589657 | + | No |
| 1930753_adh | TATTTTAGATTCCTAGCGATT  | Chr.1 | 10591682 | 10591662 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2287389_adh | TGCAGAGGAACGTATAACAAA  | Chr.1 | 10593929 | 10593909 | - | No  |
| 2582496_adh | TTATTGCAGAGGAACGTATAA  | Chr.1 | 10593933 | 10593913 | - | No  |
| 1794848_adh | TAATAGAGGACAAAAATCAAG  | Chr.1 | 10598494 | 10598474 | - | No  |
| 1837672_adh | TAGAAATAGAAATTGCTATAA  | Chr.1 | 10634355 | 10634335 | - | No  |
| 2728561_adh | TTTGTATGATGAAGAAGAAAT  | Chr.1 | 10638149 | 10638129 | - | No  |
| 1806753_adh | TACAAAGCAGGGTGACTGGGT  | Chr.1 | 10651276 | 10651296 | + | No  |
| 2016429_adh | TCGGGACATGGACGCACCTTT  | Chr.1 | 10651330 | 10651310 | - | No  |
| 1889899_adh | TATATATTTTCAGTCGGGACA  | Chr.1 | 10651343 | 10651323 | - | No  |
| 2287611_adh | TGCAGATAGTGCTATCGCGGC  | Chr.1 | 10653741 | 10653761 | + | No  |
| 1990094_adh | TCCTCCGGAATACGAATTTCA  | Chr.1 | 10708142 | 10708122 | - | No  |
| 2016372_adh | TCGGGAAGAAAGGAAAATGCA  | Chr.1 | 10720239 | 10720219 | - | No  |
| 2561501_adh | TTAGAAGGAGTCGGGAAGAAA  | Chr.1 | 10720249 | 10720229 | - | No  |
| 2025849_adh | TCGTGAAGATTGCAAAGAAAA  | Chr.1 | 10731637 | 10731617 | - | No  |
| 1802957_adh | TAATTCATGCCTCTGAAATTC  | Chr.1 | 10736449 | 10736469 | + | No  |
| 2635654_adh | TTGACGAGAACATGTGATGGA  | Chr.1 | 10750224 | 10750244 | + | No  |
| 2702960_adh | TTTCAGATGACGAGGATTTCT  | Chr.1 | 10777754 | 10777774 | + | No  |
| 2710372_adh | TTTCTGAACCTCTCGCTGGAAT | Chr.1 | 10788707 | 10788727 | + | No  |
| 2681064_adh | TTGTGATGAATTCTTGAAGAA  | Chr.1 | 10788754 | 10788734 | - | No  |
| 2639754_adh | TTGAGACTGCCTATGAAGCGA  | Chr.1 | 10790474 | 10790494 | + | No  |
| 1956639_adh | TCAGAAAAAGTAGAAACGGAA  | Chr.1 | 10793191 | 10793171 | - | No  |
| 2710811_adh | TTTCTGTAAAAACGCTCAAC   | Chr.1 | 10798318 | 10798298 | - | No  |
| 2489689_adh | TGAGTCTGTGCGGCTTTTAAC  | Chr.1 | 10808381 | 10808361 | - | No  |
| 2037297_adh | TCTCAGAATTCGGAATTCAGT  | Chr.1 | 10812872 | 10812852 | - | No  |
| 1966453_adh | TCAGTCTCAGAATTCGGAATT  | Chr.1 | 10812876 | 10812856 | - | No  |
| 1885741_adh | TATAATCGGAGGATTTGCATG  | Chr.1 | 10862956 | 10862936 | - | No  |
| 2217566_adh | TGAGATGAAGAGAGTGGAAGA  | Chr.1 | 10875282 | 10875302 | + | No  |
| 1824081_adh | TACGATGACTGGGCATACTAT  | Chr.1 | 10906484 | 10906504 | + | Yes |
| 2560189_adh | TTACTTGAATTTTCGGAGCGGT | Chr.1 | 10909707 | 10909687 | - | No  |
| 1824081_adh | TACGATGACTGGGCATACTAT  | Chr.1 | 10919406 | 10919386 | - | Yes |
| 1773180_adh | TAAGAAAAGCTTGAAAACAAT  | Chr.1 | 10923721 | 10923741 | + | No  |
| 1927362_adh | TATTGGTTGTTTGGAAAATTC  | Chr.1 | 10928269 | 10928249 | - | No  |
| 2104133_adh | TGAAATGGAAAAGTGAGAAAA  | Chr.1 | 10930389 | 10930369 | - | No  |
| 1980031_adh | TCCATTGGACGCTGAAATGGC  | Chr.1 | 10954087 | 10954107 | + | No  |
| 2189153_adh | TGAGAGTAAGCGTTGAATTGA  | Chr.1 | 10959044 | 10959064 | + | No  |
| 1819844_adh | TACCGTATACGTGACATTTAG  | Chr.1 | 10990121 | 10990141 | + | No  |
| 2651240_adh | TTGCCGACTGTAAGGACGGGA  | Chr.1 | 10995148 | 10995168 | + | No  |
| 2016520_adh | TCGGGAGACGTGATAATTGAT  | Chr.1 | 11052932 | 11052912 | - | No  |
| 2127868_adh | TGAAGACGACTTTGTGGATCT  | Chr.1 | 11054770 | 11054790 | + | No  |
| 2714145_adh | TTTGAATAATGACGCTTCACT  | Chr.1 | 11055207 | 11055227 | + | No  |
| 2690674_adh | TTTAAGGGATTTAATTCGGTA  | Chr.1 | 11055318 | 11055298 | - | No  |
| 2299652_adh | TGCGATTGATAGATGGTTCCT  | Chr.1 | 11056125 | 11056145 | + | No  |
| 1769821_adh | TAACTACTGTAGCGCGGTGTT  | Chr.1 | 11057303 | 11057283 | - | No  |
| 2492650_adh | TGTATGTTGGTATCGTGACGG  | Chr.1 | 11062917 | 11062937 | + | No  |
| 2737254_adh | TTTTCAATGACGGCGAAGGTG  | Chr.1 | 11072849 | 11072829 | - | No  |
| 2634755_adh | TTGACACAACGGCGCCAAAAT  | Chr.1 | 11073374 | 11073394 | + | No  |
| 2526009_adh | TGTTACCGGTATTAGTATACA  | Chr.1 | 11083313 | 11083333 | + | No  |
| 2623478_adh | TTCTTTTCGATTTTTGTAGGTT | Chr.1 | 11110878 | 11110858 | - | No  |
| 2732769_adh | TTTGTTTTAATGGATTTTCGG  | Chr.1 | 11111000 | 11111020 | + | No  |
| 2688139_adh | TTGTTTTAATGGATTTTCGGT  | Chr.1 | 11111001 | 11111021 | + | No  |
| 2691689_adh | TTTAATGGATTTTCGGTGATT  | Chr.1 | 11111005 | 11111025 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2748727_adh | TTTTTCCGGCAATTCGACAA   | Chr.1 | 11159641 | 11159621 | - | No |
| 1891375_adh | TATCAACAACAGCGAAGAACT  | Chr.1 | 11174516 | 11174496 | - | No |
| 2747091_adh | TTTTTGCGGATTTATTTGGTT  | Chr.1 | 11182463 | 11182443 | - | No |
| 1797393_adh | TAATCAAAAAATCGAATCTAT  | Chr.1 | 11245116 | 11245096 | - | No |
| 2601264_adh | TTCTTCTTTCGATCGAAATT   | Chr.1 | 11252119 | 11252139 | + | No |
| 2706783_adh | TTTCGAATTGTGGACAGCACT  | Chr.1 | 11252147 | 11252167 | + | No |
| 1989367_adh | TCCTACTATTGTTTCATCGTCA | Chr.1 | 11253250 | 11253270 | + | No |
| 2718133_adh | TTTGATCGAAAGAATGTACGC  | Chr.1 | 11271687 | 11271707 | + | No |
| 2333611_adh | TGGAATCCGCAAAGACTGCTA  | Chr.1 | 11292800 | 11292780 | - | No |
| 2589739_adh | TTCACGGTAGCACAGAAACTA  | Chr.1 | 11299918 | 11299938 | + | No |
| 2589739_adh | TTCACGGTAGCACAGAAACTA  | Chr.1 | 11302101 | 11302081 | - | No |
| 2299230_adh | TGCGATGGAGCGATTGGTCGA  | Chr.1 | 11304341 | 11304361 | + | No |
| 2299230_adh | TGCGATGGAGCGATTGGTCGA  | Chr.1 | 11308982 | 11308962 | - | No |
| 2718190_adh | TTTGATCGCAGGGATACGAGA  | Chr.1 | 11319986 | 11320006 | + | No |
| 2721998_adh | TTTGCGGAAAAATCTGGCGAAA | Chr.1 | 11371775 | 11371755 | - | No |
| 2011222_adh | TCGGACAAGCTGGAGAAAATT  | Chr.1 | 11374427 | 11374407 | - | No |
| 1977691_adh | TCCACTCGGACAAGCTGGAGA  | Chr.1 | 11374432 | 11374412 | - | No |
| 2462389_adh | TGGTACGGAAAAAAGGATGGA  | Chr.1 | 11377818 | 11377838 | + | No |
| 2276721_adh | TGATTGGAAAAGAGCAAGAAA  | Chr.1 | 11416850 | 11416870 | + | No |
| 1860665_adh | TAGGAAATACGCAAATGGCGC  | Chr.1 | 11438008 | 11437988 | - | No |
| 2743921_adh | TTTTGTGATGGAATCGTTGGA  | Chr.1 | 11438988 | 11438968 | - | No |
| 1967000_adh | TCAGTGGATTTTGTGATGGAA  | Chr.1 | 11438996 | 11438976 | - | No |
| 2593110_adh | TTCAGTGGATTTTGTGATGGA  | Chr.1 | 11438997 | 11438977 | - | No |
| 2275155_adh | TGATTCAGTGGATTTTGTGAT  | Chr.1 | 11439000 | 11438980 | - | No |
| 2611908_adh | TTCGTCATGATTTTTCGTCGAT | Chr.1 | 11439134 | 11439154 | + | No |
| 1860665_adh | TAGGAAATACGCAAATGGCGC  | Chr.1 | 11446779 | 11446759 | - | No |
| 2589807_adh | TTCACGTTTGGCGGCGATCTT  | Chr.1 | 11487916 | 11487896 | - | No |
| 2733139_adh | TTTTAAATAAAAAATTATTTTT | Chr.1 | 11513972 | 11513952 | - | No |
| 2098815_adh | TGAAATCTGAAAATCCGTCTA  | Chr.1 | 11576331 | 11576311 | - | No |
| 1929890_adh | TATTCGGAGTGTCGTTGTGTC  | Chr.1 | 11578403 | 11578423 | + | No |
| 2707753_adh | TTTCGGAGTGTCGTTGTGCAA  | Chr.1 | 11578405 | 11578425 | + | No |
| 2608092_adh | TTTCGGAGTGTCGTTGTGCAAT | Chr.1 | 11578406 | 11578426 | + | No |
| 2721890_adh | TTTGCGAAAAACGGATCGATA  | Chr.1 | 11586251 | 11586271 | + | No |
| 1930789_adh | TATTTTATCAGTAGAGCGCAT  | Chr.1 | 11609489 | 11609469 | - | No |
| 2747836_adh | TTTTTGTTGGTTTTTCGTGGAT | Chr.1 | 11611403 | 11611383 | - | No |
| 2234879_adh | TGAGCTCGGCACATTTTGAGA  | Chr.1 | 11628081 | 11628061 | - | No |
| 2234879_adh | TGAGCTCGGCACATTTTGAGA  | Chr.1 | 11628728 | 11628748 | + | No |
| 2701005_adh | TTTCAAACAAAACGTTGGGCA  | Chr.1 | 11636151 | 11636171 | + | No |
| 2714561_adh | TTTGAATTTTAGAGAGGATGG  | Chr.1 | 11684798 | 11684818 | + | No |
| 2474770_adh | TGGTTCAGTGGAACGACGGT   | Chr.1 | 11684816 | 11684836 | + | No |
| 2593087_adh | TTCAGTGGAAACGACGGTTTT  | Chr.1 | 11684819 | 11684839 | + | No |
| 1966944_adh | TCAGTGGAAACGACGGTTTTT  | Chr.1 | 11684820 | 11684840 | + | No |
| 2314372_adh | TGGAAACGACGGTTTTTTCGG  | Chr.1 | 11684824 | 11684844 | + | No |
| 2701617_adh | TTTCAAGTAGATTTTCTCACA  | Chr.1 | 11685548 | 11685568 | + | No |
| 2589723_adh | TTCACGGCGTAAATGGTTCAC  | Chr.1 | 11712555 | 11712575 | + | No |
| 1953287_adh | TCACGGCGTAAATGGTTCACG  | Chr.1 | 11712556 | 11712576 | + | No |
| 2487499_adh | TGTAGAAGGGAAGGCAGATTT  | Chr.1 | 11726877 | 11726857 | - | No |
| 2616137_adh | TTCTCAGTTTTACGATTATCG  | Chr.1 | 11743965 | 11743945 | - | No |
| 2494147_adh | TGTCAAGGAGCTCTTCCGTCA  | Chr.1 | 11775186 | 11775166 | - | No |
| 2730444_adh | TTTGTTAGTTGACAACCTCTT  | Chr.1 | 11885714 | 11885734 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2490487_adh | TGTATACTGGAAAGACTGGAT  | Chr.1 | 11887010 | 11887030 | + | No |
| 1887649_adh | TATACTGGGAAAAATAATCAT  | Chr.1 | 11896476 | 11896456 | - | No |
| 2749732_adh | TTTTTTGTCTGGAAACAGTT   | Chr.1 | 11896607 | 11896627 | + | No |
| 2124815_adh | TGAAGTCTCGCCTCTGTGACG  | Chr.1 | 11897313 | 11897293 | - | No |
| 1964033_adh | TCAGGATTGGGCATGTTTCAG  | Chr.1 | 11903539 | 11903519 | - | No |
| 1754105_adh | TAAACAATCGGAACTGGTTA   | Chr.1 | 11909909 | 11909889 | - | No |
| 2057033_adh | TCTTCTCTGTTTACGGTTAGT  | Chr.1 | 11909954 | 11909934 | - | No |
| 1826292_adh | TACGGCCTAAAATCGTCATGT  | Chr.1 | 11909981 | 11909961 | - | No |
| 2745843_adh | TTTTTCCATTTCAGCTGAAA   | Chr.1 | 11910111 | 11910131 | + | No |
| 2587125_adh | TTCAAGCTGAAAAATATGAGGA | Chr.1 | 11910120 | 11910140 | + | No |
| 1975737_adh | TCCAAAATAAGACCGCGAAGA  | Chr.1 | 11910146 | 11910166 | + | No |
| 2691548_adh | TTTAATGATCTCAATAATAAT  | Chr.1 | 11910377 | 11910357 | - | No |
| 2721922_adh | TTTGCGACCGCGAGACCGGAC  | Chr.1 | 11910562 | 11910542 | - | No |
| 1834776_adh | TACTTCAGCCAGGCTGGAAAC  | Chr.1 | 11910687 | 11910667 | - | No |
| 2587339_adh | TTCAAGTAGAAAACTGGAATA  | Chr.1 | 11910900 | 11910880 | - | No |
| 1923375_adh | TATTCAAGTAGAAAACTGGAA  | Chr.1 | 11910902 | 11910882 | - | No |
| 1852786_adh | TAGCAAACGCTGCGTCTTTTA  | Chr.1 | 11911091 | 11911111 | + | No |
| 2123010_adh | TGAACGAGATAGTAGAACGAG  | Chr.1 | 11912198 | 11912218 | + | No |
| 1848717_adh | TAGAGGTTTAGAGAAAGTTGAG | Chr.1 | 11913012 | 11913032 | + | No |
| 2613239_adh | TTCGTTGGAAAATTAGGTTTT  | Chr.1 | 11929955 | 11929935 | - | No |
| 2629605_adh | TTGAATACAAGTAGACGAAAT  | Chr.1 | 11944871 | 11944851 | - | No |
| 2629605_adh | TTGAATACAAGTAGACGAAAT  | Chr.1 | 11945502 | 11945522 | + | No |
| 2494513_adh | TGTCACATTTTTTCGGGCAAA  | Chr.1 | 11975370 | 11975350 | - | No |
| 2745506_adh | TTTTTATTGTGATTTTGGAAG  | Chr.1 | 12004988 | 12005008 | + | No |
| 1943813_adh | TCACAAACTTAGGATGGAACC  | Chr.1 | 12008156 | 12008136 | - | No |
| 1848736_adh | TAGAGTAAAATATTCTTCACA  | Chr.1 | 12023326 | 12023346 | + | No |
| 2629605_adh | TTGAATACAAGTAGACGAAAT  | Chr.1 | 12023831 | 12023851 | + | No |
| 2046967_adh | TCTGATCGTCCTGGACAGAAA  | Chr.1 | 12033726 | 12033706 | - | No |
| 2581912_adh | TTATTCTGATCGTCCTGGACA  | Chr.1 | 12033730 | 12033710 | - | No |
| 2737419_adh | TTTTCACTTATATGTTTTGTT  | Chr.1 | 12043558 | 12043578 | + | No |
| 1931161_adh | TATTTTGCTTTTTTCCCAAGT  | Chr.1 | 12043971 | 12043991 | + | No |
| 2733928_adh | TTTTACAAGTAGAATCGAGCC  | Chr.1 | 12058908 | 12058888 | - | No |
| 2694695_adh | TTACTTGTGAACAGATGGTG   | Chr.1 | 12065470 | 12065490 | + | No |
| 2189153_adh | TGAGAGTAAGCGTTGAATTGA  | Chr.1 | 12077851 | 12077831 | - | No |
| 1981625_adh | TCCCGGCTTGCTGAAAGAATG  | Chr.1 | 12117691 | 12117671 | - | No |
| 1981625_adh | TCCCGGCTTGCTGAAAGAATG  | Chr.1 | 12125872 | 12125892 | + | No |
| 2711844_adh | TTTCTTGCGCATGTGACTTT   | Chr.1 | 12147561 | 12147541 | - | No |
| 1930991_adh | TATTTTCTTGCGCATGTGAC   | Chr.1 | 12147564 | 12147544 | - | No |
| 2180182_adh | TGAGAAGATGACTGCAGTTTT  | Chr.1 | 12163625 | 12163605 | - | No |
| 1919484_adh | TATGTTGCGGAGATTTTGACC  | Chr.1 | 12173673 | 12173653 | - | No |
| 2279222_adh | TGATTTTCGAAAAATGCGGGA  | Chr.1 | 12185929 | 12185909 | - | No |
| 2706178_adh | TTTCTCACTAAATCGTCGCC   | Chr.1 | 12198848 | 12198868 | + | No |
| 1952620_adh | TCACCTCTTTGTGCGCCATAA  | Chr.1 | 12204871 | 12204891 | + | No |
| 1944430_adh | TCACACACAACAAAACGCGGC  | Chr.1 | 12206771 | 12206791 | + | No |
| 2375930_adh | TGGACGAAGACACCGAAGACG  | Chr.1 | 12209527 | 12209507 | - | No |
| 2624253_adh | TTGAAAAACAATGGAAAAACA  | Chr.1 | 12209670 | 12209650 | - | No |
| 2472960_adh | TGGTGTCAAAATCGGACTACC  | Chr.1 | 12219151 | 12219131 | - | No |
| 2118181_adh | TGAAATTTAAAGAAGTTTTTA  | Chr.1 | 12224636 | 12224656 | + | No |
| 2711071_adh | TTTCTGTTGGAAACGCTAAAA  | Chr.1 | 12259446 | 12259426 | - | No |
| 2711071_adh | TTTCTGTTGGAAACGCTAAAA  | Chr.1 | 12268789 | 12268769 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2139193_adh | TGAATATAGTTGTGACGTAAT  | Chr.1 | 12286134 | 12286154 | + | No  |
| 1967511_adh | TCAGTTGATTGAACATACCAG  | Chr.1 | 12325058 | 12325078 | + | No  |
| 2339178_adh | TGGAATGAAAAGAAATTGTAA  | Chr.1 | 12385448 | 12385428 | - | No  |
| 2724500_adh | TTTGGCTATGATGCGACGGTT  | Chr.1 | 12454586 | 12454606 | + | No  |
| 1924747_adh | TATTCTATCATACTGCACTCT  | Chr.1 | 12473384 | 12473364 | - | No  |
| 2287315_adh | TGCAGACTGCAAGAGGGCGTG  | Chr.1 | 12508374 | 12508394 | + | No  |
| 2714028_adh | TTTGAAGGTTTCGGCAAAGCGG | Chr.1 | 12513636 | 12513656 | + | No  |
| 2084422_adh | TGAAAGTTAGGCCATACTCCT  | Chr.1 | 12522811 | 12522791 | - | No  |
| 1762506_adh | TAAATTGCGAAATTTTGCAGG  | Chr.1 | 12532218 | 12532238 | + | No  |
| 2566411_adh | TTAGCAGTAAAATTTTCGCAAA | Chr.1 | 12535066 | 12535046 | - | No  |
| 2623607_adh | TTCTTTGATCTTTTTTGGCAAA | Chr.1 | 12598961 | 12598941 | - | No  |
| 2054992_adh | TCTTATATTAATAATCGTAGAA | Chr.1 | 12599122 | 12599142 | + | No  |
| 1813435_adh | TACATCGTATGCCTTAAGAAT  | Chr.1 | 12606046 | 12606026 | - | No  |
| 1766224_adh | TAACATGTATTAGAGCGGAAA  | Chr.1 | 12607514 | 12607494 | - | Yes |
| 2000259_adh | TCGACTCAGGAATCAAGGGAA  | Chr.1 | 12652862 | 12652882 | + | No  |
| 1939813_adh | TCAAGGGAATGGCCATGAAC   | Chr.1 | 12652874 | 12652894 | + | No  |
| 2513636_adh | TGTGCCAATTGGACGTGGACA  | Chr.1 | 12653166 | 12653186 | + | No  |
| 2488730_adh | TGTAGGATCTGCTGCTCAAAC  | Chr.1 | 12653871 | 12653891 | + | No  |
| 2429427_adh | TGGGATCGAAAAACGCGTCAA  | Chr.1 | 12728128 | 12728148 | + | No  |
| 2624286_adh | TTGAAAAATAGGATTTGACAT  | Chr.1 | 12728471 | 12728451 | - | No  |
| 1839805_adh | TAGAAGTCGTAAAAAACAAAC  | Chr.1 | 12754230 | 12754210 | - | No  |
| 1879005_adh | TAGTGGTGGAAGAGATGGATA  | Chr.1 | 12792721 | 12792701 | - | No  |
| 2742350_adh | TTTTGCATCGATTTTTTCAGT  | Chr.1 | 12806997 | 12807017 | + | No  |
| 1968532_adh | TCATACAAGAGAAGAATTTTCG | Chr.1 | 12826750 | 12826770 | + | No  |
| 2182023_adh | TGAGACAACGAAGTTTGAATA  | Chr.1 | 12849290 | 12849310 | + | No  |
| 2550109_adh | TTAATATTGAGTTGGAGACCA  | Chr.1 | 12859101 | 12859121 | + | No  |
| 2318418_adh | TGGAAATTAATACTTTTTTG   | Chr.1 | 12863602 | 12863622 | + | No  |
| 1833685_adh | TACTGTAGATTTAGGTCTTAA  | Chr.1 | 12864127 | 12864147 | + | No  |
| 2693033_adh | TTTAATTTTCGTCCGATTTTT  | Chr.1 | 12876318 | 12876338 | + | No  |
| 1788110_adh | TAAGTCTTAGAGGAACATCAA  | Chr.1 | 12904227 | 12904207 | - | No  |
| 2665571_adh | TTGGCCTAAAATCGATACGGA  | Chr.1 | 12904256 | 12904236 | - | No  |
| 2031540_adh | TCTACGACAAGAAGACTTCAT  | Chr.1 | 12905249 | 12905269 | + | No  |
| 1954718_adh | TCAGTGGAGAAAGCCGAAGGA  | Chr.1 | 12905293 | 12905313 | + | No  |
| 1891543_adh | TATCAAGCCGTTCAAGACTTC  | Chr.1 | 12910664 | 12910644 | - | No  |
| 2737456_adh | TTTTCAGAGTTTCTTATCGAA  | Chr.1 | 12918342 | 12918362 | + | No  |
| 2015229_adh | TCGGCAGAGATGGTGAGCTTC  | Chr.1 | 12919006 | 12918986 | - | No  |
| 2709734_adh | TTTCTAGTGGAACACGTCGG   | Chr.1 | 12919696 | 12919676 | - | No  |
| 2715185_adh | TTTGACGCGCAAAATTTTCTG  | Chr.1 | 12919784 | 12919804 | + | No  |
| 2194142_adh | TGAGATAGGTTTGCATACTCT  | Chr.1 | 12923253 | 12923233 | - | No  |
| 1830348_adh | TACTAGTTCGCAGTACTTTTC  | Chr.1 | 12929362 | 12929382 | + | No  |
| 1805877_adh | TAATTTTCAATGGGAAGGCTG  | Chr.1 | 12933884 | 12933904 | + | No  |
| 2745084_adh | TTTTTAGCACATGCATTGACA  | Chr.1 | 12944134 | 12944154 | + | No  |
| 2269804_adh | TGATCGATGAGCAGAACAAGC  | Chr.1 | 12964575 | 12964595 | + | No  |
| 2604855_adh | TTCGATCGTCATAACAATGT   | Chr.1 | 12964750 | 12964730 | - | No  |
| 1995831_adh | TCGAACCTGTAGTCGAGACGA  | Chr.1 | 12965021 | 12965041 | + | No  |
| 2721967_adh | TTTGCGATTTTACAAGACGGT  | Chr.1 | 12966661 | 12966641 | - | No  |
| 2675088_adh | TTGTAGGAAATAGGGCGTAAA  | Chr.1 | 12974856 | 12974836 | - | No  |
| 2447334_adh | TGGGATGTTTAGTAATTTCTA  | Chr.1 | 13030050 | 13030030 | - | No  |
| 2374069_adh | TGGACAGCAGTACAAGATGAC  | Chr.1 | 13085800 | 13085820 | + | No  |
| 2292614_adh | TGCCAGTAGAAAAGTATTATGG | Chr.1 | 13098979 | 13098999 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2374069_adh | TGGACAGCAGTACAAGATGAC  | Chr.1 | 13102046 | 13102026 | - | No |
| 1942763_adh | TCAATGTTGTCACTGGGCATA  | Chr.1 | 13120287 | 13120267 | - | No |
| 2626670_adh | TTGAACTCTGTGGATATGAAA  | Chr.1 | 13147135 | 13147155 | + | No |
| 2626670_adh | TTGAACTCTGTGGATATGAAA  | Chr.1 | 13149243 | 13149263 | + | No |
| 2626670_adh | TTGAACTCTGTGGATATGAAA  | Chr.1 | 13150139 | 13150159 | + | No |
| 2626670_adh | TTGAACTCTGTGGATATGAAA  | Chr.1 | 13150811 | 13150831 | + | No |
| 2626670_adh | TTGAACTCTGTGGATATGAAA  | Chr.1 | 13151707 | 13151727 | + | No |
| 2010194_adh | TCGGAAAATCAGAATGTGCCA  | Chr.1 | 13155183 | 13155203 | + | No |
| 2041708_adh | TCTCGTGGTGTAGTGGTTATT  | Chr.1 | 13156283 | 13156303 | + | No |
| 2702949_adh | TTTCAGATCAATTCGTCGGT   | Chr.1 | 13160524 | 13160544 | + | No |
| 1931329_adh | TATTTTTCATACTTTTTCAGG  | Chr.1 | 13161896 | 13161876 | - | No |
| 2590455_adh | TTCAGAATTTGGCACACATAC  | Chr.1 | 13231286 | 13231266 | - | No |
| 2590455_adh | TTCAGAATTTGGCACACATAC  | Chr.1 | 13231430 | 13231410 | - | No |
| 2724246_adh | TTTGGCACCTGTAGAGGCTAC  | Chr.1 | 13266066 | 13266046 | - | No |
| 2287282_adh | TGCAGACGTCGCACAAATTGG  | Chr.1 | 13266160 | 13266180 | + | No |
| 1890387_adh | TATATGGGAATGGTGGAAAGA  | Chr.1 | 13294336 | 13294356 | + | No |
| 1812729_adh | TACAGTATTTAGGCGTGAAAA  | Chr.1 | 13331540 | 13331560 | + | No |
| 2737502_adh | TTTTCAGCTTGTTTTGTCTGGT | Chr.1 | 13339097 | 13339117 | + | No |
| 2703129_adh | TTTCAGCTTGTTTTGTCTGGT  | Chr.1 | 13339098 | 13339118 | + | No |
| 1963240_adh | TCAGCTTGTTTTGTCTGGTTTT | Chr.1 | 13339100 | 13339120 | + | No |
| 2703268_adh | TTTCAGGGACTTATCAACAAC  | Chr.1 | 13384601 | 13384581 | - | No |
| 2127078_adh | TGAAGAAGAAAAAAGACGGTT  | Chr.1 | 13384642 | 13384622 | - | No |
| 2446920_adh | TGGGATGTTGAGAAAAATGTT  | Chr.1 | 13413215 | 13413235 | + | No |
| 2016844_adh | TCGGGCGGCATAAACACACAG  | Chr.1 | 13434496 | 13434476 | - | No |
| 2287397_adh | TGCAGAGGAATCGTATTGAGA  | Chr.1 | 13470623 | 13470643 | + | No |
| 2127896_adh | TGAAGACGCAGAGAACGGCTT  | Chr.1 | 13487580 | 13487560 | - | No |
| 2722275_adh | TTTGCTAGATTTTCAATTTTT  | Chr.1 | 13489282 | 13489262 | - | No |
| 2372119_adh | TGGAATTTAATATAGTTTGTA  | Chr.1 | 13500936 | 13500916 | - | No |
| 2623265_adh | TTCTTTAGATCGTTAAACTTC  | Chr.1 | 13530141 | 13530161 | + | No |
| 1971749_adh | TCATGAAGACTGCAGTCATAT  | Chr.1 | 13560010 | 13560030 | + | No |
| 2304006_adh | TGCGTCTGACAAGGAAAGGTT  | Chr.1 | 13562255 | 13562275 | + | No |
| 2738881_adh | TTTTCGTTGCTTTTATCGGTT  | Chr.1 | 13562402 | 13562422 | + | No |
| 2709266_adh | TTTCGTTGCTTTTATCGGTTT  | Chr.1 | 13562403 | 13562423 | + | No |
| 1999418_adh | TCGAATTTCCGCGATTGCACA  | Chr.1 | 13572114 | 13572094 | - | No |
| 2326862_adh | TGGAAGTGCGTAGACGGAGAG  | Chr.1 | 13605846 | 13605866 | + | No |
| 1813071_adh | TACATAATTTTTGAACGAAAA  | Chr.1 | 13615977 | 13615957 | - | No |
| 2633364_adh | TTGAATGTGTGTGTAGACGAA  | Chr.1 | 13626532 | 13626552 | + | No |
| 2217815_adh | TGAGATGAGAAAACTTCTGAA  | Chr.1 | 13628164 | 13628144 | - | No |
| 2721157_adh | TTTGCAATTTTTGATGGTTTT  | Chr.1 | 13628726 | 13628746 | + | No |
| 2403391_adh | TGGCAGACTTCGTTGAGGCTA  | Chr.1 | 13629823 | 13629843 | + | No |
| 2712676_adh | TTTGAAAGCTTAAGATCGCGT  | Chr.1 | 13651323 | 13651303 | - | No |
| 1956864_adh | TCAGAAACGAACAAACAACAG  | Chr.1 | 13659312 | 13659332 | + | No |
| 2279472_adh | TGATTTTTCTGGAGATTTTGC  | Chr.1 | 13659479 | 13659459 | - | No |
| 2742968_adh | TTTTGGGCAATGTGGACGGAA  | Chr.1 | 13660558 | 13660578 | + | No |
| 2395101_adh | TGGATTGTAGTTCAGTGTCAA  | Chr.1 | 13661938 | 13661958 | + | No |
| 1935997_adh | TCAACACGATTTACGGAGGGA  | Chr.1 | 13663390 | 13663370 | - | No |
| 2659713_adh | TTGGAGCATATTTTGACAAT   | Chr.1 | 13667946 | 13667926 | - | No |
| 1935850_adh | TCAACAACAAGATCATAGGAT  | Chr.1 | 13677939 | 13677959 | + | No |
| 2742945_adh | TTTTGGGAAAAGGCATGAAAT  | Chr.1 | 13762312 | 13762332 | + | No |
| 1844805_adh | TAGAATTTTCGGAAAACGGCT  | Chr.1 | 13783686 | 13783706 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2742968_adh | TTTTGGGCAATGTGGACGGAA  | Chr.1 | 13800991 | 13800971 | - | No |
| 2015370_adh | TCGGCCGAATGTTGAACGGAT  | Chr.1 | 13817417 | 13817397 | - | No |
| 2291601_adh | TGCATTTTAGTTGGCTTTTCA  | Chr.1 | 13835150 | 13835130 | - | No |
| 2291483_adh | TGCATTGTTTATAAGGATTAT  | Chr.1 | 13835235 | 13835255 | + | No |
| 2531951_adh | TGTTTATAAGGATTATTAGGG  | Chr.1 | 13835240 | 13835260 | + | No |
| 2573986_adh | TTATAAGGATTATTAGGGTTA  | Chr.1 | 13835243 | 13835263 | + | No |
| 1807810_adh | TACAACGGATCATTCGGAACA  | Chr.1 | 13841405 | 13841425 | + | No |
| 1984052_adh | TCCGAATTTGAAGACTGAAAA  | Chr.1 | 13854154 | 13854134 | - | No |
| 2598660_adh | TTCCGAATTTGAAGACTGAAA  | Chr.1 | 13854155 | 13854135 | - | No |
| 1931749_adh | TCAAAAAATGAGGGCATGTAA  | Chr.1 | 13877489 | 13877469 | - | No |
| 1931749_adh | TCAAAAAATGAGGGCATGTAA  | Chr.1 | 13878466 | 13878446 | - | No |
| 1857484_adh | TAGCGGTTTCGGATGCATTCGT | Chr.1 | 13883502 | 13883522 | + | No |
| 2424674_adh | TGGGAGTGGGAGGGGGAGGGA  | Chr.1 | 13894864 | 13894844 | - | No |
| 2044992_adh | TCTGACACGGATAGAATGATT  | Chr.1 | 13933527 | 13933547 | + | No |
| 2148258_adh | TGAATTTCTCATTTTTAGGCG  | Chr.1 | 13951940 | 13951960 | + | No |
| 2745118_adh | TTTTTAGGCGAACTTTTCGGT  | Chr.1 | 13951951 | 13951971 | + | No |
| 2734803_adh | TTTTAGGCGAACTTTTCGGTT  | Chr.1 | 13951952 | 13951972 | + | No |
| 1926142_adh | TATTGCAAGACCTGATATTGA  | Chr.1 | 13959136 | 13959156 | + | No |
| 2710036_adh | TTTCTCGGAAGGTACTGTCTGA | Chr.1 | 13960024 | 13960004 | - | No |
| 2742969_adh | TTTTGGGCAATGTGGACGGTA  | Chr.1 | 13965802 | 13965822 | + | No |
| 2742968_adh | TTTTGGGCAATGTGGACGGAA  | Chr.1 | 13967748 | 13967768 | + | No |
| 2414845_adh | TGGCTGCGTACTCCTCTTGGA  | Chr.1 | 13969686 | 13969706 | + | No |
| 2029595_adh | TCTAACATGCTTTCGAAGGAT  | Chr.1 | 13972408 | 13972428 | + | No |
| 2140342_adh | TGAATCACAGAAGCTCATTCA  | Chr.1 | 13973119 | 13973099 | - | No |
| 2735434_adh | TTTTATCAATGGAGCGCGCTT  | Chr.1 | 13988310 | 13988330 | + | No |
| 2735434_adh | TTTTATCAATGGAGCGCGCTT  | Chr.1 | 13988631 | 13988611 | - | No |
| 2589606_adh | TTACGCCAAGCTGAGGAACC   | Chr.1 | 14010373 | 14010393 | + | No |
| 2621042_adh | TTCTTCACAGAGAATGCTGCG  | Chr.1 | 14048017 | 14047997 | - | No |
| 2567584_adh | TTAGGAAGGGAAGTAGTTTTT  | Chr.1 | 14058640 | 14058620 | - | No |
| 1747348_adh | TAAAAATTTGCATTAATTTTT  | Chr.1 | 14111925 | 14111905 | - | No |
| 2730444_adh | TTTGTTAGTTGACAACCTCTT  | Chr.1 | 14145462 | 14145442 | - | No |
| 2568854_adh | TTAGGGGTACTGGAGATGGTT  | Chr.1 | 14162798 | 14162778 | - | No |
| 1797735_adh | TAATCAAGTCTAGTGGAATAT  | Chr.1 | 14194185 | 14194205 | + | No |
| 2313962_adh | TGGAATATGTGAGTTTAGCGG  | Chr.1 | 14200036 | 14200056 | + | No |
| 1985225_adh | TCCGCACTGTGGCATTAAATTT | Chr.1 | 14241305 | 14241285 | - | No |
| 2013754_adh | TCGGATCAGGAGATGGAAAAG  | Chr.1 | 14326504 | 14326484 | - | No |
| 2689879_adh | TTTAACCGAAAATGAGCATT   | Chr.1 | 14358402 | 14358382 | - | No |
| 2394751_adh | TGGATTGTAAAATGCAAAAAA  | Chr.1 | 14405801 | 14405821 | + | No |
| 1883920_adh | TATAAAAGACCGTCGTCACGC  | Chr.1 | 14428154 | 14428134 | - | No |
| 2513587_adh | TGTGCATCGGGGGCAACTAAT  | Chr.1 | 14464525 | 14464505 | - | No |
| 2479167_adh | TGGTTTTGATTTGTTGTGTTG  | Chr.1 | 14468376 | 14468356 | - | No |
| 2545161_adh | TTAACCATTTACTCGGCTCAT  | Chr.1 | 14508517 | 14508537 | + | No |
| 1999451_adh | TCGAATTTTAAAAGGCGCCAA  | Chr.1 | 14523047 | 14523027 | - | No |
| 2683662_adh | TTGTTCTGAATTTTAAAAGGCG | Chr.1 | 14523051 | 14523031 | - | No |
| 2578358_adh | TTATGAATAGGGGGAAAGGGA  | Chr.1 | 14525621 | 14525641 | + | No |
| 1953599_adh | TCACGTGTTTAATGGATTGAC  | Chr.1 | 14548041 | 14548021 | - | No |
| 2025904_adh | TCGTGACGTCATTTTTCTACA  | Chr.1 | 14595050 | 14595070 | + | No |
| 2270489_adh | TGATCTGGGAAGAAGCGAACG  | Chr.1 | 14612975 | 14612995 | + | No |
| 2733110_adh | TTTTAAAGCGGGGGATTGAA   | Chr.1 | 14614880 | 14614900 | + | No |
| 2711570_adh | TTTCTTCTCGGATAATAAATT  | Chr.1 | 14621196 | 14621176 | - | No |

|             |                       |       |          |          |   |    |
|-------------|-----------------------|-------|----------|----------|---|----|
| 2497090_adh | TGTCCGAAACTTGACTGAAGA | Chr.1 | 14622706 | 14622686 | - | No |
| 2186065_adh | TGAGAGAGCTGAGGAGCGTGC | Chr.1 | 14623851 | 14623831 | - | No |
| 2270660_adh | TGATCTTGAGAGAGCTGAGGA | Chr.1 | 14623857 | 14623837 | - | No |
| 2025164_adh | TCGTATTGTGCTTGTGGAGGA | Chr.1 | 14625047 | 14625027 | - | No |
| 2254112_adh | TGAGTGCGCAAATTCGGAAT  | Chr.1 | 14632312 | 14632292 | - | No |
| 1847393_adh | TAGAGACTGCCGTAATAATTT | Chr.1 | 14637881 | 14637901 | + | No |
| 2519052_adh | TGTGTATGTAGTGGAACGTGG | Chr.1 | 14647551 | 14647531 | - | No |
| 2095435_adh | TGAAATCGGAGGAAGGTTATA | Chr.1 | 14654124 | 14654144 | + | No |
| 2620177_adh | TTCTGTGCGAAACAACAAGGC | Chr.1 | 14663357 | 14663337 | - | No |
| 2602650_adh | TTCGAATTGTGTATTGACGAC | Chr.1 | 14664506 | 14664486 | - | No |
| 1880883_adh | TAGTTGAATTTTTTGTGCGAA | Chr.1 | 14701834 | 14701854 | + | No |
| 1749582_adh | TAAAAGCGAATAAATTTGAAT | Chr.1 | 14710946 | 14710926 | - | No |
| 2701000_adh | TTTCAAAATTGCACTGCTATT | Chr.1 | 14716142 | 14716162 | + | No |
| 2580255_adh | TTATGTTACTGTAGTGCAAGC | Chr.1 | 14716243 | 14716263 | + | No |
| 2614773_adh | TTCTAGAGGGATACTGAGATG | Chr.1 | 14719040 | 14719020 | - | No |
| 2598705_adh | TTCCGACGACGAACGCGCAT  | Chr.1 | 14720923 | 14720943 | + | No |
| 2018699_adh | TCGGTCCGTAGATGTGCAAGA | Chr.1 | 14731153 | 14731133 | - | No |
| 2573430_adh | TTAGTTTGACGCGCGATACCT | Chr.1 | 14734751 | 14734731 | - | No |
| 1932381_adh | TCAAAATATCGTTAGGTGAAA | Chr.1 | 14735097 | 14735117 | + | No |
| 2164321_adh | TGACTAGAAGTCGAGTATCTT | Chr.1 | 14747062 | 14747042 | - | No |
| 2589445_adh | TTACCTGAGCGGCTCCATTT  | Chr.1 | 14756452 | 14756432 | - | No |
| 2519510_adh | TGTGTGAATCACGGAAGCTGC | Chr.1 | 14756510 | 14756530 | + | No |
| 2688726_adh | TTTAAAAATGCACGATTATTT | Chr.1 | 14756761 | 14756741 | - | No |
| 2674078_adh | TTGTAATGGAGAAGGCTCAAC | Chr.1 | 14757652 | 14757672 | + | No |
| 2705704_adh | TTTCCGAGGCTCTGTGCGGAT | Chr.1 | 14757963 | 14757983 | + | No |
| 2739560_adh | TTTTCTGCTGGCCTAAACGAT | Chr.1 | 14759586 | 14759606 | + | No |
| 2723782_adh | TTTGGAGGATGACAGCGATAT | Chr.1 | 14790402 | 14790422 | + | No |
| 2628343_adh | TTGAAGAGGCAAAGGAGAAAC | Chr.1 | 14796149 | 14796169 | + | No |
| 1860174_adh | TAGGAAAATAGGAAATGGATA | Chr.1 | 14801677 | 14801657 | - | No |
| 1822924_adh | TACGAGAAGACTGATCCAGCA | Chr.1 | 14848976 | 14848996 | + | No |
| 2117529_adh | TGAAATTGTGTAGATTCAAAA | Chr.1 | 14856040 | 14856020 | - | No |
| 2603407_adh | TTCGAGAACACGAGAAAGAAC | Chr.1 | 14857441 | 14857421 | - | No |
| 2057946_adh | TCTTGAGATTGAGAAGGAAGA | Chr.1 | 14857592 | 14857572 | - | No |
| 2046094_adh | TCTGAGAATGGAGACCTTGTC | Chr.1 | 14858344 | 14858324 | - | No |
| 1785932_adh | TAAGGGACGCCTTCACTCTGA | Chr.1 | 14858360 | 14858340 | - | No |
| 2127105_adh | TGAAGAAGAAGGAATCTGAGT | Chr.1 | 14858949 | 14858929 | - | No |
| 2627166_adh | TTGAAGAAGAAGGAATCTGAG | Chr.1 | 14858950 | 14858930 | - | No |
| 1976127_adh | TCCAAGAAGAACGTCTGGATC | Chr.1 | 14862791 | 14862771 | - | No |
| 1908531_adh | TATGACTCCAAGAAGAACGTC | Chr.1 | 14862797 | 14862777 | - | No |
| 1942732_adh | TCAATGTTAGCTATGAATAAT | Chr.1 | 14953367 | 14953387 | + | No |
| 2111371_adh | TGAAATGTATAAAATTATTTA | Chr.1 | 14963964 | 14963984 | + | No |
| 2743543_adh | TTTTGTAGACTTATTGATAAT | Chr.1 | 14990591 | 14990571 | - | No |
| 2700917_adh | TTTCAAAAAACAACGTGCGTC | Chr.1 | 15014653 | 15014673 | + | No |
| 1999466_adh | TCGAATTTTGACAGCAGTATT | Chr.1 | 15018268 | 15018248 | - | No |
| 1821207_adh | TACCTTATTTGCAGATCTGCA | Chr.1 | 15023107 | 15023127 | + | No |
| 2614512_adh | TTCTACGTGACAAGCTTTTGA | Chr.1 | 15031025 | 15031045 | + | No |
| 2730432_adh | TTTGTTAGGTTTTGCTCATAT | Chr.1 | 15036009 | 15036029 | + | No |
| 2582305_adh | TTATTGATTTTCTCTCGGCAA | Chr.1 | 15052575 | 15052555 | - | No |
| 2700098_adh | TTTATTGATTTTCTCTCGGCA | Chr.1 | 15052576 | 15052556 | - | No |
| 1994133_adh | TCCTTTGATTGAGTTTTTTGT | Chr.1 | 15061118 | 15061138 | + | No |

|             |                         |       |          |          |   |    |
|-------------|-------------------------|-------|----------|----------|---|----|
| 2154861_adh | TGACAGTTGGTCTGAGACGTG   | Chr.1 | 15061687 | 15061707 | + | No |
| 2670371_adh | TTGGTCTGAGACGTGATGTCT   | Chr.1 | 15061693 | 15061713 | + | No |
| 2530135_adh | TGTTGGTGATGGTAGTGTGTG   | Chr.1 | 15061724 | 15061744 | + | No |
| 2471455_adh | TGGTGATGGTAGTGTGTGTCT   | Chr.1 | 15061727 | 15061747 | + | No |
| 2530725_adh | TGTTGTCTGTTGGACTTGTTTA  | Chr.1 | 15061966 | 15061986 | + | No |
| 1970980_adh | TCATCGCCGTGCCTCTGTGCC   | Chr.1 | 15063818 | 15063838 | + | No |
| 1895372_adh | TATCCACAAACCTTAAGATGC   | Chr.1 | 15063844 | 15063864 | + | No |
| 2547294_adh | TTAAGATGCTCGACTGGCTTC   | Chr.1 | 15063856 | 15063876 | + | No |
| 2589742_adh | TTCACGGTCAGTTGAGTGTCTG  | Chr.1 | 15063874 | 15063894 | + | No |
| 2398868_adh | TGGCAAGAGTAGTGAAGTGTCC  | Chr.1 | 15063930 | 15063950 | + | No |
| 1877700_adh | TAGTGAAGTGTCCGACCCATGG  | Chr.1 | 15063939 | 15063959 | + | No |
| 2171528_adh | TGACTGTCCGACCCATGGAAC   | Chr.1 | 15063942 | 15063962 | + | No |
| 2519187_adh | TGTGTCTGAGGGCTTAATGATGA | Chr.1 | 15063988 | 15064008 | + | No |
| 2526938_adh | TGTTCTGCAGTAGACGTTGTT   | Chr.1 | 15064024 | 15064044 | + | No |
| 2618589_adh | TTCTGCAGTAGACGTTGTTCA   | Chr.1 | 15064026 | 15064046 | + | No |
| 2047937_adh | TCTGCAGTAGACGTTGTTTAC   | Chr.1 | 15064027 | 15064047 | + | No |
| 2288722_adh | TGCAGTAGACGTTGTTTACGA   | Chr.1 | 15064029 | 15064049 | + | No |
| 2683500_adh | TTGTTTACGAGTCGTCTCAAC   | Chr.1 | 15064040 | 15064060 | + | No |
| 2589579_adh | TTCACGAGTCGTCTCAACACA   | Chr.1 | 15064043 | 15064063 | + | No |
| 2722039_adh | TTTGCGGAGAGGAAGTTAGTT   | Chr.1 | 15064111 | 15064131 | + | No |
| 1970306_adh | TCATATTTGAATCAGTACACT   | Chr.1 | 15064201 | 15064221 | + | No |
| 1811354_adh | TACACTGATTGCCAAAAGTCT   | Chr.1 | 15064216 | 15064236 | + | No |
| 2589638_adh | TTCACGGACATGCGGTGATTT   | Chr.1 | 15064236 | 15064256 | + | No |
| 1953184_adh | TCACGGACATGCGGTGATTTG   | Chr.1 | 15064237 | 15064257 | + | No |
| 2302864_adh | TGCGGTGATTTGTTGTTGAGA   | Chr.1 | 15064246 | 15064266 | + | No |
| 2278982_adh | TGATTTGTTGTTGAGATTTGC   | Chr.1 | 15064251 | 15064271 | + | No |
| 2732359_adh | TTTGTGTTGAGATTTGCATC    | Chr.1 | 15064254 | 15064274 | + | No |
| 2650345_adh | TTGCATCTCGATAATACGTAC   | Chr.1 | 15064268 | 15064288 | + | No |
| 2290416_adh | TGCATCTCGATAATACGTACT   | Chr.1 | 15064269 | 15064289 | + | No |
| 2002581_adh | TCGATAATACGTACTAGCTTC   | Chr.1 | 15064275 | 15064295 | + | No |
| 1827717_adh | TACGTACTAGCTTCAGCGATG   | Chr.1 | 15064282 | 15064302 | + | No |
| 1830251_adh | TACTAGCTTCAGCGATGGATC   | Chr.1 | 15064286 | 15064306 | + | No |
| 2051426_adh | TCTGGTTCAGGGTTGTTTAAC   | Chr.1 | 15064424 | 15064444 | + | No |
| 2474744_adh | TGGTTCAGGGTTGTTTAACTC   | Chr.1 | 15064426 | 15064446 | + | No |
| 2546048_adh | TTAACTCAATGCCTTAGGCTT   | Chr.1 | 15064440 | 15064460 | + | No |
| 2056647_adh | TCTTCGGCTTGTCGGGCAACA   | Chr.1 | 15064473 | 15064493 | + | No |
| 2608786_adh | TTTCGGCTTGTCGGGCAACATT  | Chr.1 | 15064475 | 15064495 | + | No |
| 2015954_adh | TCGGCTTGTCGGGCAACATTA   | Chr.1 | 15064476 | 15064496 | + | No |
| 2016797_adh | TCGGGCAACATTAGTGAGCTG   | Chr.1 | 15064484 | 15064504 | + | No |
| 2606683_adh | TTTCGGCTTCGGCATACTGAT   | Chr.1 | 15064508 | 15064528 | + | No |
| 2008182_adh | TCGGCTTCGGCATACTGATC    | Chr.1 | 15064509 | 15064529 | + | No |
| 2040134_adh | TCTCGGCATACTGATCTTGTC   | Chr.1 | 15064514 | 15064534 | + | No |
| 1876258_adh | TAGTCCAGAAGCATCACAAGT   | Chr.1 | 15064536 | 15064556 | + | No |
| 1944269_adh | TCACAAGTCAAGACAGAGCTT   | Chr.1 | 15064549 | 15064569 | + | No |
| 1938495_adh | TCAAGACAGAGCTTCACCGTT   | Chr.1 | 15064556 | 15064576 | + | No |
| 2059294_adh | TCTTGTAATGTGACGCGCTAC   | Chr.1 | 15064580 | 15064600 | + | No |
| 1801790_adh | TAATGTGACGCGCTACTCTTA   | Chr.1 | 15064585 | 15064605 | + | No |
| 2503946_adh | TGTGACGCGCTACTCTTATAT   | Chr.1 | 15064588 | 15064608 | + | No |
| 1831707_adh | TACTCTTATATCGGAGGAGCT   | Chr.1 | 15064598 | 15064618 | + | No |
| 2054978_adh | TCTTATATCGGAGGAGCTGCC   | Chr.1 | 15064601 | 15064621 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2575599_adh | TTATATCGGAGGAGCTGCCAA  | Chr.1 | 15064603 | 15064623 | + | No |
| 1890071_adh | TATATCGGAGGAGCTGCCAAA  | Chr.1 | 15064604 | 15064624 | + | No |
| 1984345_adh | TCCGACTTGACTCGGCTGATC  | Chr.1 | 15064630 | 15064650 | + | No |
| 2636714_adh | TTGACTCGGCTGATCATCAAG  | Chr.1 | 15064636 | 15064656 | + | No |
| 2168043_adh | TGACTCGGCTGATCATCAAGA  | Chr.1 | 15064637 | 15064657 | + | No |
| 2015791_adh | TCGGCTGATCATCAAGACGTG  | Chr.1 | 15064641 | 15064661 | + | No |
| 2269260_adh | TGATCATCAAGACGTGTTTAA  | Chr.1 | 15064646 | 15064666 | + | No |
| 1970377_adh | TCATCAAGACGTGTTTAACTG  | Chr.1 | 15064649 | 15064669 | + | No |
| 2304328_adh | TGCGTGTCCTTATGATGTGAAG | Chr.1 | 15064668 | 15064688 | + | No |
| 2500067_adh | TGTCTTATGATGTGAAGCTAC  | Chr.1 | 15064672 | 15064692 | + | No |
| 1911757_adh | TATGATGTGAAGCTACTGCAT  | Chr.1 | 15064677 | 15064697 | + | No |
| 2131763_adh | TGAAGCTACTGCATCTATGTC  | Chr.1 | 15064684 | 15064704 | + | No |
| 2494822_adh | TGTCAGAATGTGTCGTCGCTC  | Chr.1 | 15064701 | 15064721 | + | No |
| 1997057_adh | TCGAATACTGGGATTCGTCTA  | Chr.1 | 15064725 | 15064745 | + | No |
| 1805929_adh | TAATTTTCGATTGATGCGGCG  | Chr.1 | 15064772 | 15064792 | + | No |
| 2707209_adh | TTTCGATTGATGCGGCGCTGA  | Chr.1 | 15064776 | 15064796 | + | No |
| 2645007_adh | TTGATGCGGCGCTGAGAAGAG  | Chr.1 | 15064782 | 15064802 | + | No |
| 2271933_adh | TGATGCGGCGCTGAGAAGAGA  | Chr.1 | 15064783 | 15064803 | + | No |
| 2301676_adh | TGCGGCGCTGAGAAGAGAGAC  | Chr.1 | 15064786 | 15064806 | + | No |
| 2179936_adh | TGAGAAGAGAGACGGTGCGTG  | Chr.1 | 15064794 | 15064814 | + | No |
| 1798791_adh | TAATCTCAACCTGAACTCAGT  | Chr.1 | 15064821 | 15064841 | + | No |
| 2035823_adh | TCTCAACCTGAACTCAGTCGT  | Chr.1 | 15064824 | 15064844 | + | No |
| 1994133_adh | TCCTTTGATTGAGTTTTTGT   | Chr.1 | 15068314 | 15068334 | + | No |
| 2154861_adh | TGACAGTTGGTCTGAGACGTG  | Chr.1 | 15068884 | 15068904 | + | No |
| 2670371_adh | TTGGTCTGAGACGTGATGTCT  | Chr.1 | 15068890 | 15068910 | + | No |
| 2530135_adh | TGTTGGTGTAGGTAGTGTGTG  | Chr.1 | 15068921 | 15068941 | + | No |
| 2471455_adh | TGGTGATGGTAGTGTGTGTCT  | Chr.1 | 15068924 | 15068944 | + | No |
| 2530725_adh | TGTTGTCGTGGGACTTGTTTA  | Chr.1 | 15069163 | 15069183 | + | No |
| 1970980_adh | TCATCGCCGTGCCTCTGTGCC  | Chr.1 | 15071015 | 15071035 | + | No |
| 1895372_adh | TATCCACAAACCTTAAGATGC  | Chr.1 | 15071041 | 15071061 | + | No |
| 2547294_adh | TTAAGATGCTCGACTGGCTTC  | Chr.1 | 15071053 | 15071073 | + | No |
| 2589742_adh | TTACCGGTCAGTTGAGTGTCG  | Chr.1 | 15071071 | 15071091 | + | No |
| 2398868_adh | TGGCAAGAGTAGTGAAGTCC   | Chr.1 | 15071127 | 15071147 | + | No |
| 1877700_adh | TAGTGAAGTCCGACCCATGG   | Chr.1 | 15071136 | 15071156 | + | No |
| 2171528_adh | TGACTGTCCGACCCATGGAAC  | Chr.1 | 15071139 | 15071159 | + | No |
| 2519187_adh | TGTGTCAGGGCTTAATGATGA  | Chr.1 | 15071185 | 15071205 | + | No |
| 2526938_adh | TGTTCTGCAGTAGACGTTGTT  | Chr.1 | 15071221 | 15071241 | + | No |
| 2618589_adh | TTCTGCAGTAGACGTTGTTCA  | Chr.1 | 15071223 | 15071243 | + | No |
| 2047937_adh | TCTGCAGTAGACGTTGTTTCA  | Chr.1 | 15071224 | 15071244 | + | No |
| 2288722_adh | TGCAGTAGACGTTGTTTACGA  | Chr.1 | 15071226 | 15071246 | + | No |
| 2683500_adh | TTGTTTACGAGTCGTCTCAAC  | Chr.1 | 15071237 | 15071257 | + | No |
| 2589579_adh | TTCACGAGTCGTCTCAACACA  | Chr.1 | 15071240 | 15071260 | + | No |
| 2722039_adh | TTTGCGGAGAGGAAGTTAGTT  | Chr.1 | 15071308 | 15071328 | + | No |
| 2154861_adh | TGACAGTTGGTCTGAGACGTG  | Chr.1 | 15071976 | 15071996 | + | No |
| 2670371_adh | TTGGTCTGAGACGTGATGTCT  | Chr.1 | 15071982 | 15072002 | + | No |
| 2530135_adh | TGTTGGTGTAGGTAGTGTGTG  | Chr.1 | 15072013 | 15072033 | + | No |
| 2471455_adh | TGGTGATGGTAGTGTGTGTCT  | Chr.1 | 15072016 | 15072036 | + | No |
| 2374081_adh | TGGACAGCTGATGGACGAGAC  | Chr.2 | 1515     | 1495     | - | No |
| 2618534_adh | TTCTGATTTTCATTTCTGACG  | Chr.2 | 43779    | 43759    | - | No |
| 2373863_adh | TGGACACGATGACAATTTCAA  | Chr.2 | 43800    | 43780    | - | No |

|             |                         |       |        |        |   |    |
|-------------|-------------------------|-------|--------|--------|---|----|
| 1937466_adh | TCAACTGCGCTCTGTTGGACA   | Chr.2 | 43815  | 43795  | - | No |
| 1929523_adh | TATTCACGACAGAAGAATAG    | Chr.2 | 43863  | 43883  | + | No |
| 2702556_adh | TTTCACGACAGAAGAATAGTG   | Chr.2 | 43865  | 43885  | + | No |
| 2589541_adh | TTCACGACAGAAGAATAGTGT   | Chr.2 | 43866  | 43886  | + | No |
| 2029220_adh | TCTAAAAACGAACGTGGAGCA   | Chr.2 | 57859  | 57839  | - | No |
| 2688735_adh | TTTAAAAATTGATTTTGACGT   | Chr.2 | 94731  | 94751  | + | No |
| 2608089_adh | TTCGGAGTGTCTGTTGGCTAAA  | Chr.2 | 98297  | 98317  | + | No |
| 1858370_adh | TAGCTGAAGAAGAACATAAAG   | Chr.2 | 101599 | 101579 | - | No |
| 2742923_adh | TTTTGGCTGAAAATGGTTGGA   | Chr.2 | 146889 | 146869 | - | No |
| 2520697_adh | TGTGTTAGTAAGAAGGATGAT   | Chr.2 | 167610 | 167590 | - | No |
| 2123264_adh | TGAACGGATCCGGACAAACAT   | Chr.2 | 175105 | 175125 | + | No |
| 1980135_adh | TCCCAAAAGACTGGAATTA     | Chr.2 | 192170 | 192190 | + | No |
| 1924095_adh | TATTCGCGTTTTTCGTGCAAA   | Chr.2 | 218877 | 218857 | - | No |
| 1852420_adh | TAGATTTTCGGTTTTAGAATGG  | Chr.2 | 218980 | 219000 | + | No |
| 2708570_adh | TTTCGGTTTTAGAATGGCTAA   | Chr.2 | 218984 | 219004 | + | No |
| 2610890_adh | TTCGGTTTTAGAATGGCTAAA   | Chr.2 | 218985 | 219005 | + | No |
| 2526499_adh | TGTTTCGGCGTTTATTTTCAGAA | Chr.2 | 233165 | 233145 | - | No |
| 2707345_adh | TTTCGCGCTTTTCGGCCACTG   | Chr.2 | 255302 | 255282 | - | No |
| 1746208_adh | TAAAAAGACGGGAAAAATACA   | Chr.2 | 255449 | 255469 | + | No |
| 1752458_adh | TAAAATGGATTTGTAAGCAAG   | Chr.2 | 273752 | 273732 | - | No |
| 2700882_adh | TTTATTTTTCAATCTTCAAT    | Chr.2 | 294688 | 294668 | - | No |
| 1992490_adh | TCCTTAACCGTCGGAAAACCA   | Chr.2 | 320905 | 320925 | + | No |
| 1851469_adh | TAGATGGCTGAAAAAATGAGA   | Chr.2 | 339850 | 339870 | + | No |
| 2318774_adh | TGGAACAATGGCAAGAGTGCT   | Chr.2 | 409227 | 409207 | - | No |
| 2314777_adh | TGGAAACTGGTAGAAAAGCGA   | Chr.2 | 409370 | 409390 | + | No |
| 2065922_adh | TGAAAAAGCGCGAGAAGCTAA   | Chr.2 | 411026 | 411006 | - | No |
| 2739588_adh | TTTTCTGGCGAAGATGCTGAA   | Chr.2 | 436521 | 436541 | + | No |
| 2710707_adh | TTTCTGGCGAAGATGCTGAAG   | Chr.2 | 436522 | 436542 | + | No |
| 1979519_adh | TCCATCAAATCAACGTCGTTC   | Chr.2 | 446931 | 446911 | - | No |
| 1833707_adh | TACTGTAGCTCCAGGAGTACG   | Chr.2 | 457455 | 457435 | - | No |
| 1833707_adh | TACTGTAGCTCCAGGAGTACG   | Chr.2 | 461488 | 461468 | - | No |
| 2700173_adh | TTTATTGCTTTATTTCTCTAT   | Chr.2 | 484765 | 484785 | + | No |
| 2625791_adh | TTGAAATTTTTAAAATCTTTT   | Chr.2 | 493388 | 493408 | + | No |
| 1819451_adh | TACCGAATATTCTTATACTTT   | Chr.2 | 500311 | 500331 | + | No |
| 1972321_adh | TCATGCGTGTAGAAAAATGTA   | Chr.2 | 540650 | 540670 | + | No |
| 2292151_adh | TGCCACAGAAGGACCGAGAAG   | Chr.2 | 580315 | 580295 | - | No |
| 2109032_adh | TGAAATGTAAAAATGAATCAA   | Chr.2 | 609918 | 609938 | + | No |
| 2542123_adh | TTAAATACAAGTAGACGCAAT   | Chr.2 | 611576 | 611556 | - | No |
| 2542124_adh | TTAAATACAAGTAGACGTAAT   | Chr.2 | 612207 | 612227 | + | No |
| 1958006_adh | TCAGAATTGTCTCGGCAACAC   | Chr.2 | 634237 | 634257 | + | No |
| 1889703_adh | TATATACTTGGGTGCTCTGAA   | Chr.2 | 650544 | 650564 | + | No |
| 2673761_adh | TTGTAACAGTAGAAGCAGTTG   | Chr.2 | 658859 | 658879 | + | No |
| 1933904_adh | TCAAAGTAGGTGTCGTGGAAT   | Chr.2 | 700987 | 701007 | + | No |
| 2744000_adh | TTTTGTGTAGATTTACGGAGC   | Chr.2 | 714996 | 714976 | - | No |
| 2548098_adh | TTAAGCTCTCCTTCGTTGGAT   | Chr.2 | 719736 | 719716 | - | No |
| 2739419_adh | TTTTCTGAAAATTCTAGGAT    | Chr.2 | 734028 | 734048 | + | No |
| 2716467_adh | TTTGAGACTTACGAAGAAAAT   | Chr.2 | 736046 | 736066 | + | No |
| 1831630_adh | TACTCTGGATAAAAGACGCGG   | Chr.2 | 741085 | 741105 | + | No |
| 2049221_adh | TCTGGATAAAAGACGCGGTAA   | Chr.2 | 741088 | 741108 | + | No |
| 2084999_adh | TGAAATAAAAATAAAAATCCA   | Chr.2 | 771637 | 771657 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1824972_adh | TACGCGGAAATGATGGTTCCT  | Chr.2 | 783016  | 782996  | - | No |
| 2307628_adh | TGCTCGTTCTGAGGGACAAGC  | Chr.2 | 783193  | 783213  | + | No |
| 1835655_adh | TACTTGGTTAAACTTCAACA   | Chr.2 | 783839  | 783819  | - | No |
| 2738340_adh | TTTTCGATTTTCCTGCGGCTC  | Chr.2 | 794668  | 794648  | - | No |
| 1832048_adh | TACTGAAGATGATAAGTGGGT  | Chr.2 | 802243  | 802223  | - | No |
| 1957608_adh | TCAGAAGACTTATTCCTCAGC  | Chr.2 | 806472  | 806452  | - | No |
| 1979016_adh | TCCAGTCAGTCAGAAGACTTA  | Chr.2 | 806481  | 806461  | - | No |
| 2673562_adh | TTGTAAAATAGATCTCAGCAT  | Chr.2 | 812119  | 812139  | + | No |
| 2007851_adh | TCGCGATTTTTAGAGGGCTTT  | Chr.2 | 820985  | 821005  | + | No |
| 2673562_adh | TTGTAAAATAGATCTCAGCAT  | Chr.2 | 823023  | 823043  | + | No |
| 2615880_adh | TTCTCAAAGCATCTGACCGCT  | Chr.2 | 823805  | 823825  | + | No |
| 1830829_adh | TACTCAACGCAATGCGTCGCA  | Chr.2 | 839429  | 839409  | - | No |
| 1815735_adh | TACCAGTTGTATCTATCGGTT  | Chr.2 | 845840  | 845860  | + | No |
| 1830825_adh | TACTCAACATTATGAACGGCT  | Chr.2 | 866918  | 866898  | - | No |
| 2745158_adh | TTTTTAGTGTGAAACGTTGGT  | Chr.2 | 884933  | 884913  | - | No |
| 2745158_adh | TTTTTAGTGTGAAACGTTGGT  | Chr.2 | 885117  | 885097  | - | No |
| 2745158_adh | TTTTTAGTGTGAAACGTTGGT  | Chr.2 | 885301  | 885281  | - | No |
| 2745158_adh | TTTTTAGTGTGAAACGTTGGT  | Chr.2 | 885447  | 885427  | - | No |
| 1795290_adh | TAATAGTCAGTGTGTTCTGTCG | Chr.2 | 896206  | 896186  | - | No |
| 2722052_adh | TTTGCGGATAGGCAGCGTTTT  | Chr.2 | 913361  | 913341  | - | No |
| 2539985_adh | TTAAACGGTAAGGGCCGCGCTG | Chr.2 | 925407  | 925427  | + | No |
| 2691161_adh | TTTAATCAAGACATCTTCGGC  | Chr.2 | 928751  | 928771  | + | No |
| 1814776_adh | TACCAAGGACTGAAGGAAGAG  | Chr.2 | 945540  | 945520  | - | No |
| 2276343_adh | TGATTGACTGTGTGGCGACTA  | Chr.2 | 1005666 | 1005646 | - | No |
| 2276343_adh | TGATTGACTGTGTGGCGACTA  | Chr.2 | 1011494 | 1011474 | - | No |
| 2276343_adh | TGATTGACTGTGTGGCGACTA  | Chr.2 | 1017312 | 1017292 | - | No |
| 2748517_adh | TTTTTCACTAAATCGTCGGT   | Chr.2 | 1070859 | 1070879 | + | No |
| 2707300_adh | TTTCGCCAGTTTTCCGTCGAT  | Chr.2 | 1123335 | 1123315 | - | No |
| 1936657_adh | TCAACGGACAAAAGGAAAAGA  | Chr.2 | 1135198 | 1135178 | - | No |
| 2639531_adh | TTGAGAAGGATCGGCTGCCAG  | Chr.2 | 1149432 | 1149452 | + | No |
| 2514762_adh | TGTGGAATGGTCGCCTGGATC  | Chr.2 | 1150226 | 1150246 | + | No |
| 2153323_adh | TGACACTGTACACTCCAGAAA  | Chr.2 | 1150248 | 1150268 | + | No |
| 1969042_adh | TCATAGATGGCTGAAAAATAA  | Chr.2 | 1232230 | 1232250 | + | No |
| 1969042_adh | TCATAGATGGCTGAAAAATAA  | Chr.2 | 1232841 | 1232861 | + | No |
| 1925263_adh | TATTGAAAATTCGGTTATCTA  | Chr.2 | 1248931 | 1248951 | + | No |
| 2373136_adh | TGGAATTTTTGTTGGATTTTCG | Chr.2 | 1306702 | 1306682 | - | No |
| 2688478_adh | TTGTTTTTGTGTCTTAAAGT   | Chr.2 | 1320522 | 1320502 | - | No |
| 1946975_adh | TCACCATCGTCGTCGTCGGAT  | Chr.2 | 1321221 | 1321201 | - | No |
| 2026044_adh | TCGTGAGGAAGACGAGGTCGT  | Chr.2 | 1322315 | 1322335 | + | No |
| 1833707_adh | TACTGTAGCTCCAGGAGTACG  | Chr.2 | 1350285 | 1350305 | + | No |
| 2303332_adh | TGCGTAAGACGCTCGGTGTTT  | Chr.2 | 1350327 | 1350307 | - | No |
| 2723305_adh | TTTGGACGAAAACCTGGCAAAT | Chr.2 | 1369425 | 1369405 | - | No |
| 2742703_adh | TTTTGGACGAAAACCTGGCAAA | Chr.2 | 1369426 | 1369406 | - | No |
| 2126807_adh | TGAACTTTTGTGGATTTTCGTA | Chr.2 | 1377070 | 1377090 | + | No |
| 1746690_adh | TAAAAAGGATTTTCGCTTCAA  | Chr.2 | 1402316 | 1402296 | - | No |
| 2530313_adh | TGTTGTAAACGGGGCAGTGGA  | Chr.2 | 1446854 | 1446834 | - | No |
| 2745747_adh | TTTTTCATATTTTCAAGCTAA  | Chr.2 | 1497241 | 1497261 | + | No |
| 2745747_adh | TTTTTCATATTTTCAAGCTAA  | Chr.2 | 1497695 | 1497715 | + | No |
| 2696635_adh | TTTAGGACTGGGGCACAGGAA  | Chr.2 | 1500482 | 1500502 | + | No |
| 1775379_adh | TAAGACATTTTTACATCTAGA  | Chr.2 | 1501051 | 1501071 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2693793_adh | TTTACGAGAAGAGAAGTACAA  | Chr.2 | 1548930 | 1548950 | + | No |
| 1883920_adh | TATAAAAGACCGTCGTCACGC  | Chr.2 | 1561511 | 1561531 | + | No |
| 1990086_adh | TCCTCCCTGGATCAGTCGGTA  | Chr.2 | 1591638 | 1591618 | - | No |
| 2742982_adh | TTTTGGGGAGCAGAAATCGGA  | Chr.2 | 1592016 | 1591996 | - | No |
| 2090514_adh | TGAAATCAAACAAAAATCAA   | Chr.2 | 1754338 | 1754358 | + | No |
| 1762993_adh | TAACAAAAAGCGACGAAAAAG  | Chr.2 | 1814092 | 1814112 | + | No |
| 1850593_adh | TAGATCAAAGTGATATGGGAC  | Chr.2 | 1821882 | 1821902 | + | No |
| 2618481_adh | TTCTGATGGTTGTCGCTTTGG  | Chr.2 | 1855626 | 1855606 | - | No |
| 1999616_adh | TCGACACGGAGTTCTGATGGT  | Chr.2 | 1855637 | 1855617 | - | No |
| 2129901_adh | TGAAGATAACGACTTTTAACA  | Chr.2 | 1855749 | 1855769 | + | No |
| 2618481_adh | TTCTGATGGTTGTCGCTTTGG  | Chr.2 | 1862289 | 1862269 | - | No |
| 1999616_adh | TCGACACGGAGTTCTGATGGT  | Chr.2 | 1862300 | 1862280 | - | No |
| 2129901_adh | TGAAGATAACGACTTTTAACA  | Chr.2 | 1862413 | 1862433 | + | No |
| 2741014_adh | TTTTGACAGGAAAAATATCGGA | Chr.2 | 1918163 | 1918183 | + | No |
| 2689095_adh | TTTAAACGTAGTTCATCGTAT  | Chr.2 | 1922815 | 1922795 | - | No |
| 2701828_adh | TTTCAATGGAAAAATCGTTAA  | Chr.2 | 1928849 | 1928869 | + | No |
| 2600775_adh | TTCTGAGGATGTGCACAATT   | Chr.2 | 1930546 | 1930526 | - | No |
| 2623607_adh | TTCTTTGATCTTTTTGGCAAA  | Chr.2 | 2017274 | 2017294 | + | No |
| 2270073_adh | TGATCGTTGAAGCCGCTGAAA  | Chr.2 | 2018204 | 2018184 | - | No |
| 2003962_adh | TCGATGAAGAACTGGCGAAAA  | Chr.2 | 2018480 | 2018460 | - | No |
| 2595879_adh | TTCCAAGCGATTTCTGAGTGA  | Chr.2 | 2039722 | 2039702 | - | No |
| 1988983_adh | TCCGTTTTTTAGGACTTTTTTC | Chr.2 | 2042658 | 2042638 | - | No |
| 2740899_adh | TTTTGAATATTCCTGCGGCTT  | Chr.2 | 2047406 | 2047386 | - | No |
| 2748886_adh | TTTTTTCGCGATTTGTCTTGT  | Chr.2 | 2049475 | 2049455 | - | No |
| 2236600_adh | TGAGGAAGGCGAGAACCCCGT  | Chr.2 | 2052964 | 2052944 | - | No |
| 1957820_adh | TCAGAATAAAGCCTTCGAAAC  | Chr.2 | 2059155 | 2059135 | - | No |
| 2618873_adh | TTCTGGAAGAGGGAAAGCTTA  | Chr.2 | 2059260 | 2059280 | + | No |
| 2160577_adh | TGACGAAGAAGGATGTTAACT  | Chr.2 | 2091746 | 2091726 | - | No |
| 2500363_adh | TGTCTTTCTATCGACGATTCA  | Chr.2 | 2091800 | 2091780 | - | No |
| 2651739_adh | TTGCGAAGATGGAAGATCTGA  | Chr.2 | 2105311 | 2105291 | - | No |
| 2000610_adh | TCGACTGGAATTGGACGTGCT  | Chr.2 | 2134256 | 2134236 | - | No |
| 2502984_adh | TGTGAATTAAGTAGTTGATCA  | Chr.2 | 2144982 | 2145002 | + | No |
| 2474515_adh | TGGTTATTGTCGTCGGAATCA  | Chr.2 | 2157748 | 2157768 | + | No |
| 2027013_adh | TCGTGGACTTCTCACCGGTCT  | Chr.2 | 2158272 | 2158292 | + | No |
| 2700706_adh | TTTATTTTCGATTTGTCCGTTT | Chr.2 | 2170202 | 2170182 | - | No |
| 2662502_adh | TTGGATGAGACTCACAAAAAA  | Chr.2 | 2180354 | 2180374 | + | No |
| 2591913_adh | TTCAGCTTGCTGCGTTACTTA  | Chr.2 | 2199248 | 2199228 | - | No |
| 1833743_adh | TACTGTAGTCTTGGCACTTGT  | Chr.2 | 2200798 | 2200778 | - | No |
| 1928872_adh | TATTGTTTTTCTCGCGGATTT  | Chr.2 | 2204226 | 2204206 | - | No |
| 2581183_adh | TTATTATTGTTTTCTCGCGG   | Chr.2 | 2204230 | 2204210 | - | No |
| 1924720_adh | TATTCTAGAGCAGAATTTGGT  | Chr.2 | 2219971 | 2219951 | - | No |
| 2640994_adh | TTGAGCTGGACGGCGAATATG  | Chr.2 | 2220130 | 2220150 | + | No |
| 2714898_adh | TTTGACATGAATGAAGATTTT  | Chr.2 | 2220418 | 2220398 | - | No |
| 2734498_adh | TTTTAGACTCAGAAAATGGCG  | Chr.2 | 2222822 | 2222802 | - | No |
| 2717776_adh | TTTGATCAGTTTGGAAATCAA  | Chr.2 | 2223598 | 2223578 | - | No |
| 2556964_adh | TTACGCGCTGTCGAAAGGGTA  | Chr.2 | 2232473 | 2232453 | - | No |
| 1761089_adh | TAAATCTGATTTTTTACAAGC  | Chr.2 | 2232566 | 2232586 | + | No |
| 2020739_adh | TCGGTTTTTCGAGAAGAATTGA | Chr.2 | 2232732 | 2232752 | + | No |
| 2717776_adh | TTTGATCAGTTTGGAAATCAA  | Chr.2 | 2255124 | 2255144 | + | No |
| 2717776_adh | TTTGATCAGTTTGGAAATCAA  | Chr.2 | 2265778 | 2265758 | - | No |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 1807810_adh | TACAACGGATCATTCGGAACA | Chr.2 | 2272491 | 2272471 | - | No |
| 2721475_adh | TTTGCATTTGTCGTTGGCAAC | Chr.2 | 2283018 | 2282998 | - | No |
| 2017209_adh | TCGGGGTACTGTAGTAGTGCT | Chr.2 | 2348753 | 2348733 | - | No |
| 1874650_adh | TAGTAGCTCGTACGGAAGATT | Chr.2 | 2361781 | 2361761 | - | No |
| 2010464_adh | TCGGAACAAAAAAGAAAAGAT | Chr.2 | 2434496 | 2434476 | - | No |
| 2590213_adh | TTCAGAAACCGCGTAGACCAC | Chr.2 | 2437040 | 2437060 | + | No |
| 2707761_adh | TTTCGGATAATTTTCGTTGA  | Chr.2 | 2474098 | 2474078 | - | No |
| 2142647_adh | TGAATCTAATTGAACTTGAAT | Chr.2 | 2495356 | 2495336 | - | No |
| 1854552_adh | TAGCAGCATACACCAGAACAC | Chr.2 | 2549369 | 2549349 | - | No |
| 2292387_adh | TGCCAGAGCTCTGCGAAAGCA | Chr.2 | 2556797 | 2556777 | - | No |
| 2732937_adh | TTTTAAAAACCGGCAAAAAAT | Chr.2 | 2570426 | 2570446 | + | No |
| 1804742_adh | TAATTTAGAAAACAGTGACGC | Chr.2 | 2616449 | 2616469 | + | No |
| 1850533_adh | TAGATATGCAAGTAGGAACGC | Chr.2 | 2623761 | 2623741 | - | No |
| 2710713_adh | TTTCTGGCGTGAAGAAGGACA | Chr.2 | 2623811 | 2623791 | - | No |
| 2066166_adh | TGAAAAAGTTCAATATTCCAA | Chr.2 | 2667622 | 2667602 | - | No |
| 2307306_adh | TGCTCCACTAGAATAATGGCA | Chr.2 | 2717367 | 2717347 | - | No |
| 2376334_adh | TGGACGGCCAGATTTGGTAAA | Chr.2 | 2759159 | 2759139 | - | No |
| 2574011_adh | TTATAAGTGACAATGGAGCAT | Chr.2 | 2787271 | 2787251 | - | No |
| 2747805_adh | TTTTTGTGATTTCGAAGCCAT | Chr.2 | 2815262 | 2815282 | + | No |
| 1985223_adh | TCCGCACTGTGGCAAATTTTT | Chr.2 | 2860774 | 2860794 | + | No |
| 2711774_adh | TTTCTTGCAAGAAACATCCAT | Chr.2 | 2889310 | 2889290 | - | No |
| 2743572_adh | TTTTGTAGATTTTCACGAAA  | Chr.2 | 2892162 | 2892142 | - | No |
| 2279366_adh | TGATTTTGTAGATTTTCACGG | Chr.2 | 2892165 | 2892145 | - | No |
| 2743572_adh | TTTTGTAGATTTTCACGAAA  | Chr.2 | 2909528 | 2909508 | - | No |
| 2597333_adh | TTCCATGGAACTCTGAGCAA  | Chr.2 | 2915937 | 2915957 | + | No |
| 2496930_adh | TGTCCAAGTGGCGCAGTGAA  | Chr.2 | 3027106 | 3027126 | + | No |
| 2480354_adh | TGTAAAAATTGTAGGAAGAAC | Chr.2 | 3056275 | 3056295 | + | No |
| 1999940_adh | TCGACGAACGAGCAATCTGGA | Chr.2 | 3070591 | 3070571 | - | No |
| 2288460_adh | TGCAGGAATGAGGCGAGATGT | Chr.2 | 3113565 | 3113585 | + | No |
| 2604197_adh | TTCCAGTTTTTAAATTGAACG | Chr.2 | 3114245 | 3114265 | + | No |
| 2382742_adh | TGGAGTACTGTAGGAGTACGG | Chr.2 | 3177026 | 3177006 | - | No |
| 2382742_adh | TGGAGTACTGTAGGAGTACGG | Chr.2 | 3177149 | 3177129 | - | No |
| 1924747_adh | TATTCTATCATACTGCACTCT | Chr.2 | 3183415 | 3183395 | - | No |
| 2066166_adh | TGAAAAAGTTCAATATTCCAA | Chr.2 | 3189874 | 3189894 | + | No |
| 2742617_adh | TTTTGGAAAAGTTGGAGGAGG | Chr.2 | 3207918 | 3207898 | - | No |
| 2259206_adh | TGATAATTCAAATCGATCGG  | Chr.2 | 3222892 | 3222872 | - | No |
| 2287161_adh | TGCAGACCAGTGCTGTGCGGC | Chr.2 | 3235139 | 3235159 | + | No |
| 2357416_adh | TGGAATGTAAAGAAGTGCGGA | Chr.2 | 3236366 | 3236386 | + | No |
| 1972568_adh | TCATGGAGAACAAATTGATGA | Chr.2 | 3245748 | 3245728 | - | No |
| 1805384_adh | TAATTTGCTGGAAGCTGGAAA | Chr.2 | 3246302 | 3246282 | - | No |
| 2492543_adh | TGTATGTATTTGACGGTCGTT | Chr.2 | 3264230 | 3264250 | + | No |
| 2118344_adh | TGAAATTTAAATTTAAATTTA | Chr.2 | 3269168 | 3269148 | - | No |
| 2598940_adh | TTCCGATTTGTAAGAATTTCA | Chr.2 | 3278921 | 3278941 | + | No |
| 1990086_adh | TCCTCCCTGGATCAGTCGGTA | Chr.2 | 3290091 | 3290111 | + | No |
| 2587826_adh | TTCAATCGGTTGGTGTAGCGG | Chr.2 | 3291761 | 3291741 | - | No |
| 2035320_adh | TCTCAAAGAATTGTGACGTCA | Chr.2 | 3310151 | 3310171 | + | No |
| 1860220_adh | TAGGAAAATGTATATGAAAGT | Chr.2 | 3310552 | 3310572 | + | No |
| 1865140_adh | TAGGATCAATTATATTTGCCA | Chr.2 | 3314460 | 3314480 | + | No |
| 2649515_adh | TTGCAGATTGGAATATCTATT | Chr.2 | 3327412 | 3327432 | + | No |
| 1798883_adh | TAATCTGACTACGGTAGACGG | Chr.2 | 3345143 | 3345123 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2302652_adh | TGCGGTAGTTGATTTTTAAAA  | Chr.2 | 3346605 | 3346625 | + | No |
| 2070802_adh | TGAAAATTGTGCGAAAACGTT  | Chr.2 | 3348086 | 3348066 | - | No |
| 2480314_adh | TGTAAAAAAGTGTAGGAAAAT  | Chr.2 | 3351357 | 3351337 | - | No |
| 2480314_adh | TGTAAAAAAGTGTAGGAAAAT  | Chr.2 | 3358308 | 3358328 | + | No |
| 2565247_adh | TTAGATGATGAATTCCAAAAG  | Chr.2 | 3370672 | 3370692 | + | No |
| 2618353_adh | TTCTGAGTGGAGTGCGAACAT  | Chr.2 | 3373100 | 3373080 | - | No |
| 2403826_adh | TGGCAGGATCTCAGACAAAAA  | Chr.2 | 3414643 | 3414663 | + | No |
| 2457045_adh | TGGGGTTTTGAAGACGATGTT  | Chr.2 | 3440085 | 3440105 | + | No |
| 2281191_adh | TGCAAATGACGCGCATTGCTC  | Chr.2 | 3445516 | 3445496 | - | No |
| 2042732_adh | TCTCTGAAAAAAGCACAGGTT  | Chr.2 | 3504517 | 3504537 | + | No |
| 2263654_adh | TGATATCTTTTATTCAAAAAA  | Chr.2 | 3523183 | 3523163 | - | No |
| 1795258_adh | TAATAGTAGAAGCCCGAAAAA  | Chr.2 | 3532054 | 3532034 | - | No |
| 2716416_adh | TTTGAGAATTTTGTAGATCTGA | Chr.2 | 3636449 | 3636429 | - | No |
| 2110728_adh | TGAAATGTAAGTGTAGTATGTA | Chr.2 | 3707151 | 3707131 | - | No |
| 2737464_adh | TTTTGAGTGGAAACGGTGAGT  | Chr.2 | 3713305 | 3713285 | - | No |
| 2710210_adh | TTTCTCTGTGGAGATGGCCTC  | Chr.2 | 3785292 | 3785312 | + | No |
| 2675354_adh | TTGTAGTGTACCCTTAAAAAC  | Chr.2 | 3795868 | 3795888 | + | No |
| 1891039_adh | TATATTTTATCTGGACCTATA  | Chr.2 | 3815578 | 3815558 | - | No |
| 1777610_adh | TAAGAGTGGAAAAACCTTGGT  | Chr.2 | 3831054 | 3831034 | - | No |
| 2707161_adh | TTTCGATGACGACTCAATCTA  | Chr.2 | 3857075 | 3857095 | + | No |
| 1820209_adh | TACCTCTCGTCGAATCGATTC  | Chr.2 | 3906840 | 3906820 | - | No |
| 2011814_adh | TCGGACTATAAGCATCATTGG  | Chr.2 | 3925661 | 3925641 | - | No |
| 2019813_adh | TCGGTTACTAGGCGGAAAAAG  | Chr.2 | 3959328 | 3959308 | - | No |
| 1853760_adh | TAGCACAACAACGACAACAAC  | Chr.2 | 3966392 | 3966412 | + | No |
| 2747142_adh | TTTTTGCTGTAAATTTTCGGAT | Chr.2 | 4044471 | 4044451 | - | No |
| 2711556_adh | TTTCTTCGTTTTTTGCTGTAA  | Chr.2 | 4044480 | 4044460 | - | No |
| 2692406_adh | TTTAATTGACGACACTTTCTT  | Chr.2 | 4048114 | 4048134 | + | No |
| 2608432_adh | TTCGGCAATTTTCGGGCAGAA  | Chr.2 | 4048156 | 4048176 | + | No |
| 2738647_adh | TTTTCGGGCAGAAATTGTGAA  | Chr.2 | 4048164 | 4048184 | + | No |
| 2702431_adh | TTTCACAGAGAATTCAGTGCG  | Chr.2 | 4049971 | 4049991 | + | No |
| 1908722_adh | TATGACTTAGAGAAGAGACAA  | Chr.2 | 4050479 | 4050459 | - | No |
| 1930982_adh | TATTTTCTGTTGACTCGTCTT  | Chr.2 | 4051882 | 4051902 | + | No |
| 1876095_adh | TAGTCACAAGACTGTGTGGCA  | Chr.2 | 4053175 | 4053155 | - | No |
| 1762599_adh | TAAATTGTAGGAGAAAGGTGG  | Chr.2 | 4053200 | 4053220 | + | No |
| 2050761_adh | TCTGGTCATACATGTCGGAGA  | Chr.2 | 4058309 | 4058289 | - | No |
| 2705232_adh | TTTCCATTTACGACTCTTTGA  | Chr.2 | 4075658 | 4075638 | - | No |
| 2728205_adh | TTTGTAGAAGCGGAATGTGAA  | Chr.2 | 4087187 | 4087207 | + | No |
| 2674718_adh | TTGTAGAAGCGGAATGTGAAG  | Chr.2 | 4087188 | 4087208 | + | No |
| 2043781_adh | TCTGAAAGTCGATGGAGGAAT  | Chr.2 | 4093742 | 4093762 | + | No |
| 2723229_adh | TTTGGACAAGCCTTTTGGCA   | Chr.2 | 4115284 | 4115304 | + | No |
| 2747239_adh | TTTTTGGAGCGAAGGACGATT  | Chr.2 | 4126181 | 4126161 | - | No |
| 2746443_adh | TTTTTCTTGCATATTTTCCC   | Chr.2 | 4127750 | 4127770 | + | No |
| 1839666_adh | TAGAAGGGTTGAACACAAGTG  | Chr.2 | 4130238 | 4130218 | - | No |
| 2737438_adh | TTTTCAGAAGATGTGCTCCCT  | Chr.2 | 4223298 | 4223318 | + | No |
| 2049099_adh | TCTGGAGGAACACACGGAATA  | Chr.2 | 4235369 | 4235389 | + | No |
| 2602668_adh | TTCAATTTTAACTGTATTTT   | Chr.2 | 4237820 | 4237800 | - | No |
| 2600842_adh | TTCTGTCAGTAACTTGATGGT  | Chr.2 | 4238055 | 4238035 | - | No |
| 2278820_adh | TGATTTGTGCGAAATTTTCAT  | Chr.2 | 4290029 | 4290009 | - | No |
| 2738327_adh | TTTTCGATTGTTTTCTTCAA   | Chr.2 | 4323101 | 4323121 | + | No |
| 2492873_adh | TGTATTCAAAAACCAGAAAAA  | Chr.2 | 4339916 | 4339936 | + | No |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 1897541_adh | TATCGGAACGCTAGAAACAAG | Chr.2 | 4358834 | 4358814 | - | No |
| 1774568_adh | TAAGAATGAGAGTTCGACAGT | Chr.2 | 4375506 | 4375526 | + | No |
| 2530034_adh | TGTTGGGATCGGCGGAAAATC | Chr.2 | 4413372 | 4413392 | + | No |
| 2257300_adh | TGAGTTTAAGACGTATTTCTG | Chr.2 | 4419184 | 4419164 | - | No |
| 2280720_adh | TGCAAAGGATTATACAGTTTT | Chr.2 | 4419290 | 4419310 | + | No |
| 2689956_adh | TTTAACGATCAAAAGATGGCC | Chr.2 | 4419994 | 4419974 | - | No |
| 2044175_adh | TCTGAAGAGCGTGTAGACTTT | Chr.2 | 4425460 | 4425480 | + | No |
| 2745081_adh | TTTTTAGATTTTTGAACAAAG | Chr.2 | 4441910 | 4441930 | + | No |
| 1982213_adh | TCCCTGAACTTTTAGAATGAC | Chr.2 | 4445098 | 4445078 | - | No |
| 2090057_adh | TGAAATATTTGAGAAATTTTT | Chr.2 | 4448402 | 4448382 | - | No |
| 2289530_adh | TGCAGTTTTTCGATTTCCCAA | Chr.2 | 4460913 | 4460933 | + | No |
| 2646462_adh | TTGATTGGCAAACCTGGTGC  | Chr.2 | 4471065 | 4471045 | - | No |
| 2673470_adh | TTGGTTTTTTGTAGATCAGGC | Chr.2 | 4471122 | 4471142 | + | No |
| 2479378_adh | TGGTTTTTTGTAGATCAGGCG | Chr.2 | 4471123 | 4471143 | + | No |
| 2749688_adh | TTTTTTGTAGATCAGGCGGGT | Chr.2 | 4471126 | 4471146 | + | No |
| 2747724_adh | TTTTTTGTAGATCAGGCGGGT | Chr.2 | 4471127 | 4471147 | + | No |
| 2107304_adh | TGAAATGGCAGAAATGAACGG | Chr.2 | 4566039 | 4566059 | + | No |
| 1754527_adh | TAAACATTCACCAATCGTCTT | Chr.2 | 4568547 | 4568567 | + | No |
| 2589123_adh | TTACACGAGTGCGAGACTTC  | Chr.2 | 4603018 | 4602998 | - | No |
| 1822100_adh | TACGACAGAATGACACTGAAA | Chr.2 | 4604690 | 4604710 | + | No |
| 2010611_adh | TCGGAACGCACTAGAATGGAC | Chr.2 | 4622468 | 4622448 | - | No |
| 1878970_adh | TAGTGGTAATGTAGAGGTA   | Chr.2 | 4626347 | 4626367 | + | No |
| 2496994_adh | TGTCCATAAATCTCGGTTTAA | Chr.2 | 4641291 | 4641271 | - | No |
| 2496994_adh | TGTCCATAAATCTCGGTTTAA | Chr.2 | 4641642 | 4641622 | - | No |
| 2496994_adh | TGTCCATAAATCTCGGTTTAA | Chr.2 | 4642227 | 4642207 | - | No |
| 2496994_adh | TGTCCATAAATCTCGGTTTAA | Chr.2 | 4642504 | 4642484 | - | No |
| 1759729_adh | TAAATAGGCAGATTGTATCGT | Chr.2 | 4672604 | 4672584 | - | No |
| 1974353_adh | TCATTGGTAGAAACAAGGCAT | Chr.2 | 4673120 | 4673100 | - | No |
| 2537487_adh | TTAAAAAAGCAGAACTATATA | Chr.2 | 4698324 | 4698304 | - | No |
| 2746213_adh | TTTTTCTCATCATTTGCGGAT | Chr.2 | 4701881 | 4701901 | + | No |
| 2670118_adh | TTGGTCAAAGTCTCGGGATGT | Chr.2 | 4702273 | 4702253 | - | No |
| 2679044_adh | TTGTCTTGTCTGAGAGTGGCT | Chr.2 | 4703030 | 4703010 | - | No |
| 2739428_adh | TTTTCTGAACCGCGGCACAGT | Chr.2 | 4706582 | 4706602 | + | No |
| 2710366_adh | TTTCTGAACCGCGGCACAGTT | Chr.2 | 4706583 | 4706603 | + | No |
| 2697280_adh | TTTAGTGATGAAATGAAGACA | Chr.2 | 4706635 | 4706655 | + | No |
| 2326447_adh | TGGAAGTATGATAGACAAATC | Chr.2 | 4739547 | 4739567 | + | No |
| 2582935_adh | TTATTGGAATTATGAAGAAGA | Chr.2 | 4744094 | 4744114 | + | No |
| 1833757_adh | TACTGTAGTTTAGACCTTTAG | Chr.2 | 4790761 | 4790741 | - | No |
| 1941669_adh | TCAATGAACTAGTAGAAGGC  | Chr.2 | 4823341 | 4823361 | + | No |
| 2125737_adh | TGAACTGTCAAAACGGGACGT | Chr.2 | 4825256 | 4825236 | - | No |
| 2031121_adh | TCTACAAAGAAGTCGCGATGG | Chr.2 | 4825385 | 4825405 | + | No |
| 2558046_adh | TTACGTGGACTATCTTTAAAA | Chr.2 | 4834901 | 4834881 | - | No |
| 1813276_adh | TACATATTTGTATAGACGATC | Chr.2 | 4842242 | 4842222 | - | No |
| 1813276_adh | TACATATTTGTATAGACGATC | Chr.2 | 4863657 | 4863677 | + | No |
| 2318528_adh | TGGAAATTGGGAATGGGCACA | Chr.2 | 4871486 | 4871466 | - | No |
| 1961773_adh | TCAGATTGCTTGACCCGAAAC | Chr.2 | 4874828 | 4874808 | - | No |
| 1936535_adh | TCAACGAAGTTCGTCCATACT | Chr.2 | 4882953 | 4882973 | + | No |
| 2538998_adh | TTAAAATCGCTGCGATACTGA | Chr.2 | 4888721 | 4888701 | - | No |
| 2723262_adh | TTTGGACAGGAGGACACTAAC | Chr.2 | 4892444 | 4892424 | - | No |
| 2048928_adh | TCTGGACCCAAAGGAAGCTGT | Chr.2 | 4892496 | 4892476 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2723262_adh | TTTGGACAGGAGGACACTAAC  | Chr.2 | 4899029 | 4899049 | + | No  |
| 2008556_adh | TCGCTCGAACTAGAAATTGGTG | Chr.2 | 4904070 | 4904050 | - | No  |
| 1963627_adh | TCAGGAGAACGCTGCTGTGAA  | Chr.2 | 4904671 | 4904691 | + | No  |
| 2704027_adh | TTTCATCGTCGGAATCGATAT  | Chr.2 | 4911860 | 4911880 | + | No  |
| 2698153_adh | TTTATAGGATTATTTTGTGCA  | Chr.2 | 4914303 | 4914283 | - | No  |
| 2615443_adh | TTCTATCGGAATTTTCATGCAT | Chr.2 | 4914324 | 4914304 | - | No  |
| 2014186_adh | TCGGATGAAAAAATGTGCATA  | Chr.2 | 4914563 | 4914583 | + | No  |
| 1999809_adh | TCGACCACTGAAGTACAATAG  | Chr.2 | 4914696 | 4914716 | + | No  |
| 2723262_adh | TTTGGACAGGAGGACACTAAC  | Chr.2 | 4916312 | 4916292 | - | No  |
| 2048928_adh | TCTGGACCCAAAGGAAGCTGT  | Chr.2 | 4916364 | 4916344 | - | No  |
| 2048928_adh | TCTGGACCCAAAGGAAGCTGT  | Chr.2 | 4933198 | 4933218 | + | No  |
| 2723262_adh | TTTGGACAGGAGGACACTAAC  | Chr.2 | 4933250 | 4933270 | + | No  |
| 2000854_adh | TCGACTTTGTGGGAAGGGCCA  | Chr.2 | 4935652 | 4935632 | - | No  |
| 2161811_adh | TGACGGCTTCTGAAGATGTTC  | Chr.2 | 4939071 | 4939051 | - | No  |
| 2104044_adh | TGAAATGGAAAAGAGAGAAAA  | Chr.2 | 4940512 | 4940492 | - | No  |
| 1784959_adh | TAAGGCATGTAGTATAGATAA  | Chr.2 | 4946823 | 4946803 | - | No  |
| 1909750_adh | TATGAGTCAGTAAGGCATGTA  | Chr.2 | 4946833 | 4946813 | - | No  |
| 2126995_adh | TGAAGAACCAACACAAAAGAA  | Chr.2 | 4954517 | 4954537 | + | No  |
| 2532675_adh | TGTTTCTCTGTTTTATTAAAT  | Chr.2 | 4955468 | 4955448 | - | No  |
| 2488035_adh | TGTAGATCTTCGAGAGATGCA  | Chr.2 | 4959960 | 4959980 | + | No  |
| 2712874_adh | TTTGAACAACCTTGAGACCGAA | Chr.2 | 4993451 | 4993431 | - | No  |
| 2535106_adh | TGTTTTTCTCTGTTTTGCATG  | Chr.2 | 4999398 | 4999418 | + | No  |
| 2549433_adh | TTAATAAAAAGTTTCTCGTCGT | Chr.2 | 4999430 | 4999450 | + | No  |
| 2289456_adh | TGCAGTTGGAATTTCTGAAAA  | Chr.2 | 5011813 | 5011793 | - | No  |
| 2403271_adh | TGGCACTTACTAGAGACACAA  | Chr.2 | 5040969 | 5040989 | + | No  |
| 1989354_adh | TCCTACTAATTGAAAACCTGGC | Chr.2 | 5055200 | 5055180 | - | No  |
| 2602102_adh | TTCGAAGACGCCGGCTAGTTT  | Chr.2 | 5055323 | 5055303 | - | No  |
| 2281833_adh | TGCAAGAACCCAGTTGAGGAT  | Chr.2 | 5055685 | 5055705 | + | No  |
| 2641304_adh | TTGAGGATGGAATTCTCAGAA  | Chr.2 | 5055698 | 5055718 | + | No  |
| 1833672_adh | TACTGTAGAGTAAGCGTAGTA  | Chr.2 | 5056733 | 5056753 | + | No  |
| 2039579_adh | TCTCGATCAACAACACATAGA  | Chr.2 | 5062793 | 5062813 | + | No  |
| 1943786_adh | TCACAAAAGGTAAGTAGGCAA  | Chr.2 | 5073293 | 5073273 | - | No  |
| 1829512_adh | TACTACAGAATTTTCGGTGTG  | Chr.2 | 5087497 | 5087517 | + | No  |
| 2035348_adh | TCTCAAATCGTAGAAGGTATG  | Chr.2 | 5093111 | 5093091 | - | Yes |
| 1975978_adh | TCCAACAAAGGATGAAGAACG  | Chr.2 | 5094624 | 5094644 | + | No  |
| 1754551_adh | TAAACCAAGGAAAAAGTGTGT  | Chr.2 | 5102877 | 5102857 | - | No  |
| 2593531_adh | TTCATACATATCTGATATTAA  | Chr.2 | 5148531 | 5148551 | + | No  |
| 2018664_adh | TCGGTCAGGAGGATACAAACA  | Chr.2 | 5156827 | 5156807 | - | No  |
| 2018664_adh | TCGGTCAGGAGGATACAAACA  | Chr.2 | 5158768 | 5158748 | - | No  |
| 2515961_adh | TGTGGCCGACGGAAGTGAACGG | Chr.2 | 5184449 | 5184469 | + | No  |
| 2636606_adh | TTGACTCATTAGATTGTGAAT  | Chr.2 | 5278413 | 5278393 | - | No  |
| 2412176_adh | TGGCGATTTTGGAGATGGACA  | Chr.2 | 5284066 | 5284046 | - | No  |
| 1867080_adh | TAGGCATGTAGGTAGGCATTT  | Chr.2 | 5308636 | 5308616 | - | No  |
| 1921983_adh | TATTATAGAAAAATACGATCG  | Chr.2 | 5319118 | 5319138 | + | No  |
| 2600777_adh | TTCTGAGTAGAATTGGCTAT   | Chr.2 | 5347186 | 5347166 | - | No  |
| 2600777_adh | TTCTGAGTAGAATTGGCTAT   | Chr.2 | 5349913 | 5349933 | + | No  |
| 2448277_adh | TGGGATTGAACTAGTGGACGT  | Chr.2 | 5353796 | 5353816 | + | No  |
| 1979999_adh | TCCATTGATATCATTCGGGA   | Chr.2 | 5358296 | 5358276 | - | No  |
| 2742518_adh | TTTTGCTCTGAAATCTGCAGA  | Chr.2 | 5358434 | 5358454 | + | No  |
| 2043806_adh | TCTGAAATCTGCAGAAAAACG  | Chr.2 | 5358440 | 5358460 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2237812_adh | TGAGGAGTTCAAGGCTATCAA  | Chr.2 | 5378994 | 5379014 | + | No  |
| 2741511_adh | TTTTGATACTGAAATTCTGAA  | Chr.2 | 5379538 | 5379558 | + | No  |
| 2552992_adh | TTACAAAAATGAATGCGTGCG  | Chr.2 | 5414197 | 5414217 | + | No  |
| 2598437_adh | TTCCCTGCGCCTATTTCTTCT  | Chr.2 | 5414539 | 5414559 | + | No  |
| 2004110_adh | TCGATGCGTAGATGGCGGGAC  | Chr.2 | 5418617 | 5418597 | - | No  |
| 1753070_adh | TAAAATTATGTGAAGCCGGCG  | Chr.2 | 5429838 | 5429818 | - | No  |
| 1889006_adh | TATAGTCGCTATAAAAAACAAT | Chr.2 | 5433461 | 5433481 | + | No  |
| 2584982_adh | TTCAAAAGAAATCGATCAACA  | Chr.2 | 5437855 | 5437875 | + | No  |
| 2732081_adh | TTTGTTGGAAGTTAAACGCAT  | Chr.2 | 5453544 | 5453564 | + | No  |
| 2727028_adh | TTTGGTTTGTAGAAGAGAGGT  | Chr.2 | 5454369 | 5454349 | - | No  |
| 2521414_adh | TGTGTTTTCAGAAAGACAATTT | Chr.2 | 5455974 | 5455954 | - | No  |
| 2029237_adh | TCTAAAAATTGCTTTGAACAA  | Chr.2 | 5456142 | 5456162 | + | No  |
| 2387387_adh | TGGATAAGAAAAGGGGATTGC  | Chr.2 | 5458787 | 5458767 | - | No  |
| 2728977_adh | TTTGTGCGATTTTTCAATGGTT | Chr.2 | 5465963 | 5465983 | + | No  |
| 2137811_adh | TGAATACTTCCACTGACGTCG  | Chr.2 | 5493476 | 5493456 | - | No  |
| 2672690_adh | TTGGTTGATGAGTATGAGGCG  | Chr.2 | 5544126 | 5544106 | - | No  |
| 2744062_adh | TTTTGTAAAGAACAAGTCGG   | Chr.2 | 5547628 | 5547608 | - | No  |
| 1922046_adh | TATTATATAGAGGTCGGAAAG  | Chr.2 | 5599855 | 5599875 | + | No  |
| 2741422_adh | TTTTGAGCAGACGCAGCCATT  | Chr.2 | 5661242 | 5661222 | - | No  |
| 2148333_adh | TGAATTTGAATAGACTGGCAT  | Chr.2 | 5662020 | 5662040 | + | No  |
| 2707855_adh | TTTCGGATTTCGTCGGTGTTCC | Chr.2 | 5666121 | 5666101 | - | No  |
| 2714415_adh | TTTGAATGTGAACGCAGCGTT  | Chr.2 | 5714942 | 5714922 | - | No  |
| 2740936_adh | TTTTGAATGTGAACGCAGCGT  | Chr.2 | 5714943 | 5714923 | - | No  |
| 1806586_adh | TACAAACATTACACAAGAACAA | Chr.2 | 5716154 | 5716134 | - | No  |
| 1957721_adh | TCAGAAGCTGTTGACGTTACAC | Chr.2 | 5756756 | 5756736 | - | No  |
| 1956660_adh | TCAGAAAAATTTTCGGAAGTCG | Chr.2 | 5757734 | 5757714 | - | No  |
| 2590191_adh | TTCAGAAAAATTTTCGGAAGTC | Chr.2 | 5758010 | 5758030 | + | No  |
| 1956660_adh | TCAGAAAAATTTTCGGAAGTCG | Chr.2 | 5758011 | 5758031 | + | No  |
| 1992769_adh | TCCTTCCGGCCGTCGCAATCT  | Chr.2 | 5758492 | 5758512 | + | No  |
| 1927558_adh | TATTGTAGAAGTGTTGTTATG  | Chr.2 | 5760682 | 5760702 | + | No  |
| 2136265_adh | TGAATAAAAGTAGAAAAAGAC  | Chr.2 | 5764501 | 5764481 | - | No  |
| 2742759_adh | TTTTGGAGATGGACGGTGTTT  | Chr.2 | 5778617 | 5778597 | - | No  |
| 1991291_adh | TCCTGATTGTGCTGGTCTTCT  | Chr.2 | 5816701 | 5816721 | + | No  |
| 1891502_adh | TATCAAGAAACAGGCGAGCAT  | Chr.2 | 5819803 | 5819783 | - | No  |
| 1930827_adh | TATTTTATTGTAAATTTTGA   | Chr.2 | 5835633 | 5835613 | - | No  |
| 2007688_adh | TCGCGACGGAGACAGAAATGG  | Chr.2 | 5836381 | 5836361 | - | No  |
| 2140207_adh | TGAATCAAAAAAGATGATTCA  | Chr.2 | 5844979 | 5844999 | + | No  |
| 2117950_adh | TGAAATTTAAAAAATCATCAA  | Chr.2 | 5862331 | 5862311 | - | No  |
| 2031088_adh | TCTAATTTGACGGCTTTTATC  | Chr.2 | 5864978 | 5864998 | + | Yes |
| 2031088_adh | TCTAATTTGACGGCTTTTATC  | Chr.2 | 5866403 | 5866423 | + | Yes |
| 2580514_adh | TTATTAAGAAGAGCTGGCTAA  | Chr.2 | 5893253 | 5893273 | + | No  |
| 2694004_adh | TTTACGGTGAACGAATGTGGT  | Chr.2 | 5906380 | 5906360 | - | No  |
| 2254452_adh | TGAGTGTGCGATTTACGGTGAA | Chr.2 | 5906390 | 5906370 | - | No  |
| 2608087_adh | TTCGGAGTGTCGTTAGATAAC  | Chr.2 | 5918381 | 5918401 | + | No  |
| 2710370_adh | TTTCTGAACGTTTGTGCCAAA  | Chr.2 | 5918442 | 5918462 | + | No  |
| 2032365_adh | TCTAGAATCCTGAAAGAGAAG  | Chr.2 | 5921690 | 5921670 | - | No  |
| 2703442_adh | TTTCAGGTAGAATGCCACCGA  | Chr.2 | 5921927 | 5921947 | + | No  |
| 2639235_adh | TTGACTTTAGACACTATTTTC  | Chr.2 | 5931362 | 5931382 | + | No  |
| 2318393_adh | TGGAAATGTGGGAGAAAATTC  | Chr.2 | 6000121 | 6000101 | - | No  |
| 2402775_adh | TGGCAATGTGGAATACTGGGT  | Chr.2 | 6008428 | 6008448 | + | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2649221_adh | TTGCACTTTTTACCATGCTGC  | Chr.2 | 6028465 | 6028445 | - | No |
| 1912876_adh | TATGCCTTTCAAGAAGATGTC  | Chr.2 | 6045098 | 6045078 | - | No |
| 2707537_adh | TTTCGGAATTAGCATAATGTC  | Chr.2 | 6045918 | 6045898 | - | No |
| 2738229_adh | TTTTCGACGTCCGATGATTGT  | Chr.2 | 6050443 | 6050463 | + | No |
| 2686686_adh | TTGTTTAAGAAAATTAAAAAA  | Chr.2 | 6060437 | 6060417 | - | No |
| 2665767_adh | TTGGCGCGTAATTCAAACTA   | Chr.2 | 6061685 | 6061705 | + | No |
| 2744633_adh | TTTTTAAATCTAACACACA    | Chr.2 | 6077497 | 6077477 | - | No |
| 1983417_adh | TCCCTGTAGAAGGAGGCTTCT  | Chr.2 | 6091213 | 6091233 | + | No |
| 2742370_adh | TTTTGCATTGATTGAACGACT  | Chr.2 | 6097659 | 6097679 | + | No |
| 2616705_adh | TTCTCGGTTTTGGATTTCTTC  | Chr.2 | 6100163 | 6100143 | - | No |
| 2471480_adh | TGGTGATTGCGTACGTTGACG  | Chr.2 | 6113342 | 6113322 | - | No |
| 2745471_adh | TTTTTATTCGATCGAACGCCG  | Chr.2 | 6122830 | 6122850 | + | No |
| 2747883_adh | TTTTTGTTTCGCGATGGCAAAG | Chr.2 | 6140344 | 6140364 | + | No |
| 2472630_adh | TGGTGGTTTCATTTGGACGG   | Chr.2 | 6141468 | 6141488 | + | No |
| 2578246_adh | TTATCTTTTCGGTCATATAAC  | Chr.2 | 6197113 | 6197133 | + | No |
| 1980354_adh | TCCCAGAAAGATTGCCTGCCA  | Chr.2 | 6198908 | 6198928 | + | No |
| 2396429_adh | TGGATTTTGCAAACGGACGTT  | Chr.2 | 6245479 | 6245499 | + | No |
| 1999613_adh | TCGACACCATTGTAGAAGAAG  | Chr.2 | 6250443 | 6250463 | + | No |
| 2745376_adh | TTTTTATGCTCTGAAAATGAT  | Chr.2 | 6251021 | 6251041 | + | No |
| 2693259_adh | TTTACACGGAAGGGGACGCG   | Chr.2 | 6269677 | 6269657 | - | No |
| 2486520_adh | TGTACATGTAGGCGTTCGAAA  | Chr.2 | 6274438 | 6274458 | + | No |
| 2656368_adh | TTGGAAAGAGACGAAGAAAAG  | Chr.2 | 6289280 | 6289260 | - | No |
| 2474676_adh | TGGTTCACACTGGCTGAAGAA  | Chr.2 | 6290645 | 6290625 | - | No |
| 1931214_adh | TATTTTGTCTGTGATCGTCA   | Chr.2 | 6292553 | 6292533 | - | No |
| 2567409_adh | TTAGCTTAGACGTGTAATTTT  | Chr.2 | 6292620 | 6292600 | - | No |
| 2715602_adh | TTTGACTGAAGATGAGAAACC  | Chr.2 | 6299264 | 6299244 | - | No |
| 2708810_adh | TTTCGTATAGATTTGGAGGAC  | Chr.2 | 6303234 | 6303214 | - | No |
| 2737997_adh | TTTTCCGGAAGTGCTGCCTTT  | Chr.2 | 6321108 | 6321088 | - | No |
| 2647037_adh | TTGATTTTCCGGAAGTGCTGC  | Chr.2 | 6321112 | 6321092 | - | No |
| 2072432_adh | TGAAACATTTCTTAATTTCAA  | Chr.2 | 6348273 | 6348293 | + | No |
| 2315523_adh | TGGAAAGAACAGAAACCGGAT  | Chr.2 | 6352238 | 6352258 | + | No |
| 1894512_adh | TATCATGAAACAGACGAGCAT  | Chr.2 | 6356169 | 6356189 | + | No |
| 2269849_adh | TGATCGCTATGCAGTTTATAT  | Chr.2 | 6365720 | 6365740 | + | No |
| 1932238_adh | TCAAAAGATAAATCAGGAACG  | Chr.2 | 6376441 | 6376461 | + | No |
| 1989406_adh | TCCTACTTTTCTTCTCGGACG  | Chr.2 | 6387949 | 6387929 | - | No |
| 2731036_adh | TTTGTTGAATTGTTGGAAAAT  | Chr.2 | 6391696 | 6391716 | + | No |
| 2261169_adh | TGATAGTTGGCGTTTTTCAGTT | Chr.2 | 6395314 | 6395334 | + | No |
| 2650720_adh | TTGCATTAGTTCAAGCTGTTT  | Chr.2 | 6476869 | 6476889 | + | No |
| 2633791_adh | TTGAATTGAAGAACGGTACTC  | Chr.2 | 6489655 | 6489635 | - | No |
| 2740228_adh | TTTTCTTGACTTAGGACTTTC  | Chr.2 | 6489992 | 6490012 | + | No |
| 2451387_adh | TGGGCTTAATGAACGGCGTTT  | Chr.2 | 6490061 | 6490081 | + | No |
| 2040114_adh | TCTCGGCAACGTCGGACATTT  | Chr.2 | 6492375 | 6492355 | - | No |
| 1819948_adh | TACCTAATTTTAATGCAATCT  | Chr.2 | 6535977 | 6535957 | - | No |
| 1777753_adh | TAAGATAAATAGAAACAACAT  | Chr.2 | 6536001 | 6535981 | - | No |
| 2701173_adh | TTTCAAATATTTCTTGTCGA   | Chr.2 | 6565354 | 6565334 | - | No |
| 2734979_adh | TTTTAGTTATGAGATTGGCTC  | Chr.2 | 6587336 | 6587316 | - | No |
| 2217499_adh | TGAGATGAACGGTACGGATAG  | Chr.2 | 6587879 | 6587859 | - | No |
| 2129084_adh | TGAAGAGACGCAGACATCAAA  | Chr.2 | 6601113 | 6601093 | - | No |
| 2394032_adh | TGGATTGATGTAGATGTGCAC  | Chr.2 | 6606241 | 6606221 | - | No |
| 2046824_adh | TCTGATCATGATAGAACTTC   | Chr.2 | 6684079 | 6684099 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2664125_adh | TTGGATTCAACGTACACAGCA  | Chr.2 | 6686479 | 6686499 | + | No |
| 2515981_adh | TGTGGCCTGAGAAGACAAAAA  | Chr.2 | 6709313 | 6709293 | - | No |
| 2022081_adh | TCGTAGAACGGCAAAAAATAA  | Chr.2 | 6741511 | 6741491 | - | No |
| 2689647_adh | TTTAAATTTTGAACAGAGGCT  | Chr.2 | 6746541 | 6746521 | - | No |
| 1930982_adh | TATTTTCTGTTGACTCGTCTT  | Chr.2 | 6795648 | 6795668 | + | No |
| 1876095_adh | TAGTCACAAGACTGTGTGGCA  | Chr.2 | 6796941 | 6796921 | - | No |
| 1762599_adh | TAAATTGTAGGAGAAAGGTGG  | Chr.2 | 6796966 | 6796986 | + | No |
| 2724089_adh | TTTGGATGTGGGAAAATGGTT  | Chr.2 | 6800452 | 6800472 | + | No |
| 2419168_adh | TGGGAAGCAACGTGGAATTTG  | Chr.2 | 6845929 | 6845949 | + | No |
| 2741650_adh | TTTTGATCGCAAAGCTTCGGA  | Chr.2 | 6852694 | 6852674 | - | No |
| 1852777_adh | TAGCAAACACAACCTAGTCGGC | Chr.2 | 6853045 | 6853065 | + | No |
| 1912450_adh | TATGCAGAACATCTATCGAAA  | Chr.2 | 6857218 | 6857198 | - | No |
| 2132983_adh | TGAAGGAGTACGGTAGTTTTTC | Chr.2 | 6860167 | 6860147 | - | No |
| 2049971_adh | TCTGGATTTGGAGGACAAGTT  | Chr.2 | 6888958 | 6888938 | - | No |
| 2278459_adh | TGATTTGACCGGACAAGTTGT  | Chr.2 | 6889007 | 6888987 | - | No |
| 2020796_adh | TCGTAAAAAACGTGTTCTCAG  | Chr.2 | 6906008 | 6905988 | - | No |
| 2387471_adh | TGGATAAGGAAGAAGACACTT  | Chr.2 | 6914754 | 6914734 | - | No |
| 2500674_adh | TGTGAAACGAGAAGACGCGGA  | Chr.2 | 6926450 | 6926430 | - | No |
| 2598891_adh | TTCCGATGGCAACTGAACTA   | Chr.2 | 6928229 | 6928209 | - | No |
| 1902160_adh | TATGAATCAAGGACATTGGCA  | Chr.2 | 6940214 | 6940194 | - | No |
| 2596771_adh | TTCCAGCAGAGTTGCAAGCTT  | Chr.2 | 6967665 | 6967645 | - | No |
| 2515841_adh | TGTGGCAGAGAACGAGACGAC  | Chr.2 | 6968591 | 6968611 | + | No |
| 2726293_adh | TTTGGTGCAGTAGCCGTGATA  | Chr.2 | 6975787 | 6975767 | - | No |
| 2651136_adh | TTGCCATGTTTTAAATTAAGA  | Chr.2 | 6983657 | 6983677 | + | No |
| 2689573_adh | TTTAAATTAAGAAATCGACAA  | Chr.2 | 6983666 | 6983686 | + | No |
| 2675089_adh | TTGTAGGAAATCGTCGTTGAT  | Chr.2 | 7011065 | 7011085 | + | No |
| 2616035_adh | TTCTCACATGTTATTATAGGC  | Chr.2 | 7022636 | 7022616 | - | No |
| 1804809_adh | TAATTTATACATATACTCGGC  | Chr.2 | 7023257 | 7023277 | + | No |
| 2623706_adh | TTCTTTGTATATTCTTTTGAG  | Chr.2 | 7024920 | 7024900 | - | No |
| 2693657_adh | TTTACCGTAGACGAGAGGCGT  | Chr.2 | 7025053 | 7025073 | + | No |
| 2712503_adh | TTTGAAAATGAAGGCATGTAT  | Chr.2 | 7036620 | 7036600 | - | No |
| 2271917_adh | TGATGCGCTGGAGAGACGCTA  | Chr.2 | 7043826 | 7043846 | + | No |
| 1791026_adh | TAATACATAAAAAAGAACATCG | Chr.2 | 7045116 | 7045136 | + | No |
| 2271917_adh | TGATGCGCTGGAGAGACGCTA  | Chr.2 | 7046461 | 7046441 | - | No |
| 2260562_adh | TGATAGATCTCGCAGAAAAAT  | Chr.2 | 7061803 | 7061783 | - | No |
| 1953423_adh | TCACGGTTTCTCTTGATTCAA  | Chr.2 | 7061840 | 7061820 | - | No |
| 2667202_adh | TTGGGAGGAATTGAGCATTTT  | Chr.2 | 7072629 | 7072609 | - | No |
| 2463813_adh | TGGTAGTTTTTGAAGGCTAT   | Chr.2 | 7072717 | 7072737 | + | No |
| 1804160_adh | TAATTGGTGGATGCGTACTTC  | Chr.2 | 7075772 | 7075792 | + | No |
| 2737022_adh | TTTTATTTTCAATGGTTTTAA  | Chr.2 | 7081937 | 7081957 | + | No |
| 2707028_adh | TTTCGAGCAATATAGACAACA  | Chr.2 | 7089509 | 7089529 | + | No |
| 2411140_adh | TGGCCTACGAATTTTTTGAGC  | Chr.2 | 7105198 | 7105218 | + | No |
| 1827979_adh | TACGTATGAATAGTTGACATA  | Chr.2 | 7107056 | 7107076 | + | No |
| 2713470_adh | TTTGAAGTGCATTCTGGAGAC  | Chr.2 | 7123095 | 7123075 | - | No |
| 2270910_adh | TGATGAAGAAGATTATGTAGA  | Chr.2 | 7131923 | 7131903 | - | No |
| 2740432_adh | TTTTGAAAAAGTAGAAAGCAA  | Chr.2 | 7132141 | 7132161 | + | No |
| 2321539_adh | TGGAACCTGTTGACGAAGACT  | Chr.2 | 7146992 | 7146972 | - | No |
| 1984389_adh | TCCGAGACAATGTAGTTGAGA  | Chr.2 | 7147338 | 7147318 | - | No |
| 1924038_adh | TATTCGAGACAATGTAGTTG   | Chr.2 | 7147341 | 7147321 | - | No |
| 1761995_adh | TAAATGTTGTAGGAAATTTAA  | Chr.2 | 7147575 | 7147555 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2585584_adh | TTCAAATGTGTCGTAAGTTCA  | Chr.2 | 7147664 | 7147644 | - | No  |
| 1920665_adh | TATTACAGGACTACAAGGTAA  | Chr.2 | 7155631 | 7155651 | + | No  |
| 2160559_adh | TGACGAACAGAAAGAACTCT   | Chr.2 | 7194466 | 7194446 | - | No  |
| 1831584_adh | TACTCTGATCGTCATGCTTTT  | Chr.2 | 7200340 | 7200360 | + | No  |
| 2610946_adh | TTCGTAAAAACCTGTTTGAAG  | Chr.2 | 7210681 | 7210661 | - | Yes |
| 2649010_adh | TTGCACCTGTGGTTTGACGGC  | Chr.2 | 7232125 | 7232145 | + | No  |
| 2585230_adh | TTCAAACCTACTCTGGCAAAA  | Chr.2 | 7235495 | 7235515 | + | No  |
| 2684457_adh | TTGTTGAACAAAAATATCGTC  | Chr.2 | 7235910 | 7235930 | + | No  |
| 2607957_adh | TTCGGAGGGTCGTTGGTGGAT  | Chr.2 | 7253231 | 7253251 | + | No  |
| 2488086_adh | TGTAGATTGTAGAAACGTGCT  | Chr.2 | 7263978 | 7263998 | + | No  |
| 2170324_adh | TGACTGGATAAATCGGATGAC  | Chr.2 | 7283186 | 7283206 | + | No  |
| 2160242_adh | TGACCTAGTGAAAGACCCTGTG | Chr.2 | 7298712 | 7298732 | + | No  |
| 2127746_adh | TGAAGACCCTGTGTAGATGTA  | Chr.2 | 7298720 | 7298740 | + | No  |
| 2036326_adh | TCTCAACTCTTCAGAACTGGC  | Chr.2 | 7298864 | 7298884 | + | No  |
| 2290540_adh | TGCATGAGTTCGGCATTTCAA  | Chr.2 | 7301852 | 7301872 | + | No  |
| 2618174_adh | TTCTGACGGAAAGTGAAGTAG  | Chr.2 | 7307289 | 7307309 | + | No  |
| 2060806_adh | TCTTTCCAACAGTAAGCTCAT  | Chr.2 | 7315877 | 7315857 | - | No  |
| 1747352_adh | TAAAAATTTGGCAACAACCTCA | Chr.2 | 7317743 | 7317723 | - | No  |
| 1987690_adh | TCCGTAGCAGTTATGAATTAC  | Chr.2 | 7318018 | 7317998 | - | No  |
| 2659398_adh | TTGGAGACGATTGGTTGAACA  | Chr.2 | 7350268 | 7350288 | + | No  |
| 2593434_adh | TTCAAAAAAGACTATGGCGT   | Chr.2 | 7352718 | 7352738 | + | No  |
| 2579875_adh | TTATGTAGAATGTGAAGGAGA  | Chr.2 | 7353323 | 7353343 | + | No  |
| 2049976_adh | TCTGGATTTTAGGCAGTATCA  | Chr.2 | 7360265 | 7360285 | + | No  |
| 2654543_adh | TTGCTGAAGGAGAACTTGCCA  | Chr.2 | 7363381 | 7363361 | - | No  |
| 2414394_adh | TGGCTCAAGCTAAGACTGTTT  | Chr.2 | 7367493 | 7367473 | - | No  |
| 2516188_adh | TGTGGCTCAAGCTAAGACTGT  | Chr.2 | 7367495 | 7367475 | - | No  |
| 2721686_adh | TTTGCCGATGTTTCTGAGATG  | Chr.2 | 7367529 | 7367549 | + | No  |
| 2651255_adh | TTGCCGATGTTTCTGAGATGT  | Chr.2 | 7367530 | 7367550 | + | No  |
| 2532685_adh | TGTTTCTGAGATGTCTTCACA  | Chr.2 | 7367537 | 7367557 | + | No  |
| 2037256_adh | TCTCAGAAACATCGGCAAATG  | Chr.2 | 7367547 | 7367527 | - | No  |
| 2679291_adh | TTGTGAAGACATCTCAGAAAC  | Chr.2 | 7367558 | 7367538 | - | No  |
| 2414394_adh | TGGCTCAAGCTAAGACTGTTT  | Chr.2 | 7371715 | 7371735 | + | No  |
| 2530481_adh | TGTTGTATCCACTGTTATGGC  | Chr.2 | 7373100 | 7373080 | - | No  |
| 2126804_adh | TGAACCTTTTGAAGACTTTGT  | Chr.2 | 7394210 | 7394190 | - | No  |
| 1831845_adh | TACTGAACGGATTTTGAATGGA | Chr.2 | 7470991 | 7470971 | - | No  |
| 2086561_adh | TGAAATACGATGCTGATGATA  | Chr.2 | 7471156 | 7471176 | + | No  |
| 2640010_adh | TTGAGAGGGTTTTACACCAA   | Chr.2 | 7471371 | 7471391 | + | No  |
| 1930166_adh | TATTTGAAGTTAAACATCATG  | Chr.2 | 7489614 | 7489594 | - | No  |
| 1770926_adh | TAAGTGACAGATGACAATTAA  | Chr.2 | 7537690 | 7537670 | - | No  |
| 2546291_adh | TTAACTGACAGATGACAATTA  | Chr.2 | 7537691 | 7537671 | - | No  |
| 2693663_adh | TTTACCGTAGTTTGATTCGCA  | Chr.2 | 7537781 | 7537801 | + | No  |
| 2272075_adh | TGATGGAAAGGATGGAAGAAA  | Chr.2 | 7544616 | 7544636 | + | No  |
| 2031036_adh | TCTAATTTAAATAAACTTTTA  | Chr.2 | 7583764 | 7583784 | + | No  |
| 2747239_adh | TTTTTGAGCGAAGGACGATT   | Chr.2 | 7584741 | 7584761 | + | No  |
| 2239290_adh | TGAGGGAAGAAGTAGAAGAAG  | Chr.2 | 7593186 | 7593206 | + | No  |
| 2714518_adh | TTTGAATTGTTGAGCGGGATT  | Chr.2 | 7599074 | 7599094 | + | No  |
| 1930228_adh | TATTTGATTAGGTTTCGTGGA  | Chr.2 | 7617061 | 7617041 | - | No  |
| 2729229_adh | TTTGTCTTTCTATCGGGTTTT  | Chr.2 | 7627497 | 7627477 | - | No  |
| 2731840_adh | TTTGTTGAGAACCTGCAGAAA  | Chr.2 | 7664088 | 7664108 | + | No  |
| 2624609_adh | TTGAAAATTGTGGGAATTTAA  | Chr.2 | 7667778 | 7667798 | + | No  |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 1981028_adh | TCCCCGATGATTGGCGTTGAC   | Chr.2 | 7668078 | 7668098 | + | No |
| 2252579_adh | TGAGTCAACTACAGAAATTGC   | Chr.2 | 7682837 | 7682857 | + | No |
| 2732936_adh | TTTTAAAAACAGCGACGACTT   | Chr.2 | 7699084 | 7699064 | - | No |
| 1809170_adh | TACAAGTCACGAAAATGCTCT   | Chr.2 | 7708554 | 7708534 | - | No |
| 2695456_adh | TTTAGATCAAACGGTACAAAT   | Chr.2 | 7737163 | 7737183 | + | No |
| 2043945_adh | TCTGAACGAAGCAGTGTAGAA   | Chr.2 | 7737797 | 7737817 | + | No |
| 2396144_adh | TGGATTTGGAAGAAATTGAGA   | Chr.2 | 7744580 | 7744600 | + | No |
| 2559343_adh | TTACTGGATTTGATGAAGAGT   | Chr.2 | 7752947 | 7752967 | + | No |
| 1983677_adh | TCCCTTGTTCTACGAGATCGT   | Chr.2 | 7772509 | 7772529 | + | No |
| 2614431_adh | TTCTACGAGATCGTTGGAAGG   | Chr.2 | 7772516 | 7772536 | + | No |
| 2130331_adh | TGAAGATTTTGCAGAACAGGA   | Chr.2 | 7792114 | 7792134 | + | No |
| 2531588_adh | TGTTTAACGGACATACCTATT   | Chr.2 | 7813285 | 7813265 | - | No |
| 1790776_adh | TAATAATGCATGCTTTGAACT   | Chr.2 | 7815846 | 7815826 | - | No |
| 2616575_adh | TTCTCGCGGCAACAACAAAGA   | Chr.2 | 7816295 | 7816315 | + | No |
| 1929992_adh | TATTTCTCCAGGCGGTACATA   | Chr.2 | 7839740 | 7839760 | + | No |
| 2624241_adh | TTGAAAAAAGTTTCGCCCCGA   | Chr.2 | 7852311 | 7852291 | - | No |
| 2744472_adh | TTTTGTTTCTATAGACTACAT   | Chr.2 | 7857798 | 7857818 | + | No |
| 2615789_adh | TTCTATTGTAAGAATCAGGCC   | Chr.2 | 7863532 | 7863552 | + | No |
| 1824669_adh | TACGCACCGTAGCAGCATAAA   | Chr.2 | 7864315 | 7864295 | - | No |
| 2747776_adh | TTTTTGTCGTTGTGATTCTTT   | Chr.2 | 7864398 | 7864418 | + | No |
| 1839935_adh | TAGAAGTTGAACAGGGAAGGA   | Chr.2 | 7879501 | 7879521 | + | No |
| 1824220_adh | TACGATGGAGTGGA AAAATGA  | Chr.2 | 7879700 | 7879720 | + | No |
| 2218955_adh | TGAGATGCAAAAAGAACGGGAA  | Chr.2 | 7880300 | 7880320 | + | No |
| 2669623_adh | TTGGTACTAATGGA AAAATAAA | Chr.2 | 7884349 | 7884369 | + | No |
| 2124930_adh | TGAAGTGAAGAAAATTGCTAG   | Chr.2 | 7892610 | 7892590 | - | No |
| 2547382_adh | TTAAGATTTTTGGCCGCGCAA   | Chr.2 | 7892641 | 7892621 | - | No |
| 2127522_adh | TGAAGAATTTTGCCGCGCGAT   | Chr.2 | 7892726 | 7892706 | - | No |
| 2627260_adh | TTGAAGAATTTTGCCGCGCGGA  | Chr.2 | 7892727 | 7892707 | - | No |
| 2414680_adh | TGGCTGAAACATGAGTAGACC   | Chr.2 | 7895091 | 7895111 | + | No |
| 2747344_adh | TTTTTGGGACGAAAGAAAAGA   | Chr.2 | 7896470 | 7896490 | + | No |
| 2541156_adh | TTAAAGCACTGTAAAAACCAA   | Chr.2 | 7920910 | 7920930 | + | No |
| 2709868_adh | TTTCTCACAGCTTCCACGGAT   | Chr.2 | 7945237 | 7945217 | - | No |
| 2586005_adh | TTCAACGGAACTTAATGAAGA   | Chr.2 | 7988156 | 7988176 | + | No |
| 2369735_adh | TGGAATTGAAAGAAGAGTAAA   | Chr.2 | 7989157 | 7989137 | - | No |
| 2740978_adh | TTTTGACAAAGTACATGACGA   | Chr.2 | 8011875 | 8011895 | + | No |
| 2714586_adh | TTTGACAAAGTACATGACGAA   | Chr.2 | 8011876 | 8011896 | + | No |
| 2418512_adh | TGGGAACTGTATCAAACAACT   | Chr.2 | 8013441 | 8013461 | + | No |
| 2639467_adh | TTGAGAACTGAATTCGACGAA   | Chr.2 | 8015399 | 8015419 | + | No |
| 1822539_adh | TACGACTGAATGGAATGAAAG   | Chr.2 | 8019968 | 8019948 | - | No |
| 2717585_adh | TTTGATATACCTGTAGATGGG   | Chr.2 | 8020393 | 8020373 | - | No |
| 2381552_adh | TGGAGCTGAAGAGGGAAATCT   | Chr.2 | 8032122 | 8032102 | - | No |
| 2676860_adh | TTGTATGTATGTTGGAACAAT   | Chr.2 | 8041694 | 8041674 | - | No |
| 2728574_adh | TTTGTATGTATGTTGGAACAA   | Chr.2 | 8041695 | 8041675 | - | No |
| 1887674_adh | TATACTGTAGATGTCGTTGGA   | Chr.2 | 8051880 | 8051860 | - | No |
| 2674192_adh | TTGTACACAATCGATTGTTGA   | Chr.2 | 8062005 | 8062025 | + | No |
| 1935511_adh | TCAAATTAAGTGGTGTCTGAA   | Chr.2 | 8062238 | 8062258 | + | No |
| 2010704_adh | TCGGAAGAACGAGTGTTAAAT   | Chr.2 | 8062301 | 8062281 | - | No |
| 1836702_adh | TAGAAAACCTGAATTCGGAAGA  | Chr.2 | 8062314 | 8062294 | - | No |
| 2534245_adh | TGTTTTCATACAATCCTCTGC   | Chr.2 | 8062531 | 8062551 | + | No |
| 1956448_adh | TCACTTTGCGGTCGACGTCGA   | Chr.2 | 8070590 | 8070570 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2173892_adh | TGACTTGATGAAGGAAGTGAT  | Chr.2 | 8085641 | 8085661 | + | No |
| 2162070_adh | TGACGTAGAAAAATGGTTATA  | Chr.2 | 8104240 | 8104220 | - | No |
| 2699517_adh | TTTATTACGTTGGCTTATTTTC | Chr.2 | 8124987 | 8124967 | - | No |
| 2608252_adh | TTCGGATGAAAAAGTACGGCAA | Chr.2 | 8129627 | 8129607 | - | No |
| 2303950_adh | TGCGTCGGAATATTCAGAAAA  | Chr.2 | 8137099 | 8137119 | + | No |
| 2728770_adh | TTTGTTCATCATGTAGAGGCAG | Chr.2 | 8138140 | 8138160 | + | No |
| 2601836_adh | TTCGAAATTTTCGGACAAACAA | Chr.2 | 8143355 | 8143335 | - | No |
| 2706572_adh | TTTCGAAATTTTCGGACAAACA | Chr.2 | 8143356 | 8143336 | - | No |
| 2739403_adh | TTTTCTCTTGAAGCAGTGGAT  | Chr.2 | 8143469 | 8143489 | + | No |
| 2648790_adh | TTGCAATATTTAAGACAATGA  | Chr.2 | 8143590 | 8143570 | - | No |
| 2618570_adh | TTCTGCAGAGGAGTTCCGGAC  | Chr.2 | 8143877 | 8143897 | + | No |
| 2513698_adh | TGTGCCGGAGCTGATCGTCTC  | Chr.2 | 8144174 | 8144194 | + | No |
| 2583412_adh | TTATTTAAACTTTGCCGGCA   | Chr.2 | 8158154 | 8158174 | + | No |
| 1928977_adh | TATTTAAACTTTGCCGGCAT   | Chr.2 | 8158155 | 8158175 | + | No |
| 2538646_adh | TTAAACTTTGCCGGCATTTC   | Chr.2 | 8158158 | 8158178 | + | No |
| 1917342_adh | TATGTAAGATTGTCTAGGAT   | Chr.2 | 8173488 | 8173468 | - | No |
| 2023718_adh | TCGTAGTATCCAGGAGCACA   | Chr.2 | 8182150 | 8182130 | - | No |
| 2531195_adh | TGTTGTTTCGTAGAGTTCTGGA | Chr.2 | 8186708 | 8186728 | + | No |
| 2390457_adh | TGGATCTCGAAGAAGGCACGA  | Chr.2 | 8187139 | 8187159 | + | No |
| 2171128_adh | TGACTGTATGCAGAGTGTTTT  | Chr.2 | 8222754 | 8222774 | + | No |
| 2552670_adh | TTAATTTCTTCCGGATTACTC  | Chr.2 | 8246317 | 8246297 | - | No |
| 2738140_adh | TTTTCTTTCTGCCTACAAGC   | Chr.2 | 8253369 | 8253389 | + | No |
| 2589789_adh | TTACGTGAGTTGCGGGTCTG   | Chr.2 | 8276073 | 8276053 | - | No |
| 2145824_adh | TGAATTCACGTGAGTTGCGGG  | Chr.2 | 8276077 | 8276057 | - | No |
| 2057146_adh | TCTTCTGTGCATACTGAAATA  | Chr.2 | 8278729 | 8278709 | - | No |
| 1936528_adh | TCAACGAACTCGCCTTGCAAT  | Chr.2 | 8284620 | 8284640 | + | No |
| 2183069_adh | TGAGACATGTTGAACAGACGT  | Chr.2 | 8285675 | 8285695 | + | No |
| 2047162_adh | TCTGATGAGAATGACGCCAAG  | Chr.2 | 8327189 | 8327169 | - | No |
| 2706363_adh | TTTCCTGTTTTGATCTGTTTT  | Chr.2 | 8328967 | 8328947 | - | No |
| 2598042_adh | TTCCCGATACGTCTGACGATT  | Chr.2 | 8399580 | 8399560 | - | No |
| 1751589_adh | TAAATCGTATAGTAGGAGCA   | Chr.2 | 8413083 | 8413103 | + | No |
| 2581305_adh | TTATTCAGTCTCATCGGAAGA  | Chr.2 | 8442299 | 8442279 | - | No |
| 2738643_adh | TTTTCGGGATATTTCTACATT  | Chr.2 | 8442426 | 8442446 | + | No |
| 1940784_adh | TCAATAAAATATGAAGTGGA   | Chr.2 | 8454670 | 8454690 | + | No |
| 1751036_adh | TAAATATGAAGTGGAATGAA   | Chr.2 | 8454674 | 8454694 | + | No |
| 2341541_adh | TGGAATGAAGACAGCTTGAAT  | Chr.2 | 8454686 | 8454706 | + | No |
| 2633605_adh | TTGAATTAGTAGGTGGAAGAA  | Chr.2 | 8454701 | 8454721 | + | No |
| 1754319_adh | TAAACAGAATGGATACTATGA  | Chr.2 | 8463944 | 8463964 | + | No |
| 2552670_adh | TTAATTTCTTCCGGATTACTC  | Chr.2 | 8475736 | 8475756 | + | No |
| 1755792_adh | TAACTTGAAACGCGGTGATT   | Chr.2 | 8483531 | 8483551 | + | No |
| 2132633_adh | TGAAGGACATAGTACAATTAT  | Chr.2 | 8514150 | 8514130 | - | No |
| 1956916_adh | TCAGAAAGAGCAGTAAAGTGA  | Chr.2 | 8532833 | 8532813 | - | No |
| 2622947_adh | TTCTTGGAAGTTCCTCGGAA   | Chr.2 | 8545583 | 8545603 | + | No |
| 1932460_adh | TCAAAATGGCTTGCAAGAATC  | Chr.2 | 8545630 | 8545650 | + | No |
| 2596969_adh | TTCCAGGAGGATGCATTCAAT  | Chr.2 | 8568466 | 8568446 | - | No |
| 1867853_adh | TAGGGAAACAGACAGAAAACA  | Chr.2 | 8569341 | 8569321 | - | No |
| 1825806_adh | TACGGACTCAAGGTCGGACTT  | Chr.2 | 8570171 | 8570191 | + | No |
| 2559290_adh | TTACTGGAGAAGACTACAATG  | Chr.2 | 8570334 | 8570354 | + | No |
| 2379565_adh | TGGAGAAGACTACAATGTAGA  | Chr.2 | 8570338 | 8570358 | + | No |
| 2132429_adh | TGAAGGAAGAGGATGAGGATC  | Chr.2 | 8570589 | 8570609 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1767284_adh | TAACCGTAGAGTACAGTACCT  | Chr.2 | 8573553 | 8573533 | - | No |
| 1787893_adh | TAAGTCGAAGAGCTTCTTTCT  | Chr.2 | 8574915 | 8574895 | - | No |
| 1899581_adh | TATCTCCTTTTTTCTTAAAT   | Chr.2 | 8575418 | 8575438 | + | No |
| 1939459_adh | TCAAGGAAACATACTTTAATA  | Chr.2 | 8602362 | 8602342 | - | No |
| 2748293_adh | TTTTTTAGGAATTTTGTCTGGT | Chr.2 | 8602532 | 8602552 | + | No |
| 2745107_adh | TTTTTAGGAATTTTGTCTGGTA | Chr.2 | 8602533 | 8602553 | + | No |
| 1861977_adh | TAGGAATTTTGTCTGGTATTTT | Chr.2 | 8602537 | 8602557 | + | No |
| 2271389_adh | TGATGAGGTCGTCGTTATGCG  | Chr.2 | 8603052 | 8603072 | + | No |
| 2683666_adh | TTGTTTCGAGAAAATAGTGGCA | Chr.2 | 8632028 | 8632048 | + | No |
| 1838935_adh | TAGAAGAAAATGAAATGCATA  | Chr.2 | 8649112 | 8649132 | + | No |
| 1916051_adh | TATGGGGCACGGATCGGTTGG  | Chr.2 | 8670202 | 8670182 | - | No |
| 2616437_adh | TTCTCGAAATGAATCGTAGAA  | Chr.2 | 8713731 | 8713751 | + | No |
| 2714164_adh | TTTGAATAGAACGAATATCAC  | Chr.2 | 8716427 | 8716407 | - | No |
| 1764078_adh | TAACAATTGAGAGGATTCCGG  | Chr.2 | 8740511 | 8740491 | - | No |
| 2124482_adh | TGAAGTCAAACAGAATGTCAC  | Chr.2 | 8742206 | 8742186 | - | No |
| 2728766_adh | TTTGTCTATTAATTTTCGAG   | Chr.2 | 8759498 | 8759478 | - | No |
| 2058851_adh | TCTTGAGCTCCAGATGATGT   | Chr.2 | 8763177 | 8763157 | - | No |
| 2617363_adh | TTCTCTGACTGACGGTAAAAC  | Chr.2 | 8787701 | 8787721 | + | No |
| 1924618_adh | TATTCGTATGGTATTCATTTT  | Chr.2 | 8787823 | 8787843 | + | No |
| 2592269_adh | TTCAGGCCATACATTCTGAAA  | Chr.2 | 8788605 | 8788625 | + | No |
| 2627202_adh | TTGAAGAATCGTCATATATGG  | Chr.2 | 8788965 | 8788985 | + | No |
| 2493358_adh | TGTATTGGAGATAGAGACGTT  | Chr.2 | 8790218 | 8790198 | - | No |
| 2048487_adh | TCTGCTCTTTGATACGGCGAC  | Chr.2 | 8808759 | 8808779 | + | No |
| 2747239_adh | TTTTTGAGCGAAGGACGATT   | Chr.2 | 8824365 | 8824345 | - | No |
| 2654479_adh | TTGCTGAAACAGCAGACGCTA  | Chr.2 | 8859570 | 8859550 | - | No |
| 2736745_adh | TTTTATTGGCGTCGATCCTAA  | Chr.2 | 8884426 | 8884446 | + | No |
| 2165999_adh | TGACTAGAGAGACCACCGGTT  | Chr.2 | 8891094 | 8891074 | - | No |
| 2733741_adh | TTTTAATGGTCTGCACCCGTC  | Chr.2 | 8927315 | 8927295 | - | No |
| 2487310_adh | TGTACTTGTAATATGAAGATT  | Chr.2 | 8933671 | 8933691 | + | No |
| 2502112_adh | TGTGAAGATGGTCTCTTGAG   | Chr.2 | 8957157 | 8957177 | + | No |
| 2623531_adh | TTCTTTCTGATTTTATCGTTC  | Chr.2 | 8964893 | 8964873 | - | No |
| 2304855_adh | TGCGTTGGAACAAGCCAAAAT  | Chr.2 | 8965020 | 8965000 | - | No |
| 2744572_adh | TTTTGTTTTGGCTGTATTTT   | Chr.2 | 8965025 | 8965045 | + | No |
| 2301218_adh | TGCGGAGCATCGTTGTACAAT  | Chr.2 | 8973776 | 8973796 | + | No |
| 2126577_adh | TGAAGTTGATAAGTGCTGATA  | Chr.2 | 8973937 | 8973917 | - | No |
| 1831889_adh | TACTGAACTTGATAAGTGCTG  | Chr.2 | 8973940 | 8973920 | - | No |
| 1921037_adh | TATTACTGAACTTGATAAGTG  | Chr.2 | 8973943 | 8973923 | - | No |
| 2591010_adh | TTCAGCAGACAGAACTGACAG  | Chr.2 | 8987905 | 8987925 | + | No |
| 2589067_adh | TTCACAAAATTTACAAGACGT  | Chr.2 | 8987979 | 8987959 | - | No |
| 1985200_adh | TCCGCAATCGAGGACTCGTCA  | Chr.2 | 8996335 | 8996355 | + | No |
| 2693139_adh | TTTACAAGATTTTGTCTCGGA  | Chr.2 | 8997625 | 8997645 | + | No |
| 2012487_adh | TCGGAGATTTTTGGCTCAATT  | Chr.2 | 8997641 | 8997661 | + | No |
| 2237496_adh | TGAGGAGAGAAAGAAAAAGAA  | Chr.2 | 9010792 | 9010812 | + | No |
| 2231271_adh | TGAGATTGTTAGAAAAATTAA  | Chr.2 | 9038891 | 9038911 | + | No |
| 1812024_adh | TACAGATCGAACGAAAAGAAA  | Chr.2 | 9044941 | 9044961 | + | No |
| 2472933_adh | TGGTGTATGTTGAAAGAATTC  | Chr.2 | 9051013 | 9050993 | - | No |
| 2703826_adh | TTTCATATCGCTTATTGCTCA  | Chr.2 | 9054637 | 9054617 | - | No |
| 2293896_adh | TGCCGACTTAGAGCAGGAGTT  | Chr.2 | 9056148 | 9056168 | + | No |
| 2063405_adh | TCTTTTTTGGGATCTTTTCGC  | Chr.2 | 9057318 | 9057298 | - | No |
| 2542389_adh | TTAAATAGTTGATTTTCAGAA  | Chr.2 | 9057806 | 9057826 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2737432_adh | TTTTCAGAAAGTTCAGACGAT  | Chr.2 | 9057818 | 9057838 | + | No  |
| 1932659_adh | TCAAACCAAAACGTCATCAAC  | Chr.2 | 9065229 | 9065209 | - | No  |
| 2395986_adh | TGGATTTGAACGGAATAAAAT  | Chr.2 | 9067854 | 9067834 | - | No  |
| 2713800_adh | TTTGAAGAGCATGAAAAGAGT  | Chr.2 | 9067882 | 9067862 | - | No  |
| 1869008_adh | TAGGGGAAGAAGAATAGACGA  | Chr.2 | 9088549 | 9088569 | + | No  |
| 1924408_adh | TATTCGGATTATTGACGCGTT  | Chr.2 | 9099136 | 9099156 | + | No  |
| 2014764_adh | TCGGATTATTGACGCGTTTCT  | Chr.2 | 9099139 | 9099159 | + | No  |
| 1787578_adh | TAAGTAGACGCCAGAAGCCAA  | Chr.2 | 9100893 | 9100913 | + | No  |
| 1984100_adh | TCCGACATGAGCAACTTCGAG  | Chr.2 | 9134371 | 9134351 | - | No  |
| 2104622_adh | TGAAATGGAAAGAAGGTGCTA  | Chr.2 | 9142679 | 9142699 | + | No  |
| 2600820_adh | TTCTTGATTTTATGAATTTCT  | Chr.2 | 9155816 | 9155836 | + | No  |
| 2030400_adh | TCTAATAATCATGGAACGACT  | Chr.2 | 9161331 | 9161351 | + | No  |
| 2651083_adh | TTGCCAGATTAGAATTGACGA  | Chr.2 | 9172314 | 9172334 | + | No  |
| 2608273_adh | TTCGGATGAGAGGATTGCCTT  | Chr.2 | 9181027 | 9181007 | - | No  |
| 2180626_adh | TGAGAAGGAGACAATCTGGCT  | Chr.2 | 9204899 | 9204919 | + | No  |
| 1986424_adh | TCCGGCTCGACGGAATCTTTT  | Chr.2 | 9211738 | 9211718 | - | No  |
| 1896506_adh | TATCCTTAGGTCGCTGGTTCG  | Chr.2 | 9211761 | 9211741 | - | No  |
| 2023391_adh | TCGTAGGAGTTGATATAAAAG  | Chr.2 | 9217686 | 9217706 | + | No  |
| 1964040_adh | TCAGGATTTTTAGTGGACGGA  | Chr.2 | 9231961 | 9231981 | + | No  |
| 2709929_adh | TTTCTCCGACTCGGAAGATGT  | Chr.2 | 9243017 | 9243037 | + | No  |
| 2038245_adh | TCTCATCTTTAGTCGTCTGAG  | Chr.2 | 9273041 | 9273021 | - | No  |
| 2322414_adh | TGGAAGACGACAGGAACCTAA  | Chr.2 | 9290345 | 9290325 | - | No  |
| 2721059_adh | TTTGCAATGTAGAAGTGCAC   | Chr.2 | 9291382 | 9291362 | - | No  |
| 2411472_adh | TGGCCTTGTAATGATGACACA  | Chr.2 | 9308615 | 9308595 | - | No  |
| 1917554_adh | TATGTAGAACAGAAGAGGTGG  | Chr.2 | 9308917 | 9308937 | + | No  |
| 1804608_adh | TAATTGTTGCTCGGATAACTT  | Chr.2 | 9322927 | 9322907 | - | No  |
| 2582271_adh | TTATTGATCATCTGATTTCTA  | Chr.2 | 9323001 | 9322981 | - | No  |
| 2700083_adh | TTTATTGATCATCTGATTTCT  | Chr.2 | 9323002 | 9322982 | - | No  |
| 1762962_adh | TAAATTTTTTCACGGTTTTTCG | Chr.2 | 9323105 | 9323125 | + | No  |
| 1811287_adh | TACACTCGGACAAAGTGTGCAT | Chr.2 | 9334130 | 9334150 | + | No  |
| 2263604_adh | TGATATCTTTCTGTACTTCAC  | Chr.2 | 9340830 | 9340810 | - | No  |
| 2126845_adh | TGAAGAAAAAGCGGAAAAGAA  | Chr.2 | 9346702 | 9346722 | + | No  |
| 2603736_adh | TTCGAGATCTATCGTTTCAAC  | Chr.2 | 9351842 | 9351822 | - | No  |
| 2515730_adh | TGTGGATTTACGGGCAAACAT  | Chr.2 | 9352807 | 9352827 | + | No  |
| 2615930_adh | TTCTCAAGACCGTTCAACAAC  | Chr.2 | 9376377 | 9376357 | - | No  |
| 2615930_adh | TTCTCAAGACCGTTCAACAAC  | Chr.2 | 9381421 | 9381401 | - | No  |
| 2142249_adh | TGAATCGCGAGAGTGACTGGT  | Chr.2 | 9415907 | 9415927 | + | No  |
| 2282540_adh | TGCAAGTAGGGTCGAATTTAC  | Chr.2 | 9464411 | 9464431 | + | Yes |
| 2526351_adh | TGTTTCGAGAAGGATATGGTTT | Chr.2 | 9504642 | 9504622 | - | No  |
| 2539010_adh | TTAAAATCTACGAGCAAAAGG  | Chr.2 | 9519007 | 9519027 | + | No  |
| 2560189_adh | TTACTTGAATTTTCGGAGCGGT | Chr.2 | 9536779 | 9536799 | + | No  |
| 2070007_adh | TGAAAATCTGGA AAAATGGCA | Chr.2 | 9559876 | 9559856 | - | No  |
| 2121530_adh | TGAACATTAAGAACAAGGTT   | Chr.2 | 9560543 | 9560563 | + | No  |
| 2641212_adh | TTGAGGAGAAATGTGTGGTTA  | Chr.2 | 9605359 | 9605339 | - | No  |
| 2647138_adh | TTGCAAAAAGGAAAAAAGAA   | Chr.2 | 9611636 | 9611656 | + | No  |
| 2488866_adh | TGTAGGGAAGTTGTAGATGAG  | Chr.2 | 9613887 | 9613867 | - | No  |
| 2585155_adh | TTCAAACCTAGAATATGGCAA  | Chr.2 | 9617236 | 9617256 | + | No  |
| 1789679_adh | TAAGTTTGAAAGATTTTAAGG  | Chr.2 | 9625498 | 9625518 | + | No  |
| 1805498_adh | TAATTTGTGAAGTAATGGCAT  | Chr.2 | 9651829 | 9651849 | + | No  |
| 2729381_adh | TTTGTGAAGTAATGGCATTGA  | Chr.2 | 9651832 | 9651852 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2602676_adh | TTCGAATTTTTGGGCACGGCG  | Chr.2 | 9656657  | 9656637  | - | No |
| 2714528_adh | TTTGAATTTTCAGATCTCGGT  | Chr.2 | 9664334  | 9664314  | - | No |
| 2740959_adh | TTTTGAATTTTCAGATCTCGGT | Chr.2 | 9664335  | 9664315  | - | No |
| 2682022_adh | TTGTGTACTCCTCTCGGAAAA  | Chr.2 | 9669077  | 9669057  | - | No |
| 2745502_adh | TTTTTATTGTAGAAAGTGGCTT | Chr.2 | 9689039  | 9689019  | - | No |
| 2489281_adh | TGTAGGTCAGGGCTGTGCGGC  | Chr.2 | 9694109  | 9694089  | - | No |
| 2034080_adh | TCTATCAAGTAGACTGAATGA  | Chr.2 | 9751267  | 9751287  | + | No |
| 2714531_adh | TTTGAATTTTCAGGCAGGGACA | Chr.2 | 9765597  | 9765617  | + | No |
| 2634506_adh | TTGAATTTTCAGGCAGGGACAT | Chr.2 | 9765598  | 9765618  | + | No |
| 1801804_adh | TAATGTGACTGACGTGGCCTC  | Chr.2 | 9770189  | 9770169  | - | No |
| 2732972_adh | TTTTAAAAATCTTCTGACAAC  | Chr.2 | 9829219  | 9829199  | - | No |
| 2595761_adh | TTCCAACAAGAAATGAAGCTC  | Chr.2 | 9831243  | 9831263  | + | No |
| 2063343_adh | TCTTTTTTAGAAGATCTGACA  | Chr.2 | 9834812  | 9834832  | + | No |
| 2071069_adh | TGAAACACAAAGATCAACGGT  | Chr.2 | 9846602  | 9846582  | - | No |
| 1770700_adh | TAActCTGCCGAAGAAGCCGT  | Chr.2 | 9936691  | 9936671  | - | No |
| 1865602_adh | TAGGATGCAATTTTTTGAGA   | Chr.2 | 9940503  | 9940483  | - | No |
| 2744629_adh | TTTTTAAAAGTGGAATATTGA  | Chr.2 | 9968369  | 9968349  | - | No |
| 2067684_adh | TGAAAACAGCACACATTTTTC  | Chr.2 | 9968398  | 9968378  | - | No |
| 2618302_adh | TTCTGAGAGAACGCATAGAAA  | Chr.2 | 9970836  | 9970856  | + | No |
| 2145675_adh | TGAATTATGTCAAATGTCAA   | Chr.2 | 9985534  | 9985554  | + | No |
| 1963300_adh | TCAGGAAACTCAACCGGAAGA  | Chr.2 | 10011259 | 10011239 | - | No |
| 1886711_adh | TATACAAGCTGAAGATCATAA  | Chr.2 | 10013466 | 10013446 | - | No |
| 2305434_adh | TGCTAAGGATGCCAAAGATTC  | Chr.2 | 10015695 | 10015675 | - | No |
| 2624470_adh | TTGAAAAGGAGTACAAGTAGA  | Chr.2 | 10024246 | 10024226 | - | No |
| 2618748_adh | TTCTGCGGAATTTTTGTGCGAT | Chr.2 | 10040791 | 10040811 | + | No |
| 2250803_adh | TGAGTACATTACATTACACAC  | Chr.2 | 10099331 | 10099311 | - | No |
| 2721280_adh | TTTGCAGAATGAGTTCAATCG  | Chr.2 | 10099783 | 10099763 | - | No |
| 1830805_adh | TACTATTTTGAAGCTGTGCAA  | Chr.2 | 10100128 | 10100148 | + | No |
| 2740848_adh | TTTTGAAGCTGTGCAATTTGT  | Chr.2 | 10100133 | 10100153 | + | No |
| 2713934_adh | TTTGAAGCTGTGCAATTTGTT  | Chr.2 | 10100134 | 10100154 | + | No |
| 1933802_adh | TCAAAGGGAAGAAGAAGGTTA  | Chr.2 | 10100282 | 10100302 | + | No |
| 2305672_adh | TGCTACATACTCGTCCGACAA  | Chr.2 | 10108392 | 10108372 | - | No |
| 2654095_adh | TTGCTACATACTCGTCCGACA  | Chr.2 | 10108393 | 10108373 | - | No |
| 1960185_adh | TCAGATCAGAAGAAGATGGTA  | Chr.2 | 10112614 | 10112594 | - | No |
| 2092862_adh | TGAAATCGAAAAGAATGTGAA  | Chr.2 | 10112874 | 10112854 | - | No |
| 2732958_adh | TTTTAAAAAGTTTTTCTTTTC  | Chr.2 | 10134616 | 10134596 | - | No |
| 2449679_adh | TGGGCAAAAAGAAATCGGAAG  | Chr.2 | 10136534 | 10136554 | + | No |
| 2651856_adh | TTGCGAATGAAAGATGAGCGG  | Chr.2 | 10143698 | 10143678 | - | No |
| 2739533_adh | TTTTCTGCAGTTGTTACCCAA  | Chr.2 | 10171000 | 10171020 | + | No |
| 1956404_adh | TCACTTTAGAAGTCATTTCAA  | Chr.2 | 10172472 | 10172452 | - | No |
| 1845121_adh | TAGACATTCACTTTAGAAGTC  | Chr.2 | 10172479 | 10172459 | - | No |
| 2066913_adh | TGAAAACATTGGAACGGAGCT  | Chr.2 | 10190617 | 10190597 | - | No |
| 2749488_adh | TTTTTGTGCTGCGTTGGCTAAC | Chr.2 | 10197320 | 10197340 | + | No |
| 1771761_adh | TAActGTACAAAGCATTTTAT  | Chr.2 | 10201079 | 10201099 | + | No |
| 2517221_adh | TGTGGTAGTGTGAGATAGGAG  | Chr.2 | 10240342 | 10240322 | - | No |
| 1754448_adh | TAAACATAATCTGTCGGATAG  | Chr.2 | 10242600 | 10242620 | + | No |
| 2704321_adh | TTTCATGTATTCCCTCGTCGGT | Chr.2 | 10242775 | 10242795 | + | No |
| 2694201_adh | TTTACTCCCGGACCGGCAGGT  | Chr.2 | 10248003 | 10247983 | - | No |
| 2621904_adh | TTCTTCGTTTTACTCCCGGAC  | Chr.2 | 10248011 | 10247991 | - | No |
| 2529122_adh | TGTTGATGACTTCGGTGGATT  | Chr.2 | 10248138 | 10248158 | + | No |

|             |                       |       |          |          |   |     |
|-------------|-----------------------|-------|----------|----------|---|-----|
| 2271295_adh | TGATGACTTCGGTGGATTGTC | Chr.2 | 10248141 | 10248161 | + | No  |
| 2173128_adh | TGACTTCGGTGGATTGTCGTG | Chr.2 | 10248144 | 10248164 | + | No  |
| 2395166_adh | TGGATTGTCTGAGCATTAG   | Chr.2 | 10248153 | 10248173 | + | No  |
| 2694977_adh | TTAGAATACGGAAGACTTC   | Chr.2 | 10248169 | 10248189 | + | No  |
| 2561670_adh | TTAGAATACGGAAGACTTCG  | Chr.2 | 10248170 | 10248190 | + | No  |
| 1929754_adh | TATTCCTTGACGCATTCCT   | Chr.2 | 10248214 | 10248234 | + | No  |
| 1807662_adh | TACAACGATTGTCGCAATAC  | Chr.2 | 10248306 | 10248286 | - | No  |
| 2048223_adh | TCTGCCTTAGCGATTCTGTT  | Chr.2 | 10248532 | 10248552 | + | No  |
| 2237441_adh | TGAGGAGAAAACAATACTGA  | Chr.2 | 10258584 | 10258604 | + | No  |
| 2043301_adh | TCTCTTCTACATCGGACAACA | Chr.2 | 10261203 | 10261223 | + | No  |
| 1938552_adh | TCAAGACTATATGAATCGGAA | Chr.2 | 10263009 | 10263029 | + | No  |
| 2544754_adh | TTAAATTTTCAGTGGACAATT | Chr.2 | 10270116 | 10270136 | + | No  |
| 2285829_adh | TGCAATTTGCTAAATTTGGAC | Chr.2 | 10271114 | 10271134 | + | No  |
| 1957839_adh | TCAGAATACTCGGAGAATCAT | Chr.2 | 10302767 | 10302747 | - | No  |
| 2292131_adh | TGCCAATTTGCAGACTCGGAG | Chr.2 | 10308104 | 10308084 | - | No  |
| 2716879_adh | TTTGAGGATCCTGCAGGAGCA | Chr.2 | 10377794 | 10377774 | - | Yes |
| 2268680_adh | TGATATTTATTTATTTATTTA | Chr.2 | 10391670 | 10391690 | + | No  |
| 2581865_adh | TTATTCTCATTTAAGTTTCGA | Chr.2 | 10393884 | 10393904 | + | No  |
| 1804827_adh | TAATTTATTCTGGATACGGTG | Chr.2 | 10416568 | 10416588 | + | No  |
| 2600742_adh | TTCTTGAGAAATTTAAGACAT | Chr.2 | 10416693 | 10416713 | + | No  |
| 2492601_adh | TGTATGTGAGACTGCGTCAAT | Chr.2 | 10437822 | 10437842 | + | No  |
| 2052601_adh | TCTGTGCGAAGACGTGTAAT  | Chr.2 | 10442325 | 10442345 | + | No  |
| 2274249_adh | TGATTACAATGTAGAAATGAC | Chr.2 | 10493034 | 10493054 | + | No  |
| 2553621_adh | TTACAATGTAGAAATGACTAA | Chr.2 | 10493037 | 10493057 | + | No  |
| 2177609_adh | TGAGAAATGAGAAGATGATAT | Chr.2 | 10557339 | 10557319 | - | No  |
| 2530664_adh | TGTTGTGCGAACTCCGAATAC | Chr.2 | 10561569 | 10561549 | - | No  |
| 2500675_adh | TGTGAAACGAGACGAGAGGAG | Chr.2 | 10563952 | 10563972 | + | No  |
| 2678902_adh | TTGTCTGGCGTGATTTGGTA  | Chr.2 | 10571624 | 10571644 | + | No  |
| 2584996_adh | TTCAAAGAAGACTTAAATG   | Chr.2 | 10574196 | 10574176 | - | No  |
| 2039967_adh | TCTCGGACCGGCAGGTCGCAT | Chr.2 | 10578428 | 10578408 | - | No  |
| 2694242_adh | TTTACTCTCGGACCGGCAGGT | Chr.2 | 10578433 | 10578413 | - | No  |
| 2621909_adh | TTCTTCGTTTTACTCTCGGAC | Chr.2 | 10578441 | 10578421 | - | No  |
| 2173057_adh | TGACTTCCGTGGATTGTCGTG | Chr.2 | 10578574 | 10578594 | + | No  |
| 2395166_adh | TGGATTGTCTGAGCATTAG   | Chr.2 | 10578583 | 10578603 | + | No  |
| 2694977_adh | TTAGAATACGGAAGACTTC   | Chr.2 | 10578599 | 10578619 | + | No  |
| 2561670_adh | TTAGAATACGGAAGACTTCG  | Chr.2 | 10578600 | 10578620 | + | No  |
| 1929754_adh | TATTCCTTGACGCATTCCT   | Chr.2 | 10578644 | 10578664 | + | No  |
| 2308591_adh | TGCTGATTTGAAAATGGATAT | Chr.2 | 10598007 | 10597987 | - | No  |
| 2402911_adh | TGGCACCAGAGATGCTGCAGA | Chr.2 | 10607680 | 10607700 | + | No  |
| 2288041_adh | TGCAGATTTGAGATGAACAA  | Chr.2 | 10607695 | 10607715 | + | No  |
| 2693562_adh | TTTACCAGAGCATTTCTGAC  | Chr.2 | 10644723 | 10644703 | - | No  |
| 2474310_adh | TGGTTAGGAAGAGACACATTC | Chr.2 | 10657774 | 10657794 | + | No  |
| 2602663_adh | TTCAATTTGGCTGCATTTAT  | Chr.2 | 10658900 | 10658920 | + | No  |
| 1999443_adh | TCGAATTTGGCTGCATTTATT | Chr.2 | 10658901 | 10658921 | + | No  |
| 2584524_adh | TTATTTTCGATTTAACCTGAA | Chr.2 | 10658917 | 10658937 | + | No  |
| 2613782_adh | TTCTAAATTGTCGGTTGCAAA | Chr.2 | 10660923 | 10660903 | - | No  |
| 2746012_adh | TTTTTCGATTTTCAGTTTCC  | Chr.2 | 10712314 | 10712334 | + | No  |
| 2618186_adh | TTCTGACGGGTGAACAGGTGA | Chr.2 | 10730733 | 10730713 | - | No  |
| 2738469_adh | TTTTCGGACGACATAATTATT | Chr.2 | 10753036 | 10753016 | - | No  |
| 2712498_adh | TTTGAAAATGAACAACAAGTA | Chr.2 | 10753369 | 10753349 | - | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2153394_adh | TGACAGAAACGGACAAAAGAG  | Chr.2 | 10787357 | 10787337 | - | No |
| 2746445_adh | TTTTTCTTGGAACTTTTCGAA  | Chr.2 | 10798536 | 10798516 | - | No |
| 2021926_adh | TCGTACGTAGGTAGACAGGCA  | Chr.2 | 10801007 | 10800987 | - | No |
| 1945018_adh | TCACAGCTGGAGGCCTTTTTTA | Chr.2 | 10820088 | 10820068 | - | No |
| 1964029_adh | TCAGGATTGCGTGGATGAAAA  | Chr.2 | 10820167 | 10820187 | + | No |
| 2651240_adh | TTGCCGACTGTAAGGACGGGA  | Chr.2 | 10848498 | 10848518 | + | No |
| 2570572_adh | TTAGTAGCATATTAATAAT    | Chr.2 | 10853297 | 10853277 | - | No |
| 2616133_adh | TTCTCAGTTAGTAGCATATTA  | Chr.2 | 10853304 | 10853284 | - | No |
| 2651240_adh | TTGCCGACTGTAAGGACGGGA  | Chr.2 | 10854447 | 10854427 | - | No |
| 2053507_adh | TCTGTTTTCGGCTTCTTTGTA  | Chr.2 | 10863275 | 10863255 | - | No |
| 2127156_adh | TGAAGAAGAGAGATTACTGTA  | Chr.2 | 10863395 | 10863415 | + | No |
| 2313638_adh | TGGAAGAGATTTGACTTTACT  | Chr.2 | 10863456 | 10863476 | + | No |
| 2606187_adh | TTCGCAACTTTCTGCTTTCT   | Chr.2 | 10868958 | 10868978 | + | No |
| 1974037_adh | TCATTGATCGTCAGACGCATT  | Chr.2 | 10870132 | 10870112 | - | No |
| 2015339_adh | TCGGCATTTTAATTAAGCTTA  | Chr.2 | 10872598 | 10872578 | - | No |
| 2733212_adh | TTTTAACAATCGGCATTTTAA  | Chr.2 | 10872607 | 10872587 | - | No |
| 2744728_adh | TTTTTAACAATCGGCATTTTA  | Chr.2 | 10872608 | 10872588 | - | No |
| 2167430_adh | TGACTATTGACGTGGATTATC  | Chr.2 | 10872717 | 10872737 | + | No |
| 2691550_adh | TTTAATGATGGAAAAACGCAT  | Chr.2 | 10884462 | 10884442 | - | No |
| 1973033_adh | TCATGTGTCTGGAGGTGTATC  | Chr.2 | 10928547 | 10928567 | + | No |
| 2515714_adh | TGTGGATTGAAGAAGATTGCT  | Chr.2 | 10931548 | 10931528 | - | No |
| 2729962_adh | TTTGTGGGCATAGAGTAGGCG  | Chr.2 | 10932909 | 10932929 | + | No |
| 2727074_adh | TTTGGTTTTTCAGAAGCTACA  | Chr.2 | 10935113 | 10935093 | - | No |
| 2746013_adh | TTTTTCGATTTTTCGGCCTAA  | Chr.2 | 10935373 | 10935353 | - | No |
| 1800787_adh | TAATGGTCACTGTATGCCGGA  | Chr.2 | 10939186 | 10939166 | - | No |
| 2729962_adh | TTTGTGGGCATAGAGTAGGCG  | Chr.2 | 10942110 | 10942130 | + | No |
| 2103700_adh | TGAAATGGAAAAAGTAGGAA   | Chr.2 | 10965952 | 10965932 | - | No |
| 2295667_adh | TGCGAACTGTCGAGATCGTAA  | Chr.2 | 10972962 | 10972942 | - | No |
| 1797862_adh | TAATCAGGATGTGCAGGACGG  | Chr.2 | 10975652 | 10975672 | + | No |
| 2606309_adh | TTCGCAGTTGGACAAATCATC  | Chr.2 | 10987355 | 10987375 | + | No |
| 2527783_adh | TGTTGAATGACGATGACAAGC  | Chr.2 | 11006259 | 11006239 | - | No |
| 2012891_adh | TCGGAGGCGACAACGGTATTT  | Chr.2 | 11022172 | 11022192 | + | No |
| 2314741_adh | TGGAAGCTGAAAGATCGGAAA  | Chr.2 | 11023660 | 11023680 | + | No |
| 2701542_adh | TTTCAAGATCTGATGGGATTC  | Chr.2 | 11050695 | 11050675 | - | No |
| 2535048_adh | TGTTTTTCAAATTGCTTCTAA  | Chr.2 | 11051878 | 11051858 | - | No |
| 1834915_adh | TACTTCGGTATTTGATTAAAC  | Chr.2 | 11092672 | 11092692 | + | No |
| 2749364_adh | TTTTTTGATAAATTGACTGA   | Chr.2 | 11097355 | 11097335 | - | No |
| 2598685_adh | TTCCGACCGCTGGAACGTCGG  | Chr.2 | 11097526 | 11097546 | + | No |
| 2747064_adh | TTTTTGCCTGATTTTCAACG   | Chr.2 | 11097565 | 11097585 | + | No |
| 2594529_adh | TTTCAAGATCTGATGGGATTC  | Chr.2 | 11098218 | 11098238 | + | No |
| 2739505_adh | TTTTCTGAGTCGTGTCGTCGT  | Chr.2 | 11105775 | 11105755 | - | No |
| 1847085_adh | TAGACTTTTGAATGAAACGGA  | Chr.2 | 11112042 | 11112062 | + | No |
| 1807103_adh | TACAAATAAAATTGTTGGACA  | Chr.2 | 11125372 | 11125352 | - | No |
| 1992729_adh | TCCTTCATCGTTGTTTGGAC   | Chr.2 | 11125522 | 11125502 | - | No |
| 2128937_adh | TGAAGACTGTGCAATCTAAAG  | Chr.2 | 11126267 | 11126247 | - | No |
| 2044157_adh | TCTGAAGACTGTGCAATCTAA  | Chr.2 | 11126269 | 11126249 | - | No |
| 2747330_adh | TTTTTGGGAAAATCGCTGAAT  | Chr.2 | 11126450 | 11126430 | - | No |
| 2321824_adh | TGGAAGAAGTAGAATATAGGT  | Chr.2 | 11130230 | 11130210 | - | No |
| 2287444_adh | TGCAGAGGTAGGGGTACTGTA  | Chr.2 | 11154573 | 11154553 | - | No |
| 2458787_adh | TGGGTGGATAGAACTAGCAGA  | Chr.2 | 11167371 | 11167391 | + | No |

|             |                       |       |          |          |   |    |
|-------------|-----------------------|-------|----------|----------|---|----|
| 2112720_adh | TGAAATGTTAAAAAATCTCAA | Chr.2 | 11168433 | 11168413 | - | No |
| 2043675_adh | TCTGAAACAACATCTGCAGAA | Chr.2 | 11209848 | 11209868 | + | No |
| 2235299_adh | TGAGCTCTCGAAGGATGATCA | Chr.2 | 11213180 | 11213200 | + | No |
| 2235299_adh | TGAGCTCTCGAAGGATGATCA | Chr.2 | 11213645 | 11213665 | + | No |
| 2133020_adh | TGAAGGATCAGGAGAAGACAC | Chr.2 | 11214440 | 11214460 | + | No |
| 2133020_adh | TGAAGGATCAGGAGAAGACAC | Chr.2 | 11214818 | 11214838 | + | No |
| 2133020_adh | TGAAGGATCAGGAGAAGACAC | Chr.2 | 11215007 | 11215027 | + | No |
| 2133020_adh | TGAAGGATCAGGAGAAGACAC | Chr.2 | 11216147 | 11216167 | + | No |
| 2607298_adh | TTCGGACAGAAGCAATGGGAA | Chr.2 | 11234543 | 11234523 | - | No |
| 2120248_adh | TGAACAGAGAGCTGCTGCATC | Chr.2 | 11236119 | 11236099 | - | No |
| 1940704_adh | TCAAGTTGAGCAAGTTGTCTA | Chr.2 | 11237736 | 11237716 | - | No |
| 2294220_adh | TGCCGTCAATTTGTTTTGCTC | Chr.2 | 11261710 | 11261730 | + | No |
| 1839437_adh | TAGAAGGAAAAACGTAGAAAA | Chr.2 | 11305086 | 11305066 | - | No |
| 1967451_adh | TCAGTTGAAAGTGAAGTGACA | Chr.2 | 11307238 | 11307258 | + | No |
| 2372046_adh | TGGAATTTAACTAATTATTTA | Chr.2 | 11329528 | 11329548 | + | No |
| 1763427_adh | TAACAAGAAAACGCATGACTT | Chr.2 | 11348056 | 11348076 | + | No |
| 1976624_adh | TCCAATAAATTGTCAGATGTT | Chr.2 | 11353554 | 11353534 | - | No |
| 1824099_adh | TACGATGAGCAGAGCTAAACA | Chr.2 | 11376633 | 11376613 | - | No |
| 1812143_adh | TACAGATTTGATGCATGATAT | Chr.2 | 11376671 | 11376651 | - | No |
| 2518684_adh | TGTGTACTGTGGAAATACAGA | Chr.2 | 11376686 | 11376666 | - | No |
| 2602960_adh | TTCGACGCCCAGGAGACTGTG | Chr.2 | 11377351 | 11377371 | + | No |
| 2291672_adh | TGCCAAAACGAGAGGGACCTC | Chr.2 | 11377405 | 11377425 | + | No |
| 2129273_adh | TGAAGAGATCGAAAATCGGAA | Chr.2 | 11407561 | 11407541 | - | No |
| 2141983_adh | TGAATCCAAGCACAGAACTGC | Chr.2 | 11439239 | 11439219 | - | No |
| 1801837_adh | TAATGTGGAAATCGATGGCAC | Chr.2 | 11443819 | 11443799 | - | No |
| 2042735_adh | TCTCTGAAACAAGCCGACTCC | Chr.2 | 11443968 | 11443988 | + | No |
| 1913425_adh | TATGGAAAGCTGTCTGATGTC | Chr.2 | 11452789 | 11452769 | - | No |
| 2729752_adh | TTTGTGCGGCATTTCTTCTTA | Chr.2 | 11453203 | 11453223 | + | No |
| 1798208_adh | TAATCCTGCATTGAATTCGC  | Chr.2 | 11453241 | 11453261 | + | No |
| 1838908_adh | TAGAACTTTAAAAACGCAGA  | Chr.2 | 11453528 | 11453548 | + | No |
| 2488092_adh | TGTAGATTTACGGCACATTTT | Chr.2 | 11464016 | 11463996 | - | No |
| 2698299_adh | TTTATATGATTTAGTACGGAT | Chr.2 | 11468576 | 11468556 | - | No |
| 2059770_adh | TCTTGTGATCGTCGAAAACCA | Chr.2 | 11468602 | 11468582 | - | No |
| 1821945_adh | TACGAATTCGGCGCATTTTTA | Chr.2 | 11471770 | 11471750 | - | No |
| 2373379_adh | TGGACAAGAAGAAGTAGAGAA | Chr.2 | 11476254 | 11476274 | + | No |
| 1911583_adh | TATGATGGAAATAATGACGAA | Chr.2 | 11529094 | 11529074 | - | No |
| 1768275_adh | TAACGATAAGATCTGATTGGA | Chr.2 | 11532084 | 11532064 | - | No |
| 2723762_adh | TTTGGAGGAAAAAGTGGAAAA | Chr.2 | 11534530 | 11534510 | - | No |
| 1980198_adh | TCCCAACTATTATTCTCGGAT | Chr.2 | 11537511 | 11537531 | + | No |
| 2551285_adh | TTAATGGCATTGAGAATTTT  | Chr.2 | 11540444 | 11540424 | - | No |
| 1839106_adh | TAGAAGACGACTCGATCCTTT | Chr.2 | 11540992 | 11541012 | + | No |
| 2707038_adh | TTTCGAGCGCAGAGTTCAGGA | Chr.2 | 11544878 | 11544898 | + | No |
| 2136264_adh | TGAATAAAAGCATGAGCACGA | Chr.2 | 11545305 | 11545285 | - | No |
| 2057032_adh | TCTTCTCTCATGATTCGGC   | Chr.2 | 11545444 | 11545464 | + | No |
| 2734847_adh | TTTTAGGTGATTGTTGCGGTT | Chr.2 | 11547582 | 11547562 | - | No |
| 2068691_adh | TGAAAAGCAATAGACTATGAC | Chr.2 | 11549163 | 11549143 | - | No |
| 2549873_adh | TTAATAGATCGTTGATAAACA | Chr.2 | 11554271 | 11554251 | - | No |
| 2047398_adh | TCTGATTAATAGGATAGGCTC | Chr.2 | 11563545 | 11563525 | - | No |
| 1784305_adh | TAAGGAGAACACATCGAAAAT | Chr.2 | 11596267 | 11596287 | + | No |
| 2237880_adh | TGAGGATATTTTCAGGCATGG | Chr.2 | 11596485 | 11596505 | + | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2503009_adh | TGTGAATTGAGACTGTGTATA  | Chr.2 | 11600214 | 11600234 | + | No  |
| 2468739_adh | TGGTATTGCTCGACGTGCAAA  | Chr.2 | 11609741 | 11609761 | + | No  |
| 2183130_adh | TGAGACCAACGATCAATAGAA  | Chr.2 | 11635898 | 11635918 | + | No  |
| 2741897_adh | TTTTGATTATTTTGTAGCAT   | Chr.2 | 11638454 | 11638434 | - | No  |
| 1775417_adh | TAAGACCAGTGACGTGCTCTT  | Chr.2 | 11649419 | 11649399 | - | No  |
| 2133585_adh | TGAAGGTCGGAGAAGTCGGAT  | Chr.2 | 11652377 | 11652357 | - | No  |
| 2519281_adh | TGTGTGATTTACGGAGAATG   | Chr.2 | 11652912 | 11652932 | + | No  |
| 2606808_adh | TCGCTCTCGTTTGAAATTTA   | Chr.2 | 11676035 | 11676015 | - | No  |
| 2573825_adh | TTATAACCAAGGAAACGGTCT  | Chr.2 | 11676236 | 11676256 | + | No  |
| 2472743_adh | TGGTGTACTACAACAAAGGAC  | Chr.2 | 11679142 | 11679122 | - | No  |
| 1932929_adh | TCAAACCTTTGGGACAAGTTGA | Chr.2 | 11693935 | 11693915 | - | No  |
| 2608504_adh | TCGGCCCTAAAATATTTCTTT  | Chr.2 | 11700655 | 11700635 | - | No  |
| 1977049_adh | TCCAATTTATTCTGTCGCGTC  | Chr.2 | 11701222 | 11701242 | + | No  |
| 1983673_adh | TCCCTTGTTTCGTCAGCGGCGG | Chr.2 | 11709426 | 11709406 | - | No  |
| 2281841_adh | TGCAAGAAGAATCTCGAAGAT  | Chr.2 | 11714756 | 11714736 | - | No  |
| 1966677_adh | TCAGTGCAAGAAGAATCTCGA  | Chr.2 | 11714760 | 11714740 | - | No  |
| 2303297_adh | TGCGTAAAACTACTATGACA   | Chr.2 | 11723692 | 11723672 | - | No  |
| 1839790_adh | TAGAAGTCGCAGAAAACAACA  | Chr.2 | 11724452 | 11724432 | - | No  |
| 2618401_adh | TTCTGATAGAAGTCGCAGAAA  | Chr.2 | 11724458 | 11724438 | - | No  |
| 2607309_adh | TCGGACAGCAAAAAACGAGA   | Chr.2 | 11724497 | 11724477 | - | No  |
| 2702935_adh | TTTCAGAGTAAACTTCGGTT   | Chr.2 | 11726491 | 11726471 | - | No  |
| 2309878_adh | TGCTGTTGATAAGACGACGGG  | Chr.2 | 11728732 | 11728712 | - | No  |
| 2588165_adh | TTCAATGCTGTTGATAAGACG  | Chr.2 | 11728737 | 11728717 | - | No  |
| 2642959_adh | TTGAGTGTAAGACTGGATTCC  | Chr.2 | 11730871 | 11730851 | - | No  |
| 2726524_adh | TTTGGTGTAGAAAATGAAATT  | Chr.2 | 11744748 | 11744768 | + | No  |
| 2623261_adh | TTCTTTAGAGAGGAACTTTGG  | Chr.2 | 11748296 | 11748316 | + | No  |
| 2059767_adh | TCTTGTGAGTGTGTGAAGATG  | Chr.2 | 11756753 | 11756773 | + | No  |
| 1937408_adh | TCAACTGAAGATGCATCACGT  | Chr.2 | 11757382 | 11757362 | - | No  |
| 2132199_adh | TGAAGGAAACAGCTGAGACTT  | Chr.2 | 11758686 | 11758666 | - | No  |
| 1958440_adh | TCAGACTGTAAGCATTGGCCA  | Chr.2 | 11758813 | 11758793 | - | No  |
| 1958440_adh | TCAGACTGTAAGCATTGGCCA  | Chr.2 | 11759982 | 11760002 | + | No  |
| 2132199_adh | TGAAGGAAACAGCTGAGACTT  | Chr.2 | 11760109 | 11760129 | + | No  |
| 1937408_adh | TCAACTGAAGATGCATCACGT  | Chr.2 | 11761413 | 11761433 | + | No  |
| 1811856_adh | TACAGACGTTACGGAATTGAA  | Chr.2 | 11763205 | 11763185 | - | No  |
| 2658420_adh | TTGGACGAGGCACCTTCTTCT  | Chr.2 | 11769377 | 11769397 | + | No  |
| 2705130_adh | TTTCCAGCTGAAATCGATCGT  | Chr.2 | 11778066 | 11778046 | - | No  |
| 2733031_adh | TTTTAAAATTCGTGCATCTTC  | Chr.2 | 11782669 | 11782689 | + | No  |
| 2309166_adh | TGCTGGTTAGCTTGTCTGTT   | Chr.2 | 11782734 | 11782754 | + | No  |
| 1805353_adh | TAATTTGCATGTAAGTGGCCT  | Chr.2 | 11817895 | 11817915 | + | Yes |
| 2063007_adh | TCTTTTGGGAGAACTGACAGA  | Chr.2 | 11860873 | 11860893 | + | No  |
| 2296981_adh | TGCGAGATAGAAGTTGTGTAA  | Chr.2 | 11874704 | 11874684 | - | No  |
| 2552880_adh | TTAATTTTAGGACGATCGGGA  | Chr.2 | 11875045 | 11875025 | - | No  |
| 2151588_adh | TGACAAGTCGTAAACGGTCTG  | Chr.2 | 11880561 | 11880581 | + | No  |
| 2391126_adh | TGGATGCAACGAAGAAGGACA  | Chr.2 | 11880602 | 11880582 | - | No  |
| 2486805_adh | TGTACGATTTTCCCGCCGGAC  | Chr.2 | 11885352 | 11885372 | + | No  |
| 2586286_adh | TTCAACTGGAGACGTTTTAAA  | Chr.2 | 11897781 | 11897761 | - | No  |
| 2702872_adh | TTTCAGAATGTCAGACGTTGC  | Chr.2 | 11916423 | 11916443 | + | No  |
| 2571304_adh | TTAGTCTGAGCCATCGAAGAA  | Chr.2 | 11917427 | 11917407 | - | No  |
| 1931960_adh | TCAAAAATTGTGTGGACATTT  | Chr.2 | 11919317 | 11919337 | + | No  |
| 2278054_adh | TGATTTTCATTAGCTGAGGCTT | Chr.2 | 11960856 | 11960876 | + | No  |

|             |                        |       |          |          |   |    |
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| 2667897_adh | TTGGGGGGAAACGGTAGAGAT  | Chr.2 | 11972128 | 11972108 | - | No |
| 2674993_adh | TTGTAGATTATGGGTAGAAAA  | Chr.2 | 11980182 | 11980162 | - | No |
| 2737347_adh | TTTTCACCTATTTTCGTCGTT  | Chr.2 | 12006699 | 12006679 | - | No |
| 2457373_adh | TGGGTACTGTACTTGGCGGAT  | Chr.2 | 12023571 | 12023551 | - | No |
| 2714861_adh | TTTGACAGTGGAATATCGAAA  | Chr.2 | 12027487 | 12027507 | + | No |
| 2709569_adh | TTTCTAGAAAAGCGTCATTGT  | Chr.2 | 12027982 | 12028002 | + | No |
| 1855424_adh | TAGCATTAAAGAATCTGGAAAA | Chr.2 | 12059268 | 12059288 | + | No |
| 1884347_adh | TATAACACATTCTCAGTGTAT  | Chr.2 | 12113829 | 12113809 | - | No |
| 1884347_adh | TATAACACATTCTCAGTGTAT  | Chr.2 | 12120255 | 12120275 | + | No |
| 2746153_adh | TTTTTCGTGAAAACCTGTAGA  | Chr.2 | 12132957 | 12132937 | - | No |
| 2732109_adh | TTTGTTGGATTTTTTCGGATT  | Chr.2 | 12196171 | 12196191 | + | No |
| 2379437_adh | TGGAGAACAAGTGGACGGCCG  | Chr.2 | 12213400 | 12213380 | - | No |
| 2553901_adh | TTACACGGCAAAAAGGAGAAAT | Chr.2 | 12213499 | 12213479 | - | No |
| 2689302_adh | TTTAAAGCGAGAACAACGGAA  | Chr.2 | 12223385 | 12223405 | + | No |
| 1938089_adh | TCAAGAAAATCGTTCGAAAAA  | Chr.2 | 12257562 | 12257542 | - | No |
| 2623556_adh | TTCTTTGAAAATGGACAGAAA  | Chr.2 | 12280381 | 12280361 | - | No |
| 2639613_adh | TTGAGAATTCAGCAATAAACT  | Chr.2 | 12280478 | 12280498 | + | No |
| 2132826_adh | TGAAGGAGAAGCTGATGGCCG  | Chr.2 | 12283794 | 12283814 | + | No |
| 2082059_adh | TGAAAGGAAGACTAGTCGAAC  | Chr.2 | 12305516 | 12305496 | - | No |
| 2183142_adh | TGAGACCACGGAAAAGACTGA  | Chr.2 | 12341430 | 12341410 | - | No |
| 1812953_adh | TACAGTTGTGACCTCATAAAT  | Chr.2 | 12413327 | 12413347 | + | No |
| 2304495_adh | TGCGTTTCGTAGTTCGTGCTCA | Chr.2 | 12538864 | 12538844 | - | No |
| 2707437_adh | TTTCGCTCTGAAAATGCTGAA  | Chr.2 | 12599963 | 12599943 | - | No |
| 1929351_adh | TATTTATCAGTTTTTCGTTCAA | Chr.2 | 12604008 | 12603988 | - | No |
| 2606773_adh | TTCGCTCGAATTTCGGGGACGG | Chr.2 | 12671709 | 12671689 | - | No |
| 2736984_adh | TTTTATTTGTCTGTCGAATTTA | Chr.2 | 12678590 | 12678610 | + | No |
| 2150462_adh | TGACAAGAAGAACTACTCGTT  | Chr.2 | 12733089 | 12733069 | - | No |
| 1787848_adh | TAAGTCCACAGAATCGTCCGA  | Chr.2 | 12738647 | 12738667 | + | No |
| 2617115_adh | TTCTCTCGGACAATTGGCGGG  | Chr.2 | 12738878 | 12738858 | - | No |
| 1770350_adh | TAACTCAAAACAAGCTGAAAT  | Chr.2 | 12738970 | 12738990 | + | No |
| 2542021_adh | TTAAATAACATCCCCAAATTA  | Chr.2 | 12750229 | 12750209 | - | No |
| 2601862_adh | TTCGAACAATCTAACCGACGG  | Chr.2 | 12774600 | 12774620 | + | No |
| 2038463_adh | TCTCATTCTCACGCATCCACA  | Chr.2 | 12776127 | 12776147 | + | No |
| 1889112_adh | TATAGTGGGAGATAAGATTTA  | Chr.2 | 12830513 | 12830533 | + | No |
| 2278049_adh | TGATTTTCATGGTTAGTTGGAA | Chr.2 | 12846542 | 12846522 | - | No |
| 1963730_adh | TCAGGAGAGGAATTGGGAAAT  | Chr.2 | 12866294 | 12866274 | - | No |
| 2010276_adh | TCGGAAACGGAACCAGAATCG  | Chr.2 | 12895808 | 12895828 | + | No |
| 2011245_adh | TCGGACAATCATTTAATTAGG  | Chr.2 | 12914826 | 12914846 | + | No |
| 2551829_adh | TTAATTAGGCAATTCTTCGTA  | Chr.2 | 12914838 | 12914858 | + | No |
| 2538910_adh | TTAAAAGTAGAAACAGCGTGA  | Chr.2 | 12914951 | 12914971 | + | No |
| 2526804_adh | TGTTCTCGGTGTAATTTTGCT  | Chr.2 | 12916715 | 12916695 | - | No |
| 2271301_adh | TGATGACTTTAACTTGGAAG   | Chr.2 | 12945282 | 12945262 | - | No |
| 2680706_adh | TTGTGATCGGCTGAGAGGTTA  | Chr.2 | 12994620 | 12994600 | - | No |
| 2040062_adh | TCTCGGAGCAAAGAAAACGTT  | Chr.2 | 12995777 | 12995757 | - | No |
| 2702686_adh | TTTCACTCTTTTTTCCGTTGA  | Chr.2 | 13043400 | 13043380 | - | No |
| 2714572_adh | TTTGAATTTTGATGCGCGGTA  | Chr.2 | 13043462 | 13043442 | - | No |
| 2740974_adh | TTTTGAATTTTGATGCGCGGT  | Chr.2 | 13043463 | 13043443 | - | No |
| 2738411_adh | TTTTCGCTCGATTTTCACACA  | Chr.2 | 13043798 | 13043818 | + | No |
| 2041423_adh | TCTCGTCGAGCAGAATCGCTT  | Chr.2 | 13044256 | 13044236 | - | No |
| 1994921_adh | TCGAAAGGACATTGGCGACGG  | Chr.2 | 13045828 | 13045848 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2574074_adh | TTATAATCGGTATATTAGGAC  | Chr.2 | 13058757 | 13058777 | + | No |
| 2693092_adh | TTTACAAACTCGGCAAAACAG  | Chr.2 | 13083697 | 13083677 | - | No |
| 2553576_adh | TTACAATCGTTGTGAAGCTTT  | Chr.2 | 13083921 | 13083941 | + | No |
| 2726975_adh | TTTGGTTTAATAGTGTCTGTCG | Chr.2 | 13083944 | 13083964 | + | No |
| 2673070_adh | TTGGTTTAATAGTGTCTGTCGT | Chr.2 | 13083945 | 13083965 | + | No |
| 2625804_adh | TTGAACAAAAGGTCTTCTTCT  | Chr.2 | 13130486 | 13130466 | - | No |
| 2044808_adh | TCTGAATGTGAAAAATTGCCG  | Chr.2 | 13140769 | 13140749 | - | No |
| 2388873_adh | TGGATATCACTCGAGAAAACT  | Chr.2 | 13145549 | 13145529 | - | No |
| 2746541_adh | TTTTTGAAGTGTCTTCTGGA   | Chr.2 | 13157131 | 13157151 | + | No |
| 2048903_adh | TCTGGACAGCAATTTTTGGCG  | Chr.2 | 13157760 | 13157780 | + | No |
| 1895764_adh | TATCCGGAACACGGCAAACCG  | Chr.2 | 13177881 | 13177901 | + | No |
| 1809060_adh | TACAAGGCATATTAGAAATCT  | Chr.2 | 13183018 | 13182998 | - | No |
| 2048903_adh | TCTGGACAGCAATTTTTGGCG  | Chr.2 | 13184522 | 13184542 | + | No |
| 2606543_adh | TTCGCGAAGACAATGTTAATG  | Chr.2 | 13184808 | 13184828 | + | No |
| 2007658_adh | TCGCGAAGACAATGTTAATGT  | Chr.2 | 13184809 | 13184829 | + | No |
| 2605180_adh | TTCGATGGACGGCGAGTTTTT  | Chr.2 | 13190110 | 13190090 | - | No |
| 2009814_adh | TCGCTTCCAGATCATCGTCGA  | Chr.2 | 13198226 | 13198246 | + | No |
| 2494513_adh | TGTCACATTTTTTCGGGCAAA  | Chr.2 | 13202828 | 13202808 | - | No |
| 2492035_adh | TGTATGGAAAACTTTTCGGCA  | Chr.2 | 13220617 | 13220597 | - | No |
| 1928450_adh | TATTGTTGGAAAGTTGAAGAA  | Chr.2 | 13237987 | 13238007 | + | No |
| 2529703_adh | TGTTGGAAAGTTGAAGAATTC  | Chr.2 | 13237990 | 13238010 | + | No |
| 2317654_adh | TGGAAGTTGAAGAATTCTTA   | Chr.2 | 13237993 | 13238013 | + | No |
| 2602619_adh | TTCGAATTCAGAGCTACGAAT  | Chr.2 | 13238022 | 13238042 | + | No |
| 2627281_adh | TTGAAGACAATTATGACGTAG  | Chr.2 | 13244801 | 13244821 | + | No |
| 2580528_adh | TTATTAAGTTCGTTAGATATA  | Chr.2 | 13244877 | 13244897 | + | No |
| 2580528_adh | TTATTAAGTTCGTTAGATATA  | Chr.2 | 13259187 | 13259207 | + | No |
| 2734401_adh | TTTTAGAAATAGGACAATATA  | Chr.2 | 13264402 | 13264382 | - | No |
| 2396234_adh | TGGATTTTAAAAAATATTTAA  | Chr.2 | 13358673 | 13358653 | - | No |
| 2053350_adh | TCTGTTGGTGAAGGTTGGATA  | Chr.2 | 13441651 | 13441671 | + | No |
| 2485374_adh | TGTAATTTAAAGCCATGGCAA  | Chr.2 | 13460793 | 13460813 | + | No |
| 1973991_adh | TCATTGACACATACACAAGAC  | Chr.2 | 13461950 | 13461930 | - | No |
| 2642972_adh | TTGAGTGTATGAAGCCAATGA  | Chr.2 | 13473803 | 13473783 | - | No |
| 2287050_adh | TGCAGAAGAGACGAAGCCGAA  | Chr.2 | 13484063 | 13484083 | + | No |
| 2583653_adh | TTATTTATTTACTTTTTAATC  | Chr.2 | 13494823 | 13494803 | - | No |
| 2735347_adh | TTTTATAGTTGAAAGTCGGGC  | Chr.2 | 13494932 | 13494952 | + | No |
| 2585193_adh | TTCAAACATAAGTAGATGATC  | Chr.2 | 13513427 | 13513447 | + | No |
| 2628462_adh | TTGAAGATGGCTCTGGATGTT  | Chr.2 | 13513702 | 13513722 | + | No |
| 2337995_adh | TGGAATCTTACGAAAACAGT   | Chr.2 | 13513864 | 13513884 | + | No |
| 2595647_adh | TTCCAAACGGCGTTCAACTGC  | Chr.2 | 13516191 | 13516211 | + | No |
| 2597538_adh | TTCCATTTCTGGCGGAAGGGG  | Chr.2 | 13521211 | 13521231 | + | No |
| 2619458_adh | TTCTGGCGGAAGGGGCATTGA  | Chr.2 | 13521217 | 13521237 | + | No |
| 2269042_adh | TGATCAAGCAGACTGAGAATT  | Chr.2 | 13637410 | 13637390 | - | No |
| 2722190_adh | TTTGCGTGACATTAGAGGGTA  | Chr.2 | 13638523 | 13638503 | - | No |
| 2414845_adh | TGGCTGCGTACTCCTCTTGGA  | Chr.2 | 13654797 | 13654817 | + | No |
| 2351261_adh | TGGAATGGACACGACGAAGGC  | Chr.2 | 13689817 | 13689797 | - | No |
| 2700399_adh | TTTATTGGATTTTTCGCGTAA  | Chr.2 | 13694764 | 13694744 | - | No |
| 2738368_adh | TTTTCGCATAGTTTTATTGGA  | Chr.2 | 13694776 | 13694756 | - | No |
| 1857893_adh | TAGCTAGAAAATGATGTCATA  | Chr.2 | 13694890 | 13694910 | + | No |
| 2490048_adh | TGTAGTTGACGTATAAAATAC  | Chr.2 | 13695292 | 13695272 | - | No |
| 2102075_adh | TGAAATGATAGTGAGTGTGAG  | Chr.2 | 13705831 | 13705811 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1926641_adh | TATTGCTGATAAAGGACGACT  | Chr.2 | 13731909 | 13731889 | - | No |
| 1999944_adh | TCGACGAAGCTATGAAACCCT  | Chr.2 | 13737963 | 13737983 | + | No |
| 2644685_adh | TTGATGAAGACTCACAAAGTGA | Chr.2 | 13819856 | 13819876 | + | No |
| 2644685_adh | TTGATGAAGACTCACAAAGTGA | Chr.2 | 13823294 | 13823314 | + | No |
| 2644685_adh | TTGATGAAGACTCACAAAGTGA | Chr.2 | 13825431 | 13825411 | - | No |
| 2625422_adh | TTGAAATCACTTCAAGACTTC  | Chr.2 | 13829147 | 13829127 | - | No |
| 1891025_adh | TATATTTGTAGTTTACTCGTT  | Chr.2 | 13829634 | 13829614 | - | No |
| 1772684_adh | TAAC TTGACTACCGGAATTTT | Chr.2 | 13834376 | 13834356 | - | No |
| 2411545_adh | TGGCGAAAATTGGCTATGTAA  | Chr.2 | 13872451 | 13872431 | - | No |
| 2373239_adh | TGGACAAAGACGACGTGATCA  | Chr.2 | 13873055 | 13873075 | + | No |
| 2010948_adh | TCGGAATATTTGTGTTTGCGG  | Chr.2 | 13888349 | 13888329 | - | No |
| 2728827_adh | TTTGTCCA ACTCTACTGCCTC | Chr.2 | 13888415 | 13888435 | + | No |
| 2513844_adh | TGTGCGGTGAAGCGCGCTTGC  | Chr.2 | 13899231 | 13899211 | - | No |
| 2513844_adh | TGTGCGGTGAAGCGCGCTTGC  | Chr.2 | 13899495 | 13899475 | - | No |
| 2280858_adh | TGCAAAGTTATAGGAAATTTA  | Chr.2 | 13901370 | 13901350 | - | No |
| 2725939_adh | TTTGGTAGGATAGTGTTACGG  | Chr.2 | 13904415 | 13904395 | - | No |
| 1879195_adh | TAGTGTACTGTTTTGTGTTTT  | Chr.2 | 13908763 | 13908783 | + | No |
| 2300799_adh | TGCGGAAGATCATTGAAAAAT  | Chr.2 | 13925998 | 13925978 | - | No |
| 2289010_adh | TGCAGTGCGGAAGATCATTGA  | Chr.2 | 13926003 | 13925983 | - | No |
| 2744347_adh | TTTTGTTGGGTAAATCGTTAT  | Chr.2 | 13947420 | 13947440 | + | No |
| 2732179_adh | TTTGTTGGGTAAATCGTTATT  | Chr.2 | 13947421 | 13947441 | + | No |
| 1866699_adh | TAGGATTTCTGCAGTACACGC  | Chr.2 | 13969693 | 13969673 | - | No |
| 2566090_adh | TTAGATTTTAGAAGACCCGTA  | Chr.2 | 13971966 | 13971986 | + | No |
| 1829145_adh | TACGTTTGAAGCCGAAAATG   | Chr.2 | 14028713 | 14028693 | - | No |
| 2721528_adh | TTTGCCAATAACGAAAACGAC  | Chr.2 | 14028742 | 14028722 | - | No |
| 2732944_adh | TTTTAAAAAGCAAAATTGACA  | Chr.2 | 14028841 | 14028861 | + | No |
| 2624759_adh | TTGAAACCCAAAAACAGGACA  | Chr.2 | 14028873 | 14028893 | + | No |
| 2601024_adh | TTCTGTAGAGATAGACTGCT   | Chr.2 | 14038763 | 14038743 | - | No |
| 2459908_adh | TGGGTTGCAAGTAGAGCGATT  | Chr.2 | 14050791 | 14050811 | + | No |
| 2526895_adh | TGTTCTGAAGGCCTGTAAGCA  | Chr.2 | 14080050 | 14080070 | + | No |
| 2041746_adh | TCTCGTTAGGATTTTGCGGCG  | Chr.2 | 14123631 | 14123611 | - | No |
| 1833976_adh | TACTGTGGAATACAATTTAAG  | Chr.2 | 14127116 | 14127096 | - | No |
| 2161716_adh | TGACGGATCACGAGGAGAATA  | Chr.2 | 14139795 | 14139815 | + | No |
| 2728078_adh | TTTGTACTCCTCTCGGACAAA  | Chr.2 | 14140799 | 14140819 | + | No |
| 1749337_adh | TAAAAGATCAGTTTGAAGTTA  | Chr.2 | 14147086 | 14147066 | - | No |
| 1826174_adh | TACGGATTTTGTGAAGGATAA  | Chr.2 | 14151728 | 14151708 | - | No |
| 2410491_adh | TGGCCAAGAGAACTAAGAAGG  | Chr.2 | 14155198 | 14155218 | + | No |
| 2028107_adh | TCGTTCTGCGGAAAGGAGGCC  | Chr.2 | 14155314 | 14155334 | + | No |
| 2260276_adh | TGATAGAAGACACGAATTGCA  | Chr.2 | 14172843 | 14172863 | + | No |
| 1887894_adh | TATAGAAATGTAGAAAACGAG  | Chr.2 | 14192027 | 14192047 | + | No |
| 1790401_adh | TAATAAGAGTAACGGAAGATA  | Chr.2 | 14218399 | 14218419 | + | No |
| 1777548_adh | TAAGAGTAACGGAAGATAAAA  | Chr.2 | 14218402 | 14218422 | + | No |
| 2541722_adh | TTAAAGTATGCTGATTCTGAA  | Chr.2 | 14227129 | 14227109 | - | No |
| 2541722_adh | TTAAAGTATGCTGATTCTGAA  | Chr.2 | 14230666 | 14230646 | - | No |
| 2711745_adh | TTTCTTGAGTTTTTGTGCGTT  | Chr.2 | 14234400 | 14234380 | - | No |
| 2629142_adh | TTGAAGTACGCTGATTCTGAA  | Chr.2 | 14237928 | 14237908 | - | No |
| 2541722_adh | TTAAAGTATGCTGATTCTGAA  | Chr.2 | 14242944 | 14242964 | + | No |
| 2616626_adh | TTCTCGGAGATTCTTTAATAA  | Chr.2 | 14244887 | 14244867 | - | No |
| 1860676_adh | TAGGAAATCGCAGAAATTGAA  | Chr.2 | 14245027 | 14245047 | + | No |
| 2544786_adh | TTAAATTTTTTCTGCGAATTT  | Chr.2 | 14247240 | 14247220 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1956580_adh | TCACTTTTTTCACCCGCCGTGG | Chr.2 | 14247383 | 14247403 | + | No |
| 2308531_adh | TGCTGATGACGTGGGAAATTA  | Chr.2 | 14251567 | 14251587 | + | No |
| 2488668_adh | TGTAGGAGTACGGTAGGGTAA  | Chr.2 | 14265561 | 14265581 | + | No |
| 2054011_adh | TCTTAATTGAAATTAGCGGAA  | Chr.2 | 14276562 | 14276582 | + | No |
| 2584908_adh | TTCAAAAACCAGCCGGTAAGC  | Chr.2 | 14276629 | 14276649 | + | No |
| 2635753_adh | TTGACGCGCAAAACACTGAAT  | Chr.2 | 14321406 | 14321426 | + | No |
| 2734401_adh | TTTTAGAAATAGGACAATATA  | Chr.2 | 14331996 | 14331976 | - | No |
| 1929576_adh | TATTCAGTAGATATGGAAAA   | Chr.2 | 14343744 | 14343724 | - | No |
| 2547687_adh | TTAAGCATTTATCGGACTTTC  | Chr.2 | 14349541 | 14349521 | - | No |
| 2533133_adh | TGTTTGCGGACCAAGAAGATT  | Chr.2 | 14358049 | 14358069 | + | No |
| 2652457_adh | TTGCGGACCAAGAAGATTTGA  | Chr.2 | 14358052 | 14358072 | + | No |
| 1866940_adh | TAGGCACCTTTTGATATAAAA  | Chr.2 | 14365149 | 14365129 | - | No |
| 1972111_adh | TCATGATAAATACGTTCCCCA  | Chr.2 | 14365247 | 14365267 | + | No |
| 2707225_adh | TTTCGATTTATTCTCTCGTCT  | Chr.2 | 14383805 | 14383825 | + | No |
| 1962300_adh | TCAGCAGTCACGTGGTTAATT  | Chr.2 | 14399710 | 14399730 | + | No |
| 1814626_adh | TACATTTTTCGTCGATTTTGC  | Chr.2 | 14408036 | 14408016 | - | No |
| 2701660_adh | TTTCAATACATTTTTCGTCGA  | Chr.2 | 14408042 | 14408022 | - | No |
| 2388001_adh | TGGATACTGTACAAGAAGGAA  | Chr.2 | 14408958 | 14408978 | + | No |
| 2546752_adh | TTAAGAAGATACACGACACAG  | Chr.2 | 14440809 | 14440789 | - | No |
| 2531600_adh | TGTTTAAGAAGATACACGACA  | Chr.2 | 14440812 | 14440792 | - | No |
| 1810347_adh | TACAATTTAAAAAATTATTTT  | Chr.2 | 14447511 | 14447491 | - | No |
| 1810441_adh | TACACAAAGAAATTAGGAAGG  | Chr.2 | 14480192 | 14480212 | + | No |
| 2236383_adh | TGAGGAAGAAGGTGTTGGACA  | Chr.2 | 14487098 | 14487078 | - | No |
| 2535317_adh | TGTTTTTTGAACTAGACGTG   | Chr.2 | 14488737 | 14488757 | + | No |
| 2748222_adh | TTTTTTACGTTTGTTGAGAT   | Chr.2 | 14496417 | 14496437 | + | No |
| 2272110_adh | TGATGGAAGTCCAAGCACAAAG | Chr.2 | 14507090 | 14507070 | - | No |
| 2588931_adh | TTCAATTGTTGCGGTTTTTCAT | Chr.2 | 14512538 | 14512558 | + | No |
| 1984199_adh | TCCGACGTGACGGTGTTCGCA  | Chr.2 | 14561702 | 14561682 | - | No |
| 2707762_adh | TTTCGATACACGGGGAGGCA   | Chr.2 | 14561719 | 14561739 | + | No |
| 2714576_adh | TTTGAATTTTTTCGTAGAAGT  | Chr.2 | 14608882 | 14608902 | + | No |
| 1968514_adh | TCATAATTTCAAAGACGAGTC  | Chr.2 | 14609294 | 14609314 | + | No |
| 2604202_adh | TTTCGAGTTTTTGCGATGCTCT | Chr.2 | 14632553 | 14632533 | - | No |
| 2523563_adh | TGTTAGGAGTCGTCAAATTTT  | Chr.2 | 14635720 | 14635700 | - | No |
| 1824832_adh | TACGCCTACCTGCCGGAGAAT  | Chr.2 | 14636386 | 14636406 | + | No |
| 1824550_adh | TACGATTGTACTCCATGCCCA  | Chr.2 | 14661966 | 14661946 | - | No |
| 1834427_adh | TACTTAAATCTTTGGATGACA  | Chr.2 | 14698605 | 14698625 | + | No |
| 2543599_adh | TTAAATCTTTGGATGACAATT  | Chr.2 | 14698608 | 14698628 | + | No |
| 2143414_adh | TGAATGAGACGTTGAATGAGT  | Chr.2 | 14708452 | 14708472 | + | No |
| 2151338_adh | TGACAAGGACTGCGACTACGT  | Chr.2 | 14709349 | 14709369 | + | No |
| 1800806_adh | TAATGGTGACAGACCAGTTCA  | Chr.2 | 14710566 | 14710586 | + | No |
| 2291625_adh | TGCATTTTGTAGGAAATCGGA  | Chr.2 | 14741844 | 14741864 | + | No |
| 1936815_adh | TCAACGGGTCGCAAAATGGGC  | Chr.2 | 14753722 | 14753702 | - | No |
| 2161395_adh | TGACGCGGGAAAACTGAAGAA  | Chr.2 | 14753864 | 14753844 | - | No |
| 2003990_adh | TCGATGAATTTGAAGACAATT  | Chr.2 | 14795518 | 14795538 | + | No |
| 2001380_adh | TCGAGATTGACAAGAAGGACG  | Chr.2 | 14796913 | 14796933 | + | No |
| 1891543_adh | TATCAAGCCGTTCAAGACTTC  | Chr.2 | 14802418 | 14802438 | + | No |
| 1830793_adh | TACTATTTCCGTCGAGATTTT  | Chr.2 | 14826195 | 14826175 | - | No |
| 2279355_adh | TGATTTTGGTGCTACGGAATG  | Chr.2 | 14845587 | 14845607 | + | No |
| 2734785_adh | TTTTAGGATGATTGTTTTGAT  | Chr.2 | 14916842 | 14916822 | - | No |
| 2002560_adh | TCGATAAGATTTTCGATGATCG | Chr.2 | 14990208 | 14990228 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1984555_adh | TCCGAGTAGTTGAGAGAGCGA  | Chr.2 | 14999821 | 14999841 | + | No |
| 2376117_adh | TGGACGATTTTCGCGGCGAGA  | Chr.2 | 15005115 | 15005095 | - | No |
| 1836665_adh | TAGAAAACAGTTGCCGCACTT  | Chr.2 | 15044579 | 15044559 | - | No |
| 2607307_adh | TTCGGACAGATTTGACACGGA  | Chr.2 | 15045624 | 15045644 | + | No |
| 2748705_adh | TTTTTCCAGATTTTCAGGTT   | Chr.2 | 15089559 | 15089579 | + | No |
| 2596048_adh | TTCCACAGAAAATGCCAATTA  | Chr.2 | 15120119 | 15120139 | + | No |
| 1834770_adh | TACTTCACTGATTTTCTTCAT  | Chr.2 | 15121306 | 15121286 | - | No |
| 2620582_adh | TTCTTACTGTAGTTTTCGGTA  | Chr.2 | 15124696 | 15124676 | - | No |
| 2514967_adh | TGTGGACGAGGTTAATGCTAA  | Chr.2 | 15149627 | 15149647 | + | No |
| 1927998_adh | TATTGTGATTGTGGAATGCAT  | Chr.2 | 15164992 | 15164972 | - | No |
| 2693694_adh | TTTACCTCGTTCGACATTTTT  | Chr.2 | 15165814 | 15165794 | - | No |
| 2116575_adh | TGAAATTGGCGGAAACTCAAA  | Chr.2 | 15232790 | 15232770 | - | No |
| 2711791_adh | TTTCTTGCTGAGAATCTTGCA  | Chr.2 | 15232893 | 15232913 | + | No |
| 2622894_adh | TTCTTGCTGAGAATCTTGCA   | Chr.2 | 15232894 | 15232914 | + | No |
| 2181459_adh | TGAGAATCTTGCAATTTAAAG  | Chr.2 | 15232901 | 15232921 | + | No |
| 2730444_adh | TTTGTTAGTTGACAACCTTCTT | Chr.2 | 15268670 | 15268650 | - | No |
| 2739231_adh | TTTTCTCAGTTGACAACTTTT  | Chr.2 | 15273575 | 15273595 | + | No |
| 2621022_adh | TTCTTCAACAACCTCTCGTCGA | Chr.3 | 1080     | 1060     | - | No |
| 2378945_adh | TGGACTTGAATGATGATGGAA  | Chr.3 | 18779    | 18759    | - | No |
| 1837651_adh | TAGAAATAAAAGAATAATGAA  | Chr.3 | 48809    | 48789    | - | No |
| 2707946_adh | TTTCGGCTATTTATTGCGGTT  | Chr.3 | 86599    | 86619    | + | No |
| 2745112_adh | TTTTTAGGAGGTTTCCTTGGT  | Chr.3 | 87467    | 87487    | + | No |
| 2117961_adh | TGAAATTTAAAAAATTTTAA   | Chr.3 | 163642   | 163662   | + | No |
| 2737924_adh | TTTTCCCCGAATTTTCATCGAT | Chr.3 | 188653   | 188633   | - | No |
| 2738305_adh | TTTTCGATGGATTTTCGACGT  | Chr.3 | 235435   | 235455   | + | No |
| 2707167_adh | TTTCGATGGATTTTCGACGTT  | Chr.3 | 235436   | 235456   | + | No |
| 2692406_adh | TTTAATTGACGACACTTTCTT  | Chr.3 | 269840   | 269860   | + | No |
| 2685740_adh | TTGTTGCAGAAAATTAATAAA  | Chr.3 | 271461   | 271441   | - | No |
| 2510098_adh | TGTGATGCAAAATCACTTCAA  | Chr.3 | 287489   | 287509   | + | No |
| 1798856_adh | TAATCTGAAAATTTTCGTCTGA | Chr.3 | 344367   | 344347   | - | No |
| 2309959_adh | TGCTTAAAATGACTGGAACAA  | Chr.3 | 348715   | 348735   | + | No |
| 2539043_adh | TTAAAATGACTGGAACAAAAG  | Chr.3 | 348718   | 348738   | + | No |
| 2318626_adh | TGGAACAAAAGAAGAATACAT  | Chr.3 | 348728   | 348748   | + | No |
| 1985724_adh | TCCGGAAGACGATCTGTGTTT  | Chr.3 | 399924   | 399944   | + | No |
| 2620582_adh | TTCTTACTGTAGTTTTCGGTA  | Chr.3 | 483434   | 483414   | - | No |
| 1940190_adh | TCAAGTATTGTCGGTAAATTA  | Chr.3 | 484313   | 484293   | - | No |
| 2237052_adh | TGAGGACAACTACGAATGAAA  | Chr.3 | 502880   | 502900   | + | No |
| 1867805_adh | TAGGCTTTAGAAAAAACACAT  | Chr.3 | 502912   | 502932   | + | No |
| 1851347_adh | TAGATGATGAGAGTAGAAGAG  | Chr.3 | 504765   | 504785   | + | No |
| 2741790_adh | TTTTGATGAGTGTTTTCTTCT  | Chr.3 | 556856   | 556876   | + | No |
| 2689489_adh | TTTAAATGAACGAGTGATAT   | Chr.3 | 599155   | 599175   | + | No |
| 2543654_adh | TTAAATGAACGAGTGATATA   | Chr.3 | 599156   | 599176   | + | No |
| 2608457_adh | TTCGGCAGTAATGGTAGAGGT  | Chr.3 | 599435   | 599415   | - | No |
| 1827471_adh | TACGGTGTTTGAGAGATGGAG  | Chr.3 | 609156   | 609136   | - | No |
| 2692319_adh | TTTAATTCGCATTGTATTGTA  | Chr.3 | 634810   | 634830   | + | No |
| 1955146_adh | TCACTGTTAATTTCCGGCAT   | Chr.3 | 640345   | 640325   | - | No |
| 2046223_adh | TCTGAGATTGGAAGAAACAAA  | Chr.3 | 646634   | 646614   | - | No |
| 2520053_adh | TGTGTGGCGGCAATGTAAGCG  | Chr.3 | 654580   | 654600   | + | No |
| 1920442_adh | TATTAATTTTCGGTATTTTTT  | Chr.3 | 665205   | 665185   | - | No |
| 1922417_adh | TATTATGAATTTGCACAGTAA  | Chr.3 | 687566   | 687546   | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2293468_adh | TGCCCCCTAGGGATTGTTGGCC | Chr.3 | 690973  | 690993  | + | No |
| 2590913_adh | TTCAGATTTTCGGAACCTGGC  | Chr.3 | 791466  | 791446  | - | No |
| 2486281_adh | TGTAATTTTGAATGAATCCGG  | Chr.3 | 792473  | 792453  | - | No |
| 2740927_adh | TTTTGAATGGAAAAACGACAG  | Chr.3 | 793716  | 793696  | - | No |
| 1940826_adh | TCAATAAATTGTTGGCATAAT  | Chr.3 | 795006  | 795026  | + | No |
| 1898721_adh | TATCGTCAATGTCTTCCGGTA  | Chr.3 | 795231  | 795251  | + | No |
| 2132491_adh | TGAAGGAAGATGAATCTGAAA  | Chr.3 | 803380  | 803400  | + | No |
| 2546880_adh | TTAAGACGGCTGATGGGATAT  | Chr.3 | 822143  | 822163  | + | No |
| 2701176_adh | TTTCAAATCCTCGTCGTTTTTC | Chr.3 | 828330  | 828310  | - | No |
| 2644495_adh | TTGATCTCTGAAAGAAGATTT  | Chr.3 | 836211  | 836231  | + | No |
| 2629230_adh | TTGAAGTGAAATCGGGGATAA  | Chr.3 | 861961  | 861941  | - | No |
| 2716789_adh | TTTGAGCGTGACGGTGTTCG   | Chr.3 | 875819  | 875839  | + | No |
| 1789692_adh | TAAGTTTGACGGAGTGATAAT  | Chr.3 | 879668  | 879648  | - | No |
| 2130819_adh | TGAAGCATGCAAATGAGTGAT  | Chr.3 | 879688  | 879668  | - | No |
| 2735321_adh | TTTTATAGGATTCAGGACAAA  | Chr.3 | 881844  | 881864  | + | No |
| 2606561_adh | TTGCGGACATACTGAATAAC   | Chr.3 | 882275  | 882255  | - | No |
| 2696738_adh | TTTAGGGCATTTGTACGTGTG  | Chr.3 | 889288  | 889268  | - | No |
| 2688130_adh | TTGTTTTAAAGTTGAGAAGCA  | Chr.3 | 889447  | 889467  | + | No |
| 2260884_adh | TGATAGGGTAGATGAATTGAC  | Chr.3 | 890374  | 890394  | + | No |
| 2590456_adh | TTCAGAATTTTGAAGAGCTTG  | Chr.3 | 895921  | 895941  | + | No |
| 2659925_adh | TTGGAGGAGTCTCGCCGAACA  | Chr.3 | 901157  | 901137  | - | No |
| 2709275_adh | TTTCGTTGGGCGGCAATATGA  | Chr.3 | 902082  | 902102  | + | No |
| 2625098_adh | TTGAAAGCGGTACGGTTCATC  | Chr.3 | 910549  | 910569  | + | No |
| 1802031_adh | TAATGTTTTAGACCTAGCAAT  | Chr.3 | 950703  | 950723  | + | No |
| 2643090_adh | TTGAGTTGACGACATCTCAAA  | Chr.3 | 952355  | 952335  | - | No |
| 2709453_adh | TTTCTAAGTATGTTTCGGCGGC | Chr.3 | 964640  | 964660  | + | No |
| 2480514_adh | TGTAAAATGTCCATTTCTCGT  | Chr.3 | 1022110 | 1022090 | - | No |
| 2584978_adh | TTCAAAACTTGAAAATATTGA  | Chr.3 | 1037400 | 1037420 | + | No |
| 2746089_adh | TTTTTCGGCAAATTTTGGGT   | Chr.3 | 1080649 | 1080629 | - | No |
| 2596723_adh | TTCCAGACCGATGCAGAACGA  | Chr.3 | 1104107 | 1104127 | + | No |
| 1940701_adh | TCAAGTTGAAGGAAGACCTCG  | Chr.3 | 1143263 | 1143283 | + | No |
| 2067479_adh | TGAAAACATAAGGAACATGTA  | Chr.3 | 1175631 | 1175611 | - | No |
| 2498884_adh | TGTCGTTGAGAAGAAGGAATT  | Chr.3 | 1196210 | 1196190 | - | No |
| 2740234_adh | TTTTCTTGATTTTCTGCGGAA  | Chr.3 | 1202270 | 1202250 | - | No |
| 2737027_adh | TTTTATTTTCGCCGGAATTTT  | Chr.3 | 1202297 | 1202277 | - | No |
| 2688385_adh | TTGTTTTTATTTTCGCCGGA   | Chr.3 | 1202301 | 1202281 | - | No |
| 2732865_adh | TTTGTTTTTATTTTCGCCGGA  | Chr.3 | 1202302 | 1202282 | - | No |
| 2746149_adh | TTTTTCGTCGATTTTCAGCCA  | Chr.3 | 1208074 | 1208094 | + | No |
| 2146849_adh | TGAATTGAATAGCATTATGTA  | Chr.3 | 1303237 | 1303217 | - | No |
| 2608462_adh | TTGCGCATAAATTTGAAAAAG  | Chr.3 | 1323238 | 1323218 | - | No |
| 2100383_adh | TGAAATGAAAAGAAGAATATA  | Chr.3 | 1333832 | 1333812 | - | No |
| 2595852_adh | TTCCAAGACTGCCTACGGATT  | Chr.3 | 1370474 | 1370494 | + | No |
| 2620325_adh | TTCTGTTCTTGAGCTTTAGAA  | Chr.3 | 1390976 | 1390996 | + | No |
| 2693138_adh | TTTACAAGAGAGATCTGAAAC  | Chr.3 | 1403233 | 1403253 | + | No |
| 2067686_adh | TGAAAACATGCAGAAAAATTGG | Chr.3 | 1416823 | 1416843 | + | No |
| 2735613_adh | TTTTATCGATTTTCCAGCTGT  | Chr.3 | 1418794 | 1418774 | - | No |
| 2606844_adh | TTGCTGCAGATTTGTTTCGC   | Chr.3 | 1418940 | 1418960 | + | No |
| 2585201_adh | TTCAAACCTCAGTAATCTATTA | Chr.3 | 1419740 | 1419760 | + | No |
| 2669696_adh | TTGGTAGAACCTGAGAACGAG  | Chr.3 | 1419875 | 1419895 | + | No |
| 2519198_adh | TGTGTCAGTAGTGTGAGAAGG  | Chr.3 | 1435868 | 1435888 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2380455_adh | TGGAGAGCAGTGCTGTGCGGC  | Chr.3 | 1437542 | 1437522 | - | No |
| 1824186_adh | TACGATGGAAATAATGAAGAA  | Chr.3 | 1481708 | 1481688 | - | No |
| 2690669_adh | TTTAAGGGAACATGCAGAAAA  | Chr.3 | 1496087 | 1496107 | + | No |
| 2620240_adh | TTCTGTGTAGAAAATGGCTGG  | Chr.3 | 1508023 | 1508043 | + | No |
| 2713986_adh | TTTGAAGGCGCTGAATTGCAA  | Chr.3 | 1520015 | 1519995 | - | No |
| 2711450_adh | TTTCTTCCTGCAAAATAGAGA  | Chr.3 | 1520357 | 1520377 | + | No |
| 2313997_adh | TGAAAAATTGACGGAAAAATCG | Chr.3 | 1521487 | 1521467 | - | No |
| 2713931_adh | TTTGAAGCTGGAGACGTGAAA  | Chr.3 | 1531944 | 1531924 | - | No |
| 2749370_adh | TTTTTTGATATATTTTGCATT  | Chr.3 | 1538359 | 1538379 | + | No |
| 2625127_adh | TTGAAAGCTGGAGATGTGGAG  | Chr.3 | 1564203 | 1564223 | + | No |
| 1806444_adh | TACAAAAATTCCGTGACTAGA  | Chr.3 | 1592260 | 1592240 | - | No |
| 2693390_adh | TTTACATCAAAATTTGCGTCA  | Chr.3 | 1619251 | 1619271 | + | No |
| 2038424_adh | TCTCATTAAGATCGAGGATAT  | Chr.3 | 1623161 | 1623181 | + | No |
| 2629303_adh | TTGAAGTTGGAGAGAAGAAGG  | Chr.3 | 1623406 | 1623426 | + | No |
| 2709715_adh | TTTCTAGGGGTAAATATGAGC  | Chr.3 | 1633103 | 1633083 | - | No |
| 2728380_adh | TTTGTAGTCTGTGACGTCATT  | Chr.3 | 1657920 | 1657940 | + | No |
| 2578521_adh | TTATGACGTCACTGTAATGGC  | Chr.3 | 1732427 | 1732407 | - | No |
| 2072572_adh | TGAAACCGAAAAACAAAAACAA | Chr.3 | 1741741 | 1741761 | + | No |
| 1990259_adh | TCCTCGCATGGTGTAACGGCT  | Chr.3 | 1744686 | 1744666 | - | No |
| 2015016_adh | TCGGATTTCTTAGCAGAAAAAA | Chr.3 | 1750423 | 1750443 | + | No |
| 2029524_adh | TCTAAATGAGCTGAAACTTGA  | Chr.3 | 1781880 | 1781860 | - | No |
| 1927764_adh | TATTGTAGTTTCGAAGAGGTA  | Chr.3 | 1824642 | 1824622 | - | No |
| 2583260_adh | TTATTGTAGTTTCGAAGAGGT  | Chr.3 | 1824643 | 1824623 | - | No |
| 2738379_adh | TTTTCGCCAATTTTCGCCATT  | Chr.3 | 1824770 | 1824790 | + | No |
| 2712672_adh | TTTGAAAGCTGGAGACTTGGA  | Chr.3 | 1837526 | 1837546 | + | No |
| 2745751_adh | TTTTTCATCATTTTCGTTGGG  | Chr.3 | 1859785 | 1859805 | + | No |
| 2557186_adh | TTACGGAAAAATGCAGAATTT  | Chr.3 | 1903159 | 1903139 | - | No |
| 2608091_adh | TTCGGAGTGTCGTTGTGACAA  | Chr.3 | 1905772 | 1905752 | - | No |
| 2608091_adh | TTCGGAGTGTCGTTGTGACAA  | Chr.3 | 1905815 | 1905835 | + | No |
| 2739589_adh | TTTTCTGGCGATTTAGTAGAG  | Chr.3 | 1916504 | 1916484 | - | No |
| 1766715_adh | TAACCAGTGAAAAATGACGCG  | Chr.3 | 1943147 | 1943127 | - | No |
| 2545136_adh | TTAACCAGTGAAAAATGACGC  | Chr.3 | 1943148 | 1943128 | - | No |
| 2737905_adh | TTTTCCATTTTCAGGCGTCGG  | Chr.3 | 1949148 | 1949128 | - | No |
| 2748875_adh | TTTTTTCGATTTTATAGGCATT | Chr.3 | 1962208 | 1962188 | - | No |
| 2301088_adh | TGCGGACTTAGGCGGTTTTTT  | Chr.3 | 1962296 | 1962316 | + | No |
| 1858198_adh | TAGCTCGTGGAATGCGATGGA  | Chr.3 | 1970238 | 1970258 | + | No |
| 2603668_adh | TTCGAGAATTTTCGATTGAA   | Chr.3 | 1976738 | 1976718 | - | No |
| 2616704_adh | TTCTCGGTTCTCTCGTTTAAA  | Chr.3 | 1977035 | 1977055 | + | No |
| 2719622_adh | TTTGATTACATTGAGAGCGGA  | Chr.3 | 1978440 | 1978420 | - | No |
| 2502365_adh | TGTGAAGGATGAGATGTCAAA  | Chr.3 | 1979654 | 1979674 | + | No |
| 2100346_adh | TGAAATGAAAAGAAACATATA  | Chr.3 | 1980769 | 1980789 | + | No |
| 1895523_adh | TATCCATCGTGGCCTAGTGGC  | Chr.3 | 2031385 | 2031365 | - | No |
| 2412195_adh | TGGCGCAGTCGGTTACATTTT  | Chr.3 | 2031937 | 2031917 | - | No |
| 2484331_adh | TGTAATGGCGCAGTCGGTTAC  | Chr.3 | 2031942 | 2031922 | - | No |
| 2272936_adh | TGATGTAATGGCGCAGTCGGT  | Chr.3 | 2031945 | 2031925 | - | No |
| 2645453_adh | TTGATGTAATGGCGCAGTCGG  | Chr.3 | 2031946 | 2031926 | - | No |
| 1990086_adh | TCCTCCCTGGATCAGTCGGTA  | Chr.3 | 2077540 | 2077560 | + | No |
| 2532896_adh | TGTTTGACTGTGCGGTGATGT  | Chr.3 | 2090965 | 2090985 | + | No |
| 2128010_adh | TGAAGACGTCCGACATCATCA  | Chr.3 | 2178608 | 2178588 | - | No |
| 2112754_adh | TGAAATGTTAAAAATTATGTA  | Chr.3 | 2227788 | 2227808 | + | No |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 2717366_adh | TTTGATACAAGTAGACGTAAT   | Chr.3 | 2237222 | 2237202 | - | No |
| 2660798_adh | TTGGATACGAGTAGACGAAAT   | Chr.3 | 2239065 | 2239085 | + | No |
| 1853875_adh | TAGCACATGACATAGAGGTAA   | Chr.3 | 2274967 | 2274987 | + | No |
| 2534352_adh | TGTTTTCGGTGTATTTTGTGTC  | Chr.3 | 2278294 | 2278274 | - | No |
| 2285891_adh | TGCACAAATTAGTAGAAACCA   | Chr.3 | 2285883 | 2285903 | + | No |
| 2614899_adh | TTCTAGCGGAAATTAACGAGA   | Chr.3 | 2314220 | 2314200 | - | No |
| 2299894_adh | TGCGATTTTGCATTGGCTGA    | Chr.3 | 2372019 | 2371999 | - | No |
| 1926475_adh | TATTGCGATTTTGCATTGGC    | Chr.3 | 2372022 | 2372002 | - | No |
| 1962143_adh | TCAGCAAGTGTAGGATAAGTG   | Chr.3 | 2427369 | 2427389 | + | No |
| 2692223_adh | TTTAATTACCCAAGTTTGAGA   | Chr.3 | 2430998 | 2431018 | + | No |
| 1957676_adh | TCAGAAGATTGCAGGTTTCGTG  | Chr.3 | 2431112 | 2431092 | - | No |
| 2587580_adh | TTCAATAGCGGACAAATAAAT   | Chr.3 | 2442909 | 2442889 | - | No |
| 1828779_adh | TACGTGGAAGGTCATCTAAAT   | Chr.3 | 2457346 | 2457366 | + | No |
| 1936585_adh | TCAACGATTATTTTCATGAACG  | Chr.3 | 2458763 | 2458783 | + | No |
| 1932375_adh | TCAAAATAGAGGACAATGCAA   | Chr.3 | 2477054 | 2477034 | - | No |
| 2269171_adh | TGATCAGCTGGTAAAATTCTC   | Chr.3 | 2483047 | 2483067 | + | No |
| 2692409_adh | TTTAATTGACGAGCATTAGGT   | Chr.3 | 2487300 | 2487320 | + | No |
| 2635671_adh | TTGACGAGCATTAGGTTTTCA   | Chr.3 | 2487305 | 2487325 | + | No |
| 2737832_adh | TTTTCCAAGCGAACTCGGAAA   | Chr.3 | 2514687 | 2514667 | - | No |
| 1856291_adh | TAGCGAAGCGAGGAACTTTTT   | Chr.3 | 2546504 | 2546524 | + | No |
| 2548805_adh | TTAAGTAGATAGACAGACCCC   | Chr.3 | 2548715 | 2548735 | + | No |
| 2686682_adh | TTGTTTAACTCGCAGCGGGCG   | Chr.3 | 2564620 | 2564600 | - | No |
| 2686682_adh | TTGTTTAACTCGCAGCGGGCG   | Chr.3 | 2565026 | 2565006 | - | No |
| 1990381_adh | TCCTCGGGGAGTACACGATCT   | Chr.3 | 2574368 | 2574388 | + | No |
| 1883920_adh | TATAAAAGACCGTCGTCACGC   | Chr.3 | 2583434 | 2583414 | - | No |
| 2749173_adh | TTTTTTGAAAGAAATCGTTGA   | Chr.3 | 2597359 | 2597379 | + | No |
| 2688961_adh | TTTAAATGTTGGTGTTGACC    | Chr.3 | 2599095 | 2599075 | - | No |
| 2538933_adh | TTAAAGTTTAAATGTTGGT     | Chr.3 | 2599102 | 2599082 | - | No |
| 2123222_adh | TGAACGCTTTGAATTCGGGAG   | Chr.3 | 2605305 | 2605325 | + | No |
| 2048997_adh | TCTGGACTGAAGAAGAAGCAC   | Chr.3 | 2674585 | 2674605 | + | No |
| 2584618_adh | TTATTTTTAAATTTTCTATT    | Chr.3 | 2695941 | 2695961 | + | No |
| 2288005_adh | TGCAGATTAATCGTCAGAAAC   | Chr.3 | 2711163 | 2711143 | - | No |
| 2620583_adh | TTCTTACTGTAGTTTTCTCTA   | Chr.3 | 2717197 | 2717217 | + | No |
| 2414936_adh | TGGCTGGAATTACGGAGAAAA   | Chr.3 | 2722626 | 2722606 | - | No |
| 2510755_adh | TGTGATGGCTGGAATTACGGA   | Chr.3 | 2722631 | 2722611 | - | No |
| 2649261_adh | TTGCAGAAGTTTCGAGACAAA   | Chr.3 | 2748710 | 2748690 | - | No |
| 2075454_adh | TGAAAGAAGTGAGCAAGACTA   | Chr.3 | 2763075 | 2763095 | + | No |
| 2061703_adh | TCTTTGAAGGACGAACGTATA   | Chr.3 | 2780421 | 2780401 | - | No |
| 2572236_adh | TTAGTTATATTCAAAACGGCT   | Chr.3 | 2788090 | 2788070 | - | No |
| 2577594_adh | TTATCGAAATCTGAAGGAGCA   | Chr.3 | 2788537 | 2788557 | + | No |
| 2679281_adh | TTGTGAACTTTTGTTGCGGCG   | Chr.3 | 2790752 | 2790772 | + | No |
| 2010107_adh | TCGGA AAAACGAAGAAAATGGA | Chr.3 | 2811497 | 2811477 | - | No |
| 2301092_adh | TGCGGACTTTTTGCATCATTT   | Chr.3 | 2815141 | 2815121 | - | No |
| 2348765_adh | TGGAATGGAAAGAGGTATTGA   | Chr.3 | 2891041 | 2891021 | - | No |
| 1990019_adh | TCCTCATATCAATATCGTTTA   | Chr.3 | 2944620 | 2944600 | - | No |
| 1930845_adh | TATTTTCACCGGTTTTTCGCG   | Chr.3 | 2946937 | 2946957 | + | No |
| 2716397_adh | TTTGAGAATATGATTGAACAA   | Chr.3 | 2962656 | 2962636 | - | No |
| 2029595_adh | TCTAACATGCTTTCGAAGGAT   | Chr.3 | 2970031 | 2970011 | - | No |
| 2516392_adh | TGTGGGAGGTGAAGAGACGCA   | Chr.3 | 2973425 | 2973445 | + | No |
| 1901532_adh | TATGAACAACACGTGGAATCA   | Chr.3 | 3052048 | 3052028 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2737544_adh | TTTTCAGGTTTCAGAAGTGGA  | Chr.3 | 3068007 | 3067987 | - | No |
| 2736583_adh | TTTTATTCTCGCGTTTTGGCC  | Chr.3 | 3068169 | 3068189 | + | No |
| 2699914_adh | TTTATTCTCGCGTTTTGGCCT  | Chr.3 | 3068170 | 3068190 | + | No |
| 2039876_adh | TCTCGCGTTTTGGCCTAAATT  | Chr.3 | 3068175 | 3068195 | + | No |
| 2657545_adh | TTGGAATCGGAATATTCACAA  | Chr.3 | 3070182 | 3070162 | - | No |
| 2618793_adh | TTCTGCTGGAAAATTGGCTAC  | Chr.3 | 3085285 | 3085265 | - | No |
| 2617108_adh | TTCTCTCGATTTTGATTAAAT  | Chr.3 | 3127246 | 3127226 | - | No |
| 2490670_adh | TGTATATGAAGACGTTGAATT  | Chr.3 | 3161890 | 3161910 | + | No |
| 2269450_adh | TGATCCGCGGATTTTGATGGA  | Chr.3 | 3171514 | 3171494 | - | No |
| 2590528_adh | TTCAGACTAAAGGCTAAATTG  | Chr.3 | 3211405 | 3211425 | + | No |
| 1976458_adh | TCCAAGGAGGAATGAGAAGCT  | Chr.3 | 3248883 | 3248903 | + | No |
| 2311978_adh | TGCTTTGTGGCTTTGCTGGTA  | Chr.3 | 3249207 | 3249227 | + | No |
| 2737231_adh | TTTTCAAGTAAATCTACCGCA  | Chr.3 | 3310741 | 3310761 | + | No |
| 1806092_adh | TAATTTTGTGGTGTAGTGGGC  | Chr.3 | 3355914 | 3355934 | + | No |
| 2487548_adh | TGTAGAATGCGGTGCCCCAAG  | Chr.3 | 3387787 | 3387807 | + | No |
| 2594292_adh | TTCATCGATCAAGAGGATCTG  | Chr.3 | 3393514 | 3393494 | - | No |
| 2708877_adh | TTTCGTCGGCTTTTCGCATAT  | Chr.3 | 3396353 | 3396373 | + | No |
| 2706289_adh | TTTCCTGCAGAAACCACAGAA  | Chr.3 | 3398587 | 3398567 | - | No |
| 2005360_adh | TCGATTTTCCTGCAGAAACCA  | Chr.3 | 3398592 | 3398572 | - | No |
| 2736358_adh | TTTTATGTTTGGCTTCGAAAA  | Chr.3 | 3398737 | 3398757 | + | No |
| 2738220_adh | TTTTCGAATTTTGAGGACAAA  | Chr.3 | 3399555 | 3399535 | - | No |
| 1994791_adh | TCGAAAGACGGATCTGTCAAA  | Chr.3 | 3402543 | 3402523 | - | No |
| 2695263_adh | TTTAGACTGTTTCGCCATAGT  | Chr.3 | 3404553 | 3404533 | - | No |
| 2734511_adh | TTTAGACTGTTTCGCCATAG   | Chr.3 | 3404554 | 3404534 | - | No |
| 2584481_adh | TTATTTTAGACTGTTTCGCCA  | Chr.3 | 3404557 | 3404537 | - | No |
| 2600777_adh | TTCTGAGTAGAATTGGCTAT   | Chr.3 | 3450741 | 3450761 | + | No |
| 2031209_adh | TCTACACGGCTCGGATGGTGA  | Chr.3 | 3455823 | 3455803 | - | No |
| 2689365_adh | TTTAAAGTGGAAGGGCAAA    | Chr.3 | 3460178 | 3460158 | - | No |
| 2721513_adh | TTTGCCAAGAGAACGATGAGA  | Chr.3 | 3471521 | 3471501 | - | No |
| 2583485_adh | TTATTTAATTTTCAGTTGGAC  | Chr.3 | 3503084 | 3503064 | - | No |
| 1984341_adh | TCCGACTTCAACCAAGAAGAA  | Chr.3 | 3503149 | 3503129 | - | No |
| 2498676_adh | TGTCGTCCTCAGAGCTGAAGA  | Chr.3 | 3503479 | 3503459 | - | No |
| 2597271_adh | TTCCATCGTTGCAAAGAAGCT  | Chr.3 | 3503518 | 3503498 | - | No |
| 2734799_adh | TTTAGGCAGAATTCTTGATT   | Chr.3 | 3508624 | 3508604 | - | No |
| 2338885_adh | TGGAATGAAAAATAGTTTCTT  | Chr.3 | 3519607 | 3519627 | + | No |
| 2580080_adh | TTATGTCCGCATAGCCAGCAA  | Chr.3 | 3525744 | 3525724 | - | No |
| 2723063_adh | TTTGGAACGTAGACAGTTTAT  | Chr.3 | 3528945 | 3528925 | - | No |
| 2688657_adh | TTTAAAAAACTGTTTTTTGTA  | Chr.3 | 3536997 | 3537017 | + | No |
| 1932513_adh | TCAAACAAAAGCTCAAAGACA  | Chr.3 | 3540722 | 3540702 | - | No |
| 1821606_adh | TACGAACGTAGGAATCGTGGT  | Chr.3 | 3540817 | 3540797 | - | No |
| 2607095_adh | TTCGGAAACGTTTGAAGAGG   | Chr.3 | 3548584 | 3548604 | + | No |
| 2552606_adh | TTAATTTAGTCGGAAACCGCA  | Chr.3 | 3587093 | 3587113 | + | No |
| 2067500_adh | TGAAAAC TAGAAAAAATGATG | Chr.3 | 3650330 | 3650310 | - | No |
| 1878710_adh | TAGTGGAGTGCGCAGAGAAGA  | Chr.3 | 3650486 | 3650466 | - | No |
| 2730057_adh | TTTGTGTGCGAAAAGACGAGA  | Chr.3 | 3652665 | 3652685 | + | No |
| 2065558_adh | TGAAAACGTCACATTGAGAT   | Chr.3 | 3690850 | 3690830 | - | No |
| 2561501_adh | TTAGAAGGAGTCGGGAAGAAA  | Chr.3 | 3695675 | 3695695 | + | No |
| 2016372_adh | TCGGGAAGAAAGGAAAATGCA  | Chr.3 | 3695685 | 3695705 | + | No |
| 2532809_adh | TGTTTGAAGTCACGGCGTTGA  | Chr.3 | 3699806 | 3699786 | - | No |
| 2290453_adh | TGCATCTTACGACGATTCTA   | Chr.3 | 3705177 | 3705197 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2618884_adh | TTCTGGAAGTAGAATGAGGTC  | Chr.3 | 3724933 | 3724913 | - | No |
| 2025980_adh | TCGTGAGAAGATTGACTATTA  | Chr.3 | 3729114 | 3729094 | - | No |
| 2713558_adh | TTTGAAGAAGTTGGAAGTTGA  | Chr.3 | 3729612 | 3729632 | + | No |
| 2041751_adh | TCTCGTTAGTTCTAGTTATCG  | Chr.3 | 3730793 | 3730813 | + | No |
| 1921872_adh | TATTATAAATTTTCAGATGATC | Chr.3 | 3735033 | 3735013 | - | No |
| 2689000_adh | TTTAAACAATTTTTGGTCGGA  | Chr.3 | 3735774 | 3735794 | + | No |
| 2633699_adh | TTGAATTCCTGGCATGTTTCT  | Chr.3 | 3735820 | 3735840 | + | No |
| 2700858_adh | TTTATTTTGGAAAGGACGAACG | Chr.3 | 3735989 | 3736009 | + | No |
| 1802666_adh | TAATTATACGGATATATATTC  | Chr.3 | 3742206 | 3742186 | - | No |
| 2233238_adh | TGAGCACTGTATTTGAGCATA  | Chr.3 | 3767923 | 3767903 | - | No |
| 2720915_adh | TTTGCAAACATGTAGAAAAAG  | Chr.3 | 3782613 | 3782593 | - | No |
| 2047282_adh | TCTGATGGATGGGATAGAACT  | Chr.3 | 3793978 | 3793958 | - | No |
| 2713823_adh | TTTGAAGATAATAAAACAAGT  | Chr.3 | 3799640 | 3799660 | + | No |
| 2462856_adh | TGGTAGAGACGAACTGCGGAT  | Chr.3 | 3801730 | 3801710 | - | No |
| 2166823_adh | TGACTAGGCAGAGGAGGAACG  | Chr.3 | 3831426 | 3831446 | + | No |
| 2711514_adh | TTTCTTCGGCGAAACAAGAGA  | Chr.3 | 3843902 | 3843882 | - | No |
| 2161496_adh | TGACGGAAAAATGCACAGAGT  | Chr.3 | 3844081 | 3844101 | + | No |
| 2743741_adh | TTTTGTCAGCAGCCAAGAAGC  | Chr.3 | 3844609 | 3844629 | + | No |
| 2705454_adh | TTTCCCTATAATTTTGTCTGTT | Chr.3 | 3844638 | 3844658 | + | No |
| 2513334_adh | TGTGCACTTGATCCGACGACA  | Chr.3 | 3863914 | 3863934 | + | No |
| 2337508_adh | TGGAATCTATGGAGATGAGCA  | Chr.3 | 3866284 | 3866304 | + | No |
| 2282178_adh | TGCAAGATCTAAACTTTTAAC  | Chr.3 | 3866915 | 3866935 | + | No |
| 2142754_adh | TGAATCTGAAGGACTATGCTG  | Chr.3 | 3869533 | 3869553 | + | No |
| 2539949_adh | TTAAACGGAGTGTGGACAGCA  | Chr.3 | 3915991 | 3916011 | + | No |
| 2055958_adh | TCTTCGAAATGGTCGAGACGA  | Chr.3 | 3955919 | 3955939 | + | No |
| 2412903_adh | TGGCGGGGAAAAACAAGACGA  | Chr.3 | 3974239 | 3974219 | - | No |
| 2702566_adh | TTTCACGCAACTGAAAATTAA  | Chr.3 | 3985300 | 3985320 | + | No |
| 2662436_adh | TTGGATGAAGATGATGCTATG  | Chr.3 | 4000195 | 4000175 | - | No |
| 2380354_adh | TGGAGAGACTTACGAATCGGA  | Chr.3 | 4016069 | 4016049 | - | No |
| 2674682_adh | TTGTAGAACCATACAATGCCA  | Chr.3 | 4016991 | 4016971 | - | No |
| 2450531_adh | TGGGCGGCAAATTTTGAATTT  | Chr.3 | 4019952 | 4019932 | - | No |
| 2696645_adh | TTTAGGAGCTTTTGGGAAGGA  | Chr.3 | 4058121 | 4058141 | + | No |
| 1774440_adh | TAAGAATAAGAACATTAGCGT  | Chr.3 | 4088457 | 4088437 | - | No |
| 2595487_adh | TTCATTTCTCATTCGCTTCGT  | Chr.3 | 4095544 | 4095524 | - | No |
| 2615020_adh | TTCTAGTAATTTTCGTTTCGAA | Chr.3 | 4098155 | 4098135 | - | No |
| 2603354_adh | TTCGACTTACAAAAATGGCTA  | Chr.3 | 4098309 | 4098329 | + | No |
| 2000762_adh | TCGACTTACAAAAATGGCTAA  | Chr.3 | 4098310 | 4098330 | + | No |
| 2729856_adh | TTTGTGGACTGCGCACAAAAC  | Chr.3 | 4152569 | 4152589 | + | No |
| 1884151_adh | TATAAATACTGCAGAAATCGC  | Chr.3 | 4153026 | 4153046 | + | No |
| 2714177_adh | TTTGAATAGTAGATACTCCTG  | Chr.3 | 4172501 | 4172481 | - | No |
| 2624529_adh | TTGAAAATCTCAATCAGGACG  | Chr.3 | 4176258 | 4176238 | - | No |
| 2678327_adh | TTGTTCGGATCTCAAGAAGAAG | Chr.3 | 4185040 | 4185020 | - | No |
| 2587696_adh | TTCAATCACTCGGAGAAGGCG  | Chr.3 | 4187084 | 4187104 | + | No |
| 1954239_adh | TCACTCGGAGAAGGCGATAAA  | Chr.3 | 4187089 | 4187109 | + | No |
| 2376734_adh | TGGACTACATTAATAAAGACTC | Chr.3 | 4195373 | 4195393 | + | No |
| 2133378_adh | TGAAGGGAGACGTGTTGAAGT  | Chr.3 | 4200221 | 4200241 | + | No |
| 2742736_adh | TTTTGGAGAATAGATGTGGCA  | Chr.3 | 4206039 | 4206059 | + | No |
| 2749050_adh | TTTTTTCTGCAAAAATCGTTA  | Chr.3 | 4230215 | 4230195 | - | No |
| 2053424_adh | TCTGTTTCAGCTTGAAGAAATG | Chr.3 | 4241938 | 4241918 | - | No |
| 2689573_adh | TTTAAATTAAGAAAATCGACAA | Chr.3 | 4255592 | 4255572 | - | No |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 1845916_adh | TAGACTGCAGCTGGATGGTAT   | Chr.3 | 4277988 | 4278008 | + | No |
| 2709771_adh | TTTCTATCAAAAATGACATCG   | Chr.3 | 4287456 | 4287436 | - | No |
| 2669789_adh | TTGGTAGCAGTAACTGAAAAT   | Chr.3 | 4288000 | 4287980 | - | No |
| 2737523_adh | TTTTCAGGTAAATTAGGACTA   | Chr.3 | 4340578 | 4340598 | + | No |
| 1839058_adh | TAGAAGACATGAGAGAATAAT   | Chr.3 | 4350798 | 4350778 | - | No |
| 1956940_adh | TCGAAAAGGTTTTTATTTTGA   | Chr.3 | 4352252 | 4352272 | + | No |
| 1994809_adh | TCGAAAGAGCACATTTGCATA   | Chr.3 | 4360515 | 4360495 | - | No |
| 1994809_adh | TCGAAAGAGCACATTTGCATA   | Chr.3 | 4360537 | 4360557 | + | No |
| 1938285_adh | TCAAGAAGATATGGATGTAAG   | Chr.3 | 4373286 | 4373306 | + | No |
| 2044288_adh | TCTGAAGGATTGGCAAAACTT   | Chr.3 | 4401252 | 4401232 | - | No |
| 2307742_adh | TGCTCTGAAGGATTGGCAAAA   | Chr.3 | 4401255 | 4401235 | - | No |
| 2558757_adh | TTACTCGAATTTTGAACGGTA   | Chr.3 | 4404545 | 4404565 | + | No |
| 1831199_adh | TACTCGAATTTTGAACGGTAT   | Chr.3 | 4404546 | 4404566 | + | No |
| 2050088_adh | TCTGGCCGAGAAGATCTGTAT   | Chr.3 | 4407018 | 4406998 | - | No |
| 2590470_adh | TTCAGACATCACTTTGAGAAA   | Chr.3 | 4412196 | 4412176 | - | No |
| 2738699_adh | TTTTCGGTCATTCTGTGTTTT   | Chr.3 | 4419439 | 4419419 | - | No |
| 2025874_adh | TCGTGAATTTGTGGGAGCGGT   | Chr.3 | 4419543 | 4419563 | + | No |
| 2174441_adh | TGACTTTTCAGATTCGGCCATT  | Chr.3 | 4433250 | 4433270 | + | No |
| 2385909_adh | TGGAGTGTC AAGAGACGTGCT  | Chr.3 | 4433427 | 4433447 | + | No |
| 2174441_adh | TGACTTTTCAGATTCGGCCATT  | Chr.3 | 4438449 | 4438469 | + | No |
| 2385909_adh | TGGAGTGTC AAGAGACGTGCT  | Chr.3 | 4438626 | 4438646 | + | No |
| 2471957_adh | TGGTGGACGTAATACTTGA AAA | Chr.3 | 4441623 | 4441643 | + | No |
| 2123850_adh | TGAACGTGGGACATGTAATGC   | Chr.3 | 4444274 | 4444254 | - | No |
| 2082011_adh | TGAAAGGAAAGAAAATGAGGA   | Chr.3 | 4449143 | 4449123 | - | No |
| 2648281_adh | TTGCAAATTTTAGGACTTTTC   | Chr.3 | 4475670 | 4475690 | + | No |
| 2598383_adh | TTCCCTCCTATTTTTTCAGCA   | Chr.3 | 4475709 | 4475729 | + | No |
| 1954240_adh | TCACTCGGAGACTTGAACAAC   | Chr.3 | 4476161 | 4476181 | + | No |
| 1936233_adh | TCAACCAAGTCAAGAAGACTT   | Chr.3 | 4476393 | 4476413 | + | No |
| 2010129_adh | TCGAAAAAGATATTGAGAAGA   | Chr.3 | 4476580 | 4476600 | + | No |
| 1938958_adh | TCAAGATCATCAAGAGACCAA   | Chr.3 | 4476646 | 4476666 | + | No |
| 2696549_adh | TTTAGGAATTATAGAAAGAAG   | Chr.3 | 4477332 | 4477312 | - | No |
| 2120387_adh | TGAACAGGACGCAAAAACAAG   | Chr.3 | 4478669 | 4478649 | - | No |
| 2060403_adh | TCTTTACATCTGCAGACTTGG   | Chr.3 | 4485341 | 4485361 | + | No |
| 1771373_adh | TAAGTGAACATTTTGTGCGAT   | Chr.3 | 4494692 | 4494672 | - | No |
| 2471442_adh | TGGTGATGATAGTGACGACGA   | Chr.3 | 4494852 | 4494872 | + | No |
| 2271473_adh | TGATGATAGTGACGACGACAA   | Chr.3 | 4494855 | 4494875 | + | No |
| 2155376_adh | TGACATCACCTCCACTGAAGA   | Chr.3 | 4500816 | 4500796 | - | No |
| 2379363_adh | TGGAGAAAAATGGATGTGCAAC  | Chr.3 | 4507709 | 4507689 | - | No |
| 2681631_adh | TTGTGGAGCCAGTGACTGGAT   | Chr.3 | 4521683 | 4521703 | + | No |
| 1761397_adh | TAAATGAGGACACGAAGAAAG   | Chr.3 | 4530390 | 4530410 | + | No |
| 1839058_adh | TAGAAGACATGAGAGAATAAT   | Chr.3 | 4543592 | 4543572 | - | No |
| 2176888_adh | TGAGAAACGCAGACAGCACAC   | Chr.3 | 4560558 | 4560578 | + | No |
| 2172237_adh | TGACTGTGGCAAGGTATTTTT   | Chr.3 | 4587138 | 4587118 | - | No |
| 1930640_adh | TATTTTAAAGGAGCATAGGCG   | Chr.3 | 4596031 | 4596011 | - | No |
| 1917574_adh | TATGTAGAGAAAAGCAAAGAGA  | Chr.3 | 4607864 | 4607844 | - | No |
| 2542226_adh | TTAAATAGAAAAATTAAGAAA   | Chr.3 | 4611961 | 4611941 | - | No |
| 1991109_adh | TCCTGAATTTTGAAACGGTTT   | Chr.3 | 4618640 | 4618620 | - | No |
| 2089616_adh | TGAAATATGAAGAATTTTCAA   | Chr.3 | 4625018 | 4624998 | - | No |
| 2702910_adh | TTTCAGAGACTGACATTCCAA   | Chr.3 | 4626371 | 4626391 | + | No |
| 2013640_adh | TCGGATATTAACGTGCATTTA   | Chr.3 | 4635094 | 4635074 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1798573_adh | TAATCGGATATTAACGTGCAT  | Chr.3 | 4635097 | 4635077 | - | No |
| 2620521_adh | TTCTTAATTTGAACGAGTTGC  | Chr.3 | 4635205 | 4635225 | + | No |
| 2620521_adh | TTCTTAATTTGAACGAGTTGC  | Chr.3 | 4638284 | 4638304 | + | No |
| 2523708_adh | TGTTAGTGGAACGACAGCAGT  | Chr.3 | 4651123 | 4651143 | + | No |
| 2540109_adh | TTAAACTGTATAGGGAAGACC  | Chr.3 | 4651659 | 4651679 | + | No |
| 1773067_adh | TAAGAAAAACGGCATGTGACT  | Chr.3 | 4652566 | 4652586 | + | No |
| 2172993_adh | TGACTTCATTTAGTTTTTCAA  | Chr.3 | 4654102 | 4654122 | + | No |
| 2565822_adh | TTAGATTGAACTGTGAATGGC  | Chr.3 | 4654324 | 4654304 | - | No |
| 1811111_adh | TACACGGATTTTTGCACCAGA  | Chr.3 | 4655567 | 4655587 | + | No |
| 1971793_adh | TCATGACATTGAGGACAGCTC  | Chr.3 | 4677884 | 4677864 | - | No |
| 2744424_adh | TTTTGTTGTTTCGTGCGATTT  | Chr.3 | 4693488 | 4693508 | + | No |
| 2709954_adh | TTTCTCGAAAATTGTAACGGA  | Chr.3 | 4707054 | 4707074 | + | No |
| 2710651_adh | TTTCTGGAATAATCGGTTTTGC | Chr.3 | 4707506 | 4707526 | + | No |
| 2569691_adh | TTAGTAACAATTCGAACACGG  | Chr.3 | 4709890 | 4709910 | + | No |
| 1764074_adh | TAACAATTCGAACACGGAATC  | Chr.3 | 4709894 | 4709914 | + | No |
| 1935542_adh | TCAAATTCAGAAAATCGTCTC  | Chr.3 | 4720943 | 4720923 | - | No |
| 2269904_adh | TGATCGGAGATGGAGGTGTGCG | Chr.3 | 4739965 | 4739945 | - | No |
| 1755919_adh | TAAACTTGGTTTTTCTGTGCGT | Chr.3 | 4749501 | 4749521 | + | No |
| 1755919_adh | TAAACTTGGTTTTTCTGTGCGT | Chr.3 | 4752591 | 4752571 | - | No |
| 2608681_adh | TTCGGCTAGACCATACGCCCA  | Chr.3 | 4753708 | 4753688 | - | No |
| 2595572_adh | TTCATTTTGTGTTGCAGCGGG  | Chr.3 | 4757205 | 4757225 | + | No |
| 2589444_adh | TTCACCTGAATAGGCATTTTC  | Chr.3 | 4759586 | 4759566 | - | No |
| 1985203_adh | TCCGCACAACTCTGAATATGGT | Chr.3 | 4769915 | 4769935 | + | No |
| 2688933_adh | TTTAAAAGTTTTTCTGACGGC  | Chr.3 | 4782038 | 4782018 | - | No |
| 2748193_adh | TTTTTTACAATTTTGTGCGTT  | Chr.3 | 4782082 | 4782062 | - | No |
| 2736275_adh | TTTTATGTTATGTGCCGGCAC  | Chr.3 | 4782105 | 4782085 | - | No |
| 2729246_adh | TTTGTGAAATCGGTTTCTCTC  | Chr.3 | 4785185 | 4785165 | - | No |
| 2127343_adh | TGAAGAAGTGAATGAAGAAGA  | Chr.3 | 4790269 | 4790289 | + | No |
| 2608669_adh | TTCGGCTACCCATTCTAAATA  | Chr.3 | 4792775 | 4792795 | + | No |
| 2016662_adh | TCGGGAGGTTAGAGACAGTGT  | Chr.3 | 4796151 | 4796131 | - | No |
| 2148688_adh | TGAATTTTATTTTTTATTGCA  | Chr.3 | 4807517 | 4807497 | - | No |
| 1860663_adh | TAGGAAATAAATGAGCGATGA  | Chr.3 | 4809491 | 4809511 | + | No |
| 2643072_adh | TTGAGTTGAAATATGAATTTG  | Chr.3 | 4840604 | 4840584 | - | No |
| 2185266_adh | TGAGAGAATACGGTATCTATC  | Chr.3 | 4846909 | 4846889 | - | No |
| 2715108_adh | TTTGACGACGATTGATATTCC  | Chr.3 | 4850320 | 4850340 | + | No |
| 2602633_adh | TTCGAATTGCAAAGCGGAGCA  | Chr.3 | 4850347 | 4850367 | + | No |
| 2623967_adh | TTCTTTTTTCAGAACGATGGCC | Chr.3 | 4857339 | 4857359 | + | No |
| 2524033_adh | TGTTATATTATAAGTAGACGA  | Chr.3 | 4862093 | 4862113 | + | No |
| 1866496_adh | TAGGATTTAAATAAAAAGAAGA | Chr.3 | 4876504 | 4876524 | + | No |
| 2734161_adh | TTTTACGATTTTCGCCGGTAT  | Chr.3 | 4878504 | 4878524 | + | No |
| 2512295_adh | TGTGATTGCAGAATTATTCCC  | Chr.3 | 4904345 | 4904325 | - | No |
| 2712317_adh | TTTGAAAAAGAAAAGATGAGG  | Chr.3 | 4905406 | 4905386 | - | No |
| 2724180_adh | TTTGGATTTTAGTTTCAAAGA  | Chr.3 | 4911204 | 4911224 | + | No |
| 1757151_adh | TAAAGCAATATGGGTACTCTT  | Chr.3 | 4912410 | 4912390 | - | No |
| 2716616_adh | TTTGAGATCAAATGGACGCCA  | Chr.3 | 4912656 | 4912676 | + | No |
| 2049706_adh | TCTGGATATGAAGTTTGCTAT  | Chr.3 | 4930539 | 4930559 | + | No |
| 2744192_adh | TTTTGTTGAAGAGCGCTGAAG  | Chr.3 | 4932214 | 4932234 | + | No |
| 2129339_adh | TGAAGAGCGCTGAAGATTTTC  | Chr.3 | 4932220 | 4932240 | + | No |
| 1929435_adh | TATTTATTTTCGGTATTACAT  | Chr.3 | 4932384 | 4932364 | - | No |
| 2581150_adh | TTATTATTATTATTTCGGT    | Chr.3 | 4932391 | 4932371 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2259652_adh | TGATACGGCTTTAATCAATTT  | Chr.3 | 4932422 | 4932402 | - | No  |
| 2616046_adh | TTCTCACGATGATACGGCTTT  | Chr.3 | 4932431 | 4932411 | - | No  |
| 2258334_adh | TGATAAATCAATCTGAACGGA  | Chr.3 | 4934659 | 4934639 | - | No  |
| 2709884_adh | TTTCTCAGGAGCATTGATTAA  | Chr.3 | 4935080 | 4935100 | + | No  |
| 2616111_adh | TTCTCAGGAGCATTGATTAAA  | Chr.3 | 4935081 | 4935101 | + | No  |
| 2541761_adh | TTAAAGTCGGGCTAAAGTAAA  | Chr.3 | 4935097 | 4935117 | + | No  |
| 1930069_adh | TATTTCTGTAGGATTGAACGT  | Chr.3 | 4948951 | 4948971 | + | No  |
| 1932150_adh | TCAAAAGAAAAGGAGCATATA  | Chr.3 | 4955021 | 4955001 | - | No  |
| 2574110_adh | TTATAATGTAGGAGTTTCGAC  | Chr.3 | 4963147 | 4963167 | + | No  |
| 2589453_adh | TTACCTGGTTCGCCGCCAAA   | Chr.3 | 4984875 | 4984855 | - | No  |
| 2487690_adh | TGTAGAGAACATGAAGATGCA  | Chr.3 | 4986515 | 4986535 | + | No  |
| 1858942_adh | TAGCTTACCGTAGATTGAACA  | Chr.3 | 4987747 | 4987727 | - | No  |
| 2722871_adh | TTTGGAAAAGTGAAGAGAGAA  | Chr.3 | 4998521 | 4998541 | + | No  |
| 2740738_adh | TTTTGAACGTTTTTCGCGCAGA | Chr.3 | 4998948 | 4998928 | - | No  |
| 2744817_adh | TTTTTAATCGTCAGTTTTGAA  | Chr.3 | 4998962 | 4998942 | - | No  |
| 2038617_adh | TCTCCACACGGCTGAAATAAC  | Chr.3 | 4999010 | 4998990 | - | No  |
| 1768702_adh | TAACGGAGAACCTATCAACAC  | Chr.3 | 5012530 | 5012510 | - | No  |
| 2471757_adh | TGGTGGAAGATGACTAAAAA   | Chr.3 | 5016498 | 5016478 | - | No  |
| 1897255_adh | TATCGATTTTTTGACAAATA   | Chr.3 | 5018121 | 5018101 | - | No  |
| 2713980_adh | TTTGAAGGCCAAGACGGGACA  | Chr.3 | 5018377 | 5018397 | + | No  |
| 2646225_adh | TTGATTCTTGCTGTGAAACGG  | Chr.3 | 5024479 | 5024459 | - | No  |
| 2709923_adh | TTTCTCCCAGTTTTCTTCAA   | Chr.3 | 5024615 | 5024635 | + | No  |
| 2515589_adh | TGTGGATGGAATGAAGGAAAT  | Chr.3 | 5024789 | 5024769 | - | No  |
| 1888035_adh | TATAGAGTGTAGTAAAGCGTG  | Chr.3 | 5030383 | 5030363 | - | No  |
| 2608370_adh | TTCGGATTGTCATTGAGATGG  | Chr.3 | 5047348 | 5047368 | + | No  |
| 2589095_adh | TTCACAATCAGATTCGGTATA  | Chr.3 | 5056718 | 5056738 | + | No  |
| 1961670_adh | TCAGATTCGGTATATTGAGAC  | Chr.3 | 5056725 | 5056745 | + | No  |
| 2742889_adh | TTTTGGCATCTTTGGAATCTT  | Chr.3 | 5078817 | 5078837 | + | No  |
| 2589071_adh | TTCACAAACAGTGCTTTTATT  | Chr.3 | 5081250 | 5081270 | + | No  |
| 2123811_adh | TGAACGTCTTTGGAAGTCCGC  | Chr.3 | 5084895 | 5084915 | + | No  |
| 1763008_adh | TAACAAAACATTTTCGTTGGG  | Chr.3 | 5108673 | 5108653 | - | No  |
| 2541068_adh | TTAAAGATACAGTGACGTCAA  | Chr.3 | 5158769 | 5158789 | + | No  |
| 2710860_adh | TTTCTGTAGTATGGCATATTT  | Chr.3 | 5166287 | 5166307 | + | No  |
| 2745990_adh | TTTTTCGAATTCTCATTGCAT  | Chr.3 | 5172628 | 5172608 | - | No  |
| 2703987_adh | TTTCATCGATGTTGCGGTGTT  | Chr.3 | 5172775 | 5172795 | + | No  |
| 1750624_adh | TAAATACTTTTCGGATTATC   | Chr.3 | 5173016 | 5173036 | + | No  |
| 2259264_adh | TGATACAAACGGTAGACCTGT  | Chr.3 | 5186366 | 5186346 | - | No  |
| 2602350_adh | TTCAATAAAGGAAATGGTGA   | Chr.3 | 5188719 | 5188739 | + | No  |
| 2661096_adh | TTGGATATGATTATGGGAGAA  | Chr.3 | 5204564 | 5204544 | - | No  |
| 2531105_adh | TGTTGTGTTTTCTTTACGA    | Chr.3 | 5207109 | 5207089 | - | No  |
| 2724483_adh | TTTGGCGTTAATCAGTTGATT  | Chr.3 | 5207251 | 5207271 | + | No  |
| 1774100_adh | TAAGAAGACAAGTAGCAGAAT  | Chr.3 | 5215968 | 5215988 | + | No  |
| 2593062_adh | TTCACTGCAAGTAAGCTAACC  | Chr.3 | 5228171 | 5228191 | + | No  |
| 2649148_adh | TTGCACTGAAACAGGCTAGAC  | Chr.3 | 5228180 | 5228160 | - | No  |
| 2739225_adh | TTTTCTCAGGCATTTTAGGTG  | Chr.3 | 5228207 | 5228227 | + | Yes |
| 1971732_adh | TCATGAACGTCATTGGAGAGC  | Chr.3 | 5228940 | 5228960 | + | No  |
| 2276253_adh | TGATTGAAGGAGGAGTCATTG  | Chr.3 | 5229258 | 5229278 | + | No  |
| 2535389_adh | TGTTTTTTGGTAGAGATAAAT  | Chr.3 | 5230244 | 5230264 | + | No  |
| 1829907_adh | TACTAGAAACTTGTCAGTTCA  | Chr.3 | 5242913 | 5242933 | + | No  |
| 2696448_adh | TTTAGCGTTGAATGCTTTTTT  | Chr.3 | 5256255 | 5256275 | + | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2586346_adh | TTCAACTTTGAAAGACTAAAT  | Chr.3 | 5263356 | 5263336 | - | No |
| 2488087_adh | TGTAGATTGTCAACAAAAGAA  | Chr.3 | 5268051 | 5268071 | + | No |
| 2423865_adh | TGGGAGGAGCTGGCGGAGCAG  | Chr.3 | 5274169 | 5274149 | - | No |
| 2151570_adh | TGACAAGTACGAAGCAACTCT  | Chr.3 | 5274447 | 5274427 | - | No |
| 2391208_adh | TGGATGCTCGACGAACGGTTT  | Chr.3 | 5282934 | 5282954 | + | No |
| 2272117_adh | TGATGGAAGAAGACTCAAGCG  | Chr.3 | 5286230 | 5286210 | - | No |
| 2706514_adh | TTTCGAAACAAATGAAGACCG  | Chr.3 | 5301845 | 5301825 | - | No |
| 2745917_adh | TTTTTCCTTAGCAACCGGTTG  | Chr.3 | 5308439 | 5308459 | + | No |
| 2560518_adh | TTACTTTGTAGACGCTTCTCC  | Chr.3 | 5310978 | 5310958 | - | No |
| 1809156_adh | TACAAGTAGAAATAAGAAGAT  | Chr.3 | 5318448 | 5318428 | - | No |
| 2534351_adh | TGTTTTCGGTGTATTTTTGGT  | Chr.3 | 5324366 | 5324386 | + | No |
| 2534351_adh | TGTTTTCGGTGTATTTTTGGT  | Chr.3 | 5324605 | 5324585 | - | No |
| 1897609_adh | TATCGGAGCAAAAAGTTGCAGA | Chr.3 | 5326818 | 5326798 | - | No |
| 1890446_adh | TATATGTATGGACCACCACCA  | Chr.3 | 5343886 | 5343906 | + | No |
| 2291625_adh | TGCATTTTGTAGGAAATCGGA  | Chr.3 | 5365846 | 5365826 | - | No |
| 2487020_adh | TGTA CTGAGATTGTTTAATA  | Chr.3 | 5375333 | 5375353 | + | No |
| 2702970_adh | TTTCAGATTT CAGCACTTCCT | Chr.3 | 5375384 | 5375404 | + | No |
| 2745091_adh | TTTTTAGCGAAGTTTTGTGGT  | Chr.3 | 5380482 | 5380462 | - | No |
| 1995788_adh | TCGA ACTGTAAAACACGGAAA | Chr.3 | 5392813 | 5392793 | - | No |
| 2749062_adh | TTTTTTCTGGTTTCTGGCATT  | Chr.3 | 5394199 | 5394179 | - | No |
| 2295187_adh | TGCCTTCTGCGCATACGTCAA  | Chr.3 | 5397316 | 5397336 | + | No |
| 2702967_adh | TTTCAGATTACGGAATAATGG  | Chr.3 | 5410963 | 5410983 | + | No |
| 1756363_adh | TAAAGAACTCGTAGAAAACGT  | Chr.3 | 5422034 | 5422014 | - | No |
| 2748495_adh | TTTTTTCAATAAAGAACTCGT  | Chr.3 | 5422043 | 5422023 | - | No |
| 2652569_adh | TTGCGGACTTG CATACCGTAT | Chr.3 | 5442982 | 5443002 | + | No |
| 2391208_adh | TGGATGCTCGACGAACGGTTT  | Chr.3 | 5459942 | 5459922 | - | No |
| 2391208_adh | TGGATGCTCGACGAACGGTTT  | Chr.3 | 5460506 | 5460526 | + | No |
| 2037826_adh | TCTCAGTGGCTGAAGAAACAA  | Chr.3 | 5473228 | 5473208 | - | No |
| 1864191_adh | TAGGAGTATAGACGGCAGAAA  | Chr.3 | 5483915 | 5483935 | + | No |
| 2271889_adh | TGATGCGAAACGGATGAAACT  | Chr.3 | 5486099 | 5486119 | + | No |
| 2689268_adh | TTTAAAGCAAGAACGATAGAG  | Chr.3 | 5488322 | 5488302 | - | No |
| 2641216_adh | TTGAGGAGACTGCAGAGAGAA  | Chr.3 | 5500006 | 5500026 | + | No |
| 2701612_adh | TTTCAAGGTTTTCGCCTACGC  | Chr.3 | 5503900 | 5503920 | + | No |
| 2376091_adh | TGGACGATCAAGACAGCGACA  | Chr.3 | 5505561 | 5505581 | + | No |
| 2550425_adh | TTAATCCACAGTTTGAAGCGC  | Chr.3 | 5506319 | 5506299 | - | No |
| 2737449_adh | TTTTCAGAGAATTCATCGAAA  | Chr.3 | 5516902 | 5516882 | - | No |
| 2235472_adh | TGAGCTGCGTCTGACGGCCAT  | Chr.3 | 5538157 | 5538177 | + | No |
| 2639425_adh | TTGAGAAATATCGGAGGTGTT  | Chr.3 | 5542278 | 5542298 | + | No |
| 2571065_adh | TTAGTCATCATTTTTCCCTCA  | Chr.3 | 5543170 | 5543150 | - | No |
| 2313969_adh | TGGA AAATTAAAGAAGTTGTA | Chr.3 | 5555006 | 5554986 | - | No |
| 2733496_adh | TTTTAAGATTTTTGTGGAA    | Chr.3 | 5555022 | 5555002 | - | No |
| 2573626_adh | TTAGTTTTTTCTTTCGGCGGA  | Chr.3 | 5555133 | 5555153 | + | No |
| 2749139_adh | TTTTTTCTTTCGGCGGAAAAC  | Chr.3 | 5555137 | 5555157 | + | No |
| 2746462_adh | TTTTTCTTTCGGCGGAAAACC  | Chr.3 | 5555138 | 5555158 | + | No |
| 1996060_adh | TCGAAGACTGCATCAGCGAAC  | Chr.3 | 5591060 | 5591040 | - | No |
| 2738122_adh | TTTTCTTATATTCCCATACT   | Chr.3 | 5591309 | 5591329 | + | No |
| 2123045_adh | TGAACGATGACGTCTTCCTCA  | Chr.3 | 5594091 | 5594111 | + | No |
| 1833638_adh | TACTGTAGAAAATTTAGGTAT  | Chr.3 | 5604270 | 5604290 | + | No |
| 2618498_adh | TTCTGATTCTCATACTCATTA  | Chr.3 | 5614895 | 5614915 | + | No |
| 2667130_adh | TTGGGAGAGAAGATGATTATG  | Chr.3 | 5621201 | 5621181 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2744468_adh | TTTTGTTTCGTCGGATCAAAT  | Chr.3 | 5635942 | 5635922 | - | No |
| 2748002_adh | TTTTTGTTCGTCGGATCAAA   | Chr.3 | 5635943 | 5635923 | - | No |
| 2595583_adh | TTCATTTTTGTTCGTCGGAT   | Chr.3 | 5635947 | 5635927 | - | No |
| 2740775_adh | TTTTGAAGAATGGCTAATTTG  | Chr.3 | 5650158 | 5650178 | + | No |
| 2728387_adh | TTTGTAGTTAGAAGCTGTCTT  | Chr.3 | 5654559 | 5654539 | - | No |
| 1957372_adh | TCAGAACTTCCTGATTTCGGCT | Chr.3 | 5671654 | 5671674 | + | No |
| 1886701_adh | TATACAAGAGTTAAGGTCGGA  | Chr.3 | 5688980 | 5689000 | + | No |
| 2624814_adh | TTGAAACTACAGTACTCGTTA  | Chr.3 | 5689397 | 5689377 | - | No |
| 1762451_adh | TAAATTGACAGCAGAAATTTTC | Chr.3 | 5692733 | 5692753 | + | No |
| 2711365_adh | TTTCTTATTCATTCAAGTTCCT | Chr.3 | 5692789 | 5692769 | - | No |
| 1844717_adh | TAGAATTTCCCTCGGATATATT | Chr.3 | 5692885 | 5692905 | + | No |
| 2706228_adh | TTTCCTCGGATATATTCAAAT  | Chr.3 | 5692890 | 5692910 | + | No |
| 1996104_adh | TCGAAGAGAGGACGTGGAGGA  | Chr.3 | 5706070 | 5706050 | - | No |
| 2546239_adh | TTAACTCTGGTTGGCACTAAA  | Chr.3 | 5706589 | 5706609 | + | No |
| 2589425_adh | TTCAACCGTGTGGGATGTCGGA | Chr.3 | 5716326 | 5716346 | + | No |
| 1953097_adh | TCACGATGCGGTTTTGTTTTT  | Chr.3 | 5728062 | 5728082 | + | No |
| 1805555_adh | TAATTTTAAAAATTAATTTCA  | Chr.3 | 5737135 | 5737155 | + | No |
| 2003962_adh | TCGATGAAGAACTGGCGAAAA  | Chr.3 | 5782532 | 5782552 | + | No |
| 2621121_adh | TTCTTCATCGATTAGCGGCCCC | Chr.3 | 5782542 | 5782522 | - | No |
| 1797890_adh | TAATCAGTTTTTTAACCCATA  | Chr.3 | 5783469 | 5783449 | - | No |
| 2054997_adh | TCTTATATTGAAGTAGTAGAA  | Chr.3 | 5785896 | 5785916 | + | No |
| 2134154_adh | TGAAGTAGTAGAAAAAGAAAAA | Chr.3 | 5785904 | 5785924 | + | No |
| 2521050_adh | TGTGTTGAATGAGGCAAGACA  | Chr.3 | 5802842 | 5802822 | - | No |
| 2744053_adh | TTTTGTGTTTTTAGAACTGAA  | Chr.3 | 5803176 | 5803196 | + | No |
| 2712752_adh | TTTGAAATAAGGTACTGAAGA  | Chr.3 | 5810169 | 5810149 | - | No |
| 2663605_adh | TTGGATGTATAAGGTGCAAGA  | Chr.3 | 5828671 | 5828691 | + | No |
| 2683127_adh | TTGTTACTGAAGGCTTCGAGT  | Chr.3 | 5855135 | 5855115 | - | No |
| 2318537_adh | TGGAAATTGTGGAAAATTGCA  | Chr.3 | 5856482 | 5856462 | - | No |
| 2745647_adh | TTTTTCACGATGGCAACTGTC  | Chr.3 | 5876281 | 5876261 | - | No |
| 2075735_adh | TGAAAGAATTGTGGATTTTGA  | Chr.3 | 5893445 | 5893465 | + | No |
| 2514620_adh | TGTGGAAGACGGAATTTGTGG  | Chr.3 | 5898218 | 5898238 | + | No |
| 2740217_adh | TTTTCTTCTTCGTTTCCGGCC  | Chr.3 | 5906275 | 5906295 | + | No |
| 1927847_adh | TATTGTATTTCTGTTCTTTT   | Chr.3 | 5925977 | 5925997 | + | No |
| 1912510_adh | TATGCATAGAATATGAAGACA  | Chr.3 | 5934454 | 5934474 | + | No |
| 2705018_adh | TTTCCAGATCTTCCATCATT   | Chr.3 | 5939266 | 5939286 | + | No |
| 1938586_adh | TCAAGACTTTGACTGGAAAGA  | Chr.3 | 5941181 | 5941201 | + | No |
| 2534143_adh | TGTTTTATCTGTCTGTCTCG   | Chr.3 | 5953202 | 5953222 | + | No |
| 2602667_adh | TTCGAATTTGTACAAATTTT   | Chr.3 | 5958564 | 5958544 | - | No |
| 1994589_adh | TCGAAAATAGGCAACGACGTC  | Chr.3 | 5958778 | 5958798 | + | No |
| 1918519_adh | TATGTCATTTCGGAATGGTGT  | Chr.3 | 5987242 | 5987262 | + | No |
| 2061589_adh | TCTTTGAAAATCGCAGAAGCT  | Chr.3 | 5990594 | 5990574 | - | No |
| 2028059_adh | TCGTTCTAAAGTCGGTCTCCA  | Chr.3 | 6020028 | 6020048 | + | No |
| 1994584_adh | TCGAAAATAAACACGAACTTC  | Chr.3 | 6037656 | 6037636 | - | No |
| 2474214_adh | TGGTTAGAACACGGTGCACAA  | Chr.3 | 6039925 | 6039945 | + | No |
| 2678183_adh | TTGTCGATGAAGGGCCCTGCT  | Chr.3 | 6048322 | 6048342 | + | No |
| 2270073_adh | TGATCGTTGAAGCCGCTGAAA  | Chr.3 | 6065961 | 6065941 | - | No |
| 2714190_adh | TTTGAATATTCAGATATGTAG  | Chr.3 | 6067155 | 6067175 | + | No |
| 2729762_adh | TTTGTGCTCTCTGAGACAGCC  | Chr.3 | 6106584 | 6106604 | + | No |
| 2057444_adh | TCTTGAACATCTGGCATTG    | Chr.3 | 6111290 | 6111270 | - | No |
| 2332095_adh | TGGAATATATGATATGATGAT  | Chr.3 | 6123954 | 6123934 | - | No |

|             |                         |       |         |         |   |     |
|-------------|-------------------------|-------|---------|---------|---|-----|
| 2710559_adh | TTTCTGCAGAAAAGTTGTAAT   | Chr.3 | 6124058 | 6124078 | + | No  |
| 2710559_adh | TTTCTGCAGAAAAGTTGTAAT   | Chr.3 | 6124069 | 6124049 | - | No  |
| 2056945_adh | TCTTCTCGACATGATTGACGG   | Chr.3 | 6124952 | 6124932 | - | No  |
| 2391216_adh | TGGATGCTGAAAGATTTGTTG   | Chr.3 | 6130925 | 6130905 | - | No  |
| 2666547_adh | TTGGCTTACAGATGAAATTAC   | Chr.3 | 6140937 | 6140917 | - | No  |
| 2701226_adh | TTTCAACAGATTCAACGCCCGG  | Chr.3 | 6141047 | 6141067 | + | No  |
| 2070833_adh | TGAAAATTTTAATCGGACAGA   | Chr.3 | 6149714 | 6149734 | + | No  |
| 2189153_adh | TGAGAGTAAGCGTTGAATTGA   | Chr.3 | 6152189 | 6152169 | - | No  |
| 2681786_adh | TTGTGGGAACTGATTATGGAG   | Chr.3 | 6167572 | 6167552 | - | No  |
| 1861379_adh | TAGGAAGTGGCAAAGTAGCTG   | Chr.3 | 6172883 | 6172903 | + | No  |
| 2295414_adh | TGCGAAACTGAATTTTTAGCT   | Chr.3 | 6173112 | 6173092 | - | No  |
| 1798636_adh | TAATCGTCCTGGCGCGTTTGC   | Chr.3 | 6173153 | 6173133 | - | No  |
| 2554425_adh | TTACAGTATTTTCGGATGAAT   | Chr.3 | 6173213 | 6173233 | + | No  |
| 2005806_adh | TCGCAATCATTCTTTTCGTTT   | Chr.3 | 6198904 | 6198924 | + | No  |
| 1973935_adh | TCATTCTTTTCGTTTCGGTTCA  | Chr.3 | 6198910 | 6198930 | + | No  |
| 2062609_adh | TCTTTTCGTTTCGGTTTCATCCA | Chr.3 | 6198914 | 6198934 | + | No  |
| 2511932_adh | TGTGATTATGACGGACAAAAGA  | Chr.3 | 6200248 | 6200228 | - | No  |
| 2669692_adh | TTGGTAGAAAATGTGGTGGTG   | Chr.3 | 6208263 | 6208283 | + | No  |
| 2691144_adh | TTTAATCAAAAATCGTCATAA   | Chr.3 | 6241706 | 6241726 | + | No  |
| 1855193_adh | TAGCATCTAAAAGTGAGGGAA   | Chr.3 | 6248097 | 6248117 | + | No  |
| 2583087_adh | TTATTGGATATTCTGGAGATG   | Chr.3 | 6250683 | 6250703 | + | No  |
| 2590667_adh | TTCAGAGGAAGTGAAAGAGCA   | Chr.3 | 6278488 | 6278468 | - | No  |
| 1799698_adh | TAATGATCACAAAAGGGCAT    | Chr.3 | 6279947 | 6279927 | - | No  |
| 1821669_adh | TACGAAGAACACAAGAAAAAG   | Chr.3 | 6281029 | 6281049 | + | No  |
| 2702989_adh | TTTCAGCAGACTATGGACGCA   | Chr.3 | 6301906 | 6301926 | + | No  |
| 1993497_adh | TCCTTGATGCTCGGAAGGTGA   | Chr.3 | 6308154 | 6308134 | - | No  |
| 2640065_adh | TTGAGAGTGGCCGATTATTTT   | Chr.3 | 6329295 | 6329275 | - | Yes |
| 2005105_adh | TCGATTGGCGACAGAAGAACG   | Chr.3 | 6339654 | 6339674 | + | No  |
| 1814245_adh | TACATTATTTTGACAAAATCG   | Chr.3 | 6342358 | 6342378 | + | No  |
| 1931913_adh | TCAAAAATCGATCGATAGACA   | Chr.3 | 6344704 | 6344724 | + | No  |
| 1805876_adh | TAATTTTCAAGCGTTCGTGTA   | Chr.3 | 6344736 | 6344756 | + | No  |
| 2749115_adh | TTTTTTCTTGAATCGGATGGG   | Chr.3 | 6344812 | 6344792 | - | No  |
| 2119539_adh | TGAACAAAATTGCGAGACATA   | Chr.3 | 6362365 | 6362385 | + | No  |
| 2240140_adh | TGAGGGCATCTGAGCTCAGAA   | Chr.3 | 6367810 | 6367790 | - | No  |
| 2593475_adh | TTCATAAGCATTGTTCTGACA   | Chr.3 | 6374080 | 6374060 | - | No  |
| 2695946_adh | TTTAGCCAATCATAGGGCACT   | Chr.3 | 6375050 | 6375030 | - | No  |
| 2595541_adh | TTCATTTTAGCCAATCATAGG   | Chr.3 | 6375055 | 6375035 | - | No  |
| 1972920_adh | TCATGTCATCTGAACATTGTC   | Chr.3 | 6375193 | 6375213 | + | No  |
| 2290314_adh | TGCATCGCTTTTCTCAATGTT   | Chr.3 | 6375221 | 6375241 | + | No  |
| 2538110_adh | TTAAAACAAGCAAACCGTATT   | Chr.3 | 6379091 | 6379071 | - | No  |
| 2137785_adh | TGAATACTGGAGTAGAAGCTT   | Chr.3 | 6395472 | 6395452 | - | No  |
| 2306449_adh | TGCTATCGGATATTTGAAAAT   | Chr.3 | 6411333 | 6411313 | - | No  |
| 1825270_adh | TACGCTCGTCATCTCGATTAT   | Chr.3 | 6441089 | 6441069 | - | No  |
| 1901728_adh | TATGAAGACACACAGACACAC   | Chr.3 | 6444435 | 6444415 | - | No  |
| 2635320_adh | TTGACCAACTGCAGACAAAAC   | Chr.3 | 6447377 | 6447397 | + | No  |
| 2641159_adh | TTGAGGAATACGTAGAAGAAA   | Chr.3 | 6447544 | 6447524 | - | No  |
| 2716850_adh | TTTGAGGAATACGTAGAAGAA   | Chr.3 | 6447545 | 6447525 | - | No  |
| 1953401_adh | TCACGGTAGATGTCCGGTGGTT  | Chr.3 | 6452904 | 6452924 | + | No  |
| 1749552_adh | TAAAAGCCATTAGAATCTCGA   | Chr.3 | 6454247 | 6454267 | + | No  |
| 2694120_adh | TTTACTAATGGCTGAAGATTT   | Chr.3 | 6551176 | 6551156 | - | No  |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 2562174_adh | TTAGACGACACTTTGACTATT   | Chr.3 | 6558605 | 6558585 | - | No |
| 2060856_adh | TCTTTCCTGTAGTTAGCCCAA   | Chr.3 | 6558643 | 6558623 | - | No |
| 2589787_adh | TTCACGTGAACTGAATCGTAC   | Chr.3 | 6563700 | 6563680 | - | No |
| 2589787_adh | TTCACGTGAACTGAATCGTAC   | Chr.3 | 6575438 | 6575418 | - | No |
| 1932854_adh | TCAAACCTGCCGTCCGGTAGCAA | Chr.3 | 6608213 | 6608193 | - | No |
| 2741367_adh | TTTTGAGAAGGAATGAAAGCA   | Chr.3 | 6608342 | 6608362 | + | No |
| 2716386_adh | TTTGAGAAGGAATGAAAGCAG   | Chr.3 | 6608343 | 6608363 | + | No |
| 2555687_adh | TTACCAGGGTTCATTTACCAG   | Chr.3 | 6615263 | 6615283 | + | No |
| 2526675_adh | TGTTTCGTTGGAGATTTTCATC  | Chr.3 | 6625392 | 6625372 | - | No |
| 2683750_adh | TTGTTTCGTTGGAGATTTTCAT  | Chr.3 | 6625393 | 6625373 | - | No |
| 2477232_adh | TGGTTGTTTCGTTGGAGATTTT  | Chr.3 | 6625396 | 6625376 | - | No |
| 2590041_adh | TTCACTGGTTGTTTCGTTGGAG  | Chr.3 | 6625401 | 6625381 | - | No |
| 2526863_adh | TGTTCTCTCCAGATTTGAGGC   | Chr.3 | 6626434 | 6626414 | - | No |
| 1825624_adh | TACGGAAATCTGAAAAAGTGG   | Chr.3 | 6630498 | 6630518 | + | No |
| 2587413_adh | TTCAAGTTCTGAACAAGAAGA   | Chr.3 | 6645539 | 6645519 | - | No |
| 2273278_adh | TGATGTCAGATAGAAGTCAGT   | Chr.3 | 6646781 | 6646761 | - | No |
| 2617731_adh | TTCTGAACCAAACCTTTGTATA  | Chr.3 | 6691564 | 6691584 | + | No |
| 2606284_adh | TTCGCAGAAGAACAATATTTA   | Chr.3 | 6710383 | 6710403 | + | No |
| 1765790_adh | TAACATATTCTGCTTCGCATG   | Chr.3 | 6711809 | 6711829 | + | No |
| 2300367_adh | TGCGCTCTGTCTGAACTGTCCA  | Chr.3 | 6731426 | 6731446 | + | No |
| 2689803_adh | TTTAACAGGATTCTTGGCATT   | Chr.3 | 6741513 | 6741493 | - | No |
| 1925157_adh | TATTCTTACATATTTCAAAT    | Chr.3 | 6794506 | 6794526 | + | No |
| 1931992_adh | TCAAAACACTGGCTGAATACT   | Chr.3 | 6796983 | 6796963 | - | No |
| 2624939_adh | TTGAAAGAAAAGAAGGATGTG   | Chr.3 | 6813331 | 6813351 | + | No |
| 1812386_adh | TACAGCTTGTCTGAGCAAGAT   | Chr.3 | 6819983 | 6820003 | + | No |
| 1829905_adh | TACTAGAAACAGGAGGTGACC   | Chr.3 | 6828725 | 6828705 | - | No |
| 2250436_adh | TGAGTAACGACATGACGAACA   | Chr.3 | 6829387 | 6829367 | - | No |
| 1832400_adh | TACTGATGAGAAGCATACTGA   | Chr.3 | 6860436 | 6860456 | + | No |
| 2746017_adh | TTTTTCGCAGGGAATATCGGT   | Chr.3 | 6869357 | 6869337 | - | No |
| 2299277_adh | TGCGATGGATGGGAGAATGGA   | Chr.3 | 6871755 | 6871735 | - | No |
| 1981250_adh | TCCCCTAGGTGGCTTGACTTT   | Chr.3 | 6887679 | 6887659 | - | No |
| 2050059_adh | TCTGGCAGCTCTTGAAGACAA   | Chr.3 | 6900236 | 6900256 | + | No |
| 1967535_adh | TCAGTTGGAAGTTGGTTTGGGA  | Chr.3 | 6923392 | 6923372 | - | No |
| 2048754_adh | TCTGGAACCTGGAAAGACTGCA  | Chr.3 | 6930344 | 6930364 | + | No |
| 2288393_adh | TGCAGCTGTGAGAAAATGAGC   | Chr.3 | 6946450 | 6946430 | - | No |
| 2486436_adh | TGTACAGCAGAATGGAGGATC   | Chr.3 | 6946477 | 6946457 | - | No |
| 2538534_adh | TTAAAACGGAACGGATCTTGG   | Chr.3 | 6946527 | 6946547 | + | No |
| 1953015_adh | TCACGAATGTCTGTCGTCGAAT  | Chr.3 | 6951332 | 6951352 | + | No |
| 2411443_adh | TGGCCTTGCTCAGACATTTAT   | Chr.3 | 6951818 | 6951798 | - | No |
| 2021606_adh | TCGTAAGAGAATTCGGATATT   | Chr.3 | 6953995 | 6953975 | - | No |
| 1999551_adh | TCGACAACCTGCTGAAGAATCT  | Chr.3 | 6954034 | 6954054 | + | No |
| 2748912_adh | TTTTTTCGGGTTGATTAAAAA   | Chr.3 | 6961389 | 6961409 | + | No |
| 1747421_adh | TAAAACAAGCAAACGAACCAT   | Chr.3 | 6968454 | 6968474 | + | No |
| 1988792_adh | TCCGTTGAGAAAGTCTGATGGA  | Chr.3 | 6970149 | 6970129 | - | No |
| 2308814_adh | TGCTGGAATCGTCGAGCTCAT   | Chr.3 | 6970273 | 6970253 | - | No |
| 1924628_adh | TATTCGTCTGTGGATCCGTCTG  | Chr.3 | 6970559 | 6970539 | - | No |
| 2011696_adh | TCGGACGTGTTGAGACCGGAA   | Chr.3 | 6970725 | 6970705 | - | No |
| 2597047_adh | TTCCAGTCGGACGTGTTGAGA   | Chr.3 | 6970731 | 6970711 | - | No |
| 1978684_adh | TCCAGGATGTGTACAAGATCG   | Chr.3 | 6970767 | 6970747 | - | No |
| 2393006_adh | TGGATTCAACGGAGACAACAT   | Chr.3 | 6970934 | 6970914 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2049936_adh | TCTGGATTCAACGGAGACAAC  | Chr.3 | 6970936 | 6970916 | - | No |
| 2049937_adh | TCTGGATTCATCAAGAAGATC  | Chr.3 | 6970993 | 6970973 | - | No |
| 2294938_adh | TGCCTGCAACAAGATGGACTC  | Chr.3 | 6971066 | 6971046 | - | No |
| 2048813_adh | TCTGGAAGTTCGAGACTGCCA  | Chr.3 | 6971334 | 6971314 | - | No |
| 2668347_adh | TTGGGTCCTCGACAAGCTGAA  | Chr.3 | 6971393 | 6971373 | - | No |
| 2150572_adh | TGACAAGAGAACCATCGAGAA  | Chr.3 | 6971515 | 6971495 | - | No |
| 2025358_adh | TCGTCATCGGACACGTCGACT  | Chr.3 | 6971585 | 6971565 | - | No |
| 1969384_adh | TCATATCAACATCGTCGTCAT  | Chr.3 | 6971599 | 6971579 | - | No |
| 1854559_adh | TAGCAGCCATGGGAAAAGAAA  | Chr.3 | 6971624 | 6971604 | - | No |
| 1973091_adh | TCATGTTGGTTTTTTGTTGGT  | Chr.3 | 6971955 | 6971935 | - | No |
| 2529408_adh | TGTTGCATACTTTTTCTCTCT  | Chr.3 | 6972091 | 6972111 | + | No |
| 2289889_adh | TGCATACTTTTTCTCTCTGGC  | Chr.3 | 6972094 | 6972114 | + | No |
| 2569482_adh | TTAGGTGTACTCTTGCAATT   | Chr.3 | 6977051 | 6977071 | + | No |
| 1996100_adh | TCGAAGAGACCTAGAGACATC  | Chr.3 | 6979026 | 6979006 | - | No |
| 1755919_adh | TAAACTTGGTTTTCTGTCTGT  | Chr.3 | 6982249 | 6982269 | + | No |
| 1755919_adh | TAAACTTGGTTTTCTGTCTGT  | Chr.3 | 6985151 | 6985131 | - | No |
| 2733009_adh | TTTTAAAAGGAGGACCAATTA  | Chr.3 | 7002708 | 7002728 | + | No |
| 2087389_adh | TGAAATAGAAGGTGAACCAAA  | Chr.3 | 7057308 | 7057328 | + | No |
| 2618938_adh | TTCTGGAGACACTGCATTTTC  | Chr.3 | 7064144 | 7064164 | + | No |
| 2488536_adh | TGTAGGAAAACGGATGACACT  | Chr.3 | 7083076 | 7083096 | + | No |
| 2651698_adh | TTGCGAAATGGGAAAGTTGAC  | Chr.3 | 7084929 | 7084909 | - | No |
| 2723473_adh | TTTGGAGAAAAGAAGGTAATT  | Chr.3 | 7088087 | 7088107 | + | No |
| 2646997_adh | TTGATTTTAAAAATGTAGTGC  | Chr.3 | 7088223 | 7088203 | - | No |
| 2319052_adh | TGGAACAGTCGAATGCAGCAA  | Chr.3 | 7102320 | 7102340 | + | No |
| 2049989_adh | TCTGGCAAGAGAGAACACGTG  | Chr.3 | 7102514 | 7102534 | + | No |
| 2292350_adh | TGCCAGAATGGACACGTTGAT  | Chr.3 | 7102520 | 7102500 | - | No |
| 2704750_adh | TTTCATTTGTTTCAGTTGGTT  | Chr.3 | 7104072 | 7104052 | - | No |
| 2595989_adh | TTCCAATTGTAGAGGCGGCAA  | Chr.3 | 7107591 | 7107571 | - | No |
| 1931749_adh | TCAAAAAATGAGGGCATGTAA  | Chr.3 | 7118208 | 7118228 | + | No |
| 2616458_adh | TTCTCGAATACCGAAGAACGT  | Chr.3 | 7138205 | 7138185 | - | No |
| 2084467_adh | TGAAAGTTGAGTAGAAACGTG  | Chr.3 | 7141193 | 7141173 | - | No |
| 2516313_adh | TGTGGGAAGTAGAAGTGTTAC  | Chr.3 | 7145690 | 7145670 | - | No |
| 2374337_adh | TGGACATGATGATGATGATGA  | Chr.3 | 7152722 | 7152702 | - | No |
| 2738348_adh | TTTTCGCAATTTTGACTCGAT  | Chr.3 | 7162344 | 7162324 | - | No |
| 1918901_adh | TATGTGACGTTTCGGGCCTTT  | Chr.3 | 7162460 | 7162480 | + | No |
| 2504450_adh | TGTGACGTTTCGGGCCTTTTC  | Chr.3 | 7162462 | 7162482 | + | No |
| 1979399_adh | TCCATAATCAGTGACTGCAAA  | Chr.3 | 7171512 | 7171532 | + | No |
| 1979399_adh | TCCATAATCAGTGACTGCAAA  | Chr.3 | 7176008 | 7175988 | - | No |
| 2341812_adh | TGGAATGAAGATTGGAAGAAT  | Chr.3 | 7179049 | 7179029 | - | No |
| 1865660_adh | TAGGATGCTGGTTTTTCGAT   | Chr.3 | 7179838 | 7179858 | + | No |
| 2046038_adh | TCTGACTTTGAAAGAATGCGT  | Chr.3 | 7180597 | 7180617 | + | No |
| 2709898_adh | TTTCTCATCGTCGATATTTTT  | Chr.3 | 7181484 | 7181464 | - | No |
| 2012626_adh | TCGGAGCAGAAGTTGGAACGTG | Chr.3 | 7197833 | 7197813 | - | No |
| 2701650_adh | TTTCAATAAAGATTGTTATAA  | Chr.3 | 7198867 | 7198847 | - | No |
| 2590268_adh | TTCAGAAAGTTATTTAGGCAA  | Chr.3 | 7207928 | 7207908 | - | No |
| 2585244_adh | TTCAAAGAAACGGAACGAAAT  | Chr.3 | 7208759 | 7208779 | + | No |
| 2039966_adh | TCTCGGACATTCCAAGACTGT  | Chr.3 | 7208784 | 7208804 | + | No |
| 2282539_adh | TGCAAGTAGCCTGACAATCTT  | Chr.3 | 7209839 | 7209819 | - | No |
| 2716449_adh | TTTGAGACGATGAGCAGATGC  | Chr.3 | 7217036 | 7217016 | - | No |
| 2664754_adh | TTGGATTTCTCAAGTACAACA  | Chr.3 | 7219761 | 7219741 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2615825_adh | TTCTATTTCTTTTTCGTTGCT  | Chr.3 | 7238197 | 7238177 | - | No |
| 2698244_adh | TTTATATATGTAGAATCGTCA  | Chr.3 | 7238340 | 7238360 | + | No |
| 1866030_adh | TAGGATGTATGAAGACAAATG  | Chr.3 | 7241147 | 7241127 | - | No |
| 2748354_adh | TTTTTTATATTAATGTCGTCA  | Chr.3 | 7241307 | 7241327 | + | No |
| 2387457_adh | TGGATAAGCATATAGACTCCA  | Chr.3 | 7273712 | 7273732 | + | No |
| 2585091_adh | TTCAAACACAGAAGTAGAACA  | Chr.3 | 7274587 | 7274607 | + | No |
| 1833733_adh | TACTGTAGGTTCCATGGTATT  | Chr.3 | 7281241 | 7281221 | - | No |
| 2689407_adh | TTTAAATATTTTAACGATCTG  | Chr.3 | 7310729 | 7310709 | - | No |
| 2714077_adh | TTTGAAGTGTGAACAAAAAAT  | Chr.3 | 7333821 | 7333801 | - | No |
| 2746614_adh | TTTTTGACATGTTTGCTGCTG  | Chr.3 | 7336364 | 7336384 | + | No |
| 1953132_adh | TCACGCGATTTAAAGACGTAA  | Chr.3 | 7336407 | 7336427 | + | No |
| 2039055_adh | TCTCCTACTTGCATATAAAAT  | Chr.3 | 7337043 | 7337063 | + | No |
| 2148228_adh | TGAATTTTCAGCATTCTCTCGG | Chr.3 | 7359205 | 7359225 | + | No |
| 2029494_adh | TCTAAATAGCTGGAGAACAAT  | Chr.3 | 7362105 | 7362125 | + | No |
| 1821938_adh | TACGAATTATGACGAAGATAT  | Chr.3 | 7377230 | 7377250 | + | No |
| 2589091_adh | TTCAACAAGGATTCATACTTTT | Chr.3 | 7381947 | 7381967 | + | No |
| 1838890_adh | TAGAACTTGAATAGCAAAAAGC | Chr.3 | 7463489 | 7463469 | - | No |
| 2007681_adh | TCGCGAATTGTACATGAGTGT  | Chr.3 | 7470752 | 7470732 | - | No |
| 2379582_adh | TGGAGAAGAGTGTATTGCTGG  | Chr.3 | 7482320 | 7482300 | - | No |
| 2046651_adh | TCTGATAGAAAGGAAGAAGAA  | Chr.3 | 7488292 | 7488272 | - | No |
| 2490443_adh | TGTATAATTTGTAGAAGTTGA  | Chr.3 | 7495355 | 7495335 | - | No |
| 1939463_adh | TCAAGGAAACTGCAGAAACTT  | Chr.3 | 7496646 | 7496626 | - | No |
| 2579361_adh | TTATGGAGCTTGTGATAAAAG  | Chr.3 | 7509626 | 7509646 | + | No |
| 2702868_adh | TTTCAGAATCAGAACACCACG  | Chr.3 | 7514779 | 7514759 | - | No |
| 2615160_adh | TTCTAGTTAGACGATGCTCCT  | Chr.3 | 7515092 | 7515072 | - | No |
| 2712852_adh | TTTGAAATTTGAAGATCTGGC  | Chr.3 | 7571512 | 7571492 | - | No |
| 2706451_adh | TTTCCTTGACGTTTCAATGA   | Chr.3 | 7571671 | 7571691 | + | No |
| 2667129_adh | TTGGGAGAGAAGATCGTTCGT  | Chr.3 | 7572342 | 7572322 | - | No |
| 1939013_adh | TCAAGATGGAAACAGAACTGT  | Chr.3 | 7572430 | 7572410 | - | No |
| 1874752_adh | TAGTAGGATTTACGCGGGCGT  | Chr.3 | 7584399 | 7584419 | + | No |
| 1971650_adh | TCATGAAAAAGTTTAGACGTG  | Chr.3 | 7593393 | 7593413 | + | No |
| 2713903_adh | TTTGAAGCCGTAGAAAAGAAA  | Chr.3 | 7601177 | 7601157 | - | No |
| 2055462_adh | TCTTATTTTGAAGCCGTAGAA  | Chr.3 | 7601183 | 7601163 | - | No |
| 2584124_adh | TTATTTGGAAGAAGACAAAAA  | Chr.3 | 7605266 | 7605286 | + | No |
| 2161983_adh | TGACGGTGAGGACTCTACTTC  | Chr.3 | 7630503 | 7630523 | + | No |
| 2034703_adh | TCTATGTGATACTGACGACAT  | Chr.3 | 7643141 | 7643121 | - | No |
| 2748789_adh | TTTTTTCCTTCGAAATCATCG  | Chr.3 | 7643942 | 7643922 | - | No |
| 2238880_adh | TGAGGCGAATAATTAACATA   | Chr.3 | 7650397 | 7650417 | + | No |
| 1985176_adh | TCCGATTTGAGCTGTGTGACG  | Chr.3 | 7662194 | 7662214 | + | No |
| 2677375_adh | TTGTATTTCTGTTAGACATTTT | Chr.3 | 7667541 | 7667521 | - | No |
| 1894842_adh | TATCATTCGTTGGGAAGGCTT  | Chr.3 | 7677143 | 7677163 | + | No |
| 2695873_adh | TTTAGATTTTGCATAATAATT  | Chr.3 | 7682452 | 7682432 | - | No |
| 2737800_adh | TTTTCATTTAGATTTTGCATA  | Chr.3 | 7682458 | 7682438 | - | No |
| 2624050_adh | TTCTTTTTGTCTGGTTTTTAAA | Chr.3 | 7688967 | 7688947 | - | No |
| 2695239_adh | TTTAGACTGAGTTTCACCGAG  | Chr.3 | 7708538 | 7708518 | - | No |
| 2717230_adh | TTTGATAACTTCGGATGAAAA  | Chr.3 | 7712153 | 7712173 | + | No |
| 2146198_adh | TGAATTCGTAGAAAAGAAAAA  | Chr.3 | 7715202 | 7715182 | - | No |
| 2055002_adh | TCTTATATTGAATTCGTAGAA  | Chr.3 | 7715210 | 7715190 | - | No |
| 2737428_adh | TTTTCAGAAACACGGAATCCA  | Chr.3 | 7727556 | 7727536 | - | No |
| 1953050_adh | TCACGACTTAGAGAATCATCA  | Chr.3 | 7727863 | 7727843 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2007730_adh | TCGCGATCGATTTTTAGAAAA  | Chr.3 | 7766136 | 7766156 | + | No |
| 2699697_adh | TTTATTCAATTGCATTCGTTT  | Chr.3 | 7766166 | 7766186 | + | No |
| 1943089_adh | TCAATTGCATTCGTTTCAATA  | Chr.3 | 7766171 | 7766191 | + | No |
| 2528179_adh | TGTTGACTATGAAGATGCTCC  | Chr.3 | 7768555 | 7768535 | - | No |
| 2010436_adh | TCGGAAATGTGTTCTTTTCGA  | Chr.3 | 7770051 | 7770031 | - | No |
| 1970207_adh | TCATATTCGGAAATGTGTTCT  | Chr.3 | 7770057 | 7770037 | - | No |
| 2259356_adh | TGATACAGCACTGAGGAGACG  | Chr.3 | 7772409 | 7772429 | + | No |
| 1912559_adh | TATGCATTAAATCTGTCGGTA  | Chr.3 | 7777736 | 7777756 | + | No |
| 1854491_adh | TAGCAGAGGGAAGAAGAAACG  | Chr.3 | 7780519 | 7780499 | - | No |
| 2014926_adh | TCGGATTGTGGAGGAGGTCAA  | Chr.3 | 7780736 | 7780756 | + | No |
| 2267971_adh | TGATATTATTAAGTACCAAT   | Chr.3 | 7811405 | 7811385 | - | No |
| 2723176_adh | TTTGGAATCTGATAGAGGACT  | Chr.3 | 7820614 | 7820594 | - | No |
| 2702601_adh | TTTCACGTCAATATATAAAAC  | Chr.3 | 7820677 | 7820697 | + | No |
| 2657086_adh | TTGGAAGAGTTGAACGAGCGT  | Chr.3 | 7826075 | 7826055 | - | No |
| 1774230_adh | TAAGAAGCTGAAGAAGATTGT  | Chr.3 | 7840956 | 7840976 | + | No |
| 2041982_adh | TCTCTACTGTAAGAAGAAAGG  | Chr.3 | 7847540 | 7847560 | + | No |
| 2020796_adh | TCGTAAAAAACGTGTTCTCAG  | Chr.3 | 7850772 | 7850752 | - | No |
| 1897515_adh | TATCGCTTTGACGGAATCATA  | Chr.3 | 7854521 | 7854501 | - | No |
| 2745378_adh | TTTTTATGGAGGATTTTCGCAG | Chr.3 | 7861722 | 7861742 | + | No |
| 2220806_adh | TGAGATGGAAAGATGTATCTA  | Chr.3 | 7861833 | 7861813 | - | No |
| 2700891_adh | TTTATTTTTGAATTTGGAAAC  | Chr.3 | 7911386 | 7911366 | - | No |
| 1795252_adh | TAATAGTAAGAGGACAATCAA  | Chr.3 | 7911781 | 7911801 | + | No |
| 2607143_adh | TTCGGAACATGTGAACATTTT  | Chr.3 | 7928896 | 7928916 | + | No |
| 2714488_adh | TTTGAATTGAGAACGTTTTCC  | Chr.3 | 7940987 | 7941007 | + | No |
| 2633820_adh | TTGAATTGAGAACGTTTTCTT  | Chr.3 | 7940988 | 7941008 | + | No |
| 2738135_adh | TTTTCTTGCAATTTCTCCAGT  | Chr.3 | 7952143 | 7952123 | - | No |
| 2301472_adh | TGCGGCAAGAGAGATTTTCGTG | Chr.3 | 7954942 | 7954922 | - | No |
| 2738134_adh | TTTTCTTGCAAATCGTTTGA   | Chr.3 | 7958080 | 7958060 | - | No |
| 1971820_adh | TCATGACTGTCTGCGGTAAAA  | Chr.3 | 7959254 | 7959234 | - | No |
| 1923803_adh | TATTCATGACTGTCTGCGGTA  | Chr.3 | 7959257 | 7959237 | - | No |
| 2537572_adh | TTAAAACTCGCAAGCATCCT   | Chr.3 | 7959444 | 7959424 | - | No |
| 2286802_adh | TGCACTGTAACGGTAGACTTT  | Chr.3 | 7964221 | 7964201 | - | No |
| 2537572_adh | TTAAAACTCGCAAGCATCCT   | Chr.3 | 7966257 | 7966277 | + | No |
| 1923803_adh | TATTCATGACTGTCTGCGGTA  | Chr.3 | 7966444 | 7966464 | + | No |
| 1971820_adh | TCATGACTGTCTGCGGTAAAA  | Chr.3 | 7966447 | 7966467 | + | No |
| 1968835_adh | TCATACTGGCTGAGTAGAAGC  | Chr.3 | 7967801 | 7967821 | + | No |
| 2699136_adh | TTTATGCGGAAGAATTTTTAA  | Chr.3 | 7969141 | 7969121 | - | No |
| 1821987_adh | TACGAATTTTATGCGGAAGAA  | Chr.3 | 7969148 | 7969128 | - | No |
| 1990978_adh | TCCTGAAAAGATGGTTGCCGA  | Chr.3 | 7973209 | 7973189 | - | No |
| 2589874_adh | TTCACTCCTGAAAAGATGGTT  | Chr.3 | 7973214 | 7973194 | - | No |
| 1993024_adh | TCCTTCGTGTTTCACTCCTGA  | Chr.3 | 7973224 | 7973204 | - | No |
| 1968634_adh | TCATACCTTCGTCTTCGTCCA  | Chr.3 | 7974602 | 7974622 | + | No |
| 2378915_adh | TGGACTTCTGCCAAGGACGTT  | Chr.3 | 7975133 | 7975153 | + | No |
| 1925278_adh | TATTGAAAGAGACGGACTCTC  | Chr.3 | 7975690 | 7975710 | + | No |
| 2296920_adh | TGCGAGACTCGTCGGCCGAAA  | Chr.3 | 7977945 | 7977965 | + | No |
| 2490187_adh | TGTAGTTGTGAGTAGAATGGC  | Chr.3 | 7985982 | 7985962 | - | No |
| 2674952_adh | TTGTAGATAGAAAGCGAATGG  | Chr.3 | 8024699 | 8024719 | + | No |
| 2389597_adh | TGGATCATTAGTAGAGTCTT   | Chr.3 | 8028523 | 8028543 | + | No |
| 2308733_adh | TGCTGCTAACACCGTCGTCGT  | Chr.3 | 8029217 | 8029237 | + | No |
| 1967687_adh | TCAGTTTACTTTTGGCAGAAC  | Chr.3 | 8029650 | 8029670 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2646324_adh | TTGATTGAGAAGTGGCGATGA  | Chr.3 | 8035988 | 8036008 | + | No |
| 2451196_adh | TGGGCTGGCGATGATCGGATC  | Chr.3 | 8048233 | 8048253 | + | No |
| 2576932_adh | TTATCACATTAACACTAAATC  | Chr.3 | 8049055 | 8049035 | - | No |
| 1975559_adh | TCATTTTGATTCTTCCGTCGG  | Chr.3 | 8050200 | 8050180 | - | No |
| 1980608_adh | TCCAGTTGACGAAAAACAGC   | Chr.3 | 8079027 | 8079047 | + | No |
| 1848124_adh | TAGAGCGCATACTACGGGGCA  | Chr.3 | 8080288 | 8080268 | - | No |
| 2521536_adh | TGTGTTTGTATCAGCTGATGA  | Chr.3 | 8093221 | 8093241 | + | No |
| 2689348_adh | TTTAAAGTAGATCTCGGTGAA  | Chr.3 | 8106297 | 8106317 | + | No |
| 2500192_adh | TGTCTTGAAGTAGCATCTCGG  | Chr.3 | 8129020 | 8129000 | - | No |
| 1940096_adh | TCAAGTAGATGAAAACATGTA  | Chr.3 | 8129279 | 8129299 | + | No |
| 1860724_adh | TAGGAAATTGTAAAGAAGCCA  | Chr.3 | 8129368 | 8129388 | + | No |
| 2746440_adh | TTTTTCTTGAGACAAGTTGGA  | Chr.3 | 8162895 | 8162875 | - | No |
| 2373028_adh | TGGAATTTTCATGCACGAAAA  | Chr.3 | 8169612 | 8169632 | + | No |
| 2031128_adh | TCTACAACAAGAAGCTGATGG  | Chr.3 | 8182222 | 8182242 | + | No |
| 2032293_adh | TCTAGAACTATGAAACGGCC   | Chr.3 | 8194625 | 8194645 | + | No |
| 1895559_adh | TATCCATGTAGAACATCGCAT  | Chr.3 | 8234497 | 8234477 | - | No |
| 1809808_adh | TACAATGAGTTAACGGAACAG  | Chr.3 | 8246405 | 8246385 | - | No |
| 1811096_adh | TACACGGAAGAACTCGGCACT  | Chr.3 | 8247684 | 8247664 | - | No |
| 1888232_adh | TATAGCAGAACACAAAAAGAT  | Chr.3 | 8258064 | 8258044 | - | No |
| 2589761_adh | TTACAGTATCTAGACATTTGA  | Chr.3 | 8264946 | 8264926 | - | No |
| 2742705_adh | TTTTGGACGAGAAGAGACAGA  | Chr.3 | 8268451 | 8268471 | + | No |
| 2140041_adh | TGAATATGGATTATTTGTCAC  | Chr.3 | 8273368 | 8273388 | + | No |
| 2313365_adh | TGGAAAACAGGGAGAATTATG  | Chr.3 | 8310262 | 8310242 | - | No |
| 2656248_adh | TTGGAAAACAGGGAGAATTAT  | Chr.3 | 8310263 | 8310243 | - | No |
| 2701073_adh | TTTCAAAGAAAACGGAGGGAG  | Chr.3 | 8319254 | 8319274 | + | No |
| 2744292_adh | TTTTGTTGAGAAAAAGAGAAT  | Chr.3 | 8319292 | 8319312 | + | No |
| 2050817_adh | TCTGGTCTGGACTTTTCGGTG  | Chr.3 | 8331285 | 8331265 | - | No |
| 1991088_adh | TCCTGAATAAGACTCAATCTA  | Chr.3 | 8341259 | 8341279 | + | No |
| 2161671_adh | TGACGGAGACGTATACACTTG  | Chr.3 | 8343816 | 8343836 | + | No |
| 1991088_adh | TCCTGAATAAGACTCAATCTA  | Chr.3 | 8349454 | 8349474 | + | No |
| 2161671_adh | TGACGGAGACGTATACACTTG  | Chr.3 | 8352011 | 8352031 | + | No |
| 2744159_adh | TTTTGTTGCGGAGCACGTGCGA | Chr.3 | 8353508 | 8353488 | - | No |
| 1977473_adh | TCCACGTATCGTTGCTGACAT  | Chr.3 | 8354229 | 8354209 | - | No |
| 1838965_adh | TAGAAGAAGAACAAGAACGGA  | Chr.3 | 8360777 | 8360797 | + | No |
| 2042028_adh | TCTCTAGATTTCTGACGGCAA  | Chr.3 | 8370167 | 8370147 | - | No |
| 2713225_adh | TTTGAACGCGTCGAAGAAGAA  | Chr.3 | 8370906 | 8370886 | - | No |
| 2054042_adh | TCTTACAATTTGAACGCGTCG  | Chr.3 | 8370914 | 8370894 | - | No |
| 2055634_adh | TCTTCAGGATCGTCTTCATTC  | Chr.3 | 8403783 | 8403803 | + | No |
| 2126942_adh | TGAAGAAATGGATTTTCTCT   | Chr.3 | 8405625 | 8405645 | + | No |
| 2733895_adh | TTTTAATTTGTCGCCTCGGAA  | Chr.3 | 8411647 | 8411667 | + | No |
| 2576259_adh | TTATATTACAGAATGCCTCGG  | Chr.3 | 8429246 | 8429266 | + | No |
| 1790734_adh | TAATAATCAAGAGAAGTCTAC  | Chr.3 | 8443516 | 8443496 | - | No |
| 1884142_adh | TATAAATAAGTAGGAGATTCA  | Chr.3 | 8443769 | 8443789 | + | No |
| 2124821_adh | TGAACCTCTCTTCGCATCGTCA | Chr.3 | 8446154 | 8446134 | - | No |
| 2036692_adh | TCTCAATGTGCGGTAAGAAGC  | Chr.3 | 8451237 | 8451217 | - | No |
| 2724816_adh | TTTGGGATGGATCAGAAGACT  | Chr.3 | 8459672 | 8459692 | + | No |
| 2256078_adh | TGAGTTCTCAAGAAAACGCA   | Chr.3 | 8470142 | 8470122 | - | No |
| 2514638_adh | TGTGGAAGATTTCGATTCGGCC | Chr.3 | 8491218 | 8491238 | + | No |
| 1923502_adh | TATTCAGATGGCTCTTGTTTC  | Chr.3 | 8505960 | 8505980 | + | No |
| 2259073_adh | TGATAATAGTAGTTGTAGGTC  | Chr.3 | 8520037 | 8520057 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2687092_adh | TTGTTTCATATTCTGGTCGGA  | Chr.3 | 8529124 | 8529144 | + | No |
| 2002390_adh | TCGAGTGGTTAGTGCGAATGA  | Chr.3 | 8541132 | 8541152 | + | No |
| 2740094_adh | TTTTCTTCGCGGCATGTCATT  | Chr.3 | 8552191 | 8552171 | - | No |
| 2296254_adh | TGCGACAAGAATTTTCAAAAT  | Chr.3 | 8609339 | 8609319 | - | No |
| 2080222_adh | TGAAAGAGCAATGGTTGAAAA  | Chr.3 | 8610123 | 8610103 | - | No |
| 2130192_adh | TGAAGATGTAGATGATGGATT  | Chr.3 | 8612567 | 8612547 | - | No |
| 1757668_adh | TAAAGCTGGAATGAATGGACT  | Chr.3 | 8628384 | 8628364 | - | No |
| 2046512_adh | TCTGAGTCAAGGTGGAATGAT  | Chr.3 | 8644013 | 8644033 | + | No |
| 2740326_adh | TTTTCTTTGAAGCGCGCTCGT  | Chr.3 | 8717390 | 8717410 | + | No |
| 2046095_adh | TCTGAGAATTAGAATGATGAT  | Chr.3 | 8732664 | 8732684 | + | No |
| 1836729_adh | TAGAAAAGCAAGTAGAATCAT  | Chr.3 | 8743727 | 8743747 | + | No |
| 1975736_adh | TCCAAAATAACTTTGAGAGGG  | Chr.3 | 8754848 | 8754868 | + | No |
| 2657824_adh | TTGGAATTGTATCAAGGCGTA  | Chr.3 | 8767216 | 8767196 | - | No |
| 1926838_adh | TATTGGAATTGTATCAAGGCG  | Chr.3 | 8767218 | 8767198 | - | No |
| 2739406_adh | TTTTCTCTTGTCATCGGTTTA  | Chr.3 | 8767966 | 8767946 | - | No |
| 2738275_adh | TTTTCGATAATCTACTGGACT  | Chr.3 | 8793525 | 8793545 | + | No |
| 1763967_adh | TAACAATATGAGATCAACGAA  | Chr.3 | 8793721 | 8793701 | - | No |
| 1846152_adh | TAGACTTAGAATGTAGAGGAA  | Chr.3 | 8795562 | 8795542 | - | No |
| 2658089_adh | TTGGACATAGTAAGAGTGTTA  | Chr.3 | 8795581 | 8795561 | - | No |
| 2062982_adh | TCTTTTTGCCTCGTCGCGTGT  | Chr.3 | 8795935 | 8795955 | + | No |
| 2131958_adh | TGAAGCTGAATATGAACGAAA  | Chr.3 | 8847129 | 8847109 | - | No |
| 2034207_adh | TCTATCGCAGCATAATGGCTC  | Chr.3 | 8850690 | 8850670 | - | No |
| 2043090_adh | TCTCTGTTCTATCGCAGCATA  | Chr.3 | 8850697 | 8850677 | - | No |
| 2623051_adh | TTCTTGGAATTTTGCTCGGACA | Chr.3 | 8852692 | 8852712 | + | No |
| 2058939_adh | TCTTGGAATTTTGCTCGGACAC | Chr.3 | 8852693 | 8852713 | + | No |
| 2620185_adh | TTCTGTGGACAGGAACTTGAC  | Chr.3 | 8852973 | 8852993 | + | No |
| 1784062_adh | TAAGGAAGCGTTGACAAGAAT  | Chr.3 | 8857317 | 8857337 | + | No |
| 2623051_adh | TTCTTGGAATTTTGCTCGGACA | Chr.3 | 8861065 | 8861085 | + | No |
| 2058939_adh | TCTTGGAATTTTGCTCGGACAC | Chr.3 | 8861066 | 8861086 | + | No |
| 2620185_adh | TTCTGTGGACAGGAACTTGAC  | Chr.3 | 8861346 | 8861366 | + | No |
| 2745519_adh | TTTTTATTTCTATAGACAAAC  | Chr.3 | 8872120 | 8872100 | - | No |
| 2538544_adh | TTAAACGGTGGCAAATACAA   | Chr.3 | 8887205 | 8887185 | - | No |
| 1933745_adh | TCAAAGGCGAGTATACTGTAG  | Chr.3 | 8887261 | 8887241 | - | No |
| 2235865_adh | TGAGCTTGAAAAGTCAAAGGCG | Chr.3 | 8887273 | 8887253 | - | No |
| 2546983_adh | TTAAGACTGTGTTTCCAATCT  | Chr.3 | 8893241 | 8893221 | - | No |
| 2701009_adh | TTTCAAACAAGGAAAACCTCGG | Chr.3 | 8893979 | 8893959 | - | No |
| 2144898_adh | TGAATGTGGTGGGAAACGGAA  | Chr.3 | 8904261 | 8904281 | + | No |
| 2635160_adh | TTGACAGTCGAACGTCGTGAC  | Chr.3 | 8904300 | 8904320 | + | No |
| 1833124_adh | TACTGGAAGACTGAAAGCTAC  | Chr.3 | 8912595 | 8912615 | + | No |
| 2619493_adh | TTCTGGGAAGAAACGGTGAGA  | Chr.3 | 8918222 | 8918242 | + | No |
| 2722915_adh | TTTGGAAGAGAGAAAGAGAGAC | Chr.3 | 8923355 | 8923335 | - | No |
| 2137748_adh | TGAATACTGAACGGATTTGAC  | Chr.3 | 8935928 | 8935948 | + | No |
| 2057959_adh | TCTTGAGGATCTTAGTACAAG  | Chr.3 | 8974847 | 8974827 | - | No |
| 1845433_adh | TAGACGGTTAGAGAAGATGAA  | Chr.3 | 8985146 | 8985166 | + | No |
| 2300908_adh | TGCGGACCTATTTTGCGGAA   | Chr.3 | 8985587 | 8985607 | + | No |
| 1961248_adh | TCAGATGACTAATTACTTTCC  | Chr.3 | 8998536 | 8998516 | - | No |
| 2138108_adh | TGAATAGAACGGATAAAATGC  | Chr.3 | 8999133 | 8999153 | + | No |
| 2127955_adh | TGAAGACGGAATCAAATTTTG  | Chr.3 | 9002066 | 9002086 | + | No |
| 2706452_adh | TTTCCTTGTCAGTCGTTGCGA  | Chr.3 | 9002444 | 9002424 | - | No |
| 1763952_adh | TAACAATAAGTCGGGAAGTTC  | Chr.3 | 9035479 | 9035499 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2169665_adh | TGACTGATGATCTGGTAAGAA  | Chr.3 | 9052763 | 9052783 | + | No |
| 2270497_adh | TGATCTGGTAAGAACGGAAAA  | Chr.3 | 9052770 | 9052790 | + | No |
| 1773789_adh | TAAGAACGGAAAAACGAAGAAC | Chr.3 | 9052778 | 9052798 | + | No |
| 1769572_adh | TAACGTGTAGAAAAACAGTTGC | Chr.3 | 9052923 | 9052943 | + | No |
| 2084203_adh | TGAAAGTGAAGAATATGATAG  | Chr.3 | 9054127 | 9054147 | + | No |
| 2661098_adh | TTGGATATGCAAAATTTTTTC  | Chr.3 | 9054605 | 9054625 | + | No |
| 2318258_adh | TGGAAATGAAAAACAATAAGC  | Chr.3 | 9059978 | 9059998 | + | No |
| 1790468_adh | TAATAAGCTTAATGGTTGGTT  | Chr.3 | 9080349 | 9080329 | - | No |
| 2587066_adh | TTCAAGCCATGGTCGGACAAT  | Chr.3 | 9080415 | 9080395 | - | No |
| 1980220_adh | TCCAAGATGCCAAGGACTCC   | Chr.3 | 9080540 | 9080520 | - | No |
| 2708831_adh | TTTCGTCAAGAAGGCTATCGC  | Chr.3 | 9080712 | 9080692 | - | No |
| 1977145_adh | TCCACAGAACTTCGACGACAT  | Chr.3 | 9081809 | 9081829 | + | No |
| 2587065_adh | TTCAAGCCATCGTCGGACAAT  | Chr.3 | 9082330 | 9082350 | + | No |
| 2124122_adh | TGAACATATGCTTTTGGACA   | Chr.3 | 9086633 | 9086613 | - | No |
| 1876086_adh | TAGTCAAGTTTTTGCTCGGTG  | Chr.3 | 9089523 | 9089503 | - | No |
| 2623264_adh | TTCTTTAGATATGAGTAACAG  | Chr.3 | 9101268 | 9101288 | + | No |
| 2597020_adh | TTCCAGGTGTGTAATTCGGTA  | Chr.3 | 9111056 | 9111076 | + | No |
| 1978814_adh | TCCAGGTGTGTAATTCGGTAA  | Chr.3 | 9111057 | 9111077 | + | No |
| 2740248_adh | TTTTCTTGGCACATTTGCATA  | Chr.3 | 9111722 | 9111702 | - | No |
| 2606180_adh | TTCGCAAATTCGAAAATGTAT  | Chr.3 | 9130790 | 9130810 | + | No |
| 2625581_adh | TTGAAATGTGGCCGGCAACAA  | Chr.3 | 9145040 | 9145060 | + | No |
| 2527460_adh | TGTTGAAATAGGAAGTGGAAT  | Chr.3 | 9163957 | 9163937 | - | No |
| 2037351_adh | TCTCAGAGCGGTCTTTTGATG  | Chr.3 | 9173898 | 9173878 | - | No |
| 2033947_adh | TCTATACTGTGGAAGGGTGTC  | Chr.3 | 9176214 | 9176234 | + | No |
| 1962515_adh | TCAGCCGTTAGACGTGTTTAT  | Chr.3 | 9178955 | 9178975 | + | No |
| 1887197_adh | TATACGGGATGAGAAGAAGTG  | Chr.3 | 9186296 | 9186276 | - | No |
| 2674174_adh | TTGTACACAAAATCATCGGCA  | Chr.3 | 9196543 | 9196563 | + | No |
| 2589176_adh | TTACAGCTGAAGAATTTTAT   | Chr.3 | 9228552 | 9228572 | + | No |
| 1797811_adh | TAATCACTAGGTTTCCCGTCA  | Chr.3 | 9236620 | 9236600 | - | No |
| 2649815_adh | TTGCAGTGAGGTGACCGCTAA  | Chr.3 | 9237419 | 9237439 | + | No |
| 2578832_adh | TTATGATGTCCATGCTCCCTC  | Chr.3 | 9239996 | 9239976 | - | No |
| 2397378_adh | TGGCAACAGACTGTAATATAG  | Chr.3 | 9269182 | 9269202 | + | No |
| 1886957_adh | TATACCACTTTACTCAATAAT  | Chr.3 | 9273644 | 9273664 | + | No |
| 1761111_adh | TAAATCTGTTTGCACACATTT  | Chr.3 | 9322026 | 9322006 | - | No |
| 2411085_adh | TGGCCGTAGTAGATTACTGTC  | Chr.3 | 9331138 | 9331118 | - | No |
| 2132833_adh | TGAAGGAGAATGTGGTGAAGA  | Chr.3 | 9339416 | 9339396 | - | No |
| 1966975_adh | TCAGTGGAGTTTGCAAACAAA  | Chr.3 | 9393437 | 9393457 | + | No |
| 1920705_adh | TATTACATTTTAAGACTGGCG  | Chr.3 | 9396316 | 9396296 | - | No |
| 2747130_adh | TTTTTGCTGATCTCTCTTCTC  | Chr.3 | 9408542 | 9408562 | + | No |
| 2742533_adh | TTTTGCTGATCTCTCTTCTCG  | Chr.3 | 9408543 | 9408563 | + | No |
| 1797890_adh | TAATCAGTTTTTTAACCCATA  | Chr.3 | 9409344 | 9409324 | - | No |
| 2055004_adh | TCTTATATTTAAAGTCGTAGA  | Chr.3 | 9409869 | 9409889 | + | No |
| 2541764_adh | TTAAAGTCGTAGAAAAGAAAA  | Chr.3 | 9409877 | 9409897 | + | No |
| 2401648_adh | TGGCAAGCGGCTGCTGTCTCT  | Chr.3 | 9443514 | 9443494 | - | No |
| 2651870_adh | TTGCGACAAGCATAGTTCTAG  | Chr.3 | 9443643 | 9443663 | + | No |
| 2742554_adh | TTTTGCTGTAAAAACGTCATA  | Chr.3 | 9451383 | 9451403 | + | No |
| 2389708_adh | TGGATCGAAGAAAAGGAATAT  | Chr.3 | 9451439 | 9451419 | - | No |
| 2561689_adh | TTAGAATATGACAATACACGG  | Chr.3 | 9453773 | 9453793 | + | No |
| 2012430_adh | TCGGAGATAGAAGAGAGAAGA  | Chr.3 | 9454841 | 9454861 | + | No |
| 2554454_adh | TTACAGTTGGTTTTTAGTTCTG | Chr.3 | 9456139 | 9456119 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2577199_adh | TTATCATTCGAAATTGGCATA  | Chr.3 | 9456313 | 9456333 | + | No |
| 1894835_adh | TATCATTCGAAATTGGCATAG  | Chr.3 | 9456314 | 9456334 | + | No |
| 1995377_adh | TCGAAATTGGCATAGGTCTTA  | Chr.3 | 9456320 | 9456340 | + | No |
| 2030545_adh | TCTAATCGCAAGCTTTACATC  | Chr.3 | 9465417 | 9465397 | - | No |
| 1930790_adh | TATTTTATCGAAAACCTCCCTC | Chr.3 | 9465495 | 9465475 | - | No |
| 2017490_adh | TCGGGTCTCGAAAAATCGGCA  | Chr.3 | 9504398 | 9504418 | + | No |
| 2028842_adh | TCGTTTCAGCAATTTTATAGGC | Chr.3 | 9504526 | 9504546 | + | No |
| 1940760_adh | TCAAGTTTTAGGTCGTCTTGC  | Chr.3 | 9504640 | 9504660 | + | No |
| 1971014_adh | TCATCGGAGAAAGTTCAAGGCG | Chr.3 | 9504680 | 9504700 | + | No |
| 2309544_adh | TGCTGTGGAATTTACATTCCG  | Chr.3 | 9507462 | 9507442 | - | No |
| 2675403_adh | TTGTAGTTTAGTATGAATTTT  | Chr.3 | 9516634 | 9516614 | - | No |
| 2650186_adh | TTGCATCAGATGTTTTTAATT  | Chr.3 | 9521715 | 9521695 | - | No |
| 2706170_adh | TTTCCTATTGCATCAGATGTT  | Chr.3 | 9521722 | 9521702 | - | No |
| 2067082_adh | TGAAAACGAAAAGAAACACCAA | Chr.3 | 9521952 | 9521932 | - | No |
| 2052321_adh | TCTGTGCAATCTGATTGGAGT  | Chr.3 | 9522286 | 9522306 | + | No |
| 2488094_adh | TGTAGATTTACGGCGCTGAAC  | Chr.3 | 9538355 | 9538375 | + | No |
| 2031539_adh | TCTACGACAAACGTTCTCCAT  | Chr.3 | 9542992 | 9543012 | + | No |
| 1839954_adh | TAGAAGTTTTGCATGAATAGA  | Chr.3 | 9545949 | 9545929 | - | No |
| 1751618_adh | TAAAATCGTCGCGTTTTTCAGA | Chr.3 | 9565982 | 9565962 | - | No |
| 2005990_adh | TCGCACTGGCTTGAGGAATTA  | Chr.3 | 9570209 | 9570189 | - | No |
| 2048716_adh | TCTGGAACAAGTATTCATTAC  | Chr.3 | 9573960 | 9573940 | - | No |
| 1984760_adh | TCCGATATCGTTTGTGCAAAG  | Chr.3 | 9580622 | 9580642 | + | No |
| 2054250_adh | TCTTAGAACAACAAATAGAAT  | Chr.3 | 9580652 | 9580672 | + | No |
| 1813263_adh | TACATATGTGCCTATTTCTTG  | Chr.3 | 9614270 | 9614250 | - | No |
| 1996570_adh | TCGAAGGATCGTCTCTTATAT  | Chr.3 | 9615434 | 9615414 | - | No |
| 2608181_adh | TTCGGATCAAGTTACAGCAGC  | Chr.3 | 9618398 | 9618418 | + | No |
| 2526728_adh | TGTTCTACCAGGCTGATGACG  | Chr.3 | 9628614 | 9628594 | - | No |
| 2552572_adh | TTAATTTAACTCGTCGTTTCAT | Chr.3 | 9630345 | 9630325 | - | No |
| 1929356_adh | TATTTATCGAGAATTAGTTTC  | Chr.3 | 9631300 | 9631280 | - | No |
| 1954064_adh | TCACTATGACTGAGATCGCGG  | Chr.3 | 9673228 | 9673208 | - | No |
| 2047699_adh | TCTGCAAAAACATGAATAGGA  | Chr.3 | 9675171 | 9675151 | - | No |
| 2027897_adh | TCGTTATTTTGCACAAATAAA  | Chr.3 | 9723173 | 9723153 | - | No |
| 2748297_adh | TTTTTTAGGATTTCAAGGAAT  | Chr.3 | 9746825 | 9746845 | + | No |
| 2556903_adh | TTACGCCTTTTCTATCGTTGT  | Chr.3 | 9747313 | 9747333 | + | No |
| 2558704_adh | TTACTCATGAATATCGAAGGG  | Chr.3 | 9748708 | 9748688 | - | No |
| 2044135_adh | TCTGAAGAATGATCGCTGCAG  | Chr.3 | 9748832 | 9748852 | + | No |
| 1919947_adh | TATTAAATAACACAGACGCAA  | Chr.3 | 9753100 | 9753120 | + | No |
| 2579270_adh | TTATGGAAATCTGTTTCTCAG  | Chr.3 | 9762386 | 9762366 | - | No |
| 2136613_adh | TGAATAACTTTGAAAATGGCG  | Chr.3 | 9776001 | 9775981 | - | No |
| 1938592_adh | TCAAGAGAAACATTTCTGAAA  | Chr.3 | 9779249 | 9779269 | + | No |
| 2381230_adh | TGGAGCGAACTTGCAATTATTA | Chr.3 | 9780685 | 9780665 | - | No |
| 2738224_adh | TTTTCGACCAGTGACACACAG  | Chr.3 | 9780766 | 9780786 | + | No |
| 2152779_adh | TGACACACAGTCGTATTGCTG  | Chr.3 | 9780777 | 9780797 | + | No |
| 1929504_adh | TATTTCAATTCTCTCTCAATT  | Chr.3 | 9781852 | 9781872 | + | No |
| 2666997_adh | TTGGGACTCTACGGTATGATT  | Chr.3 | 9782599 | 9782619 | + | No |
| 2496561_adh | TGTCATTTCAGAACTTGCTTT  | Chr.3 | 9793979 | 9793959 | - | No |
| 2237873_adh | TGAGGATATGGATGGATCATG  | Chr.3 | 9815714 | 9815694 | - | No |
| 2341509_adh | TGGAATGAAGAAGAAAACGAA  | Chr.3 | 9815776 | 9815756 | - | No |
| 2271452_adh | TGATGATAAGGAAGAATTCGT  | Chr.3 | 9816919 | 9816899 | - | No |
| 2489336_adh | TGTAGGTGTACGGTAGACAAT  | Chr.3 | 9818011 | 9818031 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2559586_adh | TTACTGTCTGAAATAACAAT   | Chr.3 | 9827482  | 9827462  | - | No |
| 2656533_adh | TTGGAAATTTTCGCAATTAAC  | Chr.3 | 9827725  | 9827745  | + | No |
| 2709399_adh | TTTCTAAAAAATAAATTCGGC  | Chr.3 | 9829883  | 9829863  | - | No |
| 2618978_adh | TTCTGGAGTACTGTAAGCGGG  | Chr.3 | 9832600  | 9832620  | + | No |
| 2641778_adh | TTGAGTAAAATTACAATACTT  | Chr.3 | 9834068  | 9834048  | - | No |
| 1978814_adh | TCCAGGTGTGTAATTCGGTAA  | Chr.3 | 9849099  | 9849079  | - | No |
| 2597020_adh | TTCCAGGTGTGTAATTCGGTA  | Chr.3 | 9849100  | 9849080  | - | No |
| 2623175_adh | TTCTTGTTTCAATGGATTTTT  | Chr.3 | 9868165  | 9868145  | - | No |
| 1803641_adh | TAATTCTTGTTTCAATGGATT  | Chr.3 | 9868168  | 9868148  | - | No |
| 2741897_adh | TTTTGATTATTTTTGTAGCAT  | Chr.3 | 9893859  | 9893879  | + | No |
| 2181112_adh | TGAGAAGTAGTTATGAAAAAT  | Chr.3 | 9916052  | 9916032  | - | No |
| 2181112_adh | TGAGAAGTAGTTATGAAAAAT  | Chr.3 | 9925493  | 9925473  | - | No |
| 2250713_adh | TGAGTACAGTAGTTTCAAACA  | Chr.3 | 9946901  | 9946921  | + | No |
| 2259625_adh | TGATACGGATTATACTGTGGT  | Chr.3 | 9962020  | 9962000  | - | No |
| 2728701_adh | TTTGTCAAGATATAAGATATT  | Chr.3 | 10020377 | 10020397 | + | No |
| 2728953_adh | TTTGTGCGAGAATGGCAAACAA | Chr.3 | 10039993 | 10039973 | - | No |
| 2737298_adh | TTTTCAATTTGTGCGAATGG   | Chr.3 | 10040000 | 10039980 | - | No |
| 2581950_adh | TTATTCTGTGACACTTTCAGA  | Chr.3 | 10047659 | 10047639 | - | No |
| 2743921_adh | TTTTGTGATGGAATCGTTGGA  | Chr.3 | 10051649 | 10051629 | - | No |
| 1967000_adh | TCAGTGGATTTTGTGATGGAA  | Chr.3 | 10051657 | 10051637 | - | No |
| 2593110_adh | TTCAGTGGATTTTGTGATGGA  | Chr.3 | 10051658 | 10051638 | - | No |
| 2275155_adh | TGATTCAGTGGATTTTGTGAT  | Chr.3 | 10051661 | 10051641 | - | No |
| 2611908_adh | TTCTGTCATGATTTTCGTCGAT | Chr.3 | 10051795 | 10051815 | + | No |
| 2745342_adh | TTTTTATCTTAAATACATAGC  | Chr.3 | 10088548 | 10088528 | - | No |
| 1924387_adh | TATTCGGACACATACAGAAAT  | Chr.3 | 10098239 | 10098219 | - | No |
| 2648949_adh | TTGCACAGGTAGGATTTACGA  | Chr.3 | 10114762 | 10114782 | + | No |
| 2595580_adh | TTCATTTTTCTTGTGTTTAAA  | Chr.3 | 10120578 | 10120598 | + | No |
| 2046018_adh | TCTGACTTGAAGACTTTAACA  | Chr.3 | 10122114 | 10122134 | + | No |
| 1828979_adh | TACGTTCTATGTAGGTTTGGA  | Chr.3 | 10170634 | 10170654 | + | No |
| 2700683_adh | TTTATTTCAATGGACAATTCA  | Chr.3 | 10170992 | 10171012 | + | No |
| 2012015_adh | TCGGAGAATCGAGAAGTTGAA  | Chr.3 | 10182972 | 10182992 | + | No |
| 2747838_adh | TTTTTGTGTAAACTCGAAAA   | Chr.3 | 10202964 | 10202984 | + | No |
| 1939431_adh | TCAAGCTTGGCAAACAGGAAT  | Chr.3 | 10203320 | 10203340 | + | No |
| 2617105_adh | TTCTCTCGATCAACTGGCTTC  | Chr.3 | 10203344 | 10203364 | + | No |
| 2139247_adh | TGAATATCGGTAGATTGAAGG  | Chr.3 | 10203606 | 10203586 | - | No |
| 2599184_adh | TTCCGGGAAATAGAAGTGAAT  | Chr.3 | 10203622 | 10203602 | - | No |
| 2628396_adh | TTGAAGAGTTTATCGCTGGAC  | Chr.3 | 10207717 | 10207737 | + | No |
| 2032423_adh | TCTAGAGGAAGTGGAATCGGT  | Chr.3 | 10214452 | 10214472 | + | No |
| 1815484_adh | TACCAGGATATGGACATGCCG  | Chr.3 | 10215326 | 10215306 | - | No |
| 2623219_adh | TTCTTTAAACGAGATCCGCTA  | Chr.3 | 10218590 | 10218570 | - | No |
| 2487499_adh | TGTAGAAGGGAAGGCAGATTT  | Chr.3 | 10269181 | 10269201 | + | No |
| 2561196_adh | TTAGAACGAGTCGGGAAGAAA  | Chr.3 | 10270744 | 10270724 | - | No |
| 2707319_adh | TTTCGCGAAAGGAGATGTTTT  | Chr.3 | 10297347 | 10297367 | + | No |
| 1968283_adh | TCATAAGGCAGAGAGAACAAT  | Chr.3 | 10328815 | 10328835 | + | No |
| 1987360_adh | TCCGGTGATTTTTTAGACGGT  | Chr.3 | 10330841 | 10330861 | + | No |
| 2150402_adh | TGACAAGAAACGGAAGTGTTT  | Chr.3 | 10365693 | 10365713 | + | No |
| 2700840_adh | TTTATTTTCGTTCGGAATTCCT | Chr.3 | 10407262 | 10407242 | - | No |
| 2062530_adh | TCTTTTATTTTCGTTCGGAATT | Chr.3 | 10407265 | 10407245 | - | No |
| 2623813_adh | TTCTTTTATTTTCGTTCGGAAT | Chr.3 | 10407266 | 10407246 | - | No |
| 2708946_adh | TTTCGTCTACTGTGGCGGCAT  | Chr.3 | 10436040 | 10436020 | - | No |

|             |                         |       |          |          |   |    |
|-------------|-------------------------|-------|----------|----------|---|----|
| 2692958_adh | TTTAATTCGTCTACTGTGGC    | Chr.3 | 10436045 | 10436025 | - | No |
| 2729246_adh | TTTGTGAAATCGGTTTCTCTC   | Chr.3 | 10436617 | 10436637 | + | No |
| 2727104_adh | TTTGTAAGAGATTCTCTGAA    | Chr.3 | 10438614 | 10438594 | - | No |
| 2747081_adh | TTTTTGCGGAAAAACCGAGTT   | Chr.3 | 10460557 | 10460537 | - | No |
| 2704920_adh | TTTCCACCTGTTGTTTTATCG   | Chr.3 | 10469986 | 10470006 | + | No |
| 2055596_adh | TCTTCACTGTATAATGGAAC    | Chr.3 | 10475767 | 10475787 | + | No |
| 2603667_adh | TTCGAGAATTGTCTGAGGAAT   | Chr.3 | 10483193 | 10483213 | + | No |
| 2126994_adh | TGAAGAACATTTGAAAGCATA   | Chr.3 | 10485002 | 10484982 | - | No |
| 2620488_adh | TTCTTAAGACAAGAGAGATGA   | Chr.3 | 10519333 | 10519353 | + | No |
| 2309360_adh | TGCTGTAGTTGAGACGAAGAA   | Chr.3 | 10520806 | 10520826 | + | No |
| 1873288_adh | TAGTAAGTATGAAGGACAAAA   | Chr.3 | 10542581 | 10542561 | - | No |
| 2607266_adh | TTCGGAATTTGAAGTAAAAAA   | Chr.3 | 10561604 | 10561584 | - | No |
| 2464290_adh | TGGTATCAAAATCGGACGACC   | Chr.3 | 10576443 | 10576463 | + | No |
| 2712054_adh | TTTCTTTCTCGGACGGGATGG   | Chr.3 | 10599831 | 10599851 | + | No |
| 2744782_adh | TTTTTAAGTAGTTGACGACAA   | Chr.3 | 10629293 | 10629313 | + | No |
| 2037310_adh | TCTCAGAATTTCTGTGGTCTCG  | Chr.3 | 10639937 | 10639917 | - | No |
| 2589571_adh | TTCACGAGCACAGATGGCGAT   | Chr.3 | 10642379 | 10642399 | + | No |
| 2591047_adh | TTCAGCAGGTAGACCAAAAAC   | Chr.3 | 10680028 | 10680048 | + | No |
| 2712463_adh | TTTGAAAAGTGGAAAATGAAA   | Chr.3 | 10685849 | 10685829 | - | No |
| 2708866_adh | TTTCGTTCGATTTTCAGCGGCTA | Chr.3 | 10687792 | 10687772 | - | No |
| 2488945_adh | TGTAGGTAAAGGACATTATAT   | Chr.3 | 10704224 | 10704244 | + | No |
| 2281379_adh | TGCAACATATCTGACGCGCAA   | Chr.3 | 10710754 | 10710734 | - | No |
| 2745820_adh | TTTTTCCACCGAAAATGTTGC   | Chr.3 | 10721044 | 10721024 | - | No |
| 2039967_adh | TCTCGGACCGGCAGGTCGCAT   | Chr.3 | 10730525 | 10730505 | - | No |
| 2694242_adh | TTTACTCTCGGACCGGCAGGT   | Chr.3 | 10730530 | 10730510 | - | No |
| 2529122_adh | TGTTGATGACTTCGGTGGATT   | Chr.3 | 10730657 | 10730677 | + | No |
| 2271295_adh | TGATGACTTCGGTGGATTGTC   | Chr.3 | 10730660 | 10730680 | + | No |
| 2173128_adh | TGACTTCGGTGGATTGTCGTG   | Chr.3 | 10730663 | 10730683 | + | No |
| 2395166_adh | TGGATTGTCGTGAGCATTTAG   | Chr.3 | 10730672 | 10730692 | + | No |
| 2498764_adh | TGTCGTGAGCATTTAGACTTC   | Chr.3 | 10730677 | 10730697 | + | No |
| 2016577_adh | TCGGGAGGAGGCACGATTTTT   | Chr.3 | 10733158 | 10733138 | - | No |
| 1939339_adh | TCAAGCGTATCTCGGAGCAAT   | Chr.3 | 10741080 | 10741060 | - | No |
| 2270249_adh | TGATCTCGAGCCAGGAACGAT   | Chr.3 | 10742065 | 10742045 | - | No |
| 2729051_adh | TTTGTCGGTTTCGCATCGTTA   | Chr.3 | 10742480 | 10742460 | - | No |
| 1975581_adh | TCATTTTGTCGGTTTCGCATC   | Chr.3 | 10742484 | 10742464 | - | No |
| 1994514_adh | TCGAAAACCAATTCCGCGGCA   | Chr.3 | 10742544 | 10742524 | - | No |
| 2644888_adh | TTGATGATTCTGTGGGAGACG   | Chr.3 | 10746386 | 10746366 | - | No |
| 2714501_adh | TTTGAATTGTAGACACCGGTT   | Chr.3 | 10746631 | 10746651 | + | No |
| 2677893_adh | TTGTCCTTGTCGGAGATGGAG   | Chr.3 | 10747574 | 10747554 | - | No |
| 2584901_adh | TTCAAAAACAAGAATGTTTCGG  | Chr.3 | 10747760 | 10747780 | + | No |
| 2578652_adh | TTATGAGGCATATTTGGAGTT   | Chr.3 | 10748210 | 10748230 | + | No |
| 1939535_adh | TCAAGGACAGTTGCATCAACG   | Chr.3 | 10749338 | 10749358 | + | No |
| 1921586_adh | TATTAGCATTGAAAGAGCATT   | Chr.3 | 10750602 | 10750622 | + | No |
| 2727104_adh | TTTGTAAGAGATTCTCTGAA    | Chr.3 | 10752742 | 10752722 | - | No |
| 1925796_adh | TATTGACTTGAATTCCATGTA   | Chr.3 | 10807572 | 10807552 | - | No |
| 2044907_adh | TCTGACAAGACTGGAACCTCTC  | Chr.3 | 10815064 | 10815044 | - | No |
| 2048468_adh | TCTGCTCTGACAAGACTGGAA   | Chr.3 | 10815069 | 10815049 | - | No |
| 2376005_adh | TGGACGAATTCGGAGAGCAAC   | Chr.3 | 10815354 | 10815334 | - | No |
| 2658386_adh | TTGGACGAATTCGGAGAGCAA   | Chr.3 | 10815355 | 10815335 | - | No |
| 2623858_adh | TTCTTTTCTTCTTTCCAACGTG  | Chr.3 | 10820799 | 10820779 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2617785_adh | TTCTGAAGAGCAAAAGAACTA  | Chr.3 | 10821277 | 10821257 | - | No |
| 2032974_adh | TCTAGTAGAGCGCGATTGCAT  | Chr.3 | 10839054 | 10839074 | + | No |
| 1990764_adh | TCCTCTCGGACAAGCAACAAT  | Chr.3 | 10844889 | 10844869 | - | No |
| 2376139_adh | TGGACGCAGTTGGAAGTCGAG  | Chr.3 | 10866644 | 10866624 | - | No |
| 2170212_adh | TGACTGGACCAGATGGGGAGA  | Chr.3 | 10867980 | 10867960 | - | No |
| 2693230_adh | TTTACACATGTAAAATGAGCG  | Chr.3 | 10870096 | 10870076 | - | No |
| 2010208_adh | TCGGAAAATTCAGTACGACGA  | Chr.3 | 10875303 | 10875323 | + | No |
| 1822366_adh | TACGACGAATCTCCGGCAAGC  | Chr.3 | 10875316 | 10875336 | + | No |
| 2680397_adh | TTGTGACTGTGGAGATGGCTG  | Chr.3 | 10881820 | 10881840 | + | No |
| 2374041_adh | TGGACAGATGGTTAATGGAAC  | Chr.3 | 10939660 | 10939680 | + | No |
| 2724460_adh | TTTGGCGGTGACGATGGCTCC  | Chr.3 | 11009231 | 11009211 | - | No |
| 2747006_adh | TTTTTGACAGAGTGAGCCATTC | Chr.3 | 11010055 | 11010075 | + | No |
| 2579743_adh | TTATGGTGGACTTTAGAACGG  | Chr.3 | 11036349 | 11036369 | + | No |
| 2733874_adh | TTTTAATTTAAAATTTGGCGA  | Chr.3 | 11062137 | 11062157 | + | No |
| 2746607_adh | TTTTTGACAATTCGAGCGAA   | Chr.3 | 11064567 | 11064547 | - | No |
| 1978720_adh | TCCAGGCTGAAAGAAGAAGAA  | Chr.3 | 11078544 | 11078524 | - | No |
| 1992786_adh | TCCTTCGAAGCGAAGAAACAC  | Chr.3 | 11079638 | 11079658 | + | No |
| 2415928_adh | TGGCTTGCTATTTGTAATTTT  | Chr.3 | 11105757 | 11105777 | + | No |
| 2735320_adh | TTTTATAGGAGCGGAGATAGG  | Chr.3 | 11111804 | 11111784 | - | No |
| 2739233_adh | TTTTCTCATAAATACGACTTT  | Chr.3 | 11111932 | 11111912 | - | No |
| 2503676_adh | TGTGACAGTTTTAAAATTTTG  | Chr.3 | 11117894 | 11117874 | - | No |
| 2487457_adh | TGTAGAACTGGCGTCGATGTA  | Chr.3 | 11118434 | 11118454 | + | No |
| 2415928_adh | TGGCTTGCTATTTGTAATTTT  | Chr.3 | 11118456 | 11118476 | + | No |
| 1917338_adh | TATGTAAAACCTGTAGAAGAC  | Chr.3 | 11127381 | 11127401 | + | No |
| 2239040_adh | TGAGGCTCTAAAATTTGAAGT  | Chr.3 | 11129731 | 11129751 | + | No |
| 2160417_adh | TGACCTGTATGACGTCACGGA  | Chr.3 | 11141732 | 11141712 | - | No |
| 2608676_adh | TTCGGCTACGGATGCGGCACG  | Chr.3 | 11143694 | 11143714 | + | No |
| 2682022_adh | TTGTGTACTCCTCTCGGAAAA  | Chr.3 | 11191084 | 11191064 | - | No |
| 1972577_adh | TCATGGAGACTTAGACGAATC  | Chr.3 | 11201320 | 11201300 | - | No |
| 1921714_adh | TATTAGGTTAGTTGGAGGGTC  | Chr.3 | 11205812 | 11205832 | + | No |
| 1973805_adh | TCATTCCTTCTGTGCGAAGAA  | Chr.3 | 11223986 | 11223966 | - | No |
| 2597574_adh | TTCCCAACTTCAGAGGTTTTA  | Chr.3 | 11235342 | 11235322 | - | No |
| 2735439_adh | TTTTATCAATTTTCGTCGGTT  | Chr.3 | 11236928 | 11236948 | + | No |
| 2470481_adh | TGGTCTTTGTAAGGAGGAAAT  | Chr.3 | 11248298 | 11248318 | + | No |
| 2622008_adh | TTCTTCTCGATTTCTTCCGAT  | Chr.3 | 11274593 | 11274573 | - | No |
| 2734551_adh | TTTTAGAGGATTTTAAAGCTA  | Chr.3 | 11274736 | 11274756 | + | No |
| 2720875_adh | TTTGATTTTTGAGCGATTTTT  | Chr.3 | 11280280 | 11280300 | + | No |
| 2744703_adh | TTTTTAAAGTCGATGGACGGC  | Chr.3 | 11307308 | 11307288 | - | No |
| 2375985_adh | TGGACGAAGCATGTATTCCGG  | Chr.3 | 11352661 | 11352641 | - | No |
| 2716938_adh | TTTGAGGGAGCGGTAGAGCAA  | Chr.3 | 11353457 | 11353437 | - | No |
| 2745808_adh | TTTTTCATTGTTTTCATCGGA  | Chr.3 | 11508964 | 11508984 | + | No |
| 2738881_adh | TTTTCGTTGCTTTTATCGGTT  | Chr.3 | 11590543 | 11590563 | + | No |
| 2709266_adh | TTTCGTTGCTTTTATCGGTTT  | Chr.3 | 11590544 | 11590564 | + | No |
| 2618774_adh | TTCTGCTATGATCTTCGACGA  | Chr.3 | 11604197 | 11604217 | + | No |
| 1990767_adh | TCCTCTCGGACAATTGGCAAA  | Chr.3 | 11615899 | 11615919 | + | No |
| 2352015_adh | TGGAATGGATAATAATATATA  | Chr.3 | 11616494 | 11616474 | - | No |
| 2602960_adh | TTCGACGCCAGGAGACTGTG   | Chr.3 | 11662422 | 11662402 | - | No |
| 2732962_adh | TTTTAAAAATCGATGGACGGC  | Chr.3 | 11682138 | 11682158 | + | No |
| 2701362_adh | TTTCAACGTTTATCGGTTTTT  | Chr.3 | 11719446 | 11719426 | - | No |
| 1990763_adh | TCCTCTCGGAAAACGGTGCGA  | Chr.3 | 11746829 | 11746849 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2044340_adh | TCTGAAGTGAATATGGCAAAG  | Chr.3 | 11789717 | 11789697 | - | No |
| 1776354_adh | TAAGACTTTTTGAGAATGCAT  | Chr.3 | 11810426 | 11810446 | + | No |
| 1994604_adh | TCGAAAATCGAGGGCAAATTG  | Chr.3 | 11823329 | 11823309 | - | No |
| 2733707_adh | TTTTAATGAGAAATACCCCCC  | Chr.3 | 11847800 | 11847820 | + | No |
| 2481069_adh | TGTAACAAAACATAGGAGGAC  | Chr.3 | 11848500 | 11848480 | - | No |
| 1890982_adh | TATATTTCCATTTTCCTCGGT  | Chr.3 | 11869234 | 11869214 | - | No |
| 2730444_adh | TTTGTTAGTTGACAACTTCTT  | Chr.3 | 11875148 | 11875128 | - | No |
| 2462747_adh | TGGTAGAACCAGCGGCAATGG  | Chr.3 | 11875483 | 11875463 | - | No |
| 2050293_adh | TCTGGGAGACAGAGAATAGGA  | Chr.3 | 11883383 | 11883403 | + | No |
| 2593123_adh | TTCACTGGCAGCTTACTCGGA  | Chr.3 | 11892651 | 11892631 | - | No |
| 2050293_adh | TCTGGGAGACAGAGAATAGGA  | Chr.3 | 11907447 | 11907427 | - | No |
| 2050293_adh | TCTGGGAGACAGAGAATAGGA  | Chr.3 | 11908886 | 11908866 | - | No |
| 1765440_adh | TAACAGTGTAGACGGTTTTTG  | Chr.3 | 11918985 | 11919005 | + | No |
| 2734219_adh | TTTTACGTGAACTGTGAGAGA  | Chr.3 | 11920406 | 11920426 | + | No |
| 2694075_adh | TTTACGTGAACTGTGAGAGAA  | Chr.3 | 11920407 | 11920427 | + | No |
| 1755919_adh | TAACTTGGTTTTCTGTCTGT   | Chr.3 | 11939440 | 11939460 | + | No |
| 1755917_adh | TAACTTGGTATTTCTGTCTGT  | Chr.3 | 11940030 | 11940010 | - | No |
| 2487498_adh | TGTAGAAGGGAAGGCAGATAA  | Chr.3 | 12007063 | 12007043 | - | No |
| 2038230_adh | TCTCATCTGGATGAAGTGGGC  | Chr.3 | 12021675 | 12021655 | - | No |
| 2403377_adh | TGGCAGACGGTGTGGAATGAG  | Chr.3 | 12028546 | 12028526 | - | No |
| 2705768_adh | TTCCGCGGAAAATTGTGCGAC  | Chr.3 | 12058491 | 12058471 | - | No |
| 2534349_adh | TGTTTTCGGTGTATTTTGCA   | Chr.3 | 12068563 | 12068583 | + | No |
| 1927893_adh | TATTGTGCGGAAATTTATTATC | Chr.3 | 12123922 | 12123902 | - | No |
| 2534349_adh | TGTTTTCGGTGTATTTTGCA   | Chr.3 | 12180581 | 12180561 | - | No |
| 2388151_adh | TGGATAGAAGATCAGAAAAAG  | Chr.3 | 12212954 | 12212934 | - | No |
| 1805516_adh | TAATTTGTGGAACGTGAAGTT  | Chr.3 | 12250465 | 12250485 | + | No |
| 1918978_adh | TATGTGGAAGCGAATGGTT    | Chr.3 | 12250805 | 12250825 | + | No |
| 2039500_adh | TCTCGACTCTTGAATTCGGT   | Chr.3 | 12256562 | 12256582 | + | No |
| 2036736_adh | TCTCAATTGGATGTGACTATG  | Chr.3 | 12264910 | 12264890 | - | No |
| 2040100_adh | TCTCGGATAAGTTGGAATTCA  | Chr.3 | 12273709 | 12273729 | + | No |
| 2487928_adh | TGTAGATCAAAACGTGATGGA  | Chr.3 | 12304661 | 12304681 | + | No |
| 2017209_adh | TCGGGGTACTGTAGTAGTGCT  | Chr.3 | 12306664 | 12306644 | - | No |
| 2677718_adh | TTGTCATCACTTCTCCCGCAA  | Chr.3 | 12316598 | 12316578 | - | No |
| 1811338_adh | TACACTGAATTTATATTTTG   | Chr.3 | 12351351 | 12351331 | - | No |
| 2584522_adh | TTATTTTCCTTCAGATTAAAC  | Chr.3 | 12363025 | 12363045 | + | No |
| 2584522_adh | TTATTTTCCTTCAGATTAAAC  | Chr.3 | 12363638 | 12363618 | - | No |
| 2595959_adh | TTCCAATGACTCGAAGAAACA  | Chr.3 | 12367232 | 12367252 | + | No |
| 2002517_adh | TCGATAACGTAGGATTTCGGA  | Chr.3 | 12368473 | 12368493 | + | No |
| 2271517_adh | TGATGATGAAATAGGAGGTGT  | Chr.3 | 12368496 | 12368516 | + | No |
| 2737255_adh | TTTTCAATGAGGATTTTGAA   | Chr.3 | 12369218 | 12369198 | - | No |
| 2682667_adh | TTGTGTTTACGTAAATTTAA   | Chr.3 | 12370062 | 12370042 | - | No |
| 2503782_adh | TGTGACCGGTGTATCGATGAC  | Chr.3 | 12376899 | 12376919 | + | No |
| 2001503_adh | TCGAGCGACAGGCGGACATCA  | Chr.3 | 12395403 | 12395423 | + | No |
| 1963261_adh | TCAGGAAAAAGAATTTTGCA   | Chr.3 | 12399019 | 12399039 | + | No |
| 1957607_adh | TCAGAAGACTGTTCGATCGAT  | Chr.3 | 12426866 | 12426846 | - | No |
| 1965937_adh | TCAGTAGATCAACGGAAAATC  | Chr.3 | 12426896 | 12426916 | + | No |
| 2560977_adh | TTAGAACAAAGAAAAGCACGG  | Chr.3 | 12429831 | 12429851 | + | No |
| 1753180_adh | TAAATTGAAACGGTCTGAAA   | Chr.3 | 12433899 | 12433919 | + | No |
| 2708814_adh | TTTCGTATATTATTAGACGAC  | Chr.3 | 12436395 | 12436415 | + | No |
| 2706426_adh | TTTCCTTCCTATTTTGACGA   | Chr.3 | 12457398 | 12457418 | + | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2707483_adh | TTTCGGAAAAAGCATAACAGA  | Chr.3 | 12489466 | 12489486 | + | No  |
| 2534353_adh | TGTTTTTCGGTGTATTTTTGTT | Chr.3 | 12493593 | 12493573 | - | No  |
| 1884965_adh | TATAAGAAATTTAAATTTCAA  | Chr.3 | 12495690 | 12495670 | - | No  |
| 2728078_adh | TTTGTACTCCTCTCGGACAAA  | Chr.3 | 12529588 | 12529568 | - | No  |
| 2376312_adh | TGGACGGCAAGATTTGGCTAA  | Chr.3 | 12573120 | 12573140 | + | No  |
| 2616105_adh | TTCTCAGATTTATGGATGGAT  | Chr.3 | 12574837 | 12574817 | - | No  |
| 2314224_adh | TGGAAACACGTGAAAGTTCGA  | Chr.3 | 12574930 | 12574910 | - | No  |
| 2709718_adh | TTTCTAGGTGGAATACTATGT  | Chr.3 | 12575263 | 12575243 | - | No  |
| 1753592_adh | TAAAATTTAAATAATCATTTA  | Chr.3 | 12607120 | 12607140 | + | No  |
| 1807295_adh | TACAAATTGGAGATATAACAT  | Chr.3 | 12621335 | 12621315 | - | No  |
| 2018691_adh | TCGGTCATTGTGGTATAATAG  | Chr.3 | 12672798 | 12672818 | + | No  |
| 1990721_adh | TCCTCTAGGACAAACAGGACA  | Chr.3 | 12673432 | 12673412 | - | No  |
| 2709266_adh | TTTCGTTGCTTTTATCGGTTT  | Chr.3 | 12684422 | 12684402 | - | No  |
| 2738881_adh | TTTTCGTTGCTTTTATCGGTT  | Chr.3 | 12684423 | 12684403 | - | No  |
| 2747833_adh | TTTTTGTTGTTTTTCGGTTTTT | Chr.3 | 12688144 | 12688164 | + | No  |
| 2707551_adh | TTTCGGACCAATCAGCGTCAT  | Chr.3 | 12696856 | 12696876 | + | No  |
| 2707551_adh | TTTCGGACCAATCAGCGTCAT  | Chr.3 | 12698799 | 12698779 | - | No  |
| 2387759_adh | TGGATAATGGCGATGGTGTTT  | Chr.3 | 12711300 | 12711280 | - | No  |
| 2609391_adh | TTCCGGTTCGAATTTAGAGCGG | Chr.3 | 12713818 | 12713798 | - | No  |
| 1932971_adh | TCAAAGAAGAGAAGACACTCA  | Chr.3 | 12789384 | 12789364 | - | No  |
| 2310278_adh | TGCTTCAACACAAGACTCTTT  | Chr.3 | 12805883 | 12805903 | + | No  |
| 2042818_adh | TCTCTGACTGGAAAACGGCAA  | Chr.3 | 12816145 | 12816165 | + | No  |
| 2689116_adh | TTTAAACTCGACGGAAAATTT  | Chr.3 | 12821481 | 12821501 | + | No  |
| 2729246_adh | TTTGTGAAATCGGTTTCTCTC  | Chr.3 | 12878496 | 12878516 | + | No  |
| 1921586_adh | TATTAGCATTGAAAGAGCATT  | Chr.3 | 12879359 | 12879379 | + | No  |
| 2047784_adh | TCTGCAATTTTGAACGGCAAT  | Chr.3 | 12894076 | 12894056 | - | Yes |
| 2544697_adh | TTAAATTTCCGGCACGAGTTTC | Chr.3 | 12905027 | 12905007 | - | No  |
| 1843533_adh | TAGAATGTGGATATGATAATG  | Chr.3 | 12906333 | 12906353 | + | No  |
| 2710994_adh | TTTCTGTGTAGAAAAATCGTT  | Chr.3 | 12907219 | 12907199 | - | No  |
| 2313640_adh | TGGAAGAGCAAAACAATTTTA  | Chr.3 | 12918038 | 12918058 | + | No  |
| 2527581_adh | TGTTGAAGACAGAGAGAGACA  | Chr.3 | 12919927 | 12919907 | - | No  |
| 1794678_adh | TAATACTTGAGAACGACCGCA  | Chr.3 | 12926095 | 12926115 | + | No  |
| 1776947_adh | TAAGAGCTGAGAGATATTTGG  | Chr.3 | 12971944 | 12971964 | + | No  |
| 2711901_adh | TTTCTTGTTCTGTCTTTCGCC  | Chr.3 | 12972333 | 12972313 | - | No  |
| 1938245_adh | TCAAGAAGAAGCTGAAGTAAT  | Chr.3 | 12977908 | 12977888 | - | No  |
| 2047831_adh | TCTGCAGAAAGTGCTATGCTC  | Chr.3 | 12977992 | 12977972 | - | No  |
| 2730056_adh | TTTGTGTCTGCTGGGCCTAAAT | Chr.3 | 12978832 | 12978812 | - | No  |
| 2557401_adh | TTACGGGAAGGGGAGAAAGAA  | Chr.3 | 12978907 | 12978927 | + | No  |
| 2396143_adh | TGGATTTGGAACCTTCGGTAGC | Chr.3 | 12985098 | 12985118 | + | No  |
| 1832596_adh | TACTGCGAGCTCCCGGATGGA  | Chr.3 | 12987161 | 12987181 | + | No  |
| 1946298_adh | TCACATTCGAACTTTGCGGAA  | Chr.3 | 12987404 | 12987384 | - | No  |
| 2526806_adh | TGTTCTCGGTGTACTTTTGCT  | Chr.3 | 13012566 | 13012586 | + | No  |
| 2746931_adh | TTTTTGATGATTTTCGGTGTAT | Chr.3 | 13012804 | 13012784 | - | No  |
| 2549248_adh | TTAAGTGTAGTTATAGGACGG  | Chr.3 | 13016545 | 13016525 | - | No  |
| 1953149_adh | TCACGCTGGATACGGAGGATA  | Chr.3 | 13019316 | 13019336 | + | No  |
| 2697722_adh | TTTATAAATTTAAATCAGCAT  | Chr.3 | 13099703 | 13099723 | + | No  |
| 2607300_adh | TTCCGACAGATGCGACACGGA  | Chr.3 | 13103537 | 13103557 | + | No  |
| 2065553_adh | TGAAAAACGGCTCTAAAAGAG  | Chr.3 | 13104454 | 13104434 | - | No  |
| 2738691_adh | TTTTCGGTAGAAACAGTTATA  | Chr.3 | 13125954 | 13125974 | + | No  |
| 2534353_adh | TGTTTTTCGGTGTATTTTTGTT | Chr.3 | 13149161 | 13149181 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2653005_adh | TTGCGGTAACCGGATAATTTG  | Chr.3 | 13151933 | 13151953 | + | No |
| 2302235_adh | TGCGGTAACCGGATAATTTGT  | Chr.3 | 13151934 | 13151954 | + | No |
| 2608134_adh | TTCGGATAGATGTGACACGGA  | Chr.3 | 13172125 | 13172105 | - | No |
| 2608134_adh | TTCGGATAGATGTGACACGGA  | Chr.3 | 13172338 | 13172358 | + | No |
| 2742880_adh | TTTTGGCAGGAATATGATGGA  | Chr.3 | 13187790 | 13187770 | - | No |
| 2747285_adh | TTTTTGGCAGGAATATGATGG  | Chr.3 | 13187791 | 13187771 | - | No |
| 1811228_adh | TACACGTGGACAAAATCGGTG  | Chr.3 | 13187819 | 13187799 | - | No |
| 1851468_adh | TAGATGGCTGAAAAAACAAAT  | Chr.3 | 13208362 | 13208342 | - | No |
| 1990973_adh | TCCTCTTTTCGGCATCCTCAT  | Chr.3 | 13233480 | 13233460 | - | No |
| 2073650_adh | TGAAACTACTATATTACGGGA  | Chr.3 | 13270085 | 13270065 | - | No |
| 2600777_adh | TTCCTGAGTAGAATTGGCTAT  | Chr.3 | 13295760 | 13295780 | + | No |
| 2411132_adh | TGGCCTAAATTAATTGCGGCA  | Chr.3 | 13296527 | 13296507 | - | No |
| 2550970_adh | TTAATGAAGAAGTTCTTCATC  | Chr.3 | 13307248 | 13307268 | + | No |
| 2230454_adh | TGAGATTGGAATAAGACACAT  | Chr.3 | 13314606 | 13314586 | - | No |
| 2470888_adh | TGGTGAACCTATTGAGATTGGA | Chr.3 | 13314617 | 13314597 | - | No |
| 2716224_adh | TTTGACTTGATATACGGAGAT  | Chr.3 | 13316969 | 13316949 | - | No |
| 2634213_adh | TTGAATTTAAATAATTATTTA  | Chr.3 | 13330760 | 13330780 | + | No |
| 2590762_adh | TTCAGATAGACTCATATTTTA  | Chr.3 | 13331841 | 13331861 | + | No |
| 2585439_adh | TTCAAATAGTACATCAAGCAT  | Chr.3 | 13341502 | 13341482 | - | No |
| 2696735_adh | TTTAGGGCACGATTAGTTGGC  | Chr.3 | 13343384 | 13343404 | + | No |
| 2526801_adh | TGTTCTCGGCTTCTCAGATCA  | Chr.3 | 13343417 | 13343437 | + | No |
| 1983707_adh | TCCCTTTTTCATTATCGTTTG  | Chr.3 | 13343552 | 13343572 | + | No |
| 2132826_adh | TGAAGGAGAAGCTGATGGCCG  | Chr.3 | 13344224 | 13344244 | + | No |
| 2671046_adh | TTGGTGGACGGAAATAAAAAT  | Chr.3 | 13393992 | 13394012 | + | No |
| 2038451_adh | TCTCATTCATCTCTGAACATC  | Chr.3 | 13394612 | 13394632 | + | No |
| 2707485_adh | TTTCGGAAAAAGGCACAAAAC  | Chr.3 | 13426064 | 13426044 | - | No |
| 2738444_adh | TTTTCGGAAAAAGGCACAAAA  | Chr.3 | 13426065 | 13426045 | - | No |
| 2584526_adh | TTATTTTCGGAAAAAGGCACA  | Chr.3 | 13426068 | 13426048 | - | No |
| 2700838_adh | TTTATTTTCGGAAAAAGGCAC  | Chr.3 | 13426069 | 13426049 | - | No |
| 2737219_adh | TTTTCAAGCATTTTCCGTCGT  | Chr.3 | 13436239 | 13436259 | + | No |
| 1956521_adh | TCACTTTTAGTCGTTTCTACA  | Chr.3 | 13455756 | 13455736 | - | No |
| 2587418_adh | TTCAAGTTTTTGCAAAGCTTA  | Chr.3 | 13456189 | 13456169 | - | No |
| 2058031_adh | TCTTGATCACAGAGTAGAAAAG | Chr.3 | 13461792 | 13461772 | - | No |
| 2619431_adh | TTCTGGCAAGCACCGACCACC  | Chr.3 | 13463069 | 13463089 | + | No |
| 1970812_adh | TCATCCGGTACTTCCCAACTC  | Chr.3 | 13463508 | 13463528 | + | No |
| 2011844_adh | TCGGACTCTACAGAGGATTCT  | Chr.3 | 13463837 | 13463857 | + | No |
| 2047267_adh | TCTGATGGACAGAACTCAAC   | Chr.3 | 13463935 | 13463955 | + | No |
| 2703026_adh | TTTCAGCGAATTCGGAATTCA  | Chr.3 | 13497820 | 13497800 | - | No |
| 2745871_adh | TTTTTCCGCTGATCGATCTGA  | Chr.3 | 13529981 | 13529961 | - | No |
| 1863277_adh | TAGGACTTAAATATGTAAAAT  | Chr.3 | 13534498 | 13534478 | - | No |
| 2728175_adh | TTTGTAGAAAAATAAGTGCTT  | Chr.3 | 13546396 | 13546376 | - | No |
| 2322844_adh | TGGAAGAGGAACGTGAAAAGC  | Chr.3 | 13547686 | 13547666 | - | No |
| 2270929_adh | TGATGAAGATCCTCACCGAGC  | Chr.3 | 13605046 | 13605026 | - | No |
| 2737139_adh | TTTTCAAATGATCGTAACGGC  | Chr.3 | 13625983 | 13626003 | + | No |
| 2741507_adh | TTTTGATACCAAATATAGACG  | Chr.3 | 13640978 | 13640998 | + | No |
| 1848320_adh | TAGAGGAGAATGGGCGGCAGT  | Chr.3 | 13643724 | 13643744 | + | No |
| 2450534_adh | TGGGCGGCAGTTTGAACGATT  | Chr.3 | 13643734 | 13643754 | + | No |
| 2703580_adh | TTTCAGTGAATAACTCATAA   | Chr.3 | 13643765 | 13643785 | + | No |
| 1912984_adh | TATGCGGATCGATTGAAAAAG  | Chr.3 | 13646540 | 13646560 | + | No |
| 2542059_adh | TTAAATAATATTCGATTTGGA  | Chr.3 | 13683283 | 13683263 | - | No |

|             |                         |       |          |          |   |    |
|-------------|-------------------------|-------|----------|----------|---|----|
| 1889189_adh | TATAGTTCAAGCAGTAAACGA   | Chr.3 | 13698598 | 13698618 | + | No |
| 2039514_adh | TCTCGAGACAGACGAAGAAGC   | Chr.3 | 13700568 | 13700548 | - | No |
| 2457014_adh | TGGGGTTTGGAAATTCGGTT    | Chr.3 | 13715058 | 13715038 | - | No |
| 2449732_adh | TGGGCAAAGTTGGTTGAGAAG   | Chr.3 | 13728331 | 13728311 | - | No |
| 2035434_adh | TCTCAACCAACTTTGGCCACT   | Chr.3 | 13728374 | 13728354 | - | No |
| 1923444_adh | TATTCACAAGGACAGGCAATA   | Chr.3 | 13755694 | 13755674 | - | No |
| 2640933_adh | TTGAGCGGCTTCAAATTTATT   | Chr.3 | 13762701 | 13762721 | + | No |
| 2739529_adh | TTTTCTGCAGAATGACTAATC   | Chr.3 | 13763512 | 13763532 | + | No |
| 2028612_adh | TCGTTGTCTGTCGGCTTCGAGT  | Chr.3 | 13765099 | 13765119 | + | No |
| 2055783_adh | TCTTCCAATCGTCAAATCACT   | Chr.3 | 13765137 | 13765117 | - | No |
| 2062262_adh | TCTTTGTCTATTCTTCTGAA    | Chr.3 | 13768011 | 13767991 | - | No |
| 2281397_adh | TGCAACCACCATTCTTGTCTGGG | Chr.3 | 13768104 | 13768084 | - | No |
| 2709264_adh | TTTCGTTGCAACCACCATTCTT  | Chr.3 | 13768110 | 13768090 | - | No |
| 2746249_adh | TTTTTCTCTTATTTTCGGGCG   | Chr.3 | 13771159 | 13771139 | - | No |
| 2704921_adh | TTTCCACGAAATTTGAAACGG   | Chr.3 | 13771190 | 13771170 | - | No |
| 2531544_adh | TGTTTAAACTGCAAGCAGGC    | Chr.3 | 13771332 | 13771352 | + | No |
| 2352759_adh | TGGAATGGATTGGTGTTCAA    | Chr.3 | 13773058 | 13773078 | + | No |
| 2515739_adh | TGTGGATTTGGTTCGAAATTT   | Chr.3 | 13777555 | 13777575 | + | No |
| 2515739_adh | TGTGGATTTGGTTCGAAATTT   | Chr.3 | 13782756 | 13782776 | + | No |
| 2007681_adh | TCGCGAATTGTACATGAGTGT   | Chr.4 | 66862    | 66882    | + | No |
| 2037135_adh | TCTCACGAGGTTTTGGATAAT   | Chr.4 | 78452    | 78472    | + | No |
| 2018388_adh | TCGGTACTCGGCGATGCACTG   | Chr.4 | 126336   | 126356   | + | No |
| 2711390_adh | TTTCTTCAACAGCAAAAACCA   | Chr.4 | 171217   | 171197   | - | No |
| 2487387_adh | TGTAGAAAACCATGCGTATGA   | Chr.4 | 185748   | 185728   | - | No |
| 1769187_adh | TAACGGTACAGAGAGTGTAGA   | Chr.4 | 206351   | 206371   | + | No |
| 2744000_adh | TTTTGTGTAGATTACGGAGC    | Chr.4 | 220322   | 220342   | + | No |
| 2001469_adh | TCGAGCATTTAAGACGTTTTT   | Chr.4 | 240430   | 240410   | - | No |
| 2287331_adh | TGCAGAGAACTTTAAGCGCGA   | Chr.4 | 255674   | 255694   | + | No |
| 2526887_adh | TGTTCTGAACGGAAAAATGGC   | Chr.4 | 255985   | 256005   | + | No |
| 2043976_adh | TCTGAACGGAAAAATGGCGGA   | Chr.4 | 255988   | 256008   | + | No |
| 1791581_adh | TAATACGAAATATTGACTTTT   | Chr.4 | 256028   | 256008   | - | No |
| 1764155_adh | TAACACACTAGTTACTTTAAA   | Chr.4 | 275897   | 275917   | + | No |
| 2057677_adh | TCTTGACCACCGGACGGTTTC   | Chr.4 | 278879   | 278859   | - | No |
| 1981607_adh | TCCCGGCCGGGGAGAACTTTT   | Chr.4 | 322645   | 322625   | - | No |
| 2686870_adh | TTGTTTAGTTCCAGCCCCATA   | Chr.4 | 322866   | 322846   | - | No |
| 2676392_adh | TTGTATCGTTTTCTTCAGGAA   | Chr.4 | 327186   | 327206   | + | No |
| 1944405_adh | TCACAATTTTGAAGTCGACA    | Chr.4 | 329914   | 329894   | - | No |
| 2684504_adh | TTGTTGAAGAAGACTGGCCTG   | Chr.4 | 340371   | 340391   | + | No |
| 2299935_adh | TGCGCAAAGAGAAACGAACGG   | Chr.4 | 341507   | 341527   | + | No |
| 2514606_adh | TGTGGAACCTTAGATGGTATC   | Chr.4 | 357961   | 357941   | - | No |
| 2132919_adh | TGAAGGAGGAGCTCATAAGGT   | Chr.4 | 361925   | 361905   | - | No |
| 1800014_adh | TAATGCCACCAACTCAGAAGA   | Chr.4 | 363824   | 363804   | - | No |
| 2318365_adh | TGGAAATGTCAAGAAAATCGA   | Chr.4 | 367618   | 367598   | - | No |
| 2693896_adh | TTTACGGCACAAAGAAATCTT   | Chr.4 | 379224   | 379204   | - | No |
| 2671237_adh | TTGGTGGCGGCAGTTTGAATA   | Chr.4 | 379771   | 379751   | - | No |
| 2741068_adh | TTTTGACGCAACCTCGATTCC   | Chr.4 | 393533   | 393513   | - | No |
| 2747001_adh | TTTTTGCAGAATGTTTCGACGT  | Chr.4 | 403622   | 403642   | + | No |
| 1874570_adh | TAGTAGATTGAGAACTTCGG    | Chr.4 | 503875   | 503895   | + | No |
| 1852110_adh | TAGATTGAGAACTTCGGCTT    | Chr.4 | 503878   | 503898   | + | No |
| 1932410_adh | TCAAAATCTGAACGCATTTAA   | Chr.4 | 519559   | 519539   | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1919925_adh | TATTAAGAACGAACAAACGG   | Chr.4 | 529128  | 529148  | + | No |
| 2042902_adh | TCTCTGCAAAAAAGAACTCGG  | Chr.4 | 580305  | 580285  | - | No |
| 1851712_adh | TAGATGTAGGAACATTCATAA  | Chr.4 | 625696  | 625716  | + | No |
| 1893556_adh | TATCAGTCTGCTGACGTTGCG  | Chr.4 | 648586  | 648566  | - | No |
| 2062546_adh | TCTTTTCATGAAGACTGTGAT  | Chr.4 | 653406  | 653426  | + | No |
| 2010361_adh | TCGGAAAGGGATGGCGTTTCT  | Chr.4 | 653632  | 653612  | - | No |
| 2307964_adh | TGCTCTTCGCTACTTGCTCCG  | Chr.4 | 654521  | 654501  | - | No |
| 1890288_adh | TATATGCAGGAAATCTGGCGC  | Chr.4 | 654556  | 654536  | - | No |
| 1870675_adh | TAGGTAGTGACATAAATGTAC  | Chr.4 | 669928  | 669948  | + | No |
| 2047699_adh | TCTGCAAAAAACATGAATAGGA | Chr.4 | 722112  | 722092  | - | No |
| 2480321_adh | TGTAATAAATGCACAAAATCC  | Chr.4 | 770102  | 770082  | - | No |
| 2737412_adh | TTTTCACTGTAAAAAATGCAC  | Chr.4 | 770109  | 770089  | - | No |
| 2745665_adh | TTTTTCACTGTAAAAAATGCA  | Chr.4 | 770110  | 770090  | - | No |
| 2714068_adh | TTTGAAGTCTGTCATTTTTCA  | Chr.4 | 770124  | 770104  | - | No |
| 1805156_adh | TAATTTGAAGTCTGTCATTTT  | Chr.4 | 770127  | 770107  | - | No |
| 2743684_adh | TTTTGTATGGAAAATTGATCG  | Chr.4 | 770217  | 770237  | + | No |
| 2700886_adh | TTTATTTTTCTTCGGATTTTC  | Chr.4 | 773162  | 773182  | + | No |
| 1851712_adh | TAGATGTAGGAACATTCATAA  | Chr.4 | 781662  | 781642  | - | No |
| 1833707_adh | TACTGTAGCTCCAGGAGTACG  | Chr.4 | 792910  | 792930  | + | No |
| 2657859_adh | TTGGAATTTTGGTAGAAGATC  | Chr.4 | 804426  | 804446  | + | No |
| 2746582_adh | TTTTTGAATAAAATGTATATA  | Chr.4 | 824064  | 824084  | + | No |
| 2603767_adh | TTCGAGCAGAAATTGGGGTTT  | Chr.4 | 830304  | 830324  | + | No |
| 2738881_adh | TTTTCGTTGCTTTTATCGGTT  | Chr.4 | 867695  | 867715  | + | No |
| 2709266_adh | TTTCGTTGCTTTTATCGGTTT  | Chr.4 | 867696  | 867716  | + | No |
| 2701571_adh | TTTCAAGCGATTTTCTTCATT  | Chr.4 | 874938  | 874958  | + | No |
| 2369919_adh | TGGAATTGAAAGTAGAATAGA  | Chr.4 | 882832  | 882812  | - | No |
| 2143216_adh | TGAATGAATGAAGGAGACACC  | Chr.4 | 958057  | 958077  | + | No |
| 2702854_adh | TTTCAGAACCCCCGAGCGGCC  | Chr.4 | 959446  | 959466  | + | No |
| 2180507_adh | TGAGAAGCTGAGGACGAAAAAT | Chr.4 | 981402  | 981422  | + | No |
| 2704760_adh | TTTCATTTTCGTGCGATTTCC  | Chr.4 | 992215  | 992235  | + | No |
| 2605863_adh | TTCGATTTATGAGCGAAGCCA  | Chr.4 | 1000430 | 1000450 | + | No |
| 1753617_adh | TAAAATTTATAGAAAAATTTA  | Chr.4 | 1007892 | 1007912 | + | No |
| 2609146_adh | TTCGGGATGGATTTTCGTTAT  | Chr.4 | 1012555 | 1012535 | - | No |
| 2606274_adh | TTCGCACTAAAAAGTCGGAAA  | Chr.4 | 1012695 | 1012715 | + | No |
| 1746821_adh | TAAAAAGTCGGAAAAAGTACC  | Chr.4 | 1012702 | 1012722 | + | No |
| 2011236_adh | TCGGACAAGTGAAGACGAGGA  | Chr.4 | 1020666 | 1020646 | - | No |
| 2288050_adh | TGCAGATTTTGGTACACTTCA  | Chr.4 | 1026620 | 1026640 | + | No |
| 1796984_adh | TAATATTAAATTGCGAAGACA  | Chr.4 | 1036625 | 1036645 | + | No |
| 2745603_adh | TTTTTCAAGCATATTTTCATGT | Chr.4 | 1056454 | 1056434 | - | No |
| 1897651_adh | TATCGGAGTGTCGTTGGGAGG  | Chr.4 | 1056724 | 1056744 | + | No |
| 2707142_adh | TTTCGATCGATTTTATAGAGA  | Chr.4 | 1058651 | 1058671 | + | No |
| 2745085_adh | TTTTTAGCAGAAAAACTCCGA  | Chr.4 | 1058661 | 1058681 | + | No |
| 1936168_adh | TCAACAGTTATGAACGGAATG  | Chr.4 | 1091892 | 1091872 | - | No |
| 2500689_adh | TGTGAAACGGTAACATTTGAG  | Chr.4 | 1097534 | 1097554 | + | No |
| 1919925_adh | TATTAAGAACGAACAAACGG   | Chr.4 | 1138563 | 1138583 | + | No |
| 1931515_adh | TATTTTTTGGTACAGTGGGAT  | Chr.4 | 1143535 | 1143515 | - | No |
| 2654517_adh | TTGCTGAAATTCGGGAATTTT  | Chr.4 | 1151144 | 1151164 | + | No |
| 2559484_adh | TTACTGTAGTTTTCGAAAAAT  | Chr.4 | 1157415 | 1157395 | - | No |
| 2649247_adh | TTGCAGAACTTAAATATCGAC  | Chr.4 | 1170666 | 1170686 | + | No |
| 2689424_adh | TTTAAATCAGGGCTGTGCGGC  | Chr.4 | 1207169 | 1207149 | - | No |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 2746991_adh | TTTTTGCAATTTTTCGGGACA | Chr.4 | 1232858 | 1232878 | + | No |
| 2744637_adh | TTTTTAAATGTCTGGGGGTAT | Chr.4 | 1264416 | 1264436 | + | No |
| 1766210_adh | TAACATGTAAGAACGATTATG | Chr.4 | 1264454 | 1264474 | + | No |
| 2707751_adh | TTTCGGAGTGTCTAGTGC GG | Chr.4 | 1309993 | 1309973 | - | No |
| 1994097_adh | TCCTTCTTTTTTAGTCGGCG  | Chr.4 | 1339925 | 1339905 | - | No |
| 2673568_adh | TTGTAAAATTCGAATTTTATG | Chr.4 | 1385770 | 1385790 | + | No |
| 1981591_adh | TCCCGGCATGGGAAGTTTATT | Chr.4 | 1388228 | 1388208 | - | No |
| 1756381_adh | TAAAGAAGAATTTGAAATACA | Chr.4 | 1395103 | 1395083 | - | No |
| 1764126_adh | TAACAATTTTTCGTACGGAAA | Chr.4 | 1420720 | 1420740 | + | No |
| 1755436_adh | TAAACTCTCTCTGGACCGGTA | Chr.4 | 1446943 | 1446923 | - | No |
| 1821762_adh | TACGAAGCGCGGCAAGACTCA | Chr.4 | 1447382 | 1447402 | + | No |
| 2006565_adh | TCGCAGTAGCGCAGTCGGTTA | Chr.4 | 1490604 | 1490584 | - | No |
| 2417871_adh | TGGGAAATCAGCTTTTGGGCA | Chr.4 | 1493213 | 1493233 | + | No |
| 2616501_adh | TTCTCGATCGTTCCAATTGC  | Chr.4 | 1496107 | 1496087 | - | No |
| 2314326_adh | TGGAAACCTGGAGAATTCGAA | Chr.4 | 1496203 | 1496223 | + | No |
| 2291625_adh | TGCATTTTGTAGGAAATCGGA | Chr.4 | 1504240 | 1504260 | + | No |
| 2261258_adh | TGATATAAAATCGTCGAAAAA | Chr.4 | 1505547 | 1505567 | + | No |
| 2559484_adh | TTACTGTAGTTTTCGAAAAAT | Chr.4 | 1570071 | 1570091 | + | No |
| 1990765_adh | TCCTCTCGGACAAGCGCAACA | Chr.4 | 1596025 | 1596045 | + | No |
| 2721317_adh | TTTGCAGAGTGTCTTGGCAA  | Chr.4 | 1624027 | 1624047 | + | No |
| 2261258_adh | TGATATAAAATCGTCGAAAAA | Chr.4 | 1647982 | 1648002 | + | No |
| 1977067_adh | TCCACAAAATATATTTCAAT  | Chr.4 | 1650848 | 1650828 | - | No |
| 2529136_adh | TGTTGATGATTGCGTTGGCCT | Chr.4 | 1659298 | 1659318 | + | No |
| 2093409_adh | TGAAATCGAAATTTTCAAAAA | Chr.4 | 1663025 | 1663005 | - | No |
| 2043618_adh | TCTGAAAAATTTTGACGCATA | Chr.4 | 1714403 | 1714423 | + | No |
| 1825925_adh | TACGGAGATGAGCAAGTGACC | Chr.4 | 1722750 | 1722770 | + | No |
| 2159916_adh | TGACCGGAAGACTTGAAAGTT | Chr.4 | 1739970 | 1739990 | + | No |
| 1911640_adh | TATGATGGGATGGGAGAAGAT | Chr.4 | 1751797 | 1751817 | + | No |
| 2011151_adh | TCGGAATTGTGAGGGACGTGC | Chr.4 | 1752544 | 1752564 | + | No |
| 2318544_adh | TGGAAATTTAAAGAAAGTAG  | Chr.4 | 1763413 | 1763393 | - | No |
| 2072424_adh | TGAAACATTTCAAATTGTCAT | Chr.4 | 1767774 | 1767794 | + | No |
| 2737125_adh | TTTTCAAAGAATTCGGCTTAA | Chr.4 | 1803646 | 1803666 | + | No |
| 2703203_adh | TTTCAGGCAAAAACTCCATGA | Chr.4 | 1846544 | 1846524 | - | No |
| 2291625_adh | TGCATTTTGTAGGAAATCGGA | Chr.4 | 1855738 | 1855718 | - | No |
| 2650752_adh | TTGCATTCGGCTGGTCATCAC | Chr.4 | 1923923 | 1923903 | - | No |
| 1826636_adh | TACGGCTCCGCAGTAACGTTT | Chr.4 | 1929181 | 1929201 | + | No |
| 2303956_adh | TGCGTCGGGAAAAATGCAGAA | Chr.4 | 1945283 | 1945263 | - | No |
| 2688983_adh | TTTAAACAAATGGTCGAGGAG | Chr.4 | 1965864 | 1965884 | + | No |
| 2738286_adh | TTTTCGATCGAAAAATACGGG | Chr.4 | 1970308 | 1970288 | - | No |
| 2518108_adh | TGTGGTTGCTCGGCGCGGTGT | Chr.4 | 1972342 | 1972362 | + | No |
| 1864035_adh | TAGGAGGCGTGTGAAGTTTGA | Chr.4 | 1978063 | 1978043 | - | No |
| 2744000_adh | TTTTGTGTAGATTTACGGAGC | Chr.4 | 1980710 | 1980690 | - | No |
| 2609843_adh | TTCGGTAGAGCGCGATTGCAT | Chr.4 | 1993620 | 1993600 | - | No |
| 2005002_adh | TCGATTGCAAGTATTGACGAG | Chr.4 | 2029630 | 2029650 | + | No |
| 2304207_adh | TGCGTGGAGAATTCGGTTTTT | Chr.4 | 2046184 | 2046164 | - | No |
| 2653587_adh | TTGCGTGGAGAATTCGGTTTT | Chr.4 | 2046185 | 2046165 | - | No |
| 2276639_adh | TGATTGCGTGGAGAATTCGGT | Chr.4 | 2046188 | 2046168 | - | No |
| 2411152_adh | TGGCCTAGTGGATAAGAGGGA | Chr.4 | 2076307 | 2076327 | + | No |
| 2411152_adh | TGGCCTAGTGGATAAGAGGGA | Chr.4 | 2079061 | 2079081 | + | No |
| 2236276_adh | TGAGGAACAAAAACGGAGAA  | Chr.4 | 2196400 | 2196380 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1811193_adh | TACACGTCAAAAGTAGCGAGA  | Chr.4 | 2196430 | 2196450 | + | No |
| 1811193_adh | TACACGTCAAAAGTAGCGAGA  | Chr.4 | 2196530 | 2196510 | - | No |
| 2236276_adh | TGAGGAACAAAAACGGAGAA   | Chr.4 | 2196560 | 2196580 | + | No |
| 2649595_adh | TTGCAGCGGTGGAAATTTTGA  | Chr.4 | 2203483 | 2203463 | - | No |
| 2649595_adh | TTGCAGCGGTGGAAATTTTGA  | Chr.4 | 2203539 | 2203559 | + | No |
| 2169511_adh | TGACTGAGAAGGTAACACGA   | Chr.4 | 2206952 | 2206932 | - | No |
| 2618314_adh | TTCTGAGCAATTTTCTGGCGT  | Chr.4 | 2216934 | 2216914 | - | No |
| 2236251_adh | TGAGGAAATGCGACGAAAAAA  | Chr.4 | 2217037 | 2217057 | + | No |
| 1848126_adh | TAGAGCGCGTCTGGCATTAC   | Chr.4 | 2240974 | 2240954 | - | No |
| 2712089_adh | TTTCTTTGAAAATCGTTTGA   | Chr.4 | 2277001 | 2276981 | - | No |
| 2700099_adh | TTTATTGATTTTTCGGTTTAA  | Chr.4 | 2277981 | 2278001 | + | No |
| 2648907_adh | TTGCACAAATTGTATATTCAT  | Chr.4 | 2309572 | 2309552 | - | No |
| 2649414_adh | TTGCAGACTGTGGTGAACATT  | Chr.4 | 2311846 | 2311866 | + | No |
| 2004167_adh | TCGATGGATCGAAAGACTGTT  | Chr.4 | 2312741 | 2312721 | - | No |
| 2649535_adh | TTGCAGCATGCGGTCGGTCAG  | Chr.4 | 2313577 | 2313597 | + | No |
| 1825721_adh | TACGGAATGATCGTCGCCCTC  | Chr.4 | 2315497 | 2315477 | - | No |
| 2499479_adh | TGTCTCGTTGGGAAAATGGTG  | Chr.4 | 2317057 | 2317077 | + | No |
| 2523164_adh | TGTTACTAATGGTTTAACTGG  | Chr.4 | 2327519 | 2327499 | - | No |
| 2022038_adh | TCGTAGAAATTGGAAAAATA   | Chr.4 | 2328440 | 2328460 | + | No |
| 2189153_adh | TGAGAGTAAGCGTTGAATTGA  | Chr.4 | 2331203 | 2331223 | + | No |
| 1930982_adh | TATTTTCTGTTGACTCGTCTT  | Chr.4 | 2368966 | 2368986 | + | No |
| 1876095_adh | TAGTCACAAGACTGTGTGGCA  | Chr.4 | 2370259 | 2370239 | - | No |
| 1762599_adh | TAAATTGTAGGAGAAAGGTGG  | Chr.4 | 2370284 | 2370304 | + | No |
| 2713445_adh | TTTGAACCTCTCGGCAAGCTGA | Chr.4 | 2383159 | 2383139 | - | No |
| 2258151_adh | TGATAAAATGTCGGAAAATGG  | Chr.4 | 2384453 | 2384473 | + | No |
| 2258151_adh | TGATAAAATGTCGGAAAATGG  | Chr.4 | 2384773 | 2384793 | + | No |
| 2258151_adh | TGATAAAATGTCGGAAAATGG  | Chr.4 | 2385116 | 2385136 | + | No |
| 2490300_adh | TGTAGTTTTTGGAGAGTGCGCG | Chr.4 | 2389232 | 2389252 | + | No |
| 2741066_adh | TTTTGACGATTTTTTCGGCGG  | Chr.4 | 2389279 | 2389299 | + | No |
| 1872893_adh | TAGTAACAAGCGGTCGGCGCA  | Chr.4 | 2400174 | 2400194 | + | No |
| 2059589_adh | TCTTGTCGAGAAGGATATCCC  | Chr.4 | 2401057 | 2401037 | - | No |
| 1897697_adh | TATCGGATTCGACATGGGCGG  | Chr.4 | 2409842 | 2409822 | - | No |
| 2701829_adh | TTTCAATGGAACAACCTGGAGA | Chr.4 | 2457010 | 2456990 | - | No |
| 1919595_adh | TATGTTGTTTTAGTTTGTTC   | Chr.4 | 2488824 | 2488844 | + | No |
| 2376287_adh | TGGACGGAGCATCGAAGAACG  | Chr.4 | 2496724 | 2496744 | + | No |
| 2585694_adh | TTCAACAGAACTCGTCAAGCA  | Chr.4 | 2497344 | 2497364 | + | No |
| 2039776_adh | TCTCGCGACGATAGAAGGATA  | Chr.4 | 2497820 | 2497840 | + | No |
| 1970315_adh | TCATATTTTAGGTTAAATCGT  | Chr.4 | 2502391 | 2502371 | - | No |
| 2176553_adh | TGAGAAAAATGCGGAAACTGT  | Chr.4 | 2551406 | 2551386 | - | No |
| 2643348_adh | TTGATAATGGCATTACATCA   | Chr.4 | 2552724 | 2552744 | + | No |
| 1875521_adh | TAGTATGGCACTCCCTAATAG  | Chr.4 | 2561066 | 2561086 | + | No |
| 2259371_adh | TGATACAGGTAGAGAAATGAG  | Chr.4 | 2577281 | 2577261 | - | No |
| 1899269_adh | TATCTAGACATCACAGCAGGA  | Chr.4 | 2588102 | 2588122 | + | No |
| 2645917_adh | TTGATTATAGGCGGGAAAATG  | Chr.4 | 2602085 | 2602065 | - | No |
| 2748935_adh | TTTTTTCGTGCGCAGCACGGG  | Chr.4 | 2602227 | 2602247 | + | No |
| 2460933_adh | TGGTAAAAAACATTATTTTCA  | Chr.4 | 2610224 | 2610204 | - | No |
| 2669661_adh | TTGGTACTGTGGATGTTGGTA  | Chr.4 | 2620842 | 2620862 | + | No |
| 2516716_adh | TGTGGGTGGCTCATGAGAAGA  | Chr.4 | 2640803 | 2640783 | - | No |
| 2739281_adh | TTTTCTCGCGACTCGGAAAAG  | Chr.4 | 2641184 | 2641204 | + | No |
| 2568482_adh | TTAGGCAGTTAGACAGTTGTT  | Chr.4 | 2655006 | 2654986 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2696684_adh | TTTAGGCAGTTAGACAGTTGT  | Chr.4 | 2655007 | 2654987 | - | No |
| 2703099_adh | TTTCAGCGTGGCGCAGTGGCT  | Chr.4 | 2664238 | 2664258 | + | No |
| 2677717_adh | TTGTCATCACTTCGCTCGGAG  | Chr.4 | 2671460 | 2671440 | - | No |
| 2148713_adh | TGAATTTTCTGGCAGTTTTGA  | Chr.4 | 2671747 | 2671767 | + | No |
| 2608090_adh | TTCGGAGTGTCGTTGTGAAAT  | Chr.4 | 2677866 | 2677846 | - | No |
| 2722884_adh | TTTGGAACAACATGAGCATA   | Chr.4 | 2709876 | 2709856 | - | No |
| 2020055_adh | TCGGTTCGGACAATTCGGCA   | Chr.4 | 2718625 | 2718605 | - | No |
| 2568197_adh | TTAGGATACACCTGCAAATAT  | Chr.4 | 2729098 | 2729118 | + | No |
| 2568197_adh | TTAGGATACACCTGCAAATAT  | Chr.4 | 2732401 | 2732381 | - | No |
| 2739231_adh | TTTTCTCAGTTGACAACTTTT  | Chr.4 | 2775787 | 2775767 | - | No |
| 2746144_adh | TTTTTCGTATTTTTGAGTGAT  | Chr.4 | 2783113 | 2783093 | - | No |
| 2738619_adh | TTTTCGGCATTTTTAGGCGAT  | Chr.4 | 2783133 | 2783113 | - | No |
| 2711827_adh | TTTCTTGCTTTTCGGCATTTT  | Chr.4 | 2783141 | 2783121 | - | No |
| 2541595_adh | TTAAAGGATTGTAAC TTGGCT | Chr.4 | 2797000 | 2797020 | + | No |
| 2134724_adh | TGAAGTCGTGCATCGGGCCAA  | Chr.4 | 2825731 | 2825711 | - | No |
| 2589767_adh | TTACGTCCTACTCAGCTGGG   | Chr.4 | 2825853 | 2825833 | - | No |
| 2566585_adh | TTAGCCTCTCTGATTTGTAGT  | Chr.4 | 2846550 | 2846570 | + | No |
| 2677633_adh | TTGTCAGATAATAGACAGCTA  | Chr.4 | 2854105 | 2854085 | - | No |
| 2735892_adh | TTTTATGAACTTTTGCCTGA   | Chr.4 | 2892905 | 2892885 | - | No |
| 2727078_adh | TTTGGTTTTTTCGGCAAAATT  | Chr.4 | 2893709 | 2893729 | + | No |
| 2748908_adh | TTTTTTCGGCAAAATTTCTG   | Chr.4 | 2893714 | 2893734 | + | No |
| 1980138_adh | TCCCAAAATTCGTCGTTGCAA  | Chr.4 | 2894881 | 2894861 | - | No |
| 2140342_adh | TGAATCACAGAAGCTCATTCA  | Chr.4 | 2901052 | 2901072 | + | No |
| 2029595_adh | TCTAACATGCTTTCGAAGGAT  | Chr.4 | 2901771 | 2901751 | - | No |
| 1897229_adh | TATCGATTATTCAGAGAGGTG  | Chr.4 | 2914104 | 2914124 | + | No |
| 2043041_adh | TCTCTGTACCGGTAATATTGC  | Chr.4 | 2918214 | 2918234 | + | No |
| 2707876_adh | TTTCGGCAATCGGCGATTGAG  | Chr.4 | 2922439 | 2922459 | + | No |
| 2576931_adh | TTATCACATGTAGAACGGCAT  | Chr.4 | 2927677 | 2927697 | + | No |
| 2615955_adh | TTCTCAATAAAATAATCGATA  | Chr.4 | 2939922 | 2939902 | - | No |
| 1824347_adh | TACGATGTAGACTTTAATATA  | Chr.4 | 2955628 | 2955608 | - | No |
| 2061708_adh | TCTTTGAAGTCTGTCGAGATA  | Chr.4 | 2991332 | 2991352 | + | No |
| 2396515_adh | TGGATTTTTAAAGCGAAGAAT  | Chr.4 | 3009338 | 3009318 | - | No |
| 2749508_adh | TTTTTTGGAAC TTTAAAAAT  | Chr.4 | 3014347 | 3014367 | + | No |
| 2161129_adh | TGACGATGGAGATGAGGATGG  | Chr.4 | 3040683 | 3040663 | - | No |
| 2005888_adh | TCGCACACTGTGCTTGAGAAT  | Chr.4 | 3042107 | 3042087 | - | No |
| 2530982_adh | TGTTGTGGAGACGATGATGAC  | Chr.4 | 3045923 | 3045903 | - | No |
| 2025355_adh | TCGTCATCATGCGTTCGCGGA  | Chr.4 | 3050411 | 3050391 | - | No |
| 2611894_adh | TTCGTCATCATGCGTTCGCGG  | Chr.4 | 3050412 | 3050392 | - | No |
| 1929353_adh | TATTTATCCAGTTCTGCAGAG  | Chr.4 | 3052396 | 3052376 | - | No |
| 1883859_adh | TATAAAAATTTGAGATCTCGT  | Chr.4 | 3054669 | 3054689 | + | No |
| 2612251_adh | TTCGTGATTTCAAGCCTAAAT  | Chr.4 | 3058356 | 3058376 | + | No |
| 2268047_adh | TGATATTCGGAATCAGGAGAA  | Chr.4 | 3058415 | 3058435 | + | No |
| 1991574_adh | TCCTGGAAGACGATGAAGAAG  | Chr.4 | 3063244 | 3063224 | - | No |
| 2005267_adh | TCGATTTGGCGAAGGAAAAAG  | Chr.4 | 3071653 | 3071673 | + | No |
| 1819707_adh | TACCGGCACAGAGAGTGTAGA  | Chr.4 | 3082332 | 3082312 | - | No |
| 2607300_adh | TTCGGACAGATGCGACACGGA  | Chr.4 | 3106733 | 3106713 | - | No |
| 2029160_adh | TCGTTTTTGTGAGATTTGAA   | Chr.4 | 3142377 | 3142397 | + | No |
| 2612251_adh | TTCGTGATTTCAAGCCTAAAT  | Chr.4 | 3142527 | 3142547 | + | No |
| 2268047_adh | TGATATTCGGAATCAGGAGAA  | Chr.4 | 3142587 | 3142607 | + | No |
| 1918114_adh | TATGTATAGTTTTGTTTTTG   | Chr.4 | 3151269 | 3151249 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2649813_adh | TTGCAGTGAGAGCCTAAACAT  | Chr.4 | 3212579 | 3212559 | - | No |
| 2718437_adh | TTTGATCTACGGGAATTGCGG  | Chr.4 | 3231295 | 3231275 | - | No |
| 2578819_adh | TTATGATGATGCATCGTTGGG  | Chr.4 | 3232264 | 3232244 | - | No |
| 1806407_adh | TACAAAAAGCAGATATTCTA   | Chr.4 | 3250447 | 3250427 | - | No |
| 2623602_adh | TTCTTTGAGCAAAACATGCAAT | Chr.4 | 3271528 | 3271548 | + | No |
| 2417928_adh | TGGGAAATTGATGGATAACTC  | Chr.4 | 3276157 | 3276177 | + | No |
| 2625173_adh | TTGAAAGGGGAAACTGTTGTT  | Chr.4 | 3294687 | 3294667 | - | No |
| 2738647_adh | TTTTCGGGCAGAAATTGTGAA  | Chr.4 | 3313399 | 3313379 | - | No |
| 2608432_adh | TTCGGCAATTTTCGGGCAGAA  | Chr.4 | 3313407 | 3313387 | - | No |
| 2044992_adh | TCTGACACGGATAGAATGATT  | Chr.4 | 3315849 | 3315869 | + | No |
| 1822924_adh | TACGAGAAGACTGATCCAGCA  | Chr.4 | 3322280 | 3322300 | + | No |
| 2048959_adh | TCTGGACGACAGCGAGCTGAG  | Chr.4 | 3336903 | 3336883 | - | No |
| 1976451_adh | TCCAAGGACGAGATGAGCAAG  | Chr.4 | 3337751 | 3337731 | - | No |
| 1773911_adh | TAAGAACTAGATCATGACGGA  | Chr.4 | 3338414 | 3338394 | - | No |
| 2042616_adh | TCTCTCTCGGTTTTCGTCACA  | Chr.4 | 3338827 | 3338807 | - | No |
| 2472039_adh | TGGTGGAGGGTGAGACGCAGT  | Chr.4 | 3350830 | 3350810 | - | No |
| 2689573_adh | TTTAAATTAAGAAATCGACAA  | Chr.4 | 3354407 | 3354427 | + | No |
| 2000633_adh | TCGACTGGTCTCTCGCTCGGC  | Chr.4 | 3368871 | 3368891 | + | No |
| 1908836_adh | TATGAGAAATTGGGCATTTTT  | Chr.4 | 3378635 | 3378655 | + | No |
| 2100848_adh | TGAAATGAAAATTATTGAGAA  | Chr.4 | 3382209 | 3382229 | + | No |
| 2634625_adh | TTGAATTTTGACGGTTTCCGG  | Chr.4 | 3385519 | 3385539 | + | No |
| 2148732_adh | TGAATTTTGACGGTTTCCGGC  | Chr.4 | 3385520 | 3385540 | + | No |
| 1973746_adh | TCATTCCAAGACGATATTTAC  | Chr.4 | 3395799 | 3395779 | - | No |
| 2355692_adh | TGGAATGTAAAATATTATTCA  | Chr.4 | 3421241 | 3421261 | + | No |
| 2702550_adh | TTTCACCTTTTCATGTGATCG  | Chr.4 | 3428845 | 3428825 | - | No |
| 2153271_adh | TGACACTGATCATCAATGAAC  | Chr.4 | 3444522 | 3444502 | - | No |
| 2254774_adh | TGAGTTAGAATTTTCGGTGTT  | Chr.4 | 3560813 | 3560833 | + | No |
| 2529415_adh | TGTTGCATCGTCCCATTACAA  | Chr.4 | 3582956 | 3582936 | - | No |
| 2746291_adh | TTTTTCTGTCAAACTCGGTA   | Chr.4 | 3599131 | 3599111 | - | No |
| 1861083_adh | TAGGAAGATGTGGTGATGGTT  | Chr.4 | 3648946 | 3648926 | - | No |
| 2737519_adh | TTTTCAGGCGTAATTTTCGGAA | Chr.4 | 3669487 | 3669507 | + | No |
| 2706297_adh | TTTCCTGCCAGAATTTTTTGA  | Chr.4 | 3669818 | 3669838 | + | No |
| 2584580_adh | TTATTTTGGCACGATGATCAT  | Chr.4 | 3678721 | 3678741 | + | No |
| 1849484_adh | TAGAGTTGTGAGAAAATTGTA  | Chr.4 | 3700101 | 3700121 | + | No |
| 2044846_adh | TCTGAATTCGACGTGACGGT   | Chr.4 | 3726044 | 3726064 | + | No |
| 2657856_adh | TTGGAATTTTCAGATTTTCCC  | Chr.4 | 3726109 | 3726129 | + | No |
| 2641090_adh | TTGAGCTTGTCACGTGGCTCC  | Chr.4 | 3735977 | 3735997 | + | No |
| 2641090_adh | TTGAGCTTGTCACGTGGCTCC  | Chr.4 | 3739687 | 3739707 | + | No |
| 2542289_adh | TTAAATAGATTAAAATTGGCT  | Chr.4 | 3747124 | 3747104 | - | No |
| 2705027_adh | TTTCAGCAGAATTTTCGATGT  | Chr.4 | 3803384 | 3803364 | - | No |
| 2271534_adh | TGATGATGATGATGGTAGAGG  | Chr.4 | 3848990 | 3848970 | - | No |
| 1891511_adh | TATCAAGAACTTAAGACGACA  | Chr.4 | 3854100 | 3854080 | - | No |
| 2601673_adh | TTCGAAACTGCTGAGGAGACG  | Chr.4 | 3875380 | 3875360 | - | No |
| 2577103_adh | TTATCAGTTCCTTAACGGTTT  | Chr.4 | 3881422 | 3881442 | + | No |
| 2668937_adh | TTGGTAACAGTTGGACGGCCA  | Chr.4 | 3891542 | 3891562 | + | No |
| 2530280_adh | TGTTGGTTGTCTCATTTTCGG  | Chr.4 | 3907452 | 3907432 | - | No |
| 2664384_adh | TTGGATTGGTCGGGTTTCATTA | Chr.4 | 3907494 | 3907474 | - | No |
| 2749069_adh | TTTTTTCTGTATTTTAGGCTT  | Chr.4 | 3959984 | 3960004 | + | No |
| 1810809_adh | TACACATGTTTCAAAAACCTT  | Chr.4 | 3979376 | 3979356 | - | No |
| 2039755_adh | TCTCGCCACGAAGTCTGCAT   | Chr.4 | 4032163 | 4032183 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2042350_adh | TCTCTCAGTGAACACGGTCAG  | Chr.4 | 4060304 | 4060284 | - | No |
| 1852538_adh | TAGATTTTCTTGGCACCGCAA  | Chr.4 | 4067485 | 4067505 | + | No |
| 2717370_adh | TTTGATACAGAAGTTGGAATT  | Chr.4 | 4068179 | 4068159 | - | No |
| 2285996_adh | TGCACAGAATTCGGATTTTAA  | Chr.4 | 4085999 | 4086019 | + | No |
| 2705139_adh | TTTCCAGGCGTTTTTTCGGAT  | Chr.4 | 4086047 | 4086067 | + | No |
| 1833707_adh | TACTGTAGCTCCAGGAGTACG  | Chr.4 | 4099554 | 4099534 | - | No |
| 2069977_adh | TGAAAATCGGAAATTTTGGAC  | Chr.4 | 4105521 | 4105541 | + | No |
| 2618926_adh | TTCTGGAGAAAAGCGAACAGA  | Chr.4 | 4143473 | 4143493 | + | No |
| 1911848_adh | TATGATTACTGGAGACTGCTC  | Chr.4 | 4156754 | 4156774 | + | No |
| 1989367_adh | TCCTACTATTGTTTCATCGTCA | Chr.4 | 4166442 | 4166462 | + | No |
| 2743684_adh | TTTTGTATGGAAAATTGATCG  | Chr.4 | 4185057 | 4185077 | + | No |
| 2705454_adh | TTTCCCTATAATTTTGTCTGTT | Chr.4 | 4187804 | 4187784 | - | No |
| 2743741_adh | TTTTGTCAGCAGCCAAGAAGC  | Chr.4 | 4187833 | 4187813 | - | No |
| 2711514_adh | TTTCTTCGGCGAAACAAGAGA  | Chr.4 | 4188351 | 4188371 | + | No |
| 2695873_adh | TTTAGATTTTGCATAATAATT  | Chr.4 | 4193155 | 4193135 | - | No |
| 2737800_adh | TTTTCATTTAGATTTTGCATA  | Chr.4 | 4193161 | 4193141 | - | No |
| 2288506_adh | TGCAGGATATGGTTTAACTAG  | Chr.4 | 4222978 | 4222958 | - | No |
| 1931062_adh | TATTTTGAGTTCTGGATGTTT  | Chr.4 | 4224284 | 4224264 | - | No |
| 2000857_adh | TCGACTTTTCGTCTGGAAGTT  | Chr.4 | 4227212 | 4227192 | - | No |
| 1981704_adh | TCCCGGTTTTTATTATCGGAA  | Chr.4 | 4267604 | 4267624 | + | No |
| 1897558_adh | TATCGGAATGCATCTTCCAAC  | Chr.4 | 4267617 | 4267637 | + | No |
| 2676558_adh | TTGTATGAATGATGTTTCGGTT | Chr.4 | 4270199 | 4270219 | + | No |
| 1981694_adh | TCCCGGTTATTGTGCAATGCA  | Chr.4 | 4272450 | 4272470 | + | No |
| 2714049_adh | TTTGAAGTAGACAGTATGAAA  | Chr.4 | 4285319 | 4285299 | - | No |
| 2707262_adh | TTTCGCAATTTTCCGTCATT   | Chr.4 | 4307478 | 4307498 | + | No |
| 2369081_adh | TGGAATTATCATGTTGGAATT  | Chr.4 | 4307516 | 4307536 | + | No |
| 2370697_adh | TGGAATTGCTTACTGCTGACC  | Chr.4 | 4307530 | 4307550 | + | No |
| 2616640_adh | TTCTCGGATGGCGTATTGCAC  | Chr.4 | 4348172 | 4348192 | + | No |
| 1955371_adh | TCACTTCTTGTTCCCATTTAG  | Chr.4 | 4360756 | 4360776 | + | No |
| 2584895_adh | TTCAAAAAAGCTGTAATCCTC  | Chr.4 | 4366429 | 4366449 | + | No |
| 1757423_adh | TAAAGCGGAGAAGCAAGAATC  | Chr.4 | 4381027 | 4381047 | + | No |
| 2694768_adh | TTTACTTTTGGGCCCGTCGTC  | Chr.4 | 4390586 | 4390566 | - | No |
| 1936555_adh | TCAACGACTGTCCTTGGCCTA  | Chr.4 | 4390622 | 4390602 | - | No |
| 2743806_adh | TTTTGTGCTTGGACCTTGCTT  | Chr.4 | 4390786 | 4390806 | + | No |
| 2729795_adh | TTTGTGCTTTTGAAACGGATA  | Chr.4 | 4393812 | 4393832 | + | No |
| 2046116_adh | TCTGAGACTATAGAGAAGAGA  | Chr.4 | 4404367 | 4404387 | + | No |
| 2230036_adh | TGAGATTGAGCTAGAAACACT  | Chr.4 | 4405541 | 4405561 | + | No |
| 2700712_adh | TTTATTTTCGTGATTGCTTGGT | Chr.4 | 4406224 | 4406244 | + | No |
| 2040115_adh | TCTCGGCAAGTTAAGGTAATT  | Chr.4 | 4435198 | 4435218 | + | No |
| 2040380_adh | TCTCGGTTTGCAATTTTAAAG  | Chr.4 | 4445839 | 4445819 | - | No |
| 2065926_adh | TGAAAAAGCGTGCGTTGGCTG  | Chr.4 | 4447586 | 4447606 | + | No |
| 2687523_adh | TTGTTTGGATGCGAACGGCAG  | Chr.4 | 4448703 | 4448723 | + | No |
| 2643979_adh | TTGATCACAAGGGCCTGTAGT  | Chr.4 | 4511746 | 4511726 | - | No |
| 1939117_adh | TCAAGCAATCTGAAGGGAATA  | Chr.4 | 4532638 | 4532658 | + | No |
| 2381279_adh | TGGAGCGCACTTACTCGGCAA  | Chr.4 | 4548876 | 4548856 | - | No |
| 1990381_adh | TCCTCGGGGAGTACACGATCT  | Chr.4 | 4551329 | 4551309 | - | No |
| 2513770_adh | TGTGCGAGAAAAGTAGAAGAA  | Chr.4 | 4570841 | 4570821 | - | No |
| 2537930_adh | TTAAAAAGTAATTTCTCGATA  | Chr.4 | 4633169 | 4633189 | + | No |
| 2279307_adh | TGATTTTGCTGATTTTGGAAC  | Chr.4 | 4633568 | 4633548 | - | No |
| 2032398_adh | TCTAGACTTTGCGGCATCCAT  | Chr.4 | 4636962 | 4636942 | - | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1924718_adh | TATTCTAGACTTTGCGGCATC  | Chr.4 | 4636965 | 4636945 | - | No  |
| 2706808_adh | TTTCGACAGAATGCAACAGAA  | Chr.4 | 4650742 | 4650722 | - | No  |
| 2295903_adh | TGCGAAGCGAGTGAACGGTGA  | Chr.4 | 4660526 | 4660546 | + | No  |
| 2590430_adh | TTCAGAATATTGTGAGCATAA  | Chr.4 | 4668537 | 4668557 | + | No  |
| 1991153_adh | TCCTGAGACGTCTATCAAACA  | Chr.4 | 4704446 | 4704426 | - | No  |
| 2712154_adh | TTTCTTTTACTAAAATATCAT  | Chr.4 | 4712545 | 4712525 | - | No  |
| 1770310_adh | TAATATGCAGAATTGAAACT   | Chr.4 | 4721406 | 4721386 | - | No  |
| 2589739_adh | TTCACGGTAGCACAGAACTA   | Chr.4 | 4725520 | 4725540 | + | No  |
| 2692407_adh | TTTAATTGACGACATTTAGCA  | Chr.4 | 4725667 | 4725687 | + | No  |
| 2589660_adh | TTCACGGCACGGCGAACGGGA  | Chr.4 | 4728015 | 4727995 | - | No  |
| 1888037_adh | TATAGAGTTTCGAGTCGGTAC  | Chr.4 | 4736525 | 4736545 | + | No  |
| 1813888_adh | TACATGGAGAAAGATTCTATT  | Chr.4 | 4738196 | 4738176 | - | No  |
| 1931291_adh | TATTTTATACACTTTATGCC   | Chr.4 | 4743888 | 4743908 | + | No  |
| 2282910_adh | TGCAATAGCAATTCGTAGTAA  | Chr.4 | 4751915 | 4751895 | - | No  |
| 2282910_adh | TGCAATAGCAATTCGTAGTAA  | Chr.4 | 4751941 | 4751921 | - | No  |
| 2593338_adh | TTCAGTTGCACAGGTTTTTTG  | Chr.4 | 4784787 | 4784767 | - | No  |
| 2712341_adh | TTTGAAAAATTTGACGGTATG  | Chr.4 | 4785009 | 4785029 | + | No  |
| 2338597_adh | TGGAATGAAAAAGAATGTAA   | Chr.4 | 4787721 | 4787701 | - | No  |
| 1956384_adh | TCACTTGTTTCGTCTTCTTCTT | Chr.4 | 4799685 | 4799705 | + | No  |
| 2668948_adh | TTGGTAACGGTCGTGTTCAAG  | Chr.4 | 4811097 | 4811117 | + | No  |
| 2590846_adh | TTCAGATGATTCGGACAATAT  | Chr.4 | 4811553 | 4811573 | + | No  |
| 2313907_adh | TGGAAAACTAACATCGGTGA   | Chr.4 | 4825333 | 4825313 | - | No  |
| 2589079_adh | TTCACAACAATCGATAATTCA  | Chr.4 | 4827320 | 4827300 | - | No  |
| 1935849_adh | TCAACAACAAGATATGAACA   | Chr.4 | 4827829 | 4827849 | + | No  |
| 2617969_adh | TTCTGACACAGAAGTTAGAAT  | Chr.4 | 4833218 | 4833198 | - | Yes |
| 2615829_adh | TTCTATTTGTATTTTGATTAT  | Chr.4 | 4835467 | 4835447 | - | No  |
| 1803564_adh | TAATTCTTCGTTTTGCAATCT  | Chr.4 | 4838711 | 4838731 | + | No  |
| 1979309_adh | TCCAGTTGGCTTCAGAAGATG  | Chr.4 | 4838804 | 4838824 | + | No  |
| 2588187_adh | TTCAATGGAATTCACATGTGG  | Chr.4 | 4839765 | 4839785 | + | No  |
| 2492000_adh | TGTATGGAAAAACAAGTAGTAG | Chr.4 | 4850598 | 4850618 | + | Yes |
| 2735077_adh | TTTTATAAACTAGAAGAACCA  | Chr.4 | 4851653 | 4851633 | - | No  |
| 2629291_adh | TTGAAGTTATGGCTAGTTTCT  | Chr.4 | 4852884 | 4852904 | + | Yes |
| 2588915_adh | TTCAATTGTATTCGACAGTGG  | Chr.4 | 4854109 | 4854089 | - | Yes |
| 2740885_adh | TTTTGAATAATCTGTCGCTGC  | Chr.4 | 4854256 | 4854236 | - | Yes |
| 2049220_adh | TCTGGAGTTTTTCTTCGATCG  | Chr.4 | 4856044 | 4856024 | - | Yes |
| 2282320_adh | TGCAAGCTGTTGATATCGAGA  | Chr.4 | 4858879 | 4858859 | - | No  |
| 1795806_adh | TAATATCAATATTTTTGTTAT  | Chr.4 | 4862374 | 4862394 | + | No  |
| 2269424_adh | TGATCCCTATGAACACGGCTG  | Chr.4 | 4864156 | 4864176 | + | No  |
| 2057445_adh | TCTTGAACCAAAAGCTGAACA  | Chr.4 | 4874801 | 4874821 | + | No  |
| 1855521_adh | TAGCATTGTTTATACTTTTTT  | Chr.4 | 4887618 | 4887598 | - | No  |
| 2034890_adh | TCTATTCATGAAGATGAGTTT  | Chr.4 | 4889299 | 4889279 | - | No  |
| 1891446_adh | TATCAACCTTTCTCACATTTA  | Chr.4 | 4893473 | 4893493 | + | No  |
| 2745511_adh | TTTTTATTGTTGTAGAGGGCG  | Chr.4 | 4905645 | 4905625 | - | No  |
| 2734302_adh | TTTTACTGATTTTCATGCTTT  | Chr.4 | 4913086 | 4913106 | + | No  |
| 2537446_adh | TTAAAAACAAGCGAAAAAATT  | Chr.4 | 4915454 | 4915474 | + | No  |
| 1745302_adh | TAAAAACAAGCGAAAAATTA   | Chr.4 | 4915455 | 4915475 | + | No  |
| 2576707_adh | TTATATTTGAAGAAACGGATA  | Chr.4 | 4936796 | 4936776 | - | No  |
| 2698357_adh | TTTATATTTGAAGAAACGGAT  | Chr.4 | 4936797 | 4936777 | - | No  |
| 2721467_adh | TTTGCATTGGAAAGGTAAACT  | Chr.4 | 4946534 | 4946554 | + | Yes |
| 1918012_adh | TATGTAGTAGTTTTGCGGCAA  | Chr.4 | 4947867 | 4947847 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2699318_adh | TTTATGTAGTAGTTTTGCGGC  | Chr.4 | 4947869 | 4947849 | - | No  |
| 1926281_adh | TATTGCAGTAACTATTACTCA  | Chr.4 | 4950753 | 4950773 | + | No  |
| 1917684_adh | TATGTAGGGATGAATGTCGAT  | Chr.4 | 4953118 | 4953098 | - | No  |
| 2738351_adh | TTTTCGCACAAAGTACTTCAAA | Chr.4 | 4954630 | 4954610 | - | No  |
| 2557800_adh | TTACGGTGTCAATTGTGCAAT  | Chr.4 | 4955372 | 4955392 | + | No  |
| 1929181_adh | TATTTACGTTGATGCTTTTAG  | Chr.4 | 4958303 | 4958323 | + | Yes |
| 2650807_adh | TTGCATTGCAACAATATATTG  | Chr.4 | 4959851 | 4959871 | + | No  |
| 2277678_adh | TGATTTAAGGATTGAAGGTAT  | Chr.4 | 4960523 | 4960543 | + | Yes |
| 2548393_adh | TTAAGGATTGAAGGTATTTTT  | Chr.4 | 4960527 | 4960547 | + | Yes |
| 2721392_adh | TTTGCATATATATCTTACTGT  | Chr.4 | 4961250 | 4961230 | - | No  |
| 2001170_adh | TCGAGAATAGGATGGTTGATG  | Chr.4 | 4966383 | 4966403 | + | No  |
| 2260352_adh | TGATAGAATGCAGAATGCAGA  | Chr.4 | 4970028 | 4970048 | + | No  |
| 1746884_adh | TAAAAATAAAGTAGCTAGACG  | Chr.4 | 4971159 | 4971179 | + | No  |
| 1923776_adh | TATTCATATGTAGTAAAGTTA  | Chr.4 | 4975286 | 4975306 | + | No  |
| 2643363_adh | TTGATACAAGCACTCGAATAA  | Chr.4 | 4977221 | 4977241 | + | No  |
| 2300055_adh | TGCGCATGGTCGGAGACGTAT  | Chr.4 | 4982479 | 4982459 | - | No  |
| 2732295_adh | TTTGTGTGCATATTTTTCGGG  | Chr.4 | 4986835 | 4986815 | - | No  |
| 2537992_adh | TTAAAAATATGCAGAGTAATA  | Chr.4 | 4989741 | 4989721 | - | No  |
| 2716213_adh | TTTGACTTCAGAACATCACGG  | Chr.4 | 4990110 | 4990130 | + | No  |
| 1896665_adh | TATCGAAAACGCTGAAAACGC  | Chr.4 | 4990494 | 4990474 | - | No  |
| 2381561_adh | TGGAGCTGAGAAGATCATCTT  | Chr.4 | 4994613 | 4994593 | - | No  |
| 1942355_adh | TCAATGGTGGAGCTGAGAAGA  | Chr.4 | 4994620 | 4994600 | - | No  |
| 2055642_adh | TCTTCAGTACCAAACAACCAA  | Chr.4 | 4994727 | 4994707 | - | No  |
| 2516328_adh | TGTGGGACAGGAGAACGCCAT  | Chr.4 | 4995901 | 4995881 | - | No  |
| 2381561_adh | TGGAGCTGAGAAGATCATCTT  | Chr.4 | 4999727 | 4999707 | - | No  |
| 1942355_adh | TCAATGGTGGAGCTGAGAAGA  | Chr.4 | 4999734 | 4999714 | - | No  |
| 2055642_adh | TCTTCAGTACCAAACAACCAA  | Chr.4 | 4999841 | 4999821 | - | No  |
| 1863263_adh | TAGGACTGTCGTGGGATAAAG  | Chr.4 | 5001795 | 5001775 | - | No  |
| 2488890_adh | TGTAGGGCTGTACAAATCGGC  | Chr.4 | 5011086 | 5011106 | + | No  |
| 1760150_adh | TAAATATTGCAGATACAAAGA  | Chr.4 | 5012961 | 5012941 | - | No  |
| 2061723_adh | TCTTTGACATGTAAGAAAAAA  | Chr.4 | 5019034 | 5019054 | + | No  |
| 2473957_adh | TGGTTAACTTAGAACAAAAA   | Chr.4 | 5039665 | 5039645 | - | No  |
| 2694820_adh | TTAGAAATGCGGGCGACTAC   | Chr.4 | 5043118 | 5043138 | + | No  |
| 2271057_adh | TGATGAATCATATAATATTAA  | Chr.4 | 5044434 | 5044454 | + | No  |
| 2580519_adh | TTATTAAGCAGTTCCACCGAC  | Chr.4 | 5047290 | 5047270 | - | No  |
| 1943895_adh | TCACAACAATGGAGAGAGAGC  | Chr.4 | 5048369 | 5048349 | - | No  |
| 2677753_adh | TTGTCATTGCATACATAATCT  | Chr.4 | 5048647 | 5048667 | + | No  |
| 1796904_adh | TAATATGTTGATCGTGTTTAA  | Chr.4 | 5053817 | 5053837 | + | No  |
| 2734040_adh | TTTTACATTTTAACGCTTTAT  | Chr.4 | 5053858 | 5053838 | - | No  |
| 2126795_adh | TGAACTTTTAGATCTAGGACA  | Chr.4 | 5056107 | 5056087 | - | No  |
| 2659091_adh | TTGGACTTGTGAGCAGATTTTC | Chr.4 | 5056279 | 5056299 | + | No  |
| 1815748_adh | TACCAGTTTTCAACCGATCAT  | Chr.4 | 5061089 | 5061069 | - | No  |
| 2126795_adh | TGAACTTTTAGATCTAGGACA  | Chr.4 | 5062465 | 5062485 | + | No  |
| 2707316_adh | TTTCGCCTTTGGACAAGAAGA  | Chr.4 | 5064821 | 5064801 | - | No  |
| 2722934_adh | TTTGGAAGCTTGACAAAAAT   | Chr.4 | 5067170 | 5067190 | + | No  |
| 2615969_adh | TTCTCAATCAAGCAGCAATTG  | Chr.4 | 5070875 | 5070895 | + | No  |
| 2373369_adh | TGGACAAGAAAATAGATACGTT | Chr.4 | 5072307 | 5072327 | + | No  |
| 2052220_adh | TCTGTCAAGGCACAAATAGAA  | Chr.4 | 5075034 | 5075054 | + | Yes |
| 2738765_adh | TTTTCGTAATTTAAATTAATT  | Chr.4 | 5075707 | 5075727 | + | Yes |
| 2160485_adh | TGACCTTTAGAATGACGTCAG  | Chr.4 | 5076661 | 5076641 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2653000_adh | TTGCGGTAAACTTTTCAGCAAC | Chr.4 | 5078635 | 5078655 | + | No  |
| 1755958_adh | TAAACTTTTCAGCAACATTTAA | Chr.4 | 5078641 | 5078661 | + | No  |
| 2583429_adh | TTATTTAAAGTTCTCTCGCAT  | Chr.4 | 5079665 | 5079645 | - | Yes |
| 2724462_adh | TTTGGCGTAGACGACAAGAAC  | Chr.4 | 5087705 | 5087725 | + | No  |
| 1999471_adh | TCGAATTTTGGACCATTTAGA  | Chr.4 | 5091376 | 5091396 | + | No  |
| 1802849_adh | TAATTATTTGTGGAAGAATGA  | Chr.4 | 5096038 | 5096018 | - | No  |
| 1885301_adh | TATAATAACTTTAAAAAATTA  | Chr.4 | 5096057 | 5096037 | - | No  |
| 2568183_adh | TTAGGAGTTCAGTACTGTTTG  | Chr.4 | 5097975 | 5097955 | - | Yes |
| 2480463_adh | TGTAAAGGAAGGTAAACAA    | Chr.4 | 5098451 | 5098471 | + | No  |
| 2036394_adh | TCTCAAGAATGTTTGACAATC  | Chr.4 | 5099753 | 5099733 | - | Yes |
| 2618608_adh | TTCTGCATAAAAGAATCTATA  | Chr.4 | 5100104 | 5100124 | + | Yes |
| 2674955_adh | TTGTAGATATAGAAGACTTAT  | Chr.4 | 5101210 | 5101190 | - | Yes |
| 2679699_adh | TTGTGACTAAATTTTGTAAAA  | Chr.4 | 5101925 | 5101945 | + | No  |
| 2546884_adh | TTAAGACGTAAACGTATATAT  | Chr.4 | 5102553 | 5102533 | - | No  |
| 2308496_adh | TGCTGAGTTTGTGGAAGTATA  | Chr.4 | 5103099 | 5103119 | + | No  |
| 2572031_adh | TTAGTGGTTTCCAAGACAATC  | Chr.4 | 5104715 | 5104695 | - | No  |
| 2554125_adh | TTACAGAAGTAGAATTCGAAC  | Chr.4 | 5106861 | 5106841 | - | Yes |
| 1923799_adh | TATTCATCTTACGAAATCTTT  | Chr.4 | 5107957 | 5107937 | - | No  |
| 2665342_adh | TTGGCATGTATTTTTGTATTAT | Chr.4 | 5109900 | 5109920 | + | Yes |
| 2593412_adh | TTCAAGTTTGGCATAATGGATT | Chr.4 | 5110330 | 5110310 | - | No  |
| 1939190_adh | TCAAGCATTTTCTGACTTGCG  | Chr.4 | 5112028 | 5112048 | + | No  |
| 2744854_adh | TTTTTAATTTGTACATATAGC  | Chr.4 | 5118021 | 5118041 | + | Yes |
| 2624348_adh | TTGAAAACGGATAACTGTAGT  | Chr.4 | 5121286 | 5121306 | + | No  |
| 1954095_adh | TCACTCAAGAAATACTAGGGG  | Chr.4 | 5121630 | 5121610 | - | No  |
| 1890216_adh | TATATGACTAATTTTCAGGTAA | Chr.4 | 5130950 | 5130970 | + | No  |
| 2717761_adh | TTTGATCAGCATTGAAAACGT  | Chr.4 | 5132397 | 5132377 | - | No  |
| 1762668_adh | TAAATTTAATATGTAAAAATC  | Chr.4 | 5132577 | 5132557 | - | Yes |
| 2740321_adh | TTTTCTTTCTTATGCCTCCAG  | Chr.4 | 5136428 | 5136408 | - | Yes |
| 2733520_adh | TTTTAAGGAAAAAGTTCACGG  | Chr.4 | 5136939 | 5136919 | - | No  |
| 2745399_adh | TTTTTATGTAGGCTTATTTGA  | Chr.4 | 5137770 | 5137750 | - | No  |
| 2590101_adh | TTCACTTGACTAACTTTGTAA  | Chr.4 | 5138316 | 5138336 | + | Yes |
| 2641935_adh | TTGAGTAGATTAATTGAAACA  | Chr.4 | 5141591 | 5141611 | + | No  |
| 2549485_adh | TTAATAACATACGGAAGATAC  | Chr.4 | 5144671 | 5144691 | + | Yes |
| 2590048_adh | TTCACTGTAACGTTGCAAAAA  | Chr.4 | 5149015 | 5148995 | - | No  |
| 2664429_adh | TTGGATTGTGCGAGTCGGTTA  | Chr.4 | 5149294 | 5149274 | - | Yes |
| 2730059_adh | TTTGTGTGCGGTAAAAATTAAG | Chr.4 | 5151224 | 5151204 | - | Yes |
| 2573643_adh | TTATAAAAACATATTATCCTC  | Chr.4 | 5152872 | 5152852 | - | No  |
| 1868445_adh | TAGGGAGAAGGAGAAGCTGTG  | Chr.4 | 5153257 | 5153277 | + | No  |
| 1750242_adh | TAAAAGTCTTATTTTCATTAA  | Chr.4 | 5156076 | 5156056 | - | Yes |
| 1901642_adh | TATGAACATGATGGGAGAGG   | Chr.4 | 5165183 | 5165203 | + | No  |
| 2273044_adh | TGATGTAGGAACATTTATAGG  | Chr.4 | 5168781 | 5168801 | + | No  |
| 2660319_adh | TTGGAGTGCTACATTTCTTCA  | Chr.4 | 5172758 | 5172738 | - | No  |
| 2566274_adh | TTAGCAATGTATAATATAATC  | Chr.4 | 5172801 | 5172781 | - | Yes |
| 2703612_adh | TTTCAGTTAGCAATGTATAAT  | Chr.4 | 5172807 | 5172787 | - | Yes |
| 2471618_adh | TGGTGCCAAAGTAAAAAGTTTC | Chr.4 | 5179514 | 5179494 | - | Yes |
| 2674591_adh | TTGTAGAAAACGTTAAAAGTA  | Chr.4 | 5179701 | 5179681 | - | No  |
| 2702799_adh | TTTCACTTTTCCGTCCGAAAT  | Chr.4 | 5183917 | 5183937 | + | No  |
| 2702479_adh | TTTCACATTAAAGGTGGTGTA  | Chr.4 | 5197136 | 5197156 | + | Yes |
| 1819985_adh | TACCTAGAATCTGCATATCAA  | Chr.4 | 5200993 | 5201013 | + | No  |
| 1912465_adh | TATGCAGATTCTAGGTACTGA  | Chr.4 | 5201009 | 5200989 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2643377_adh | TTGATACATAGCTTTTCCAGT  | Chr.4 | 5201594 | 5201574 | - | No  |
| 2025481_adh | TCGTCGATCAGGCAAAGTTAG  | Chr.4 | 5202380 | 5202400 | + | No  |
| 1936579_adh | TCAACGATCTTCGCGGAAAAT  | Chr.4 | 5206264 | 5206284 | + | No  |
| 2395912_adh | TGGATTTCCAGTGGAATGGCA  | Chr.4 | 5209679 | 5209699 | + | No  |
| 2559958_adh | TTACTTATTATCAACTTTCTC  | Chr.4 | 5213343 | 5213323 | - | Yes |
| 2704408_adh | TTTCATTAGACTTGGCGTAAT  | Chr.4 | 5216988 | 5217008 | + | No  |
| 1973360_adh | TCATTAGACTTGGCGTAATCT  | Chr.4 | 5216990 | 5217010 | + | No  |
| 2639508_adh | TTGAGAAGATCGACGACAAAC  | Chr.4 | 5219238 | 5219258 | + | No  |
| 2180159_adh | TGAGAAGATCGACGACAAACA  | Chr.4 | 5219239 | 5219259 | + | No  |
| 2539217_adh | TTAAACAAGAGAACGAAGTCT  | Chr.4 | 5220192 | 5220212 | + | No  |
| 2639508_adh | TTGAGAAGATCGACGACAAAC  | Chr.4 | 5227297 | 5227317 | + | No  |
| 2180159_adh | TGAGAAGATCGACGACAAACA  | Chr.4 | 5227298 | 5227318 | + | No  |
| 2184674_adh | TGAGACTGCATCTATATAACA  | Chr.4 | 5228616 | 5228596 | - | No  |
| 2690914_adh | TTTAATAATGGACGCAGTTTT  | Chr.4 | 5229477 | 5229497 | + | Yes |
| 1930988_adh | TATTTTCTTATGAAAACTTCG  | Chr.4 | 5234438 | 5234458 | + | Yes |
| 2723208_adh | TTTGGAATTTTCAGAACTGT   | Chr.4 | 5234536 | 5234556 | + | No  |
| 2723208_adh | TTTGGAATTTTCAGAACTGT   | Chr.4 | 5235839 | 5235819 | - | No  |
| 1930988_adh | TATTTTCTTATGAAAACTTCG  | Chr.4 | 5235937 | 5235917 | - | Yes |
| 2707316_adh | TTTCGCCTTTGGACAAGAAGA  | Chr.4 | 5241544 | 5241524 | - | No  |
| 2499632_adh | TGTCTGACAATCGGAAGATTC  | Chr.4 | 5245325 | 5245305 | - | No  |
| 2499632_adh | TGTCTGACAATCGGAAGATTC  | Chr.4 | 5245875 | 5245895 | + | No  |
| 2707316_adh | TTTCGCCTTTGGACAAGAAGA  | Chr.4 | 5249656 | 5249676 | + | No  |
| 1983869_adh | TCCGAAGAAAAGTCTTCATT   | Chr.4 | 5252400 | 5252380 | - | No  |
| 2373369_adh | TGGACAAGAAATAGATACGTT  | Chr.4 | 5253342 | 5253322 | - | No  |
| 2615969_adh | TTCTCAATCAAGCAGCAATTG  | Chr.4 | 5254775 | 5254755 | - | No  |
| 2722934_adh | TTTGGAAGCTTGACAAAAAT   | Chr.4 | 5258481 | 5258461 | - | No  |
| 2707316_adh | TTTCGCCTTTGGACAAGAAGA  | Chr.4 | 5260808 | 5260828 | + | No  |
| 1765154_adh | TAACAGCTTAGATTCACTCTC  | Chr.4 | 5266804 | 5266824 | + | No  |
| 2036773_adh | TCTCAATTTTGAACGTCGACC  | Chr.4 | 5270064 | 5270084 | + | No  |
| 2593298_adh | TTCAGTTGACAATGGTTTTTT  | Chr.4 | 5271206 | 5271226 | + | Yes |
| 2593298_adh | TTCAGTTGACAATGGTTTTTT  | Chr.4 | 5271271 | 5271291 | + | No  |
| 1799242_adh | TAATGAACATCTACTTTGGCA  | Chr.4 | 5282100 | 5282080 | - | Yes |
| 2542183_adh | TTAAATACGAATTCATATTAA  | Chr.4 | 5282546 | 5282526 | - | No  |
| 2574109_adh | TTATAATGTACATTTACGCGT  | Chr.4 | 5284577 | 5284597 | + | No  |
| 2651494_adh | TTGCCTGACAGCTTATTAAAT  | Chr.4 | 5289414 | 5289394 | - | No  |
| 1834056_adh | TACTGTTATTACTTAGCAACT  | Chr.4 | 5289664 | 5289644 | - | No  |
| 1762170_adh | TAAATTATCATTGCAGAGATC  | Chr.4 | 5291661 | 5291641 | - | No  |
| 1929608_adh | TATTTTCATCGTTGAATATCCA | Chr.4 | 5303124 | 5303104 | - | No  |
| 2707316_adh | TTTCGCCTTTGGACAAGAAGA  | Chr.4 | 5312870 | 5312850 | - | No  |
| 2125737_adh | TGAACTGTCAAAACGGGACGT  | Chr.4 | 5313258 | 5313278 | + | No  |
| 2640958_adh | TTGAGCTACTGAGCGATGACA  | Chr.4 | 5316155 | 5316135 | - | No  |
| 2640958_adh | TTGAGCTACTGAGCGATGACA  | Chr.4 | 5317610 | 5317590 | - | No  |
| 2047438_adh | TCTGATTAGGAGAAAAATTGAA | Chr.4 | 5324952 | 5324932 | - | No  |
| 1929362_adh | TATTTATCGTATTTTAAAATC  | Chr.4 | 5326667 | 5326687 | + | Yes |
| 2378769_adh | TGGACTGTTGATCTTTAGAAG  | Chr.4 | 5327693 | 5327673 | - | Yes |
| 2581235_adh | TTATTCAACATATATTTCTAC  | Chr.4 | 5330383 | 5330403 | + | No  |
| 2549733_adh | TTAATACTCTTGTTTTATTCA  | Chr.4 | 5336486 | 5336506 | + | Yes |
| 1933941_adh | TCAAAGTGAAGAACTTGTAAC  | Chr.4 | 5340236 | 5340216 | - | No  |
| 2710443_adh | TTTCTGAATTGGCAATGTGTT  | Chr.4 | 5340786 | 5340766 | - | Yes |
| 2673527_adh | TTGTAAAAGTAGCCAGAAAAA  | Chr.4 | 5342667 | 5342647 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2282616_adh | TGCAAGTGAGTAGTAGAAGTG  | Chr.4 | 5350765 | 5350745 | - | No  |
| 1767569_adh | TAACCTGGAGATTGCAGAAAA  | Chr.4 | 5353720 | 5353700 | - | No  |
| 2376713_adh | TGGACTAATAGCAGAAAAAAT  | Chr.4 | 5369632 | 5369612 | - | No  |
| 2658538_adh | TTGGACTAATAGCAGAAAAAA  | Chr.4 | 5369633 | 5369613 | - | No  |
| 2600825_adh | TTCCTGCAAGCTTCGACATGA  | Chr.4 | 5370042 | 5370022 | - | No  |
| 1801984_adh | TAATGTTGTGAAAGGAAATTC  | Chr.4 | 5376574 | 5376594 | + | Yes |
| 2743644_adh | TTTTGTATCTGGTGGCATTAA  | Chr.4 | 5388160 | 5388180 | + | Yes |
| 2744638_adh | TTTTTAAAATTCAAATATCGT  | Chr.4 | 5391719 | 5391699 | - | No  |
| 2040346_adh | TCTCGGTGTCGGCATAAAATT  | Chr.4 | 5394915 | 5394935 | + | No  |
| 1931349_adh | TATTTTCTTCCCTCGGCGTT   | Chr.4 | 5394944 | 5394964 | + | No  |
| 2710425_adh | TTTCTGAATCGTCGAAAAAAT  | Chr.4 | 5401957 | 5401937 | - | No  |
| 2550096_adh | TTAATATTCTTAAATTTTTAT  | Chr.4 | 5402357 | 5402337 | - | No  |
| 2276877_adh | TGATTGGGTGATTGGATACAA  | Chr.4 | 5404262 | 5404242 | - | Yes |
| 2575121_adh | TTATAGTGTACAATAATAAAA  | Chr.4 | 5404800 | 5404820 | + | No  |
| 1883159_adh | TAGTTTGATGACTTCATAATT  | Chr.4 | 5404877 | 5404897 | + | No  |
| 2718853_adh | TTTGATGACTTCATAATTTTT  | Chr.4 | 5404880 | 5404900 | + | No  |
| 2644805_adh | TTGATGACTTCATAATTTTTT  | Chr.4 | 5404881 | 5404901 | + | No  |
| 2513085_adh | TGTGATTTTTATCTGACGACT  | Chr.4 | 5404914 | 5404934 | + | No  |
| 2746814_adh | TTTTTGATAACATAACGGCTG  | Chr.4 | 5405648 | 5405668 | + | No  |
| 1765521_adh | TAACATAACGGCTGCATATCA  | Chr.4 | 5405655 | 5405675 | + | No  |
| 1832910_adh | TACTGGAAATCACAAAGGAAAG | Chr.4 | 5407588 | 5407608 | + | Yes |
| 1970403_adh | TCATCAAGTATATTGCGGAAT  | Chr.4 | 5410643 | 5410623 | - | No  |
| 2004487_adh | TCGATTAAAGAGATGGGATCA  | Chr.4 | 5412125 | 5412105 | - | No  |
| 1999559_adh | TCGACAAGACTAAAAGCATTAA | Chr.4 | 5415109 | 5415129 | + | No  |
| 2701651_adh | TTTCAATAAATCTCGGAAATT  | Chr.4 | 5416333 | 5416353 | + | No  |
| 1833520_adh | TACTGGTATCTGTGATTTGCG  | Chr.4 | 5418452 | 5418432 | - | No  |
| 2737250_adh | TTTTCAATCGAGATAAATAGG  | Chr.4 | 5420254 | 5420274 | + | Yes |
| 2555737_adh | TTACCATGTAGTTCCTTGGCAT | Chr.4 | 5427410 | 5427390 | - | Yes |
| 2738781_adh | TTTTCGTAGACGTCATAAACT  | Chr.4 | 5427790 | 5427770 | - | No  |
| 1824724_adh | TACGCATACTTGTTGGTTGAT  | Chr.4 | 5428012 | 5427992 | - | Yes |
| 2681187_adh | TTGTGATTTTCATATATTCCTT | Chr.4 | 5431663 | 5431683 | + | No  |
| 2069744_adh | TGAAAATAACTGGAACGGACA  | Chr.4 | 5432055 | 5432035 | - | No  |
| 2159286_adh | TGACATTTTTTCGGAAGATTCA | Chr.4 | 5432111 | 5432131 | + | No  |
| 2393029_adh | TGGATTTCAGATAAGAAATGCA | Chr.4 | 5434815 | 5434835 | + | No  |
| 2032762_adh | TCTAGGACATTTTTGCAGAAT  | Chr.4 | 5435576 | 5435596 | + | No  |
| 1834772_adh | TACTTCACTTTTTTAAAAACA  | Chr.4 | 5437295 | 5437315 | + | Yes |
| 2728591_adh | TTTGTATTACGAACTTTTATT  | Chr.4 | 5437360 | 5437380 | + | No  |
| 2060681_adh | TCTTTATTACTGGGCGTCATA  | Chr.4 | 5438891 | 5438911 | + | Yes |
| 2700714_adh | TTTATTTTCGTTTTACAAAAC  | Chr.4 | 5449345 | 5449325 | - | Yes |
| 1934261_adh | TCAAATATTTTTTCGGATGAT  | Chr.4 | 5449438 | 5449418 | - | No  |
| 2500038_adh | TGTCTTAAGTTTTAGCTGGTA  | Chr.4 | 5450224 | 5450244 | + | No  |
| 2602389_adh | TTCGAATAGTTCTCTTATTGT  | Chr.4 | 5458735 | 5458755 | + | No  |
| 2012932_adh | TCGGAGGGTGGTTGTTTCCAT  | Chr.4 | 5462347 | 5462327 | - | No  |
| 2005257_adh | TCGATTTGAGAACGACAGCTT  | Chr.4 | 5473048 | 5473068 | + | No  |
| 1955183_adh | TCACTGTTTAGAACACGGATA  | Chr.4 | 5473248 | 5473268 | + | No  |
| 2531782_adh | TGTTTAGAACACGGATAGACG  | Chr.4 | 5473252 | 5473272 | + | No  |
| 1994921_adh | TCGAAAGGACATTGGCGACGG  | Chr.4 | 5484228 | 5484208 | - | No  |
| 2041423_adh | TCTCGTCGAGCAGAATCGCTT  | Chr.4 | 5485797 | 5485817 | + | No  |
| 1994607_adh | TCGAAAATGAAGAATTTGGCG  | Chr.4 | 5486388 | 5486368 | - | No  |
| 2740974_adh | TTTTGAATTTTGATGCGCGGT  | Chr.4 | 5486590 | 5486610 | + | No  |

|             |                         |       |         |         |   |     |
|-------------|-------------------------|-------|---------|---------|---|-----|
| 2714572_adh | TTTGAATTTTGATGCGCGGTA   | Chr.4 | 5486591 | 5486611 | + | No  |
| 2741830_adh | TTTTGATGCGCGGTAATTTTCG  | Chr.4 | 5486597 | 5486617 | + | No  |
| 2498681_adh | TGTCGTGCGAAATCGATTCCCTA | Chr.4 | 5491055 | 5491075 | + | No  |
| 2616471_adh | TTCTCGACAATTCGAATACGT   | Chr.4 | 5493980 | 5494000 | + | No  |
| 2615660_adh | TTCTATGTACAACGGTTCTCT   | Chr.4 | 5498781 | 5498801 | + | Yes |
| 2639789_adh | TTGAGAGAACCGTTGTACATA   | Chr.4 | 5498804 | 5498784 | - | No  |
| 1968003_adh | TCATAAAAAGAACCTAGCGGA   | Chr.4 | 5500560 | 5500540 | - | No  |
| 2639781_adh | TTGAGACTTTTATTCAGATAT   | Chr.4 | 5501944 | 5501924 | - | Yes |
| 2716473_adh | TTTGAGACTTTTATTCAGATA   | Chr.4 | 5501945 | 5501925 | - | Yes |
| 2714110_adh | TTTGAAGTTTTTATAAGTTTT   | Chr.4 | 5502158 | 5502138 | - | Yes |
| 1963491_adh | TCAGGAAGCGAAACTCAAGTA   | Chr.4 | 5503606 | 5503626 | + | No  |
| 1754064_adh | TAAACAAGTAGTAAGAACTCC   | Chr.4 | 5506621 | 5506641 | + | No  |
| 2380139_adh | TGGAGACGCAGAAACGTATTG   | Chr.4 | 5507481 | 5507501 | + | No  |
| 2014236_adh | TCGGATGAAATTGAAATCGGG   | Chr.4 | 5507697 | 5507677 | - | Yes |
| 2531569_adh | TGTTTAAAGAGATAATTGGAT   | Chr.4 | 5508124 | 5508144 | + | No  |
| 2464720_adh | TGGTATCTGATCGGTTGAAAT   | Chr.4 | 5509212 | 5509232 | + | Yes |
| 2733794_adh | TTTTAATTACAATTTGAATAA   | Chr.4 | 5509355 | 5509335 | - | Yes |
| 1967144_adh | TCAGTGTTCAGTAGGTGCTT    | Chr.4 | 5523074 | 5523094 | + | No  |
| 1934090_adh | TCAAATAGAGAAATGACGCGG   | Chr.4 | 5523231 | 5523251 | + | No  |
| 2487525_adh | TGTAGAATAGATTCGGGTGCA   | Chr.4 | 5526188 | 5526168 | - | No  |
| 2674740_adh | TTGTAGAATAGATTCGGGTGC   | Chr.4 | 5526189 | 5526169 | - | No  |
| 1980050_adh | TCCATTGTAGAATAGATTCGG   | Chr.4 | 5526193 | 5526173 | - | No  |
| 2703735_adh | TTTCATACGCCAATGGTTTGT   | Chr.4 | 5526334 | 5526354 | + | No  |
| 1876786_adh | TAGTCGTATGTCAACAATTGT   | Chr.4 | 5528813 | 5528793 | - | Yes |
| 2682961_adh | TTGTTACGCAGATTCTAGAAA   | Chr.4 | 5529718 | 5529738 | + | No  |
| 2522917_adh | TGTTACGCAGATTCTAGAAAA   | Chr.4 | 5529719 | 5529739 | + | No  |
| 2039774_adh | TCTCGCGAAGTGAATTATTTT   | Chr.4 | 5532511 | 5532491 | - | No  |
| 1893293_adh | TATCAGAGATTTTCCCGTCGG   | Chr.4 | 5538031 | 5538051 | + | No  |
| 2585889_adh | TTCAACGAGAAAAATCAACGAT  | Chr.4 | 5541389 | 5541369 | - | No  |
| 2268667_adh | TGATATTTATAGCTTATCTTT   | Chr.4 | 5545321 | 5545341 | + | No  |
| 1754536_adh | TAAACATTGGACAATGCAAAC   | Chr.4 | 5559939 | 5559919 | - | No  |
| 1883520_adh | TAGTTTTGTTATCCGGTGAGT   | Chr.4 | 5560609 | 5560589 | - | Yes |
| 2010494_adh | TCGGAACAATCTTGAGGCGCC   | Chr.4 | 5563491 | 5563471 | - | No  |
| 2553597_adh | TTACAATGGTACTTTAAATTC   | Chr.4 | 5573665 | 5573645 | - | No  |
| 1855329_adh | TAGCATGGTAGTAGCACTGAC   | Chr.4 | 5574281 | 5574301 | + | No  |
| 2737706_adh | TTTTCATCGTTTTTTATATAT   | Chr.4 | 5575744 | 5575764 | + | Yes |
| 2740385_adh | TTTTCTTTTTAACCTGGCAAT   | Chr.4 | 5578553 | 5578533 | - | No  |
| 2066789_adh | TGAAAACAGAAATATTCGCTAA  | Chr.4 | 5582700 | 5582680 | - | Yes |
| 2598710_adh | TTCCGACGGAAATACATATGA   | Chr.4 | 5587933 | 5587913 | - | No  |
| 2039703_adh | TCTCGCAGAATGATCCTTGAA   | Chr.4 | 5590726 | 5590706 | - | Yes |
| 1975539_adh | TCATTTTCGTTTCGGTTTTAA   | Chr.4 | 5591404 | 5591384 | - | No  |
| 2594208_adh | TTCATCCAAGGACAATGCGGA   | Chr.4 | 5592169 | 5592149 | - | No  |
| 2737960_adh | TTTTCCCTTTAAAAATTCATC   | Chr.4 | 5593029 | 5593049 | + | No  |
| 2616772_adh | TTCTCGTAGGAAAAAGCGGTT   | Chr.4 | 5594316 | 5594336 | + | Yes |
| 1790210_adh | TAATAAATGGATAAGATTTTT   | Chr.4 | 5595254 | 5595234 | - | Yes |
| 2584149_adh | TTATTTGGGAAATTTTGTGAC   | Chr.4 | 5596928 | 5596948 | + | Yes |
| 1762096_adh | TAAATTACACAATTCATTTTC   | Chr.4 | 5599553 | 5599533 | - | No  |
| 2288712_adh | TGCAGTAGACAGTGATATATA   | Chr.4 | 5600309 | 5600289 | - | No  |
| 2570249_adh | TTAGTACTTCTTCTTCTGGAA   | Chr.4 | 5600786 | 5600766 | - | No  |
| 2558721_adh | TTACTCCATTATTTTTCATAA   | Chr.4 | 5602220 | 5602240 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1980122_adh | TCCATTTTTTTATTACAATTTA | Chr.4 | 5604966 | 5604946 | - | Yes |
| 2746988_adh | TTTTTGCAATCTTTGGACACA  | Chr.4 | 5606955 | 5606935 | - | No  |
| 2689286_adh | TTTAAAGCAGCCTAAGTAAAC  | Chr.4 | 5607077 | 5607057 | - | No  |
| 1928998_adh | TATTTAAAGCAGCCTAAGTAA  | Chr.4 | 5607079 | 5607059 | - | No  |
| 1927996_adh | TATTGTGATTCAAGCTGGTAT  | Chr.4 | 5610797 | 5610777 | - | No  |
| 2573659_adh | TTATAAAATGCATCGAATTAT  | Chr.4 | 5619653 | 5619633 | - | No  |
| 2526361_adh | TGTTTCGAGCAAACACTTTTCA | Chr.4 | 5625935 | 5625915 | - | No  |
| 1762696_adh | TAAATTTATTTCAATTAACCTT | Chr.4 | 5627776 | 5627796 | + | No  |
| 2583100_adh | TTATTGGATTCTACTATATGG  | Chr.4 | 5641673 | 5641653 | - | Yes |
| 2043255_adh | TCTCTTCAGAGATGGCTACAT  | Chr.4 | 5642987 | 5643007 | + | Yes |
| 2549503_adh | TTAATAAGAAACAAACATTTG  | Chr.4 | 5644364 | 5644344 | - | No  |
| 2732835_adh | TTTGTTTTGATATGTAAGGTT  | Chr.4 | 5645337 | 5645317 | - | No  |
| 1890437_adh | TATATGTAGGTAGATCAAATT  | Chr.4 | 5648535 | 5648515 | - | No  |
| 2593589_adh | TTCATAGAAGAACAATAAAT   | Chr.4 | 5649224 | 5649204 | - | No  |
| 2657060_adh | TTGGAAGACTTGATTTCATAG  | Chr.4 | 5649238 | 5649218 | - | No  |
| 1810326_adh | TACAATTGGAAGACTTGATTT  | Chr.4 | 5649243 | 5649223 | - | No  |
| 2486959_adh | TGTACTACAATTGGAAGACTT  | Chr.4 | 5649248 | 5649228 | - | No  |
| 1891496_adh | TATCAACTTCCATCGTCTGAA  | Chr.4 | 5649533 | 5649513 | - | No  |
| 1813537_adh | TACATCTGTTCTGTTGGTGACC | Chr.4 | 5666564 | 5666544 | - | No  |
| 2700716_adh | TTTATTCTAGTTTGAAAAGTA  | Chr.4 | 5667078 | 5667058 | - | No  |
| 1890177_adh | TATATGAAAAGGCAGAAAATG  | Chr.4 | 5670913 | 5670893 | - | No  |
| 2285019_adh | TGCAATGTATTCAATCGTCCA  | Chr.4 | 5673111 | 5673091 | - | No  |
| 2623149_adh | TTCTTGCTCTTAAACGTTCTCC | Chr.4 | 5673824 | 5673844 | + | No  |
| 2469208_adh | TGGTCAGAAAATTGCTATGAA  | Chr.4 | 5675067 | 5675047 | - | Yes |
| 2037297_adh | TCTCAGAATTCGGAATTCAGT  | Chr.4 | 5678147 | 5678127 | - | No  |
| 1966453_adh | TCAGTCTCAGAATTCGGAATT  | Chr.4 | 5678151 | 5678131 | - | No  |
| 1925228_adh | TATTCTTTTCGGTACATTCTTT | Chr.4 | 5680441 | 5680421 | - | Yes |
| 2582038_adh | TTATTCTTTTCGGTACATTCTT | Chr.4 | 5680442 | 5680422 | - | Yes |
| 2699977_adh | TTTATTCTTTTCGGTACATTCT | Chr.4 | 5680443 | 5680423 | - | Yes |
| 2071816_adh | TGAAACAGTAGAAAATTCAGA  | Chr.4 | 5680478 | 5680498 | + | No  |
| 1821874_adh | TACGAAGTTTTGGAAACTTCA  | Chr.4 | 5690685 | 5690665 | - | No  |
| 2689573_adh | TTTAAATTAAGAAATCGACAA  | Chr.4 | 5695471 | 5695451 | - | No  |
| 2739346_adh | TTTTCTCTCCTGAAAAC TAGT | Chr.4 | 5703574 | 5703554 | - | No  |
| 2597716_adh | TTCCCATATCAGATATTTTAA  | Chr.4 | 5705879 | 5705859 | - | No  |
| 2689643_adh | TTTAAATTTGGCAATTTTTTA  | Chr.4 | 5705947 | 5705927 | - | No  |
| 2551858_adh | TTAATTATGCGACTCATTTTG  | Chr.4 | 5706529 | 5706509 | - | Yes |
| 2481289_adh | TGTAACAGGACGTTTAGCGAA  | Chr.4 | 5709793 | 5709813 | + | No  |
| 2651143_adh | TTGCCATTTTCCATAGACGCA  | Chr.4 | 5712055 | 5712075 | + | Yes |
| 1919922_adh | TATTAAACTTTTCTTCGAAGC  | Chr.4 | 5714840 | 5714860 | + | No  |
| 1750508_adh | TAAAATAATTTGTTAAAAAAT  | Chr.4 | 5716350 | 5716330 | - | No  |
| 2644028_adh | TTGATCATATTTTAGGCTCGA  | Chr.4 | 5716799 | 5716819 | + | No  |
| 2573364_adh | TTAGTTTATAGATGTCCTCCG  | Chr.4 | 5721849 | 5721869 | + | Yes |
| 2749744_adh | TTTTTTGTCTGAAAATTATCC  | Chr.4 | 5724113 | 5724133 | + | No  |
| 2553659_adh | TTACAATTGAATTAATAATTAT | Chr.4 | 5726042 | 5726022 | - | Yes |
| 2735503_adh | TTTTATCATCTCTTAGTATAC  | Chr.4 | 5728126 | 5728106 | - | No  |
| 2040074_adh | TCTCGGAGCGTCGTACCAGAA  | Chr.4 | 5731758 | 5731738 | - | No  |
| 1923144_adh | TATTATTTAGGTAGATCTTTC  | Chr.4 | 5733038 | 5733018 | - | No  |
| 2557834_adh | TTACGGTTTCAGAGACTTTTC  | Chr.4 | 5733270 | 5733250 | - | No  |
| 2744931_adh | TTTTTACGGTTTCAGAGGGTT  | Chr.4 | 5734130 | 5734110 | - | No  |
| 1790749_adh | TAATAATCGTTGTGTCTACTT  | Chr.4 | 5736385 | 5736365 | - | Yes |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2747284_adh | TTTTTGGCAGAGAGAGTTTGT  | Chr.4 | 5741021 | 5741001 | - | No  |
| 2749537_adh | TTTTTTGGCAGAGAGAGTTTG  | Chr.4 | 5741022 | 5741002 | - | No  |
| 2014827_adh | TCGGATTGAACTGCAAGTGGA  | Chr.4 | 5742193 | 5742173 | - | No  |
| 2584480_adh | TTATTTTAGACTGTGTATTTT  | Chr.4 | 5747124 | 5747104 | - | No  |
| 2583659_adh | TTATTTATTTTAGACTGTGTA  | Chr.4 | 5747128 | 5747108 | - | No  |
| 2721159_adh | TTTGCACAAGAGTTAGAGGAG  | Chr.4 | 5754299 | 5754319 | + | No  |
| 2270002_adh | TGATCGTATTGTTTATGGTAG  | Chr.4 | 5759333 | 5759353 | + | No  |
| 2699732_adh | TTTATTCATATGCTTAGCTCT  | Chr.4 | 5762688 | 5762668 | - | Yes |
| 2119778_adh | TGAACAAGGCTTACTAAAAAGT | Chr.4 | 5763651 | 5763631 | - | No  |
| 1801872_adh | TAATGTGTTGTAGGGTAAAAT  | Chr.4 | 5769284 | 5769264 | - | Yes |
| 2565372_adh | TTAGATGGCTGAAAATGGACT  | Chr.4 | 5775647 | 5775627 | - | No  |
| 2695841_adh | TTTAGATGGCTGAAAATGGAC  | Chr.4 | 5775648 | 5775628 | - | No  |
| 2702401_adh | TTTCACAAGTTAATTCTAGCA  | Chr.4 | 5781325 | 5781345 | + | No  |
| 2644883_adh | TTGATGATTAATTGCTTTTTT  | Chr.4 | 5789340 | 5789320 | - | No  |
| 2650744_adh | TTGCATTCATTGAGTTTTGAG  | Chr.4 | 5789927 | 5789947 | + | No  |
| 1805485_adh | TAATTTGTGCGCATATTTTAC  | Chr.4 | 5790888 | 5790908 | + | Yes |
| 2653619_adh | TTGCGTGTTTTCGTTTAAATA  | Chr.4 | 5791428 | 5791448 | + | Yes |
| 2470402_adh | TGGTCTTATGGGTCATTTTTT  | Chr.4 | 5794512 | 5794532 | + | Yes |
| 2581232_adh | TTATTCAAAGCACAGTGCAAA  | Chr.4 | 5797010 | 5796990 | - | No  |
| 2744884_adh | TTTTTACAGATATAGAAATTT  | Chr.4 | 5801689 | 5801669 | - | Yes |
| 1797423_adh | TAATCAAATGATTGTCTATGG  | Chr.4 | 5808739 | 5808719 | - | No  |
| 2630415_adh | TTGAATCGTACGACAGCAAGC  | Chr.4 | 5814433 | 5814413 | - | No  |
| 2607061_adh | TTCGGAAAATTGCATCTTATT  | Chr.4 | 5818618 | 5818638 | + | No  |
| 1953999_adh | TCACTAGCAGTTCGAGGAAAT  | Chr.4 | 5819060 | 5819080 | + | Yes |
| 1930444_adh | TATTTGGCAGGGTTTAAAATT  | Chr.4 | 5819519 | 5819539 | + | No  |
| 1811697_adh | TACAGAAGAAACAGAAGAATT  | Chr.4 | 5820048 | 5820028 | - | Yes |
| 2685596_adh | TTGTTGATACAGAAGAAACAG  | Chr.4 | 5820055 | 5820035 | - | Yes |
| 2731889_adh | TTTGTTGATACAGAAGAAACA  | Chr.4 | 5820056 | 5820036 | - | Yes |
| 2726041_adh | TTTGGTATTTGAAGATAATAT  | Chr.4 | 5822954 | 5822934 | - | Yes |
| 2463611_adh | TGGTAGTACAGTATACAGATT  | Chr.4 | 5823123 | 5823103 | - | No  |
| 2068843_adh | TGAAAAGCTGGCTATGGTCCC  | Chr.4 | 5823239 | 5823219 | - | No  |
| 2639655_adh | TTGAGACATTACAATGAATAA  | Chr.4 | 5827929 | 5827949 | + | No  |
| 2052278_adh | TCTGTCAGTTGAAATGGACAT  | Chr.4 | 5834436 | 5834456 | + | No  |
| 2545067_adh | TTAACATATATTCAAACTGTT  | Chr.4 | 5834994 | 5834974 | - | No  |
| 2722751_adh | TTTGCTTGTAGAACAACGGTA  | Chr.4 | 5837288 | 5837268 | - | No  |
| 2742591_adh | TTTTGCTTGTAGAACAACGGT  | Chr.4 | 5837289 | 5837269 | - | No  |
| 1901097_adh | TATGAAACAGTAGGATTTAGA  | Chr.4 | 5837466 | 5837446 | - | No  |
| 1813204_adh | TACATAGTGACGGAACGACAG  | Chr.4 | 5837523 | 5837503 | - | No  |
| 2672432_adh | TTGGTTGAATGTCGCTATGGG  | Chr.4 | 5838069 | 5838089 | + | Yes |
| 2130719_adh | TGAAGCAGTGAGAACAAATTA  | Chr.4 | 5839699 | 5839679 | - | No  |
| 2579084_adh | TTATGCATTAAGTTACTATAA  | Chr.4 | 5840601 | 5840581 | - | No  |
| 2748932_adh | TTTTTTGTCGCGAAAACCTGA  | Chr.4 | 5840763 | 5840743 | - | No  |
| 2160220_adh | TGACCGTTTTCATCGTCGAAGA | Chr.4 | 5847043 | 5847023 | - | No  |
| 2749218_adh | TTTTTTGAATTTTCGTCGCAT  | Chr.4 | 5848054 | 5848034 | - | No  |
| 2396375_adh | TGGATTTTATGAAGAAGAGCT  | Chr.4 | 5855440 | 5855460 | + | No  |
| 2610041_adh | TTCGGTCTTGTTGGCAAATA   | Chr.4 | 5856272 | 5856252 | - | No  |
| 2687453_adh | TTGTTTGCCAGATTTATATTT  | Chr.4 | 5856817 | 5856797 | - | No  |
| 1930360_adh | TATTTGGAAGCAGAAACTATT  | Chr.4 | 5860166 | 5860186 | + | No  |
| 2657129_adh | TTGGAAGCAGAACTATTCTC   | Chr.4 | 5860169 | 5860189 | + | No  |
| 2004521_adh | TCGATTAGGACTCAACAACAA  | Chr.4 | 5863793 | 5863773 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1920121_adh | TATTAAGACGGCCAAATTATT  | Chr.4 | 5866904 | 5866924 | + | No  |
| 2546879_adh | TTAAGACGGCCAAATTATTTT  | Chr.4 | 5866906 | 5866926 | + | No  |
| 1930168_adh | TATTTGAATAAAACGTTTGGA  | Chr.4 | 5869851 | 5869871 | + | No  |
| 2623347_adh | TTCTTTTACTTACATGTTGA   | Chr.4 | 5873858 | 5873878 | + | No  |
| 2694122_adh | TTTACTACAAACTCGTAGAGT  | Chr.4 | 5877398 | 5877418 | + | No  |
| 2567294_adh | TTAGCTGAGCGGCAAATGATA  | Chr.4 | 5878765 | 5878785 | + | No  |
| 1977908_adh | TCCAGAAGACTGAGTCAAATA  | Chr.4 | 5879597 | 5879577 | - | Yes |
| 1921695_adh | TATTAGGTAGAATAGCGACTA  | Chr.4 | 5879897 | 5879917 | + | No  |
| 2423240_adh | TGGGAGATTAGCAGCAATAAG  | Chr.4 | 5882348 | 5882368 | + | No  |
| 1894049_adh | TATCATCCTTCTTCATATCAT  | Chr.4 | 5883861 | 5883881 | + | No  |
| 1929001_adh | TATTTAAAGTTTGAATTTCAA  | Chr.4 | 5886937 | 5886917 | - | No  |
| 2526169_adh | TGTTTCATTGTGGGAGTTGGAC | Chr.4 | 5888334 | 5888354 | + | No  |
| 2646759_adh | TTGATTTACGCGCTAATCTGA  | Chr.4 | 5889014 | 5888994 | - | Yes |
| 2739563_adh | TTTTCTGCTGTTTTGAAAAGG  | Chr.4 | 5889332 | 5889312 | - | No  |
| 2577174_adh | TTATCATGAAACTCAAGACAA  | Chr.4 | 5890204 | 5890224 | + | No  |
| 2479124_adh | TGGTTTTCTATTTATGAATTC  | Chr.4 | 5891385 | 5891365 | - | No  |
| 2714163_adh | TTTGAATAGAAAATAAACATG  | Chr.4 | 5892691 | 5892711 | + | Yes |
| 2591888_adh | TTCAGCTGATGATAAGACTTC  | Chr.4 | 5894574 | 5894594 | + | No  |
| 1834070_adh | TACTGTTCTTCAGAAGAGAT   | Chr.4 | 5900623 | 5900643 | + | Yes |
| 2119361_adh | TGAAATTTTCTTTGTAACTTT  | Chr.4 | 5903880 | 5903860 | - | Yes |
| 2593419_adh | TTCAGTTTTGAACAGCGGTAA  | Chr.4 | 5904325 | 5904345 | + | No  |
| 2740672_adh | TTTTGAACAGCGGTAAACAATA | Chr.4 | 5904330 | 5904350 | + | No  |
| 1762411_adh | TAAATTGAACACAATTCAGAA  | Chr.4 | 5905155 | 5905175 | + | No  |
| 2699330_adh | TTTATGTAGTCGAATTATAAT  | Chr.4 | 5905972 | 5905952 | - | No  |
| 1921810_adh | TATTAGTTTATGTAGTCGAAT  | Chr.4 | 5905978 | 5905958 | - | No  |
| 2526775_adh | TGTTCTCAAACATACTTTATT  | Chr.4 | 5906577 | 5906557 | - | No  |
| 2703658_adh | TTTCATAAATACATAACATAA  | Chr.4 | 5908420 | 5908400 | - | No  |
| 2172739_adh | TGACTTAGAAATACGCTATAC  | Chr.4 | 5909389 | 5909369 | - | No  |
| 2557776_adh | TTACGGTAGATTGCAAAAAAT  | Chr.4 | 5911001 | 5910981 | - | No  |
| 2656241_adh | TTGGA AAAATGTGAATCAAAA | Chr.4 | 5912676 | 5912696 | + | No  |
| 2624502_adh | TTGAAAAGTTTCTGGACGTAT  | Chr.4 | 5913772 | 5913752 | - | No  |
| 2527813_adh | TGTTGAATTCGGCTGATTATT  | Chr.4 | 5920598 | 5920618 | + | No  |
| 2046684_adh | TCTGATAGGTAACGTGTAGGC  | Chr.4 | 5923200 | 5923220 | + | Yes |
| 1794900_adh | TAATAGCAAGTAAGTTGATGT  | Chr.4 | 5925005 | 5925025 | + | No  |
| 1853557_adh | TAGCAAGTAAGTTGATGTTCA  | Chr.4 | 5925008 | 5925028 | + | No  |
| 2279263_adh | TGATTTTGAATGGATTTGTGT  | Chr.4 | 5925889 | 5925909 | + | No  |
| 2591000_adh | TTCAGCACATTGAATCAATAT  | Chr.4 | 5928717 | 5928737 | + | No  |
| 1921918_adh | TATTATAATCGTGGTATTTGC  | Chr.4 | 5932904 | 5932924 | + | No  |
| 1994289_adh | TCCTTTTGCTGACAAGTGCTA  | Chr.4 | 5933694 | 5933674 | - | No  |
| 2703657_adh | TTTCATAAAGAATTTGGTTGG  | Chr.4 | 5936192 | 5936172 | - | No  |
| 2137783_adh | TGAATACTGGAAGGCACTCGA  | Chr.4 | 5943338 | 5943358 | + | No  |
| 2699643_adh | TTTATTATCGGATGAATTGGC  | Chr.4 | 5945701 | 5945721 | + | No  |
| 2577816_adh | TTATCGGATGAATTGGCGGAA  | Chr.4 | 5945705 | 5945725 | + | No  |
| 1897688_adh | TATCGGATGAATTGGCGGAAT  | Chr.4 | 5945706 | 5945726 | + | No  |
| 2577907_adh | TTATCGTCAATAACTTGTTG   | Chr.4 | 5947131 | 5947111 | - | No  |
| 2593223_adh | TTCAGTTAGATGACCGTATAA  | Chr.4 | 5947774 | 5947754 | - | No  |
| 2057799_adh | TCTTGACGGTTTTTCTTCGAT  | Chr.4 | 5947837 | 5947817 | - | No  |
| 2730874_adh | TTTGTTCTTGACGGTTTTTCT  | Chr.4 | 5947842 | 5947822 | - | No  |
| 2710648_adh | TTTCTGCTTTGTTCTTGACGG  | Chr.4 | 5947849 | 5947829 | - | No  |
| 2739567_adh | TTTTCTGCTTTGTTCTTGACG  | Chr.4 | 5947850 | 5947830 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2665891_adh | TTGGCGTATTATACTTTAGAT  | Chr.4 | 5949466 | 5949486 | + | No  |
| 2496928_adh | TGTCCAAGTCGGACGACCGGA  | Chr.4 | 5950106 | 5950086 | - | No  |
| 1975543_adh | TCATTTTCTCTGAAGACGTAA  | Chr.4 | 5950655 | 5950635 | - | No  |
| 1968794_adh | TCATACGTTCAAATGATACCA  | Chr.4 | 5951444 | 5951424 | - | No  |
| 1891132_adh | TATCAAAATGAACGTTGAAAA  | Chr.4 | 5957756 | 5957736 | - | No  |
| 2593596_adh | TTCATAGACAATTCTAATTTT  | Chr.4 | 5961192 | 5961172 | - | No  |
| 1829516_adh | TACTACAGCGCTTTTATGACA  | Chr.4 | 5966175 | 5966195 | + | No  |
| 1812301_adh | TACAGCGCTTTTATGACAATT  | Chr.4 | 5966178 | 5966198 | + | No  |
| 2535029_adh | TGTTTTTATATCGGAATCTGT  | Chr.4 | 5968885 | 5968865 | - | No  |
| 1759497_adh | TAAATACAAAAATACATCAT   | Chr.4 | 5970174 | 5970154 | - | No  |
| 2688676_adh | TTAAAAAATAAATTTCACTC   | Chr.4 | 5971166 | 5971186 | + | Yes |
| 2641001_adh | TTGAGCTGTGATGTGATGAAT  | Chr.4 | 5979478 | 5979498 | + | Yes |
| 1938131_adh | TCAAGAACATCAAGATGACGA  | Chr.4 | 5993409 | 5993429 | + | No  |
| 2611825_adh | TTCGTATTTGTTAGAGAAGAG  | Chr.4 | 6001987 | 6002007 | + | No  |
| 2714813_adh | TTTGACAGACAAAGAGCAAAT  | Chr.4 | 6011951 | 6011971 | + | No  |
| 2707285_adh | TTTCGCATCGAATGGATCTAG  | Chr.4 | 6013578 | 6013558 | - | Yes |
| 1939527_adh | TCAAGGACAAGTGTGAAAGAA  | Chr.4 | 6014746 | 6014766 | + | No  |
| 1829931_adh | TACTAGAAGCATATTTAGATG  | Chr.4 | 6017251 | 6017231 | - | No  |
| 1969089_adh | TCATAGCTTTACAATAGAAAA  | Chr.4 | 6019878 | 6019898 | + | No  |
| 2500730_adh | TGTGAAACTGTAAGACGATAG  | Chr.4 | 6025719 | 6025699 | - | No  |
| 2644884_adh | TTGATGATTACTTGAAGTAAG  | Chr.4 | 6028001 | 6027981 | - | No  |
| 2639424_adh | TTGAGAAATATAGGAACTTTT  | Chr.4 | 6028549 | 6028529 | - | No  |
| 2656470_adh | TTGGAAAGTTTCGAGATGAAAT | Chr.4 | 6034575 | 6034555 | - | No  |
| 2553970_adh | TTACACTAACTAAATTCATTT  | Chr.4 | 6035048 | 6035068 | + | Yes |
| 2580981_adh | TTATTAGTACTGGCACTCTAG  | Chr.4 | 6042247 | 6042267 | + | No  |
| 1921727_adh | TATTAGTACTGGCACTCTAGA  | Chr.4 | 6042248 | 6042268 | + | No  |
| 2570234_adh | TTAGTACTGGCACTCTAGAGA  | Chr.4 | 6042250 | 6042270 | + | No  |
| 2373063_adh | TGGAATTTTGCTCGACGTCAT  | Chr.4 | 6047241 | 6047261 | + | No  |
| 1899611_adh | TATCTCGGCTTCAATCTATAA  | Chr.4 | 6049686 | 6049666 | - | No  |
| 1979942_adh | TCCATTAACAGCAATTTTTTA  | Chr.4 | 6055701 | 6055721 | + | Yes |
| 2743218_adh | TTTTGGTAATTAATCCGAGGC  | Chr.4 | 6057116 | 6057096 | - | No  |
| 1878451_adh | TAGTGAAAAATGAGAAAATAT  | Chr.4 | 6059738 | 6059758 | + | No  |
| 2480508_adh | TGTAATCTTTGGGTTAGGAC   | Chr.4 | 6061920 | 6061900 | - | No  |
| 1931500_adh | TATTTTTCTTCAGGTTCCATA  | Chr.4 | 6063518 | 6063498 | - | Yes |
| 1814515_adh | TACATTTAGAACGGTAAATT   | Chr.4 | 6072429 | 6072409 | - | No  |
| 1762275_adh | TAAATTCCTCTTTATAGGTAA  | Chr.4 | 6073531 | 6073551 | + | Yes |
| 2038512_adh | TCTCATTGTTTAGGATCGGCA  | Chr.4 | 6076057 | 6076037 | - | Yes |
| 2745825_adh | TTTTTCCAGAAATACATTCCT  | Chr.4 | 6077516 | 6077496 | - | No  |
| 2622844_adh | TTCTTGCATGTATGAATAATA  | Chr.4 | 6078402 | 6078422 | + | No  |
| 1847688_adh | TAGAGATGGACAGGCTTTTAT  | Chr.4 | 6088417 | 6088397 | - | No  |
| 2606606_adh | TTCGCGGAATACAGATGGATG  | Chr.4 | 6089350 | 6089330 | - | No  |
| 2561426_adh | TTAGAAGAATTTGTGCAAAAA  | Chr.4 | 6091482 | 6091502 | + | No  |
| 2500673_adh | TGTGAAACCTGATGAAAAAAT  | Chr.4 | 6092683 | 6092663 | - | No  |
| 2500526_adh | TGTGAAAAATCGGATGTTCAA  | Chr.4 | 6095197 | 6095177 | - | No  |
| 2591783_adh | TTCAGCGGAAGTACAGCTAAA  | Chr.4 | 6096435 | 6096455 | + | No  |
| 2074052_adh | TGAAACTGGAGAGAAATGATGG | Chr.4 | 6097081 | 6097061 | - | No  |
| 2322416_adh | TGGAAGACGACGGAGCCCCAC  | Chr.4 | 6105778 | 6105758 | - | No  |
| 1923472_adh | TATTCACCTCGCAGCTTTTGA  | Chr.4 | 6114529 | 6114549 | + | No  |
| 2553257_adh | TTACAACAGAATTATGTGAGG  | Chr.4 | 6115465 | 6115485 | + | No  |
| 1979913_adh | TCCATGTTACATGTTACATGT  | Chr.4 | 6128686 | 6128666 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1821416_adh | TACCTTTTTTGCCTGCTTTAT  | Chr.4 | 6129101 | 6129081 | - | Yes |
| 2749128_adh | TTTTTCTTTACGTTGTACAC   | Chr.4 | 6129917 | 6129897 | - | No  |
| 2595946_adh | TTCCAATATATAGAAAAAGGA  | Chr.4 | 6140511 | 6140491 | - | No  |
| 1759999_adh | TAAATATAGAGTTGAATTTTG  | Chr.4 | 6151011 | 6150991 | - | No  |
| 1953404_adh | TCACGGTATAGGTGCGGTGAA  | Chr.4 | 6151332 | 6151352 | + | No  |
| 2704798_adh | TTTCATTTTTTACTACTCGGT  | Chr.4 | 6156933 | 6156913 | - | No  |
| 2616469_adh | TTCTCGACAAAAAATGCTGTA  | Chr.4 | 6157074 | 6157094 | + | No  |
| 2537516_adh | TTAAAAAATTAAGTCGTCGT   | Chr.4 | 6157104 | 6157124 | + | No  |
| 2743779_adh | TTTTGTGCGACGTTATGGAAG  | Chr.4 | 6162925 | 6162945 | + | No  |
| 2586909_adh | TTCAAGAGTGACGTTGTTTAT  | Chr.4 | 6164902 | 6164922 | + | No  |
| 2748160_adh | TTTTTTAATATACTATTTACA  | Chr.4 | 6169043 | 6169023 | - | Yes |
| 2162166_adh | TGACGTATCATAGGTAAAATT  | Chr.4 | 6169647 | 6169667 | + | No  |
| 2155100_adh | TGACATAGAGCATAAAACAAG  | Chr.4 | 6172353 | 6172373 | + | No  |
| 2742523_adh | TTTTGCTGAAAATGTGGCATG  | Chr.4 | 6172434 | 6172454 | + | No  |
| 2136065_adh | TGAAGTTTCAGGTTAACGGCA  | Chr.4 | 6173913 | 6173933 | + | No  |
| 2004464_adh | TCGATGTTGCATAGATTTATT  | Chr.4 | 6186909 | 6186929 | + | Yes |
| 2678105_adh | TTGTGCAATATAAAAGTTGGC  | Chr.4 | 6189847 | 6189867 | + | No  |
| 1880418_adh | TAGTTAGTATGTTCTGTTGTA  | Chr.4 | 6191262 | 6191282 | + | Yes |
| 2728817_adh | TTTGTCATTGCGCGAAAATTT  | Chr.4 | 6193687 | 6193707 | + | Yes |
| 2677748_adh | TTGTCATTGCGCGAAAATTTT  | Chr.4 | 6193688 | 6193708 | + | Yes |
| 2744130_adh | TTTTGTTCAACTGGCTTTTTA  | Chr.4 | 6197502 | 6197522 | + | Yes |
| 2746231_adh | TTTTTCTCGTGTGTTGTGGCAT | Chr.4 | 6206502 | 6206482 | - | No  |
| 1869870_adh | TAGGGTTAAAGAAGTTGGTTG  | Chr.4 | 6209585 | 6209605 | + | No  |
| 2025371_adh | TCGTCATGTATACGCTCCACA  | Chr.4 | 6217074 | 6217094 | + | Yes |
| 1848225_adh | TAGAGGAAATACGTCAAAGTA  | Chr.4 | 6230958 | 6230938 | - | No  |
| 1794847_adh | TAATAGAGGAAATACGTCAAA  | Chr.4 | 6230961 | 6230941 | - | No  |
| 2451048_adh | TGGGCTGATGCAGAAGGTGTC  | Chr.4 | 6243523 | 6243543 | + | No  |
| 1887182_adh | TATACGGAGCTTCAGTTGTGT  | Chr.4 | 6244502 | 6244522 | + | No  |
| 1879145_adh | TAGTGTAAGACGTGGAATGTT  | Chr.4 | 6258765 | 6258745 | - | No  |
| 2572034_adh | TTAGTGTAAGACGTGGAATGT  | Chr.4 | 6258766 | 6258746 | - | No  |
| 2713212_adh | TTTGAACGCAGAGAAATGTAA  | Chr.4 | 6263080 | 6263100 | + | No  |
| 2626356_adh | TTGAACGCAGAGAAATGTAAG  | Chr.4 | 6263081 | 6263101 | + | No  |
| 2704747_adh | TTTCATTTGTGGCATACTTGA  | Chr.4 | 6263610 | 6263630 | + | No  |
| 1897457_adh | TATCGCTAAGTTTTATAATTT  | Chr.4 | 6267760 | 6267740 | - | Yes |
| 2571887_adh | TTAGTGGAAGGGAGTAGTCGT  | Chr.4 | 6272131 | 6272151 | + | No  |
| 1878587_adh | TAGTGGAAGGGAGTAGTCGTA  | Chr.4 | 6272132 | 6272152 | + | No  |
| 2126402_adh | TGAACCTACAATTGAATCGGG  | Chr.4 | 6272902 | 6272922 | + | No  |
| 1765156_adh | TAACAGCTTGAATTCAGTCTC  | Chr.4 | 6276327 | 6276347 | + | No  |
| 2583294_adh | TTATTGTGACGAACACTTTTT  | Chr.4 | 6279647 | 6279667 | + | No  |
| 2701152_adh | TTTCAAAGTAGATCTTTTCAC  | Chr.4 | 6280114 | 6280134 | + | No  |
| 2737137_adh | TTTTCAAATCGTAAGCTCAAG  | Chr.4 | 6282756 | 6282736 | - | No  |
| 2745802_adh | TTTTTCATTGGATTGTCGTAT  | Chr.4 | 6290359 | 6290379 | + | No  |
| 2732845_adh | TTTGTTTTGTATTTCTTTTG   | Chr.4 | 6291602 | 6291622 | + | No  |
| 2730108_adh | TTTGTGTGATTTCAAGTTCTTT | Chr.4 | 6301622 | 6301602 | - | Yes |
| 1889896_adh | TATATATTGATTGTCCTGAAA  | Chr.4 | 6305219 | 6305239 | + | No  |
| 1853875_adh | TAGCACATGACATAGAGGTAA  | Chr.4 | 6306140 | 6306160 | + | No  |
| 1871464_adh | TAGGTGACAGACGAAAAATAG  | Chr.4 | 6307124 | 6307144 | + | No  |
| 1812766_adh | TACAGTGAACTGAAATAGTT   | Chr.4 | 6313948 | 6313928 | - | No  |
| 2490487_adh | TGTATACTGGAAAGACTGGAT  | Chr.4 | 6317158 | 6317138 | - | No  |
| 2721996_adh | TTTGCGGAAAAATGTGTTGAG  | Chr.4 | 6323748 | 6323728 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2010654_adh | TCGGAACCTCGCAATGTGACG  | Chr.4 | 6324939 | 6324959 | + | No  |
| 2722859_adh | TTTGAAAACTACGTGATAAC   | Chr.4 | 6337154 | 6337134 | - | No  |
| 2739208_adh | TTTTCTCAAGAACTTCGAGAC  | Chr.4 | 6338625 | 6338605 | - | No  |
| 2584080_adh | TTATTTGCATACGCTCTCCCC  | Chr.4 | 6343596 | 6343576 | - | No  |
| 2724314_adh | TTTGGCAGCAGGTGTGAATTC  | Chr.4 | 6345523 | 6345543 | + | No  |
| 2047360_adh | TCTGATGTTGGCAGAAGCACA  | Chr.4 | 6346321 | 6346341 | + | No  |
| 2712888_adh | TTTGAACACACGGATATCCAC  | Chr.4 | 6354246 | 6354226 | - | No  |
| 1854738_adh | TAGCAGTAAAAGAAGAGGAAA  | Chr.4 | 6376454 | 6376434 | - | No  |
| 1799822_adh | TAATGATTGCATTCACCTCGGA | Chr.4 | 6376817 | 6376837 | + | No  |
| 1978642_adh | TCCAGGACAAGATGGACAACC  | Chr.4 | 6377711 | 6377731 | + | No  |
| 2740596_adh | TTTTGAACAAAACCTTTTGA   | Chr.4 | 6381361 | 6381381 | + | No  |
| 2294333_adh | TGCCTAAGTGTCTCTCATTAA  | Chr.4 | 6383695 | 6383715 | + | No  |
| 1828002_adh | TACGTATTATAGTTATTTTGA  | Chr.4 | 6385861 | 6385841 | - | No  |
| 2585572_adh | TTCAAATGGTTGTGAAACGGT  | Chr.4 | 6386015 | 6386035 | + | No  |
| 2745555_adh | TTTTTCAAAGTAGTCATTTTT  | Chr.4 | 6386954 | 6386934 | - | Yes |
| 2522111_adh | TGTTAAAGTAGATCAGCGGTG  | Chr.4 | 6388190 | 6388170 | - | No  |
| 2688678_adh | TTTAAAAAATACAAATAATTA  | Chr.4 | 6388393 | 6388413 | + | No  |
| 2733902_adh | TTTTAATTTTGAACCGACTTT  | Chr.4 | 6388471 | 6388491 | + | No  |
| 1824455_adh | TACGATTGAAGAGAGAAGACA  | Chr.4 | 6390000 | 6389980 | - | No  |
| 2547333_adh | TTAAGATGTTTCATGAAACGGT | Chr.4 | 6393867 | 6393887 | + | No  |
| 1760458_adh | TAAATCATGCCAGAAATTGTC  | Chr.4 | 6395077 | 6395057 | - | No  |
| 1939123_adh | TCAAGCACAAAGATGAATTTTA | Chr.4 | 6403760 | 6403740 | - | No  |
| 1790270_adh | TAATAACATTGCAGATAATCG  | Chr.4 | 6405594 | 6405574 | - | No  |
| 2733727_adh | TTTTAATGGAATTTGCACACC  | Chr.4 | 6406377 | 6406397 | + | No  |
| 2133369_adh | TGAAGGGACGATTAGAAAATA  | Chr.4 | 6408838 | 6408818 | - | No  |
| 2629028_adh | TTGAAGGGACGATTAGAAAAT  | Chr.4 | 6408839 | 6408819 | - | No  |
| 2737892_adh | TTTTCCATATTTTTGTGATT   | Chr.4 | 6410554 | 6410534 | - | Yes |
| 2552877_adh | TTAATTTTACGAAACGGTGTG  | Chr.4 | 6412096 | 6412116 | + | Yes |
| 2734149_adh | TTTTACGAAACGGTGTGACTA  | Chr.4 | 6412100 | 6412120 | + | Yes |
| 2534190_adh | TGTTTTCAAATATTGTATCT   | Chr.4 | 6414228 | 6414208 | - | No  |
| 2311799_adh | TGCTTTGAACGAGATGTCGCA  | Chr.4 | 6416614 | 6416594 | - | No  |
| 2487576_adh | TGTAGAATTTTAAGGCGCATT  | Chr.4 | 6421361 | 6421341 | - | No  |
| 2749469_adh | TTTTTTGCCTTCGAGGACGTT  | Chr.4 | 6421459 | 6421479 | + | No  |
| 2747065_adh | TTTTTGCTTCGAGGACGTTT   | Chr.4 | 6421460 | 6421480 | + | No  |
| 2490755_adh | TGTATCAAGTGGACGATATCC  | Chr.4 | 6424394 | 6424414 | + | No  |
| 2681528_adh | TTGTGGAATAGGCATGTAGGT  | Chr.4 | 6426270 | 6426250 | - | No  |
| 2703757_adh | TTTCATACTGTTTAAACATGT  | Chr.4 | 6433164 | 6433184 | + | Yes |
| 1900652_adh | TATCTTTGTTTGCATTCATAT  | Chr.4 | 6435132 | 6435112 | - | No  |
| 1806293_adh | TAATTTTTGGCAATGGGAGAA  | Chr.4 | 6440351 | 6440371 | + | Yes |
| 1891865_adh | TATCACACGGCCGCTGATAAA  | Chr.4 | 6441950 | 6441930 | - | No  |
| 2542498_adh | TTAAATATATTTTTTAAATCG  | Chr.4 | 6443437 | 6443457 | + | Yes |
| 2553551_adh | TTACAATACAGAAAAAGAATT  | Chr.4 | 6446547 | 6446567 | + | No  |
| 2140170_adh | TGAATATTGCCGGAAGAAAAA  | Chr.4 | 6450744 | 6450724 | - | No  |
| 2544534_adh | TTAAATTGTAGTTAACAAGTC  | Chr.4 | 6456332 | 6456312 | - | No  |
| 2487713_adh | TGTAGAGATTGATTTTCGGCA  | Chr.4 | 6457150 | 6457170 | + | No  |
| 2747311_adh | TTTTTGGCTACAATCACTTCA  | Chr.4 | 6457776 | 6457756 | - | Yes |
| 2259214_adh | TGATAATTCTGATCGTAAAAA  | Chr.4 | 6468571 | 6468591 | + | Yes |
| 1751114_adh | TAAAATCAAAAGTTTATCAAC  | Chr.4 | 6470980 | 6470960 | - | No  |
| 2121471_adh | TGAACATGAAGTCAGAACAGC  | Chr.4 | 6473246 | 6473266 | + | No  |
| 1805354_adh | TAATTTGCATGTTTCCTAGAT  | Chr.4 | 6479694 | 6479714 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1833874_adh | TACTGTCTAGAAAACCTTTTTA | Chr.4 | 6479938 | 6479958 | + | No  |
| 2692965_adh | TTTAATTTGAAAGGCTCGTAC  | Chr.4 | 6480163 | 6480143 | - | Yes |
| 1808871_adh | TACAAGCAAGGGATGAACAAA  | Chr.4 | 6482195 | 6482215 | + | No  |
| 2738736_adh | TTTTCGGTTCCATTTTCCTCG  | Chr.4 | 6484202 | 6484182 | - | No  |
| 2308185_adh | TGCTGAACTTAGCAAAAAGTAT | Chr.4 | 6491595 | 6491575 | - | No  |
| 2221592_adh | TGAGATGGAAGTGACCATGAC  | Chr.4 | 6492945 | 6492925 | - | No  |
| 2421268_adh | TGGGACACAGCTTTTGTACAC  | Chr.4 | 6503063 | 6503083 | + | No  |
| 2595600_adh | TTCCAAAAACATTTTAAATAA  | Chr.4 | 6506475 | 6506455 | - | Yes |
| 2581423_adh | TTATTCATTGGGTATGATATT  | Chr.4 | 6507906 | 6507926 | + | Yes |
| 2697668_adh | TTTAGTTTTAAGGTATTTGTT  | Chr.4 | 6508484 | 6508504 | + | Yes |
| 1968520_adh | TCATACAAAATGAACAGAAGT  | Chr.4 | 6508670 | 6508650 | - | Yes |
| 2618566_adh | TTCTGCAGAATTTTTATTGAT  | Chr.4 | 6525132 | 6525112 | - | No  |
| 2039423_adh | TCTCGAATTCGGAAAAATAAAT | Chr.4 | 6530076 | 6530096 | + | No  |
| 1923429_adh | TATTCAATTGATCAGTCTACT  | Chr.4 | 6531736 | 6531756 | + | No  |
| 1943076_adh | TCAATTGATCAGTCTACTATT  | Chr.4 | 6531739 | 6531759 | + | No  |
| 1980659_adh | TCCCATAGTTGATCTCCATCC  | Chr.4 | 6536178 | 6536198 | + | No  |
| 2595031_adh | TTCATTAGCAGAAAAGCCTGT  | Chr.4 | 6542638 | 6542618 | - | No  |
| 1782982_adh | TAAGCTAGAAGATTGTGACAC  | Chr.4 | 6545503 | 6545483 | - | Yes |
| 2579325_adh | TTATGGAATTTGTTGCGAAAT  | Chr.4 | 6555864 | 6555844 | - | No  |
| 2699160_adh | TTTATGGAATTTGTTGCGAAA  | Chr.4 | 6555865 | 6555845 | - | No  |
| 2374760_adh | TGGACCGACTTACTTTAAACC  | Chr.4 | 6564367 | 6564347 | - | No  |
| 1887703_adh | TATACTTAGAATACTTACTGG  | Chr.4 | 6568854 | 6568834 | - | No  |
| 2032682_adh | TCTAGCGTAGATGTATGTAGT  | Chr.4 | 6569916 | 6569896 | - | No  |
| 2703930_adh | TTTCATCCGGCATAACTAAAA  | Chr.4 | 6573302 | 6573282 | - | No  |
| 2590452_adh | TTCAGAATTCGGGTAATGTTT  | Chr.4 | 6573642 | 6573662 | + | No  |
| 2728224_adh | TTTGTAGAATTGCTATTCGGC  | Chr.4 | 6575551 | 6575531 | - | No  |
| 1751014_adh | TAAAATATAGAAAACGTGTTA  | Chr.4 | 6575607 | 6575627 | + | No  |
| 1886866_adh | TATACATAAACGTACACATAA  | Chr.4 | 6577080 | 6577060 | - | Yes |
| 2034901_adh | TCTATTCCGGATGCGTTCTCT  | Chr.4 | 6585235 | 6585215 | - | No  |
| 1778384_adh | TAAGATATCAGTTAGCATTCA  | Chr.4 | 6590878 | 6590858 | - | No  |
| 1927891_adh | TATTGTGCGAAAAGTCGTTAT  | Chr.4 | 6592448 | 6592428 | - | No  |
| 2583285_adh | TTATTGTGCGAAAAGTCGTTA  | Chr.4 | 6592449 | 6592429 | - | No  |
| 2700525_adh | TTTATTGTGCGAAAAGTCGTT  | Chr.4 | 6592450 | 6592430 | - | No  |
| 2073903_adh | TGAAACTGCAAGAATCGATGA  | Chr.4 | 6595394 | 6595414 | + | No  |
| 1778384_adh | TAAGATATCAGTTAGCATTCA  | Chr.4 | 6598417 | 6598437 | + | No  |
| 1778384_adh | TAAGATATCAGTTAGCATTCA  | Chr.4 | 6599378 | 6599398 | + | No  |
| 2656930_adh | TTGGAAGTGAAGCGATTGGCAA | Chr.4 | 6606808 | 6606828 | + | No  |
| 2318533_adh | TGGAAATTGTGAAACGAGCTT  | Chr.4 | 6634086 | 6634106 | + | No  |
| 1801563_adh | TAATGTATAGAAGTCCGGATG  | Chr.4 | 6639362 | 6639342 | - | No  |
| 2617106_adh | TTCTCTCGATCGTAAACATTA  | Chr.4 | 6642295 | 6642315 | + | Yes |
| 2546586_adh | TTAACTTGTGGAACGGTATT   | Chr.4 | 6643879 | 6643899 | + | No  |
| 2066225_adh | TGAAAAAGTTTTCTCAGTTTG  | Chr.4 | 6657323 | 6657303 | - | No  |
| 2561174_adh | TTAGAACGAAGTGATTTGGCC  | Chr.4 | 6659232 | 6659252 | + | No  |
| 1984249_adh | TCCGACTGGCGTACCTAAAAT  | Chr.4 | 6664310 | 6664290 | - | No  |
| 2607023_adh | TTCGGAAAAAATAAATGTTGC  | Chr.4 | 6668130 | 6668150 | + | No  |
| 1854339_adh | TAGCAGAAACGTGTGAAATGA  | Chr.4 | 6677261 | 6677281 | + | No  |
| 2716622_adh | TTTGAGATCGGAAATATGTGA  | Chr.4 | 6679661 | 6679681 | + | No  |
| 2126803_adh | TGAACTTTTGAACATGTCCC   | Chr.4 | 6729336 | 6729356 | + | No  |
| 2126803_adh | TGAACTTTTGAACATGTCCC   | Chr.4 | 6729692 | 6729712 | + | No  |
| 2126803_adh | TGAACTTTTGAACATGTCCC   | Chr.4 | 6730563 | 6730583 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2723765_adh | TTTGGAGGAAACGGTGAATAC  | Chr.4 | 6742926 | 6742946 | + | No  |
| 1784189_adh | TAAGGACAGCGTTGCGCTCGG  | Chr.4 | 6747939 | 6747959 | + | No  |
| 2270827_adh | TGATGAAATGTTGTGATGAAT  | Chr.4 | 6750783 | 6750763 | - | No  |
| 2724457_adh | TTTGGCGGGGAGAAAATAGGC  | Chr.4 | 6756611 | 6756591 | - | No  |
| 2319958_adh | TGGAACGAAAGTGAAAGTAGG  | Chr.4 | 6767348 | 6767328 | - | No  |
| 1821038_adh | TACCTGTAATGCATTCAAAAC  | Chr.4 | 6774632 | 6774652 | + | No  |
| 2488068_adh | TGTAGATGTTTGGCAACTTAT  | Chr.4 | 6790181 | 6790201 | + | No  |
| 2734041_adh | TTTTACATTTTACATTTTCA   | Chr.4 | 6800914 | 6800894 | - | Yes |
| 2737129_adh | TTTCAAAGCGATTTGTGCAT   | Chr.4 | 6812460 | 6812480 | + | No  |
| 2593831_adh | TTCATATTTTAATATCGTCTG  | Chr.4 | 6829940 | 6829960 | + | No  |
| 2324126_adh | TGGAAGGAAGAAATCATAGGC  | Chr.4 | 6841640 | 6841620 | - | No  |
| 2700650_adh | TTTATTTAGTATTTTTGGCAC  | Chr.4 | 6857328 | 6857308 | - | No  |
| 2712463_adh | TTTGAAAAGTGAAAAATGAAA  | Chr.4 | 6901679 | 6901659 | - | No  |
| 2062522_adh | TCTTTTATTCGGATTAGATGT  | Chr.4 | 6910132 | 6910112 | - | No  |
| 2689252_adh | TTTAAAGATAGATTTTCGCAG  | Chr.4 | 6910338 | 6910358 | + | No  |
| 2738362_adh | TTTTCGCAGAATTTATGCATC  | Chr.4 | 6910350 | 6910370 | + | No  |
| 2686682_adh | TTGTTTAACTCGCAGCGGGCG  | Chr.4 | 6914512 | 6914492 | - | No  |
| 2541813_adh | TTAAAGTTATTTTGGTCGGTC  | Chr.4 | 6919613 | 6919633 | + | No  |
| 1940763_adh | TCAAGTTTTTGAAAGTGACTG  | Chr.4 | 6919632 | 6919652 | + | No  |
| 1814464_adh | TACATTGATTCTTTAAAAACA  | Chr.4 | 6923126 | 6923106 | - | No  |
| 2666050_adh | TTGGCTATATATGAAATCTAA  | Chr.4 | 6940490 | 6940470 | - | Yes |
| 2617753_adh | TTCTGAACTCCATCTCAAAAG  | Chr.4 | 6948839 | 6948819 | - | No  |
| 1875521_adh | TAGTATGGCACTCCCTAATAG  | Chr.4 | 6952257 | 6952237 | - | No  |
| 2044301_adh | TCTGAAGGGAACATAAGATGG  | Chr.4 | 6959610 | 6959590 | - | No  |
| 2587440_adh | TTCAATAAACAAAAACATAAT  | Chr.4 | 6964276 | 6964296 | + | Yes |
| 1940787_adh | TCAATAAACAAAAACATAATT  | Chr.4 | 6964277 | 6964297 | + | Yes |
| 2053443_adh | TCTGTTTGAAAGTTGGACTCA  | Chr.4 | 6964578 | 6964558 | - | No  |
| 1802041_adh | TAATGTTTTGTTAGGTTGGAA  | Chr.4 | 6971802 | 6971822 | + | Yes |
| 2534826_adh | TGTTTTGTTAGGTTGGAATAT  | Chr.4 | 6971805 | 6971825 | + | Yes |
| 2550985_adh | TTAATGAATATGAATGACGAA  | Chr.4 | 6994117 | 6994137 | + | Yes |
| 1799338_adh | TAATGAATATGAATGACGAAC  | Chr.4 | 6994118 | 6994138 | + | Yes |
| 2691327_adh | TTTAATCGTTGGAAAAGTTTA  | Chr.4 | 6994893 | 6994913 | + | No  |
| 1864926_adh | TAGGATAGTATACGTTCAAAT  | Chr.4 | 6996907 | 6996927 | + | No  |
| 2688389_adh | TTGTTTTTCAATTCGTCGCC   | Chr.4 | 6999483 | 6999503 | + | No  |
| 2649268_adh | TTGCAGAATGGAATTAAACAC  | Chr.4 | 7012450 | 7012430 | - | No  |
| 1759979_adh | TAAATATAAAAAATCGGCAAAT | Chr.4 | 7012647 | 7012627 | - | No  |
| 2746737_adh | TTTTTGACTGTAATTAGCATG  | Chr.4 | 7049250 | 7049270 | + | No  |
| 2029541_adh | TCTAAATTTTCGAGAATTCAAT | Chr.4 | 7058074 | 7058054 | - | No  |
| 2412176_adh | TGGCGATTTTGGAGATGGACA  | Chr.4 | 7069261 | 7069241 | - | No  |
| 2412176_adh | TGGCGATTTTGGAGATGGACA  | Chr.4 | 7069441 | 7069461 | + | No  |
| 2534086_adh | TGTTTTAGAAATTTTGC GGAC | Chr.4 | 7073072 | 7073052 | - | No  |
| 2607244_adh | TTCGGAATGAGCAGTCTCGTA  | Chr.4 | 7078097 | 7078117 | + | No  |
| 2279147_adh | TGATTTTAGGCCAGACGCAAG  | Chr.4 | 7084893 | 7084873 | - | No  |
| 2579231_adh | TTATGCTGCGACACGATTTCG  | Chr.4 | 7085002 | 7085022 | + | No  |
| 2612974_adh | TTCGTTATCAGTACATTCAAT  | Chr.4 | 7085034 | 7085054 | + | No  |
| 2568224_adh | TTAGGATCAAATATTCGATGG  | Chr.4 | 7103561 | 7103581 | + | No  |
| 2679143_adh | TTGTGAAAAGAGTGACATTAG  | Chr.4 | 7124054 | 7124074 | + | No  |
| 1761236_adh | TAAATGAAGCAATGAGAACAT  | Chr.4 | 7126666 | 7126646 | - | No  |
| 1761236_adh | TAAATGAAGCAATGAGAACAT  | Chr.4 | 7127993 | 7127973 | - | No  |
| 2028052_adh | TCGTTCTGTGTGTTGATGCT   | Chr.4 | 7131482 | 7131462 | - | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2647101_adh | TTGATTTTTCTCGGTAATAAT  | Chr.4 | 7133354 | 7133374 | + | No  |
| 2279206_adh | TGATTTTCAAACGATCCGGAA  | Chr.4 | 7144849 | 7144829 | - | No  |
| 2038301_adh | TCTCATGAGCTGATGGTTTCT  | Chr.4 | 7147356 | 7147336 | - | No  |
| 1776380_adh | TAAGAGAACGACAGGATTCAC  | Chr.4 | 7151921 | 7151941 | + | No  |
| 2545468_adh | TTAACGATGGCAACTCCCGAT  | Chr.4 | 7154701 | 7154721 | + | No  |
| 2526097_adh | TGTTCCAGGAGTTAGAAGAATA | Chr.4 | 7165179 | 7165199 | + | No  |
| 2313422_adh | TGGAAAACGGAATGTTTCGATA | Chr.4 | 7171057 | 7171077 | + | No  |
| 1962152_adh | TCAGCAATGATCGTGACAACA  | Chr.4 | 7180151 | 7180171 | + | No  |
| 2609835_adh | TTCCGGTAGAAATATTGGTGGA | Chr.4 | 7190008 | 7190028 | + | No  |
| 2585025_adh | TTCAAATAATCTTACCATTTC  | Chr.4 | 7197196 | 7197176 | - | No  |
| 2600091_adh | TTCCCTAATCTTTTCGGCAACA | Chr.4 | 7204037 | 7204057 | + | No  |
| 2713526_adh | TTTGAAGAAAGAAAGTGTGAA  | Chr.4 | 7208347 | 7208327 | - | No  |
| 2681120_adh | TTGTGATTCATTTTTGTTTAC  | Chr.4 | 7230339 | 7230319 | - | No  |
| 2723854_adh | TTTGGATAAAAGATATGAAAA  | Chr.4 | 7242778 | 7242798 | + | No  |
| 2402775_adh | TGGCAATGTGGAATACTGGGT  | Chr.4 | 7251452 | 7251472 | + | No  |
| 2474744_adh | TGGTTCAGGGTTGTTTAACTC  | Chr.4 | 7256475 | 7256455 | - | No  |
| 2051426_adh | TCTGGTTCAGGGTTGTTTAAAC | Chr.4 | 7256477 | 7256457 | - | No  |
| 2462812_adh | TGGTAGACAAAAGATCCGGAGA | Chr.4 | 7263699 | 7263679 | - | No  |
| 1814539_adh | TACATTTATTCATCATCTTTA  | Chr.4 | 7268169 | 7268189 | + | No  |
| 2740744_adh | TTTTGAACTCAAGCTACGATA  | Chr.4 | 7292448 | 7292428 | - | No  |
| 2745683_adh | TTTTTCAGAGTAGAGGAATTC  | Chr.4 | 7293528 | 7293548 | + | No  |
| 2712476_adh | TTTGAAAAGTTCGTGGTGTTT  | Chr.4 | 7312640 | 7312620 | - | No  |
| 2011217_adh | TCGGACAAGCCAACGGATACA  | Chr.4 | 7313110 | 7313090 | - | No  |
| 1932231_adh | TCAAAAGACTGCTGCTGTTGA  | Chr.4 | 7313245 | 7313225 | - | No  |
| 1814028_adh | TACATTAAAGATTTATAGAAA  | Chr.4 | 7314197 | 7314217 | + | No  |
| 1757105_adh | TAAAGATTTATAGAAATTCGA  | Chr.4 | 7314202 | 7314222 | + | No  |
| 2713600_adh | TTTGAAGACTCCTGCATTTCT  | Chr.4 | 7314748 | 7314728 | - | No  |
| 2293117_adh | TGCCATGTGGAAACGATTTCT  | Chr.4 | 7318375 | 7318395 | + | No  |
| 1968294_adh | TCATAAGGGATACGTTGGACA  | Chr.4 | 7320445 | 7320465 | + | No  |
| 2725847_adh | TTTGGTAATTTCCTTTTATCA  | Chr.4 | 7323091 | 7323111 | + | No  |
| 2276438_adh | TGATTGATCGAAGGAACAAAG  | Chr.4 | 7348533 | 7348513 | - | No  |
| 1830785_adh | TACTATTTACCACTCGGTCTA  | Chr.4 | 7349574 | 7349594 | + | No  |
| 2054651_adh | TCTTAGTTAAACATGAAACGG  | Chr.4 | 7438137 | 7438157 | + | No  |
| 1923336_adh | TATTCAAAATGTATGACTGCT  | Chr.4 | 7438422 | 7438402 | - | No  |
| 2674069_adh | TTGTAATGAAATGATGGAAAC  | Chr.4 | 7450460 | 7450440 | - | No  |
| 2648807_adh | TTGCAATCTGAAGATATCATT  | Chr.4 | 7467950 | 7467970 | + | Yes |
| 2697540_adh | TTTAGTTGGCTAAATTTGTTT  | Chr.4 | 7473359 | 7473339 | - | No  |
| 1939042_adh | TCAAGATTTTTAGTTGGCTAA  | Chr.4 | 7473367 | 7473347 | - | No  |
| 1883921_adh | TATAAAAGACGTGAATATATA  | Chr.4 | 7487027 | 7487007 | - | No  |
| 1798989_adh | TAATCTTCAGAACACGGTGAC  | Chr.4 | 7487368 | 7487388 | + | No  |
| 2044224_adh | TCTGAAGCGCCAAGGAAGAAC  | Chr.4 | 7487707 | 7487687 | - | No  |
| 2652438_adh | TTGCGGAATCAGAATTCGGTA  | Chr.4 | 7501302 | 7501322 | + | No  |
| 1940045_adh | TCAAGTACAAGATCCACAAT   | Chr.4 | 7507618 | 7507598 | - | No  |
| 1930912_adh | TATTTTCGGATGTTTGTTGGT  | Chr.4 | 7508976 | 7508956 | - | No  |
| 2737558_adh | TTTTCAGTATTTTCGGATGTT  | Chr.4 | 7508983 | 7508963 | - | No  |
| 2535059_adh | TGTTTTTCAGTATTTTCGGAT  | Chr.4 | 7508986 | 7508966 | - | No  |
| 2160230_adh | TGACCTACAGGAGAAATTGGA  | Chr.4 | 7512965 | 7512945 | - | No  |
| 2745839_adh | TTTTTCCATGTCGGGTCATTT  | Chr.4 | 7513238 | 7513218 | - | No  |
| 2722501_adh | TTTGCTGGAGAAAAGTTTGGGA | Chr.4 | 7544373 | 7544353 | - | No  |
| 2452776_adh | TGGGGATTGGAGGGGACTGGGA | Chr.4 | 7559176 | 7559196 | + | No  |

|             |                       |       |         |         |   |     |
|-------------|-----------------------|-------|---------|---------|---|-----|
| 2023222_adh | TCGTAGATTTTAAACTAGGG  | Chr.4 | 7561978 | 7561998 | + | No  |
| 2703274_adh | TTTCAGGGATAGTGGAAGACA | Chr.4 | 7564097 | 7564117 | + | No  |
| 2703274_adh | TTTCAGGGATAGTGGAAGACA | Chr.4 | 7565724 | 7565704 | - | No  |
| 1813275_adh | TACATATTTGATTGTATGGAC | Chr.4 | 7606373 | 7606393 | + | No  |
| 1994546_adh | TCGAAAAGCAGTTGACAAGAT | Chr.4 | 7632440 | 7632460 | + | No  |
| 2525950_adh | TGTTCAATACAAGCGATACTA | Chr.4 | 7633482 | 7633502 | + | No  |
| 2129898_adh | TGAAGATAAAGATGTAGAATA | Chr.4 | 7654430 | 7654410 | - | No  |
| 1854465_adh | TAGCAGACGTAAGCAACTTTG | Chr.4 | 7662737 | 7662717 | - | No  |
| 1770753_adh | TAACCTCTTCGCTCATTTCCG | Chr.4 | 7673996 | 7674016 | + | Yes |
| 1821873_adh | TACGAAGTTAGCGGGAAATGC | Chr.4 | 7679799 | 7679779 | - | No  |
| 2709963_adh | TTTCTCGAGAAGCAAAAGACC | Chr.4 | 7684521 | 7684501 | - | No  |
| 2059328_adh | TCTTGTAGAAGTGAAACGGT  | Chr.4 | 7690126 | 7690146 | + | No  |
| 1935954_adh | TCAACAAGTGCAACTTCTGGA | Chr.4 | 7693615 | 7693595 | - | No  |
| 1929889_adh | TATTCGGAGTATCGTTGGGA  | Chr.4 | 7728678 | 7728658 | - | No  |
| 2734960_adh | TTTTAGTGGGATTTGACCAAT | Chr.4 | 7743146 | 7743126 | - | Yes |
| 2568998_adh | TTAGGTAGAGAGATATATTA  | Chr.4 | 7764367 | 7764347 | - | No  |
| 2690671_adh | TTTAAGGGAATTCGGAGAATA | Chr.4 | 7770909 | 7770929 | + | No  |
| 2598870_adh | TTCCGATCGGAAGGAATATAT | Chr.4 | 7785901 | 7785921 | + | No  |
| 1860683_adh | TAGGAAATCTGCACAGCTGAA | Chr.4 | 7791411 | 7791391 | - | No  |
| 2490357_adh | TGTATAACGGATACATGTATT | Chr.4 | 7791511 | 7791531 | + | No  |
| 2702966_adh | TTTCAGATGTTGCTTTCTTTT | Chr.4 | 7796822 | 7796802 | - | No  |
| 2378811_adh | TGGACTTAAATACGGCTCACT | Chr.4 | 7800482 | 7800502 | + | No  |
| 2271722_adh | TGATGATTTGTGAAATAAACT | Chr.4 | 7803441 | 7803461 | + | No  |
| 2718277_adh | TTTGATCGTGCGCACAGCGAG | Chr.4 | 7816024 | 7816044 | + | No  |
| 2589217_adh | TTACAGTTTGATATCCAAAA  | Chr.4 | 7877842 | 7877822 | - | No  |
| 1880679_adh | TAGTTCTATTAGTTCTGCAGC | Chr.4 | 7889886 | 7889906 | + | Yes |
| 1975992_adh | TCCAACAATTCTTCTCAAAAA | Chr.4 | 7891953 | 7891973 | + | No  |
| 2562173_adh | TTAGACGAATCAATCATTATT | Chr.4 | 7902561 | 7902541 | - | No  |
| 2074643_adh | TGAAACTTGAGAATGAGTATC | Chr.4 | 7909968 | 7909948 | - | No  |
| 2376616_adh | TGGACGTGGAGGACGTGGTGG | Chr.4 | 7926268 | 7926248 | - | No  |
| 2749733_adh | TTTTTTGTCTTTTTGAAGGAA | Chr.4 | 7926562 | 7926542 | - | No  |
| 2712632_adh | TTTGAAAGAAATACAATAACG | Chr.4 | 7926708 | 7926728 | + | No  |
| 2624959_adh | TTGAAAGAAATACAATAACGA | Chr.4 | 7926709 | 7926729 | + | No  |
| 2643993_adh | TTGATCAGACAGCAAAGGACA | Chr.4 | 7946356 | 7946336 | - | No  |
| 2745662_adh | TTTTTCACTGAAGACGTTATT | Chr.4 | 7948568 | 7948588 | + | No  |
| 2625154_adh | TTGAAAGGATGATGGCTGAAG | Chr.4 | 7953359 | 7953379 | + | No  |
| 1957031_adh | TCAGAACAAAATGGAAGAAAC | Chr.4 | 7953791 | 7953771 | - | No  |
| 1830699_adh | TACTATTACGTGGACGTCTAA | Chr.4 | 7955159 | 7955179 | + | No  |
| 2717176_adh | TTTGATAAAATAGAAGACTGA | Chr.4 | 7958249 | 7958269 | + | No  |
| 2697525_adh | TTTAGTTGATCGTTTCTTTCC | Chr.4 | 7958490 | 7958510 | + | No  |
| 2572634_adh | TTAGTTGATCGTTTCTTTCCC | Chr.4 | 7958491 | 7958511 | + | No  |
| 2714571_adh | TTTGAATTTTGATATCATTGC | Chr.4 | 7958520 | 7958540 | + | No  |
| 2018440_adh | TCGGTAGACGAGCTGTTGTAT | Chr.4 | 7962438 | 7962418 | - | No  |
| 2724396_adh | TTTGGCCGCTTATTCGTGCA  | Chr.4 | 7982133 | 7982113 | - | No  |
| 2616505_adh | TTCTCGATGAGATCTCTCGAT | Chr.4 | 7982153 | 7982133 | - | No  |
| 1939536_adh | TCAAGGACATGGACTCTACGA | Chr.4 | 7983397 | 7983417 | + | No  |
| 2737134_adh | TTTTCAAAGTGTCGGAAAAAC | Chr.4 | 7998891 | 7998871 | - | No  |
| 2540770_adh | TTAAAGACGATTTGTGGAAGA | Chr.4 | 8004272 | 8004292 | + | No  |
| 2259602_adh | TGATACGGAAAGAAGAATCAG | Chr.4 | 8004868 | 8004888 | + | No  |
| 1816789_adh | TACCCGCACAACTGGAATACG | Chr.4 | 8019997 | 8020017 | + | No  |

|             |                          |       |         |         |   |     |
|-------------|--------------------------|-------|---------|---------|---|-----|
| 2016347_adh | TCGGGAACATATTTTTAAATC    | Chr.4 | 8055786 | 8055766 | - | Yes |
| 2743575_adh | TTTTGTAGCACGAAGAAAGCA    | Chr.4 | 8066221 | 8066201 | - | No  |
| 1774419_adh | TAAGAAGTTAGTGCGATTCCC    | Chr.4 | 8085540 | 8085560 | + | No  |
| 2549873_adh | TTAATAGATCGTTGATAAACA    | Chr.4 | 8097245 | 8097225 | - | No  |
| 2544352_adh | TTAAATTCGGCATTTTATTGA    | Chr.4 | 8099652 | 8099632 | - | Yes |
| 2526584_adh | TGTTCGGTTTTTTTCGGTTTTT   | Chr.4 | 8108601 | 8108621 | + | No  |
| 1938068_adh | TCAAGAAAAAATTCAAGTGAA    | Chr.4 | 8112889 | 8112909 | + | No  |
| 2604401_adh | TTCGATATTTACAACTCAAC     | Chr.4 | 8119073 | 8119093 | + | No  |
| 2709877_adh | TTTCTCACTGGTTTTTGCTT     | Chr.4 | 8130450 | 8130430 | - | No  |
| 2641908_adh | TTGAGTAGAGATGTTAATAAT    | Chr.4 | 8132467 | 8132447 | - | No  |
| 2623503_adh | TTCTTTCTACGTCGTATTCTT    | Chr.4 | 8134037 | 8134017 | - | No  |
| 1856752_adh | TAGCGGAAAAAAGTGTTTATA    | Chr.4 | 8134335 | 8134315 | - | No  |
| 2145906_adh | TGAATTCATTTCGTATTCTGTC   | Chr.4 | 8145843 | 8145823 | - | No  |
| 2021231_adh | TCGTAACCTTCAAGTGGAACA    | Chr.4 | 8153192 | 8153172 | - | No  |
| 1857199_adh | TAGCGGAGTCTAGAGACCATG    | Chr.4 | 8164473 | 8164493 | + | No  |
| 2627047_adh | TTGAACTTTCCAAGCTCTGCA    | Chr.4 | 8172424 | 8172444 | + | No  |
| 2318257_adh | TGGAAATGGAAAAATAGCAAA    | Chr.4 | 8177369 | 8177389 | + | No  |
| 2532541_adh | TGTTTTCGCACGTATTAACACTAC | Chr.4 | 8180708 | 8180728 | + | No  |
| 2402840_adh | TGGCACAAGTAACTCACTCGA    | Chr.4 | 8212883 | 8212863 | - | No  |
| 2699681_adh | TTTATTATTGAGAGAGATCTT    | Chr.4 | 8213706 | 8213686 | - | No  |
| 1829481_adh | TACTAATTGTGAAACACTGTT    | Chr.4 | 8216565 | 8216545 | - | No  |
| 2722642_adh | TTTGCTTATCAGTTTGTCGTT    | Chr.4 | 8225571 | 8225591 | + | No  |
| 2573855_adh | TTATAACGTACGGAATCGAAA    | Chr.4 | 8225834 | 8225814 | - | No  |
| 2377114_adh | TGGACTCGAGAAACGATGGTT    | Chr.4 | 8227773 | 8227753 | - | No  |
| 2674027_adh | TTGTAATACACGATCGTCGCA    | Chr.4 | 8237289 | 8237309 | + | No  |
| 2593479_adh | TTCATAATATTCTGTGCTTCA    | Chr.4 | 8244430 | 8244450 | + | No  |
| 1824185_adh | TACGATGGAAATAATAGCGAA    | Chr.4 | 8257028 | 8257008 | - | No  |
| 2281248_adh | TGCAAATTCTGCCTCGAAAAG    | Chr.4 | 8257054 | 8257034 | - | No  |
| 2576751_adh | TTATATTTTGCAGATCCTGAT    | Chr.4 | 8267443 | 8267463 | + | No  |
| 2495770_adh | TGTCATCTAGTAGAAAGCATT    | Chr.4 | 8284619 | 8284599 | - | No  |
| 2595419_adh | TTCAATTGTTGTTGGTTTTATT   | Chr.4 | 8286751 | 8286731 | - | No  |
| 1764169_adh | TAACACAGACTTGAAGAACAT    | Chr.4 | 8287361 | 8287341 | - | No  |
| 2127144_adh | TGAAGAAGACGTAGAGGAAGA    | Chr.4 | 8287894 | 8287874 | - | No  |
| 2026951_adh | TCGTGGACGCGGTGGAAACGA    | Chr.4 | 8289024 | 8289004 | - | No  |
| 2018293_adh | TCGGTAAATCAATGGACGCAG    | Chr.4 | 8291757 | 8291777 | + | No  |
| 2387960_adh | TGGATACGGTAGTCAACGATG    | Chr.4 | 8294740 | 8294760 | + | No  |
| 2553744_adh | TTACACAGATATACGCGAGAA    | Chr.4 | 8300734 | 8300714 | - | No  |
| 2580528_adh | TTATTAAGTTCGTTAGATATA    | Chr.4 | 8325180 | 8325160 | - | No  |
| 2651741_adh | TTGCGAAGCAATTCCGGTGAA    | Chr.4 | 8325235 | 8325215 | - | No  |
| 2395986_adh | TGGATTTGAACGGAATAAAAT    | Chr.4 | 8325400 | 8325420 | + | No  |
| 2740904_adh | TTTTGAATCATCTGGAATGCA    | Chr.4 | 8327120 | 8327140 | + | No  |
| 2657915_adh | TTGGACAACCTCGGAATTGAAG   | Chr.4 | 8346365 | 8346385 | + | No  |
| 2573605_adh | TTAGTTTTTAGGTCGTTTAAG    | Chr.4 | 8350924 | 8350904 | - | No  |
| 2546612_adh | TTAACTTTTAGGTCGTTTAAG    | Chr.4 | 8351045 | 8351065 | + | No  |
| 2614518_adh | TTCTACGTTGAAACGATGGCA    | Chr.4 | 8360483 | 8360463 | - | No  |
| 2645139_adh | TTGATGGATCTTCTGTGACAC    | Chr.4 | 8375178 | 8375198 | + | No  |
| 2589218_adh | TTACATAATAGGCGGAAAAAC    | Chr.4 | 8377972 | 8377952 | - | No  |
| 2734474_adh | TTTTAGACAGCACTGCTTCGT    | Chr.4 | 8379420 | 8379400 | - | No  |
| 2701432_adh | TTTCAACTCTCGTCCTATGAT    | Chr.4 | 8379440 | 8379420 | - | No  |
| 1929172_adh | TATTTACGAGATGGTCTTTCA    | Chr.4 | 8379529 | 8379549 | + | No  |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2470309_adh | TGGTCTGTAGAAGTGGTAGAC  | Chr.4 | 8387406 | 8387426 | + | No |
| 1770310_adh | TAACTATGCAGAATTGAACT   | Chr.4 | 8395155 | 8395135 | - | No |
| 1834372_adh | TACTGTTTTAGTATCGCGGCA  | Chr.4 | 8397097 | 8397077 | - | No |
| 2747970_adh | TTTTTGTTGTAACATCAATCC  | Chr.4 | 8397155 | 8397175 | + | No |
| 2706258_adh | TTTCCTCTGTTTTTCGAACAA  | Chr.4 | 8398471 | 8398491 | + | No |
| 2038107_adh | TCTCATCAGAACTCCGACGA   | Chr.4 | 8399188 | 8399208 | + | No |
| 2297446_adh | TGCGATAAGTAGGCGTAGCTT  | Chr.4 | 8400003 | 8400023 | + | No |
| 1762599_adh | TAAATTGTAGGAGAAAGGTGG  | Chr.4 | 8401855 | 8401835 | - | No |
| 1876095_adh | TAGTCACAAGACTGTGTGGCA  | Chr.4 | 8401880 | 8401900 | + | No |
| 1930982_adh | TATTTTCTGTTGACTCGTCTT  | Chr.4 | 8403173 | 8403153 | - | No |
| 2396545_adh | TGGATTTTTGAGCGGTTTTAG  | Chr.4 | 8404207 | 8404227 | + | No |
| 2371144_adh | TGGAATTTAAAAAAGTATAAT  | Chr.4 | 8427234 | 8427214 | - | No |
| 1973146_adh | TCATTAAAGCTTAACGAACAA  | Chr.4 | 8428504 | 8428484 | - | No |
| 2617733_adh | TTCTGAACCAAGTTGCCTAGA  | Chr.4 | 8428603 | 8428583 | - | No |
| 2599179_adh | TTCCGGCTACAATTGATGATT  | Chr.4 | 8428891 | 8428911 | + | No |
| 1824422_adh | TACGATTCGTAGTAAAGATG   | Chr.4 | 8483737 | 8483717 | - | No |
| 2620304_adh | TTCTGTTCCAAATTGTTAGAA  | Chr.4 | 8484050 | 8484030 | - | No |
| 2620304_adh | TTCTGTTCCAAATTGTTAGAA  | Chr.4 | 8484375 | 8484355 | - | No |
| 2713196_adh | TTTGAACGAGAAAATGCGCGCG | Chr.4 | 8511248 | 8511268 | + | No |
| 2147105_adh | TGAATTGATTGGAAAACGAGA  | Chr.4 | 8517418 | 8517398 | - | No |
| 2721432_adh | TTTGCATGAACCTACGGATGA  | Chr.4 | 8520309 | 8520289 | - | No |
| 2001234_adh | TCGAGACTGTACAAGAAGAGT  | Chr.4 | 8552714 | 8552734 | + | No |
| 2727175_adh | TTTGTAAGAAAAAAGAACGGT  | Chr.4 | 8555500 | 8555520 | + | No |
| 2673909_adh | TTGTAAGAAAAAAGAACGGTA  | Chr.4 | 8555501 | 8555521 | + | No |
| 1765027_adh | TAACAGCAATGATCGTCATTA  | Chr.4 | 8569971 | 8569951 | - | No |
| 2152862_adh | TGACACATGCACTTGGGACAT  | Chr.4 | 8586213 | 8586193 | - | No |
| 1928881_adh | TATTGTTTTTGCATACTGTTT  | Chr.4 | 8589684 | 8589704 | + | No |
| 2535152_adh | TGTTTTTGCATACTGTTTTTT  | Chr.4 | 8589687 | 8589707 | + | No |
| 2742347_adh | TTTTGCATACTGTTTTTTAAA  | Chr.4 | 8589690 | 8589710 | + | No |
| 2013026_adh | TCGGAGTCGTAAGCTGGTTTG  | Chr.4 | 8594769 | 8594789 | + | No |
| 1929754_adh | TATTCCTTGACGCATTTCCCT  | Chr.4 | 8607505 | 8607485 | - | No |
| 2561671_adh | TTAGAATACGGATGGACTTCG  | Chr.4 | 8607549 | 8607529 | - | No |
| 2694978_adh | TTAGAATACGGATGGACTTC   | Chr.4 | 8607550 | 8607530 | - | No |
| 2395095_adh | TGGATTGTAGTGAGCATTTAG  | Chr.4 | 8607566 | 8607546 | - | No |
| 2610113_adh | TTCCGGTGGATTGTAGTGAGCA | Chr.4 | 8607571 | 8607551 | - | No |
| 2529122_adh | TGTTGATGACTTCGGTGGATT  | Chr.4 | 8607581 | 8607561 | - | No |
| 2621909_adh | TTCTTCGTTTTACTCTCGGAC  | Chr.4 | 8607708 | 8607728 | + | No |
| 2694242_adh | TTTACTCTCGGACCGGCAGGT  | Chr.4 | 8607716 | 8607736 | + | No |
| 1748809_adh | TAAAACTTACCAAGTCGTCGA  | Chr.4 | 8654559 | 8654579 | + | No |
| 2697706_adh | TTTATAAAATCCGGACAGAAT  | Chr.4 | 8665906 | 8665886 | - | No |
| 2735069_adh | TTTTATAAAATCCGGACAGAA  | Chr.4 | 8665907 | 8665887 | - | No |
| 1923845_adh | TATTCATTATGTCGGGCACAC  | Chr.4 | 8728452 | 8728472 | + | No |
| 2601616_adh | TTCGAAAACGTGTGTGGACGG  | Chr.4 | 8734878 | 8734858 | - | No |
| 2562406_adh | TTAGAGAACACAGACGACTAG  | Chr.4 | 8737465 | 8737445 | - | No |
| 2623816_adh | TTCTTTTCCCCATTTTCGGCG  | Chr.4 | 8754263 | 8754243 | - | No |
| 2268841_adh | TGATATTTTAGTAACTTGGAC  | Chr.4 | 8773199 | 8773179 | - | No |
| 1963271_adh | TCAGGAAAACGTAAACATATT  | Chr.4 | 8785204 | 8785224 | + | No |
| 1994668_adh | TCGAAACCAGAATATAGAGCA  | Chr.4 | 8809244 | 8809224 | - | No |
| 1939404_adh | TCAAGCTGGATATGATGCTGG  | Chr.4 | 8823654 | 8823634 | - | No |
| 1939404_adh | TCAAGCTGGATATGATGCTGG  | Chr.4 | 8825288 | 8825308 | + | No |

|             |                         |       |         |         |   |     |
|-------------|-------------------------|-------|---------|---------|---|-----|
| 2177125_adh | TGAGAAAGCGGAAGCAGAACT   | Chr.4 | 8837919 | 8837939 | + | No  |
| 1873697_adh | TAGTACCGCAGAACCAGTAAA   | Chr.4 | 8849482 | 8849502 | + | No  |
| 2742875_adh | TTTTGGCAGAAAGAAAGGAAT   | Chr.4 | 8873505 | 8873485 | - | No  |
| 2650417_adh | TTGCATGACTTGATTTTTTGT   | Chr.4 | 8885139 | 8885159 | + | Yes |
| 2737553_adh | TTTTCAGTAGGATCATTTGAT   | Chr.4 | 8888925 | 8888945 | + | No  |
| 2058293_adh | TCTTGCATACTTGAATCAGTT   | Chr.4 | 8893976 | 8893996 | + | No  |
| 2630211_adh | TTGAATCAGTTTGGAGCATTC   | Chr.4 | 8893986 | 8894006 | + | No  |
| 2693316_adh | TTTACAGACTGGCAAAAACAT   | Chr.4 | 8898110 | 8898090 | - | No  |
| 2415505_adh | TGGCTTCAGTGGAATTTCTTT   | Chr.4 | 8906861 | 8906881 | + | No  |
| 2735610_adh | TTTTATCGATTAATTAATAA    | Chr.4 | 8926210 | 8926230 | + | No  |
| 2581961_adh | TTATTCTGTTAGAAGACAATT   | Chr.4 | 8926239 | 8926259 | + | No  |
| 1961409_adh | TCAGATGGATCTGGCTCGTAT   | Chr.4 | 8936962 | 8936982 | + | No  |
| 2603887_adh | TTTCGAGGATTTTGTAGAGACG  | Chr.4 | 8956655 | 8956675 | + | No  |
| 2615217_adh | TTCTATACTCTATAATAAGGC   | Chr.4 | 8961359 | 8961379 | + | No  |
| 2396516_adh | TGGATTTTTAAAGCGAATGCA   | Chr.4 | 8973674 | 8973654 | - | No  |
| 2215576_adh | TGAGATCTTAGCGAGGACACC   | Chr.4 | 8990795 | 8990775 | - | No  |
| 2380904_adh | TGGAGATTTGATGGAGCTTCT   | Chr.4 | 9001188 | 9001168 | - | No  |
| 2625020_adh | TTGAAAGATGAAAAGTCGGCA   | Chr.4 | 9013793 | 9013773 | - | No  |
| 2641087_adh | TTGAGCTTGGATCGTTTGCTC   | Chr.4 | 9021513 | 9021533 | + | No  |
| 2728630_adh | TTTGTATTTGGTTGATCGGCG   | Chr.4 | 9022673 | 9022653 | - | No  |
| 1901771_adh | TATGAAGATCTTGACCACCT    | Chr.4 | 9034171 | 9034151 | - | No  |
| 1939411_adh | TCAAGCTGTAAGATAACTAGA   | Chr.4 | 9059255 | 9059275 | + | No  |
| 1860675_adh | TAGGAAATCGACAAAAAGGAG   | Chr.4 | 9059807 | 9059827 | + | No  |
| 1939411_adh | TCAAGCTGTAAGATAACTAGA   | Chr.4 | 9060252 | 9060232 | - | No  |
| 1845389_adh | TAGACGGAAGATAAGGACAGG   | Chr.4 | 9062808 | 9062788 | - | No  |
| 2679476_adh | TTGTGAATTTTTAAACGCGGCC  | Chr.4 | 9064284 | 9064264 | - | No  |
| 2729406_adh | TTTGTGAATTTTTAAACGCGGC  | Chr.4 | 9064285 | 9064265 | - | No  |
| 2745687_adh | TTTTTCAGATTATGCAGACAT   | Chr.4 | 9074310 | 9074290 | - | No  |
| 2748271_adh | TTTTTTAGAAGCATTTTCTGC   | Chr.4 | 9074457 | 9074477 | + | No  |
| 2688400_adh | TTGTTTTTCCTAATGGCGCAT   | Chr.4 | 9096752 | 9096772 | + | No  |
| 2006116_adh | TCGCAGATCACGAAAACCTGAC  | Chr.4 | 9099542 | 9099522 | - | No  |
| 1749162_adh | TAAAAGACGCAGCAACGAAGA   | Chr.4 | 9099691 | 9099671 | - | No  |
| 2059284_adh | TCTTGTAAGTGATGTTTAGGC   | Chr.4 | 9104475 | 9104455 | - | No  |
| 1847357_adh | TAGAGACATGGTTTGTGGTTA   | Chr.4 | 9112812 | 9112832 | + | No  |
| 1833713_adh | TACTGTAGGAATGGTCTTG TG  | Chr.4 | 9129987 | 9129967 | - | No  |
| 1787684_adh | TAAGTAGTTGTAGTAGGGAAT   | Chr.4 | 9142815 | 9142795 | - | No  |
| 2300851_adh | TGCGGAATAACGGAGTGTCGT   | Chr.4 | 9147129 | 9147149 | + | No  |
| 1990861_adh | TCCTCTGGACTTGGCAGACTT   | Chr.4 | 9155889 | 9155869 | - | No  |
| 2233855_adh | TGAGCGAGAAGTGTGTTCTTG   | Chr.4 | 9166601 | 9166621 | + | No  |
| 1838918_adh | TAGAACTTTGGTATCCCAATA   | Chr.4 | 9183286 | 9183266 | - | No  |
| 2738647_adh | TTTTCGGGCAGAAATTGTGAA   | Chr.4 | 9196263 | 9196243 | - | No  |
| 2608432_adh | TTCGGCAATTTTCGGGCAGAA   | Chr.4 | 9196271 | 9196251 | - | No  |
| 2745105_adh | TTTTTAGCTTTTCAAGTTTTTA  | Chr.4 | 9196544 | 9196564 | + | No  |
| 1832180_adh | TACTGAATGGAGAAGCACGTG   | Chr.4 | 9201651 | 9201671 | + | No  |
| 2590769_adh | TTTCAGATATGTGAGCAGAAAGC | Chr.4 | 9216528 | 9216508 | - | No  |
| 2721346_adh | TTTGCAGGATGTGTGATTCAA   | Chr.4 | 9249094 | 9249114 | + | No  |
| 2654102_adh | TTGCTACATTGGAAACAACAC   | Chr.4 | 9250310 | 9250290 | - | No  |
| 2746585_adh | TTTTTGAATAAACCAATCAA    | Chr.4 | 9250674 | 9250694 | + | No  |
| 2253409_adh | TGAGTGACAGTAGTCCACGCG   | Chr.4 | 9264648 | 9264628 | - | No  |
| 2735082_adh | TTTTATAAATATCAGTATTGA   | Chr.4 | 9271893 | 9271913 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2741749_adh | TTTTGATCTCGACGTGCATTC  | Chr.4 | 9284785 | 9284765 | - | No  |
| 2741749_adh | TTTTGATCTCGACGTGCATTC  | Chr.4 | 9292278 | 9292258 | - | No  |
| 2711683_adh | TTTCTTGAATTTTGATACGGT  | Chr.4 | 9316296 | 9316316 | + | No  |
| 2622502_adh | TTCTTGAATTTTGATACGGTT  | Chr.4 | 9316297 | 9316317 | + | No  |
| 2057656_adh | TCTTGAATTTTGATACGGTTT  | Chr.4 | 9316298 | 9316318 | + | No  |
| 2148739_adh | TGAATTTTGATACGGTTTTGT  | Chr.4 | 9316301 | 9316321 | + | No  |
| 1975309_adh | TCATTTGGAGAAGAAACGTCA  | Chr.4 | 9325934 | 9325954 | + | No  |
| 2584706_adh | TTATTTTGAATCTAACTTC    | Chr.4 | 9331000 | 9330980 | - | No  |
| 2737448_adh | TTTTCAGAGAAGAGGTTTCAT  | Chr.4 | 9336643 | 9336623 | - | No  |
| 1881085_adh | TAGTTGCTCAAGGATTCACTG  | Chr.4 | 9338877 | 9338857 | - | No  |
| 1992239_adh | TCCTGTGATACGGTAACTTTC  | Chr.4 | 9342568 | 9342548 | - | No  |
| 2162173_adh | TGACGTATTATTCTGTTGAAA  | Chr.4 | 9350601 | 9350581 | - | No  |
| 2639668_adh | TTGAGACGAAAGAAGGAAATA  | Chr.4 | 9351674 | 9351654 | - | No  |
| 2393726_adh | TGGATTGAAGAAGGAAGTTGA  | Chr.4 | 9353164 | 9353144 | - | No  |
| 2032296_adh | TCTAGAAATCGGCGGCGAAAG  | Chr.4 | 9361397 | 9361417 | + | No  |
| 2589254_adh | TTACATTGAATTTACGACA    | Chr.4 | 9366650 | 9366670 | + | No  |
| 2159435_adh | TGACCACAACAAAATACGGCA  | Chr.4 | 9368482 | 9368502 | + | No  |
| 2001294_adh | TCGAGAGGATATTAGAAGACG  | Chr.4 | 9398279 | 9398259 | - | No  |
| 1753787_adh | TAAACAAATGTGCATTGAATA  | Chr.4 | 9400567 | 9400587 | + | No  |
| 2545532_adh | TTAACGGAAATGCGACGAAAA  | Chr.4 | 9403895 | 9403915 | + | No  |
| 2704760_adh | TTTCATTTTCGTTCGATTTCC  | Chr.4 | 9403920 | 9403900 | - | No  |
| 1899812_adh | TATCTGAAATCAAAGGAAGCA  | Chr.4 | 9437864 | 9437884 | + | No  |
| 2589152_adh | TTACAGAGACGCAGAATGTG   | Chr.4 | 9441184 | 9441204 | + | No  |
| 2581972_adh | TTATCTTCAGGACAATATGG   | Chr.4 | 9447085 | 9447065 | - | No  |
| 1900232_adh | TATCTTATGCATCTTCTTTCA  | Chr.4 | 9447751 | 9447731 | - | Yes |
| 2136036_adh | TGAAGTTGTTGAATGTTTATG  | Chr.4 | 9459241 | 9459221 | - | No  |
| 1963427_adh | TCAGGAAATGTTGTAAAATGA  | Chr.4 | 9459308 | 9459288 | - | No  |
| 2114744_adh | TGAAATTCGTTTCGGAAGATTC | Chr.4 | 9464228 | 9464248 | + | No  |
| 2738579_adh | TTTTCGGAGGTTTGTCTGTT   | Chr.4 | 9464904 | 9464924 | + | No  |
| 2488540_adh | TGTAGGAAAAGACGAAGACAG  | Chr.4 | 9465740 | 9465720 | - | No  |
| 1927557_adh | TATTGTAGAAGTGTGGCCATG  | Chr.4 | 9481567 | 9481547 | - | No  |
| 2538795_adh | TTAAAAGAGTTTTCGACGCAT  | Chr.4 | 9513323 | 9513303 | - | No  |
| 1857592_adh | TAGCGTGAAAGGAAACAATGC  | Chr.4 | 9513736 | 9513716 | - | No  |
| 2688895_adh | TTAAAAGAGAGACGCAGAGA   | Chr.4 | 9525327 | 9525307 | - | No  |
| 2730667_adh | TTTGTTTCAGATCCTGGCGTCT | Chr.4 | 9528461 | 9528481 | + | No  |
| 2668961_adh | TTGGTAAGAAAGGCGTAACTC  | Chr.4 | 9536190 | 9536170 | - | No  |
| 1860665_adh | TAGGAAATACGCAAATGGCGC  | Chr.4 | 9548411 | 9548431 | + | No  |
| 2106676_adh | TGAAATGGATAGAAATGGCAT  | Chr.4 | 9559424 | 9559444 | + | No  |
| 2724115_adh | TTTGGATTAAGAGTAAGCATC  | Chr.4 | 9581210 | 9581230 | + | No  |
| 1874582_adh | TAGTAGCAAACAAATTCGGT   | Chr.4 | 9589297 | 9589317 | + | No  |
| 1754211_adh | TAAACACAGAAGCGAGATTTT  | Chr.4 | 9589337 | 9589357 | + | No  |
| 2259803_adh | TGATACGTTAGGAGTTGTCCG  | Chr.4 | 9594714 | 9594694 | - | No  |
| 1858532_adh | TAGCTGCTCCAAGAGATACGG  | Chr.4 | 9599699 | 9599679 | - | No  |
| 2260111_adh | TGATACTTCCTTTATTGATCG  | Chr.4 | 9610321 | 9610341 | + | No  |
| 2559644_adh | TTACTGTGGGGTATTTTAGGT  | Chr.4 | 9610482 | 9610502 | + | No  |
| 1869133_adh | TAGGGGCAACACTGTATATCA  | Chr.4 | 9610925 | 9610905 | - | No  |
| 2721992_adh | TTTGCGCTGTATTACCAAGGG  | Chr.4 | 9618734 | 9618754 | + | Yes |
| 2694182_adh | TTTACTCAAAAGAAAGGATTT  | Chr.4 | 9622774 | 9622754 | - | No  |
| 1838851_adh | TAGAACTGTGAAACGGAAGAT  | Chr.4 | 9631429 | 9631449 | + | No  |
| 1990987_adh | TCCTGAAAGTCTGAATGCTGA  | Chr.4 | 9633658 | 9633678 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2730857_adh | TTTGTTCTGTAGATGACAAGG  | Chr.4 | 9647853  | 9647833  | - | No  |
| 2028202_adh | TCGTTGAATGGACTGCGCGGT  | Chr.4 | 9648079  | 9648099  | + | No  |
| 1875521_adh | TAGTATGGCACTCCCTAATAG  | Chr.4 | 9652941  | 9652961  | + | No  |
| 2258813_adh | TGATAAGCAAAATGAGAGAAT  | Chr.4 | 9664398  | 9664418  | + | No  |
| 2652198_adh | TTGCGCAAAACATATACGAT   | Chr.4 | 9667209  | 9667189  | - | No  |
| 2741369_adh | TTTTGAGAAGGTTAAAGTTGC  | Chr.4 | 9670590  | 9670610  | + | No  |
| 1829950_adh | TACTAGACGTTTCGCATCATTT | Chr.4 | 9679579  | 9679559  | - | Yes |
| 1918940_adh | TATGTGATCTGTAATTTCAAT  | Chr.4 | 9684572  | 9684592  | + | No  |
| 2125737_adh | TGAACTGTCAAAACGGGACGT  | Chr.4 | 9688827  | 9688807  | - | No  |
| 2546035_adh | TTAACTCAAACATGACTTGCT  | Chr.4 | 9718156  | 9718136  | - | No  |
| 2494395_adh | TGTCACAAGTGGAGAGGCGAG  | Chr.4 | 9722738  | 9722758  | + | No  |
| 2080199_adh | TGAAAGAGATGTGGAAACGTG  | Chr.4 | 9731644  | 9731624  | - | No  |
| 1807293_adh | TACAAATTGAAGAGAAAAGAA  | Chr.4 | 9734097  | 9734117  | + | No  |
| 2046757_adh | TCTGATCAAGGTGGGAAGCTG  | Chr.4 | 9738539  | 9738559  | + | No  |
| 2616006_adh | TTCTCAATGACTGGATGTGTT  | Chr.4 | 9746954  | 9746974  | + | No  |
| 1887894_adh | TATAGAAATGTAGAAAACGAG  | Chr.4 | 9754325  | 9754345  | + | No  |
| 2480976_adh | TGTAAATGGTTGGAATCTGGT  | Chr.4 | 9757504  | 9757524  | + | No  |
| 1761850_adh | TAAATGGTTGGAATCTGGTAT  | Chr.4 | 9757506  | 9757526  | + | No  |
| 2699593_adh | TTTATTAGCAAAGGGATAGCA  | Chr.4 | 9758999  | 9759019  | + | No  |
| 2747869_adh | TTTTTGTTAATTCGTTTGTT   | Chr.4 | 9777654  | 9777634  | - | No  |
| 2744723_adh | TTTTTAAATTTAATTCCTTGA  | Chr.4 | 9806008  | 9806028  | + | No  |
| 2043262_adh | TCTCTTCATGTCGGCTTTTCC  | Chr.4 | 9825281  | 9825261  | - | No  |
| 1968104_adh | TCATAAATTAGGATCCAAGGA  | Chr.4 | 9830799  | 9830819  | + | No  |
| 2381013_adh | TGGAGCACGGCATATTGGGAA  | Chr.4 | 9850233  | 9850213  | - | No  |
| 2381561_adh | TGGAGCTGAGAAGATCATCTT  | Chr.4 | 9850927  | 9850907  | - | No  |
| 1942355_adh | TCAATGGTGGAGCTGAGAAGA  | Chr.4 | 9850934  | 9850914  | - | No  |
| 2055642_adh | TCTTCAGTACCAAACAACCAA  | Chr.4 | 9851041  | 9851021  | - | No  |
| 2236270_adh | TGAGGAAATTGGATTTTCGGG  | Chr.4 | 9852264  | 9852244  | - | No  |
| 1920853_adh | TATTACGATCGTTGAGGAAAT  | Chr.4 | 9852276  | 9852256  | - | No  |
| 1834747_adh | TACTTATTTGTGGCATGAATT  | Chr.4 | 9856887  | 9856907  | + | No  |
| 2590187_adh | TTCAGAAAAAGATATACTCTC  | Chr.4 | 9870403  | 9870383  | - | Yes |
| 2503841_adh | TGTGACGAATAACGGCAATAA  | Chr.4 | 9874681  | 9874661  | - | No  |
| 2053350_adh | TCTGTTGGTGAAGGTTGGATA  | Chr.4 | 9877156  | 9877136  | - | No  |
| 2250547_adh | TGAGTAATAAAGATTTTAGAG  | Chr.4 | 9890581  | 9890561  | - | No  |
| 1791859_adh | TAATACGGATACTAAAGTTTA  | Chr.4 | 9928105  | 9928085  | - | No  |
| 1989013_adh | TCCTAAAGCTTATTTGAACGT  | Chr.4 | 9935796  | 9935776  | - | No  |
| 2712619_adh | TTTGAAACTGTAAGTATGACG  | Chr.4 | 9952751  | 9952771  | + | No  |
| 2743774_adh | TTTTGTCTGAAGCAATAGGTAT | Chr.4 | 9972202  | 9972222  | + | No  |
| 1808859_adh | TACAAGCAAACGAACTGTGT   | Chr.4 | 9990686  | 9990666  | - | No  |
| 2667405_adh | TTGGGATTTTGTTGACGGATA  | Chr.4 | 9994321  | 9994301  | - | No  |
| 2181590_adh | TGAGAATGCTGACAAGTTGAA  | Chr.4 | 9996158  | 9996138  | - | No  |
| 2381427_adh | TGGAGCTAAAGGAGACAATGA  | Chr.4 | 9996314  | 9996294  | - | No  |
| 2664096_adh | TTGGATTATAGAGTTTATATC  | Chr.4 | 9996654  | 9996634  | - | No  |
| 2699033_adh | TTTATGAGAACTAGAGGACGA  | Chr.4 | 10007808 | 10007788 | - | No  |
| 2042812_adh | TCTCTGACGGCCGATCCACCA  | Chr.4 | 10022647 | 10022627 | - | No  |
| 2042812_adh | TCTCTGACGGCCGATCCACCA  | Chr.4 | 10029058 | 10029078 | + | No  |
| 2042812_adh | TCTCTGACGGCCGATCCACCA  | Chr.4 | 10035613 | 10035633 | + | No  |
| 2381997_adh | TGGAGGACTCTTCGATCGTCA  | Chr.4 | 10041144 | 10041124 | - | No  |
| 2593850_adh | TTCATCAAGAAGAACAACGTGT | Chr.4 | 10043787 | 10043807 | + | No  |
| 2714280_adh | TTTGAATGATAGAAGGAATAA  | Chr.4 | 10045638 | 10045658 | + | No  |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2739263_adh | TTTTCTCCTTTTTCATACTTT   | Chr.4 | 10083982 | 10084002 | + | No  |
| 1973743_adh | TCATTCCAACACAACGGACTG   | Chr.4 | 10112854 | 10112874 | + | No  |
| 1821701_adh | TACGAAGAGACAACAAGGATA   | Chr.4 | 10114399 | 10114379 | - | No  |
| 1921238_adh | TATTAGAACGGTGAGGAAGGA   | Chr.4 | 10127091 | 10127111 | + | No  |
| 2313676_adh | TGGA AAAAGGAGGTAGCGAAAA | Chr.4 | 10128093 | 10128073 | - | No  |
| 2311283_adh | TGCTTGGGCAACAAGGGCAGA   | Chr.4 | 10128357 | 10128337 | - | No  |
| 1927869_adh | TATTGTCAGTGAAGCGCCTAG   | Chr.4 | 10129343 | 10129363 | + | No  |
| 2495087_adh | TGTCAGTGAAGCGCCTAGCAT   | Chr.4 | 10129346 | 10129366 | + | No  |
| 2716618_adh | TTTGAGATCAGACAGCTCGAC   | Chr.4 | 10129690 | 10129670 | - | No  |
| 1885870_adh | TATAATGAATATTTCTGTCAA   | Chr.4 | 10136052 | 10136072 | + | No  |
| 2288211_adh | TGCAGCGATAGAAGAAAAGTC   | Chr.4 | 10151656 | 10151676 | + | No  |
| 2734214_adh | TTTTACGTATTTTCCCTAATA   | Chr.4 | 10151687 | 10151707 | + | No  |
| 2723957_adh | TTTGGATCCAAGTACTTGACT   | Chr.4 | 10178044 | 10178024 | - | No  |
| 2736934_adh | TTTTATTTCCAATTCATATAA   | Chr.4 | 10195074 | 10195054 | - | No  |
| 2618414_adh | TTCTGATCAACGAGTCTTAGA   | Chr.4 | 10195296 | 10195276 | - | No  |
| 2608409_adh | TTCGGCAAGAAGAGACGGAG    | Chr.4 | 10197512 | 10197532 | + | No  |
| 2130004_adh | TGAAGATCGTTAGTATATATA   | Chr.4 | 10203059 | 10203039 | - | No  |
| 2308577_adh | TGCTGATTGTAGATCAACGGA   | Chr.4 | 10203180 | 10203200 | + | No  |
| 2674968_adh | TTGTAGATCAACGGATGGCGT   | Chr.4 | 10203186 | 10203206 | + | No  |
| 2487937_adh | TGTAGATCAACGGATGGCGTT   | Chr.4 | 10203187 | 10203207 | + | No  |
| 2500850_adh | TGTGAAAGGAGTTCCATTAGT   | Chr.4 | 10211403 | 10211383 | - | No  |
| 1929258_adh | TATTTAGCTCTGTAGGAGATT   | Chr.4 | 10213316 | 10213336 | + | No  |
| 2487427_adh | TGTAGAACAAGGCCAGGAACG   | Chr.4 | 10221050 | 10221030 | - | No  |
| 2723881_adh | TTTGGATACTGTAAGTGTGGC   | Chr.4 | 10222135 | 10222155 | + | No  |
| 2694961_adh | TTTAGAAGCAAAGAGAACAAG   | Chr.4 | 10222220 | 10222240 | + | No  |
| 1831000_adh | TACTCCACGTGGACTCGGACA   | Chr.4 | 10222430 | 10222410 | - | No  |
| 1835957_adh | TACTTTTACTTTTTGCAATA    | Chr.4 | 10231032 | 10231012 | - | No  |
| 2649239_adh | TTGCAGAAATTTGGAAAGTGG   | Chr.4 | 10232788 | 10232808 | + | No  |
| 2286993_adh | TGCAGAAATTTGGAAAGTGGGA  | Chr.4 | 10232789 | 10232809 | + | No  |
| 2654093_adh | TTGCTACAGGATCTCTCGGAC   | Chr.4 | 10243984 | 10244004 | + | No  |
| 2162077_adh | TGACGTAGAGACCTACAAAGC   | Chr.4 | 10244216 | 10244236 | + | No  |
| 2038764_adh | TCTCCATGTTGGATCCATCAA   | Chr.4 | 10244565 | 10244585 | + | No  |
| 2321088_adh | TGGA ACTAGAAAGAGACGTGAG | Chr.4 | 10252693 | 10252673 | - | No  |
| 1944763_adh | TCACAGACGCTCAAGACTTCG   | Chr.4 | 10279416 | 10279436 | + | No  |
| 1973946_adh | TCATTGAACGGAAAATGGAGA   | Chr.4 | 10285560 | 10285580 | + | No  |
| 2626397_adh | TTGAACGGAAAATGGAGAGAA   | Chr.4 | 10285563 | 10285583 | + | No  |
| 2123227_adh | TGAACGGAAAATGGAGAGAAT   | Chr.4 | 10285564 | 10285584 | + | No  |
| 1836854_adh | TAGAAAATTTTCTCGACTTCA   | Chr.4 | 10294096 | 10294076 | - | No  |
| 1829902_adh | TACTAGAAAATTTTCTCGACT   | Chr.4 | 10294099 | 10294079 | - | No  |
| 2042190_adh | TCTCTATCAACGGCTTTGAGT   | Chr.4 | 10311328 | 10311348 | + | No  |
| 1804327_adh | TAATTGTGAGTTCAAACGGAT   | Chr.4 | 10324095 | 10324075 | - | Yes |
| 2313192_adh | TGGA AAAAATAAAAAGTAGAAG | Chr.4 | 10327073 | 10327093 | + | No  |
| 2100848_adh | TGAAATGAAAATTATTGAGAA   | Chr.4 | 10334429 | 10334449 | + | No  |
| 2320499_adh | TGGAACGGCCGAACGAGAGAA   | Chr.4 | 10346334 | 10346354 | + | No  |
| 2070755_adh | TGAAAATTCATAGAACAGCAA   | Chr.4 | 10348069 | 10348049 | - | No  |
| 2673518_adh | TTGTAAAAATCAAATCGGAG    | Chr.4 | 10357941 | 10357921 | - | No  |
| 1901682_adh | TATGAAGAAAAATGAAAGCGG   | Chr.4 | 10373758 | 10373738 | - | No  |
| 2616810_adh | TTCTCGTGCTGACGCTTTTAC   | Chr.4 | 10374053 | 10374073 | + | No  |
| 1886863_adh | TATACAGTTGAAAAGACCTTC   | Chr.4 | 10377080 | 10377060 | - | No  |
| 2557787_adh | TTACGGTCAGATGCCTCAAGC   | Chr.4 | 10386552 | 10386572 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2579298_adh | TTATGGAAGATCGTCAGAATC  | Chr.4 | 10415938 | 10415918 | - | No  |
| 1971767_adh | TCATGAATAGAAAAAACCGGC  | Chr.4 | 10425403 | 10425423 | + | No  |
| 1762925_adh | TAAATTTTGACAGCATTATAT  | Chr.4 | 10429454 | 10429434 | - | No  |
| 1932228_adh | TCAAAAGACGTCGGTAGTCAC  | Chr.4 | 10435211 | 10435191 | - | No  |
| 2176682_adh | TGAGAAAAGTGGAAGTGAACA  | Chr.4 | 10436339 | 10436319 | - | No  |
| 2123239_adh | TGAACGGAATAGATTACGCA   | Chr.4 | 10459552 | 10459572 | + | No  |
| 2112218_adh | TGAAATGTCAAGAATTATTTTC | Chr.4 | 10468974 | 10468994 | + | No  |
| 2723143_adh | TTTGGAAGTCAATTGGCAGAA  | Chr.4 | 10483836 | 10483816 | - | No  |
| 2463797_adh | TGGTAGTTTCAGACGAGGATT  | Chr.4 | 10500958 | 10500978 | + | No  |
| 2414238_adh | TGGCTAGGAGAAGGAGGAAAA  | Chr.4 | 10504061 | 10504081 | + | No  |
| 2290638_adh | TGCATGCTTAGTTTTCACTGT  | Chr.4 | 10507996 | 10508016 | + | No  |
| 2645779_adh | TTGATTACACATTTTTGAATA  | Chr.4 | 10510286 | 10510266 | - | No  |
| 1813244_adh | TACATATGAAGGCCTGAAAAA  | Chr.4 | 10519623 | 10519603 | - | No  |
| 2608768_adh | TTCGGCTTAGCAAGGTATGTG  | Chr.4 | 10536077 | 10536097 | + | No  |
| 1778572_adh | TAAGATCAGCACGGAACGGCA  | Chr.4 | 10549208 | 10549188 | - | No  |
| 2449910_adh | TGGGCAGAAGAGGTAGATGTC  | Chr.4 | 10550757 | 10550737 | - | No  |
| 2277838_adh | TGATTTAGAAGTACGGTACAG  | Chr.4 | 10564901 | 10564881 | - | No  |
| 1808960_adh | TACAAGCTGACTGGTTAAAGA  | Chr.4 | 10571526 | 10571506 | - | No  |
| 2740596_adh | TTTTGAACAAAACTTTTGAAA  | Chr.4 | 10582017 | 10582037 | + | No  |
| 1802287_adh | TAATTAAGTTTTGTAGCATA   | Chr.4 | 10589871 | 10589851 | - | No  |
| 1764767_adh | TAACACTGCATATGCAACACT  | Chr.4 | 10623246 | 10623226 | - | Yes |
| 1789463_adh | TAAGTTGTGTAGTTGAAGCGA  | Chr.4 | 10655656 | 10655636 | - | No  |
| 2606569_adh | TTCGCGAGGATCTTCCTAGAG  | Chr.4 | 10687227 | 10687247 | + | No  |
| 2709721_adh | TTTCTAGTAGACGTTAAGGCC  | Chr.4 | 10688233 | 10688213 | - | No  |
| 1901690_adh | TATGAAGAACGAGTTCGAATT  | Chr.4 | 10696204 | 10696184 | - | No  |
| 2607660_adh | TTCGGACTAGATCGTATTCAA  | Chr.4 | 10699918 | 10699938 | + | No  |
| 2634600_adh | TTGAATTTTAAGTAGACCATG  | Chr.4 | 10702937 | 10702917 | - | No  |
| 1928972_adh | TATTTAAAAATTGCAAGTTGA  | Chr.4 | 10703031 | 10703011 | - | No  |
| 2709772_adh | TTTCTATCAAAATGTCGTCGA  | Chr.4 | 10703098 | 10703118 | + | No  |
| 2006167_adh | TGCGAGCATGCATACATTCCCT | Chr.4 | 10709337 | 10709317 | - | No  |
| 2580483_adh | TTATTAAGTTTTGATCGGAT   | Chr.4 | 10734772 | 10734792 | + | No  |
| 1759307_adh | TAAAGTTTTGATCGGATCTCC  | Chr.4 | 10734776 | 10734796 | + | No  |
| 2589100_adh | TTCACAAATTGTCGACACTGG  | Chr.4 | 10754740 | 10754720 | - | No  |
| 2583718_adh | TTATTTACAATTGTCGACACA  | Chr.4 | 10754744 | 10754724 | - | No  |
| 2589624_adh | TTCACGCGTCTTCTCAGCGAT  | Chr.4 | 10758115 | 10758135 | + | No  |
| 2483888_adh | TGTAATGAAGTTTTGTAGAGG  | Chr.4 | 10760745 | 10760765 | + | No  |
| 1797173_adh | TAATATTGGCAGAACATGGTT  | Chr.4 | 10794897 | 10794877 | - | No  |
| 1810774_adh | TACACAGTTCAGCAAAGAAAG  | Chr.4 | 10795082 | 10795062 | - | No  |
| 1761137_adh | TAAATCTTTCACAAGGAATTT  | Chr.4 | 10813454 | 10813474 | + | Yes |
| 2595625_adh | TTCCAAAAGAATTTCTTTGTT  | Chr.4 | 10814571 | 10814551 | - | No  |
| 1930142_adh | TATTTGAAAAGGAAAACGTAA  | Chr.4 | 10815387 | 10815367 | - | Yes |
| 2515461_adh | TGTGGATAGATTGAGGTGGCA  | Chr.4 | 10817057 | 10817037 | - | No  |
| 2308593_adh | TGCTGATTTGGACGGAATGAC  | Chr.4 | 10837078 | 10837098 | + | No  |
| 2441374_adh | TGGGATGGTAAAAAATGTCAA  | Chr.4 | 10838182 | 10838162 | - | No  |
| 2003356_adh | TCGATCCAGCAAAGGTGACCA  | Chr.4 | 10842484 | 10842504 | + | No  |
| 2706635_adh | TTTCGAACTCGTCTCAGCGGA  | Chr.4 | 10864555 | 10864575 | + | No  |
| 2262983_adh | TGATATCGTTTTGATTTTCAA  | Chr.4 | 10876432 | 10876452 | + | No  |
| 2031425_adh | TCTACAGTTACAGTTTTTACA  | Chr.4 | 10886749 | 10886769 | + | Yes |
| 2487419_adh | TGTAGAAATCGGCAATTGATC  | Chr.4 | 10896683 | 10896663 | - | No  |
| 2674649_adh | TTGTAGAAATCGGCAATTGAT  | Chr.4 | 10896684 | 10896664 | - | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2113629_adh | TGAAATTAATAAATATTGATT  | Chr.4 | 10912387 | 10912367 | - | No |
| 1758890_adh | TAAAGTCGATTGCTCTACCCA  | Chr.4 | 10914627 | 10914647 | + | No |
| 2176612_adh | TGAGAAAAGAAGAAAGGTCGT  | Chr.4 | 10916231 | 10916211 | - | No |
| 2417254_adh | TGGGAAAAGAACAATCGAAAA  | Chr.4 | 10918958 | 10918938 | - | No |
| 1990941_adh | TCCTCTGTTTGCATGCTATTC  | Chr.4 | 10919393 | 10919373 | - | No |
| 2721152_adh | TTTGCAATTTTCGGCTCCTTT  | Chr.4 | 10933212 | 10933192 | - | No |
| 1967332_adh | TCAGTTCATGATCTTCGAGAC  | Chr.4 | 10938859 | 10938879 | + | No |
| 2069412_adh | TGAAAAGTACGGATATGGTTA  | Chr.4 | 10950929 | 10950949 | + | No |
| 1821467_adh | TACGAAACAACTAATGGGCA   | Chr.4 | 10951172 | 10951192 | + | No |
| 2583718_adh | TTATTTCAACAATTGTCCGACA | Chr.4 | 10952260 | 10952280 | + | No |
| 2589100_adh | TTCACAATTGTCCGACACTGG  | Chr.4 | 10952264 | 10952284 | + | No |
| 2181480_adh | TGAGAATGAATAGACTTGACC  | Chr.4 | 10966413 | 10966393 | - | No |
| 1988918_adh | TCCGTTGTTGCAAGAGCAGAA  | Chr.4 | 10999217 | 10999237 | + | No |
| 2529348_adh | TGTTGCAAGAGCAGAAATCTG  | Chr.4 | 10999222 | 10999242 | + | No |
| 2282132_adh | TGCAAGAGCAGAAATCTGGTT  | Chr.4 | 10999225 | 10999245 | + | No |
| 2732765_adh | TTTGTTTGTTTTCGGCGCTTT  | Chr.4 | 11020176 | 11020196 | + | No |
| 2403198_adh | TGGCACTCATGGTGTACTCGG  | Chr.4 | 11026187 | 11026167 | - | No |
| 2048360_adh | TCTGCGGTATTTCTTTGGAAA  | Chr.4 | 11038300 | 11038280 | - | No |
| 2748018_adh | TTTTTGTTTTCTCTTTTCGAT  | Chr.4 | 11038424 | 11038444 | + | No |
| 1829129_adh | TACGTTTCCGTTTGATTACACA | Chr.4 | 11064708 | 11064728 | + | No |
| 1926139_adh | TATTGCAACTGTGATGAATAC  | Chr.4 | 11066680 | 11066700 | + | No |
| 2584549_adh | TTATTTCTGTGTCGTCAGCAAA | Chr.4 | 11081326 | 11081306 | - | No |
| 2452759_adh | TGGGGATTGAAAGCGGAGAGA  | Chr.4 | 11083047 | 11083067 | + | No |
| 2649219_adh | TTGCACTTTTCTGATGGTTAC  | Chr.4 | 11083196 | 11083216 | + | No |
| 2712173_adh | TTTCTTTTCAGTTCGTTTGCG  | Chr.4 | 11083581 | 11083561 | - | No |
| 2038544_adh | TCTCATTTTTCGACGGCTTCT  | Chr.4 | 11103253 | 11103273 | + | No |
| 1986156_adh | TCCGGCAACTGATAAAGTATT  | Chr.4 | 11110158 | 11110138 | - | No |
| 1814285_adh | TACATTCCAGTTAAGGAGAAG  | Chr.4 | 11110790 | 11110770 | - | No |
| 2338053_adh | TGGAATCTTCATTGCTCTCCT  | Chr.4 | 11117364 | 11117344 | - | No |
| 2535252_adh | TGTTTTTGTTTGCCGGATCCA  | Chr.4 | 11119120 | 11119100 | - | No |
| 2040307_adh | TCTCGGTCGTTAGGAAGAGAC  | Chr.4 | 11119398 | 11119418 | + | No |
| 1926851_adh | TATTGGACAATTCGGAGTCGG  | Chr.4 | 11121024 | 11121044 | + | No |
| 2657976_adh | TTGGACAATTCGGAGTCGGAT  | Chr.4 | 11121026 | 11121046 | + | No |
| 2738028_adh | TTTCCGTTAGACACTTTGAA   | Chr.4 | 11142750 | 11142730 | - | No |
| 1805922_adh | TAATTTCCGTTAGACACTTT   | Chr.4 | 11142753 | 11142733 | - | No |
| 2056835_adh | TCTTCGTGGATGTGCACCAAT  | Chr.4 | 11148174 | 11148154 | - | No |
| 2586292_adh | TTCAACTGTAGATGAAAGATG  | Chr.4 | 11151971 | 11151951 | - | No |
| 1931486_adh | TATTTTTTCACATCGACTCGG  | Chr.4 | 11159457 | 11159437 | - | No |
| 2707868_adh | TTTCGGCAAGAGAAAAGACGA  | Chr.4 | 11177603 | 11177583 | - | No |
| 1923504_adh | TATTCAGCACGTTGTTGTCCG  | Chr.4 | 11179432 | 11179452 | + | No |
| 2169699_adh | TGACTGATTGCTCCACACAAC  | Chr.4 | 11181803 | 11181823 | + | No |
| 2620283_adh | TTCTGTTAGACTCATCAGCAG  | Chr.4 | 11189630 | 11189650 | + | No |
| 2449910_adh | TGGGCAGAAGAGGTAGATGTC  | Chr.4 | 11190134 | 11190154 | + | No |
| 2291623_adh | TGCATTTTGTAAGAATTCGGA  | Chr.4 | 11191615 | 11191635 | + | No |
| 1966977_adh | TCAGTGGATACGCAGATCGAG  | Chr.4 | 11193953 | 11193973 | + | No |
| 2387949_adh | TGGATACGCAGATCGAGCGCA  | Chr.4 | 11193957 | 11193977 | + | No |
| 2291623_adh | TGCATTTTGTAAGAATTCGGA  | Chr.4 | 11195151 | 11195131 | - | No |
| 1778572_adh | TAAGATCAGCACGGAACGGCA  | Chr.4 | 11196531 | 11196551 | + | No |
| 1990768_adh | TCCTCTCGGACGATTAATTAA  | Chr.4 | 11200468 | 11200488 | + | No |
| 2452080_adh | TGGGGACTCAAAGAAAACGAC  | Chr.4 | 11210612 | 11210592 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2681461_adh | TTGTGAAAAATATGGCAATTC  | Chr.4 | 11213489 | 11213509 | + | No  |
| 2514417_adh | TGTGAAAAATATGGCAATTCA  | Chr.4 | 11213490 | 11213510 | + | No  |
| 1860241_adh | TAGGAAACAATTAAGTAACT   | Chr.4 | 11225605 | 11225625 | + | No  |
| 1939404_adh | TCAAGCTGGATATGATGCTGG  | Chr.4 | 11225790 | 11225810 | + | No  |
| 1747411_adh | TAAACAACGTGGCATTTC     | Chr.4 | 11230645 | 11230625 | - | No  |
| 2708590_adh | TTTCGTAAATTGTTTTTGGGA  | Chr.4 | 11235520 | 11235500 | - | No  |
| 2513341_adh | TGTGCAGAAGAACGAAGAATT  | Chr.4 | 11246077 | 11246057 | - | No  |
| 2032270_adh | TCTACTTTCGGTATTACAAC   | Chr.4 | 11247976 | 11247956 | - | No  |
| 2747737_adh | TTTTGTATGGTCTGACGTCA   | Chr.4 | 11248363 | 11248343 | - | No  |
| 2602674_adh | TTCAATTTTTACAAGATGGC   | Chr.4 | 11253952 | 11253972 | + | No  |
| 2729045_adh | TTTGTCGGTCAGGCGTTGTCT  | Chr.4 | 11260020 | 11260040 | + | No  |
| 1810259_adh | TACAATTATATCCTTAGTTGA  | Chr.4 | 11270160 | 11270140 | - | No  |
| 2617883_adh | TTCTGAATCAGAGACTTCAGA  | Chr.4 | 11292720 | 11292740 | + | No  |
| 2740270_adh | TTTTCTTGTGCTGTTGGATTG  | Chr.4 | 11293474 | 11293494 | + | No  |
| 1921528_adh | TATTAGATTAAATTTCTGGC   | Chr.4 | 11293819 | 11293799 | - | No  |
| 2618911_adh | TTCTGGACGAACTCTCTGCT   | Chr.4 | 11298257 | 11298237 | - | No  |
| 1970317_adh | TCATATTTTCTTCGGATTCT   | Chr.4 | 11320128 | 11320148 | + | No  |
| 2710461_adh | TTTCTGACAGAACATGGAAGG  | Chr.4 | 11323841 | 11323861 | + | No  |
| 2619983_adh | TTCTGTCAGAAAACGTATGAG  | Chr.4 | 11323852 | 11323832 | - | No  |
| 2527014_adh | TGTTCTGTCAGAAAACGTATG  | Chr.4 | 11323854 | 11323834 | - | No  |
| 2044224_adh | TCTGAAGCGCCAAGGAAGAAC  | Chr.4 | 11326031 | 11326011 | - | No  |
| 1983829_adh | TCCGAACCATCTGAGTACGTC  | Chr.4 | 11328052 | 11328072 | + | No  |
| 2023225_adh | TCGTAGATTTTGACACAGAAG  | Chr.4 | 11330118 | 11330098 | - | No  |
| 2044224_adh | TCTGAAGCGCCAAGGAAGAAC  | Chr.4 | 11338762 | 11338782 | + | No  |
| 1925425_adh | TATTGAATCAAGCGAACAGA   | Chr.4 | 11340906 | 11340886 | - | No  |
| 1995773_adh | TCGAAGTATCGTTGAATTTA   | Chr.4 | 11340946 | 11340926 | - | No  |
| 1821443_adh | TACGAAAAAGTAGGACTTCAT  | Chr.4 | 11346144 | 11346124 | - | No  |
| 2650211_adh | TTGCATCCAATTTTTGTAA    | Chr.4 | 11372463 | 11372443 | - | No  |
| 2020611_adh | TCGGTTGTGGAAAGGAGGCTA  | Chr.4 | 11376521 | 11376541 | + | No  |
| 2481029_adh | TGTAAATGTGAAAGGGACGCA  | Chr.4 | 11377652 | 11377672 | + | No  |
| 2518862_adh | TGTGTAGGGCAAAGTAGGCGC  | Chr.4 | 11382672 | 11382652 | - | No  |
| 2233662_adh | TGAGCCACGTAGACGATTCGA  | Chr.4 | 11394328 | 11394348 | + | No  |
| 1773076_adh | TAAGAAAAAGCCTCATGACAG  | Chr.4 | 11400224 | 11400244 | + | No  |
| 2668808_adh | TTGGGTTGTGGTGGGAGGGCT  | Chr.4 | 11403184 | 11403204 | + | No  |
| 2074573_adh | TGAAACTTAGAAGAACGATTT  | Chr.4 | 11406298 | 11406318 | + | No  |
| 2044224_adh | TCTGAAGCGCCAAGGAAGAAC  | Chr.4 | 11407356 | 11407376 | + | No  |
| 1763162_adh | TAACAAATGTAGAAGTATGAT  | Chr.4 | 11413152 | 11413172 | + | Yes |
| 1932406_adh | TCAAAATCGTCGTAAAATTTT  | Chr.4 | 11424881 | 11424861 | - | No  |
| 2474523_adh | TGGTTCAACAGTAGGCTTGGC  | Chr.4 | 11432285 | 11432305 | + | No  |
| 2150864_adh | TGACAAGAGTGAAACGCTATG  | Chr.4 | 11482716 | 11482736 | + | No  |
| 2577165_adh | TTATCATCTGATTGCAGGCAT  | Chr.4 | 11484698 | 11484678 | - | No  |
| 1819707_adh | TACCGGCACAGAGAGTGTAGA  | Chr.4 | 11497159 | 11497179 | + | No  |
| 2712630_adh | TTTGAAAGAAAAACAACCTTAA | Chr.4 | 11500332 | 11500312 | - | No  |
| 2276571_adh | TGATTGCATGGCCGACTGGTT  | Chr.4 | 11549903 | 11549883 | - | No  |
| 2706285_adh | TTTCCTGATTTTCGGCAATTT  | Chr.4 | 11558671 | 11558691 | + | No  |
| 2531667_adh | TGTTTAATTTGATGGTGTCTT  | Chr.4 | 11561999 | 11561979 | - | No  |
| 2050577_adh | TCTGGGTGTGATGGCGTCAGA  | Chr.4 | 11593770 | 11593750 | - | No  |
| 2710733_adh | TTTCTGGGTGTGATGGCGTCA  | Chr.4 | 11593772 | 11593752 | - | No  |
| 2690041_adh | TTTAACGTTGAGAAAACTGAA  | Chr.4 | 11602183 | 11602163 | - | No  |
| 2043871_adh | TCTGAACAGACAGAAAGGGCC  | Chr.4 | 11602625 | 11602645 | + | No  |

|             |                       |       |          |          |   |     |
|-------------|-----------------------|-------|----------|----------|---|-----|
| 2654914_adh | TTGCTGGATCTAAGAAGACTC | Chr.4 | 11602692 | 11602712 | + | No  |
| 1938122_adh | TCAAGAACAAGATGACAAGAA | Chr.4 | 11602897 | 11602917 | + | No  |
| 1822928_adh | TACGAGAAGAGACATAAGAAC | Chr.4 | 11602968 | 11602988 | + | No  |
| 2579327_adh | TTATGGACAACAAGTTGGAAT | Chr.4 | 11624497 | 11624477 | - | No  |
| 2579327_adh | TTATGGACAACAAGTTGGAAT | Chr.4 | 11627163 | 11627143 | - | No  |
| 2733216_adh | TTTTAACACAAGTGAATGTAG | Chr.4 | 11627797 | 11627817 | + | No  |
| 2711772_adh | TTTCTTGCAAGGCTCGTTGGA | Chr.4 | 11637035 | 11637055 | + | No  |
| 2695872_adh | TTTAGATTTGCATAGAACTT  | Chr.4 | 11641270 | 11641290 | + | No  |
| 2587702_adh | TTCAATCAGAATCGGATTCTT | Chr.4 | 11646157 | 11646137 | - | No  |
| 1761766_adh | TAAATGGCAGATCTAAATTTA | Chr.4 | 11652171 | 11652191 | + | No  |
| 2742352_adh | TTTTGCATCGTTCTGGATTAA | Chr.4 | 11656287 | 11656267 | - | No  |
| 1975675_adh | TCATTTTTTGCATCGTTCTGG | Chr.4 | 11656292 | 11656272 | - | No  |
| 1917447_adh | TATGTAATGACATTGAGGGAT | Chr.4 | 11679561 | 11679541 | - | No  |
| 1996568_adh | TCGAAGGATACAAGCACTCGG | Chr.4 | 11695274 | 11695294 | + | No  |
| 1750048_adh | TAAAAGTAGAAATTGCAAGAA | Chr.4 | 11700050 | 11700070 | + | No  |
| 1819936_adh | TACCTAATCAATCGCTTGTTT | Chr.4 | 11703982 | 11703962 | - | No  |
| 1823238_adh | TACGAGCTCTCTTAAAGAATC | Chr.4 | 11704310 | 11704330 | + | No  |
| 2624606_adh | TTGAAAATTGAGGGAAAATGG | Chr.4 | 11729205 | 11729185 | - | No  |
| 2736417_adh | TTTTATTACTTATAGTTAGAA | Chr.4 | 11758472 | 11758452 | - | Yes |
| 1938352_adh | TCAAGAATATTACGTAGATGT | Chr.4 | 11760884 | 11760904 | + | No  |
| 1833978_adh | TACTGTGGACTTTTCATCTGA | Chr.4 | 11761316 | 11761296 | - | No  |
| 1852169_adh | TAGATTGCTGCAGTAAGGGTT | Chr.4 | 11815893 | 11815913 | + | No  |
| 1979954_adh | TCCATTACTCGAAAACTCCT  | Chr.4 | 11820424 | 11820444 | + | No  |
| 2048917_adh | TCTGGACATCTGACGTTGGAG | Chr.4 | 11821025 | 11821005 | - | No  |
| 1747819_adh | TAAAACATGTTATGAAACGAC | Chr.4 | 11822697 | 11822717 | + | No  |
| 2709159_adh | TTTCGTTATTACTGTGTCGGT | Chr.4 | 11836499 | 11836519 | + | No  |
| 2603373_adh | TTCGACTTTATTTTCTGCTCA | Chr.4 | 11847828 | 11847808 | - | No  |
| 1851952_adh | TAGATTATGTATACTGAAACG | Chr.4 | 11861212 | 11861192 | - | No  |
| 1828569_adh | TACGTGAAACTGACATTTGTT | Chr.4 | 11877848 | 11877828 | - | No  |
| 1897538_adh | TATCGGAAATTTATTGGAAAC | Chr.4 | 11908106 | 11908086 | - | No  |
| 2522291_adh | TGTTAACATTCAATGAGGACG | Chr.4 | 11920362 | 11920382 | + | No  |
| 2707879_adh | TTTCGGCACGTTGTTTCTCAA | Chr.4 | 11961767 | 11961747 | - | No  |
| 2015079_adh | TCGGATTTTTTGTTTTCGGCA | Chr.4 | 11961780 | 11961760 | - | No  |
| 2380327_adh | TGGAGAGAAGATTGAGAACAA | Chr.4 | 11977401 | 11977381 | - | No  |
| 2001595_adh | TCGAGGAACAACCAGGACGAC | Chr.4 | 11981074 | 11981054 | - | No  |
| 1825890_adh | TACGGAGAAGCTGAAGCAAAC | Chr.4 | 11982005 | 11981985 | - | No  |
| 2256968_adh | TGAGTTGGGAGAGGATGAAGC | Chr.4 | 11982888 | 11982868 | - | No  |
| 2546360_adh | TTAACTGCTAGCAGAAAAATC | Chr.4 | 11983109 | 11983089 | - | No  |
| 1812929_adh | TACAGTTGATGGCTTGAAACC | Chr.4 | 11985003 | 11984983 | - | No  |
| 2425619_adh | TGGGATAAGGATCATGTTGAC | Chr.4 | 11986074 | 11986054 | - | No  |
| 2515015_adh | TGTGGACGTAGTGGAGATACC | Chr.4 | 11987346 | 11987326 | - | No  |
| 2567523_adh | TTAGGAACAAGGCGCAAGACT | Chr.4 | 11995541 | 11995521 | - | No  |
| 2057043_adh | TCTTCTGAAGAAATCGGCGAG | Chr.4 | 12003040 | 12003020 | - | No  |
| 1775699_adh | TAAGACGGATAAGAGAAGGTA | Chr.4 | 12006021 | 12006041 | + | No  |
| 2259307_adh | TGATACAAGTTGGTTTTCTTA | Chr.4 | 12029879 | 12029859 | - | No  |
| 2320353_adh | TGGAACGGAACTGCTGAAGC  | Chr.4 | 12035752 | 12035772 | + | No  |
| 1919185_adh | TATGTGTTTGACTCATAATCG | Chr.4 | 12047812 | 12047832 | + | No  |
| 1999957_adh | TCGACGACGAAGACGAAGACG | Chr.4 | 12051911 | 12051931 | + | No  |
| 2373786_adh | TGGACACAGACAACTCTGAA  | Chr.4 | 12078380 | 12078360 | - | No  |
| 2413469_adh | TGGCGTGATGGAAAGATAAAT | Chr.4 | 12078431 | 12078451 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2293955_adh | TGCCGAGTGGATTTGCAGACA  | Chr.4 | 12089016 | 12088996 | - | No  |
| 1896666_adh | TATCGAAAAGCAGAACAAAAT  | Chr.4 | 12089118 | 12089138 | + | No  |
| 2616342_adh | TTCTCCGGAGAAAACAAGTTGA | Chr.4 | 12093481 | 12093461 | - | No  |
| 1834757_adh | TACTTCAACAATCTAACACCA  | Chr.4 | 12094516 | 12094536 | + | No  |
| 1936266_adh | TCAACCAGGACAGAATGGACA  | Chr.4 | 12109306 | 12109286 | - | No  |
| 2733020_adh | TTTTAAAATGAGCGAAGAAGA  | Chr.4 | 12121325 | 12121345 | + | No  |
| 2749443_adh | TTTTTTGCAGAGAATTAGGGA  | Chr.4 | 12122992 | 12122972 | - | No  |
| 2507051_adh | TGTGATAGAACAACAGAAGGA  | Chr.4 | 12124653 | 12124633 | - | No  |
| 2389365_adh | TGGATCAAGTATGAAGTCGAT  | Chr.4 | 12124788 | 12124808 | + | No  |
| 2635124_adh | TTGACAGTAGCACACAGGTTG  | Chr.4 | 12127272 | 12127292 | + | No  |
| 2739336_adh | TTTTCTCTCAACTGATACGAT  | Chr.4 | 12131542 | 12131562 | + | No  |
| 2029307_adh | TCTAAACAAGGAACTGATTAA  | Chr.4 | 12135192 | 12135212 | + | No  |
| 2609378_adh | TTCGGGTAGAAAATACGACGA  | Chr.4 | 12145920 | 12145940 | + | No  |
| 2017394_adh | TCGGGTAGAAAATACGACGAG  | Chr.4 | 12145921 | 12145941 | + | No  |
| 2487561_adh | TGTAGAATTAACACGGAGAAT  | Chr.4 | 12145949 | 12145969 | + | No  |
| 1829901_adh | TACTAGAAAATGGAATTTAAT  | Chr.4 | 12154907 | 12154887 | - | No  |
| 2744831_adh | TTTTTAATGCTGACGTTGATT  | Chr.4 | 12156537 | 12156517 | - | No  |
| 2597181_adh | TTCCATCAAGAGAACGGACAC  | Chr.4 | 12178219 | 12178199 | - | No  |
| 2705181_adh | TTTCCATCAAGAGAACGGACA  | Chr.4 | 12178220 | 12178200 | - | No  |
| 1931912_adh | TCAAAAATCCCATCGGGCACA  | Chr.4 | 12181552 | 12181532 | - | No  |
| 2597181_adh | TTCCATCAAGAGAACGGACAC  | Chr.4 | 12186451 | 12186431 | - | No  |
| 2705181_adh | TTTCCATCAAGAGAACGGACA  | Chr.4 | 12186452 | 12186432 | - | No  |
| 1931912_adh | TCAAAAATCCCATCGGGCACA  | Chr.4 | 12189784 | 12189764 | - | No  |
| 2250502_adh | TGAGTAAGGAGAAGAAGGAAC  | Chr.4 | 12192323 | 12192343 | + | No  |
| 1848972_adh | TAGAGTCAACAGAAGAATTGA  | Chr.4 | 12213188 | 12213168 | - | No  |
| 2747132_adh | TTTTTGCTGATTGTTGAGTTT  | Chr.4 | 12215555 | 12215535 | - | No  |
| 2598864_adh | TTCCGATCCATAGTGGACATA  | Chr.4 | 12240248 | 12240228 | - | No  |
| 2124637_adh | TGAAGTGAAGCTTCTGGCAC   | Chr.4 | 12250907 | 12250887 | - | No  |
| 2626613_adh | TTGAACTCGAAGCTTCTGGCA  | Chr.4 | 12250908 | 12250888 | - | No  |
| 2259564_adh | TGATACGAGGCAGATGAAACA  | Chr.4 | 12262156 | 12262176 | + | Yes |
| 2706233_adh | TTTCCTCGTCGAGGAGCAGAA  | Chr.4 | 12269374 | 12269394 | + | No  |
| 2603396_adh | TTCGAGAAAATGAACGTTGGT  | Chr.4 | 12270176 | 12270196 | + | No  |
| 1944395_adh | TCACAATTGTAGGAGACACCG  | Chr.4 | 12270564 | 12270584 | + | No  |
| 2521180_adh | TGTGTTGGAAATGACCGCATC  | Chr.4 | 12270821 | 12270841 | + | No  |
| 2043738_adh | TCTGAAAGAAGCTGAATTAAC  | Chr.4 | 12272383 | 12272363 | - | No  |
| 2488526_adh | TGTAGCTTTATCGGATTTGGT  | Chr.4 | 12278621 | 12278601 | - | No  |
| 2120100_adh | TGAACACTGTAGCTTTATCGG  | Chr.4 | 12278628 | 12278608 | - | No  |
| 2042277_adh | TCTCTCAATCGAATATGGCGG  | Chr.4 | 12278731 | 12278751 | + | No  |
| 2702976_adh | TTTCAGCAAAGTTTATAGCGT  | Chr.4 | 12361077 | 12361097 | + | No  |
| 1778643_adh | TAAGATCATCATCTACAACCA  | Chr.4 | 12365834 | 12365814 | - | No  |
| 2695813_adh | TTTAGATGAAGATTTCTCGTT  | Chr.4 | 12372103 | 12372123 | + | No  |
| 1961664_adh | TCAGATTGGAATGGAACGGAA  | Chr.4 | 12374530 | 12374550 | + | No  |
| 2302908_adh | TGCGGTGGAGAAGGAAGTTTT  | Chr.4 | 12374563 | 12374583 | + | No  |
| 2607905_adh | TTCGGAGCCTCGTCATCCACT  | Chr.4 | 12374616 | 12374596 | - | No  |
| 1827650_adh | TACGTAATTTAAATTTCTGAA  | Chr.4 | 12385585 | 12385605 | + | No  |
| 2679249_adh | TTGTGAACGGAAAACGAATAA  | Chr.4 | 12389399 | 12389379 | - | No  |
| 2028839_adh | TCGTTTCAAGATCGTGAAGGT  | Chr.4 | 12390389 | 12390369 | - | No  |
| 2649461_adh | TTGCAGAGTAGAGTTTTTGAA  | Chr.4 | 12391382 | 12391402 | + | No  |
| 2127972_adh | TGAAGACGGCGTAAATCTGAA  | Chr.4 | 12391888 | 12391868 | - | No  |
| 1930322_adh | TATTTGCTATTTTTCCAGGAA  | Chr.4 | 12395667 | 12395647 | - | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1929075_adh | TATTTAATATTCTGTTCGGAG  | Chr.4 | 12399091 | 12399111 | + | No |
| 1819924_adh | TACCTAAAATAAACTCAAAAA  | Chr.4 | 12402792 | 12402772 | - | No |
| 1883809_adh | TATAAAAAATGTAGACCACGA  | Chr.4 | 12404237 | 12404217 | - | No |
| 2713199_adh | TTTGAACGAGAGAGGGAGACC  | Chr.4 | 12404260 | 12404240 | - | No |
| 2496887_adh | TGTCATTTTCGGCTTCCATTA  | Chr.4 | 12410490 | 12410470 | - | No |
| 1927017_adh | TATTGGAGCTGAAGAGTAGAA  | Chr.4 | 12432562 | 12432582 | + | No |
| 2381553_adh | TGGAGCTGAAGAGTAGAAATA  | Chr.4 | 12432565 | 12432585 | + | No |
| 1823770_adh | TACGATAGTGGTAGCAGAACG  | Chr.4 | 12442904 | 12442884 | - | No |
| 2181387_adh | TGAGAATCCAAAGAGAATGTA  | Chr.4 | 12451460 | 12451480 | + | No |
| 2723171_adh | TTTGGAATCAAGTCGACGCAA  | Chr.4 | 12451873 | 12451893 | + | No |
| 2710865_adh | TTTCTGTATAAATTTTCGGCG  | Chr.4 | 12459611 | 12459631 | + | No |
| 2706580_adh | TTTCGAACCAAGGAATTTGGA  | Chr.4 | 12459649 | 12459669 | + | No |
| 1809207_adh | TACAAGTTTTGGAACTATAA   | Chr.4 | 12464599 | 12464579 | - | No |
| 1940114_adh | TCAAGTAGGGAAGAATGGAGA  | Chr.4 | 12467841 | 12467821 | - | No |
| 2148654_adh | TGAATTTTAAGATTGCAGTAG  | Chr.4 | 12508572 | 12508592 | + | No |
| 1975366_adh | TCATTTGTCAAAGATTGCTG   | Chr.4 | 12513366 | 12513346 | - | No |
| 1958431_adh | TCAGACTGATCTGTTGGTTGA  | Chr.4 | 12529571 | 12529551 | - | No |
| 2693272_adh | TTTACACTCGCGGAGAATATG  | Chr.4 | 12531129 | 12531109 | - | No |
| 2620435_adh | TTCTGTTTTACACTCGCGGAG  | Chr.4 | 12531135 | 12531115 | - | No |
| 2711097_adh | TTTCTGTTTTACACTCGCGGA  | Chr.4 | 12531136 | 12531116 | - | No |
| 2554390_adh | TTACAGTAACACCGGTCGAAA  | Chr.4 | 12555065 | 12555085 | + | No |
| 2584782_adh | TTATTTTTTCTTAGGCATTTT  | Chr.4 | 12559239 | 12559259 | + | No |
| 2023745_adh | TCGTAGTCGTAGAAGTGGTAA  | Chr.4 | 12562875 | 12562855 | - | No |
| 2379618_adh | TGGAGAAGGACAGATGGTGTGA | Chr.4 | 12567429 | 12567449 | + | No |
| 1971014_adh | TCATCGGAGAAAGTTCAAGGCG | Chr.4 | 12567841 | 12567861 | + | No |
| 2568198_adh | TTAGGATACATTGAGGACTAT  | Chr.4 | 12570659 | 12570679 | + | No |
| 2463804_adh | TGGTAGTTTGGCACGAAAAAC  | Chr.4 | 12613568 | 12613548 | - | No |
| 1875529_adh | TAGTATGGGACTGAAAAGATA  | Chr.4 | 12638049 | 12638069 | + | No |
| 1875529_adh | TAGTATGGGACTGAAAAGATA  | Chr.4 | 12638145 | 12638165 | + | No |
| 1875529_adh | TAGTATGGGACTGAAAAGATA  | Chr.4 | 12638241 | 12638261 | + | No |
| 1875529_adh | TAGTATGGGACTGAAAAGATA  | Chr.4 | 12638337 | 12638357 | + | No |
| 1875529_adh | TAGTATGGGACTGAAAAGATA  | Chr.4 | 12638433 | 12638453 | + | No |
| 2587851_adh | TTCAATCGTTGGCAGTGGCAT  | Chr.4 | 12639424 | 12639404 | - | No |
| 2701747_adh | TTTCAATCGTTGGCAGTGGCA  | Chr.4 | 12639425 | 12639405 | - | No |
| 2013415_adh | TCGGATAATGTGGCAATTGGA  | Chr.4 | 12676615 | 12676595 | - | No |
| 2587851_adh | TTCAATCGTTGGCAGTGGCAT  | Chr.4 | 12677215 | 12677195 | - | No |
| 2701747_adh | TTTCAATCGTTGGCAGTGGCA  | Chr.4 | 12677216 | 12677196 | - | No |
| 2026450_adh | TCGTGGAATTGAAGAGACGCA  | Chr.4 | 12686044 | 12686024 | - | No |
| 1807123_adh | TACAAATAGTAGAGGAATTTG  | Chr.4 | 12691810 | 12691790 | - | No |
| 2724184_adh | TTTGGATTTTGAGAAGATTTT  | Chr.4 | 12704035 | 12704055 | + | No |
| 2321760_adh | TGGAAGAACTTCGTGAAAAGA  | Chr.4 | 12729819 | 12729839 | + | No |
| 1899750_adh | TATCTCTCTTTTCTCGAGACA  | Chr.4 | 12739492 | 12739472 | - | No |
| 1943105_adh | TCAATTGGAATGTCGGAAACT  | Chr.4 | 12744717 | 12744697 | - | No |
| 1981976_adh | TCCCTACTCGGATTCGTCAAA  | Chr.4 | 12744748 | 12744728 | - | No |
| 2624260_adh | TTGAAAACTGTGCATTTTTG   | Chr.4 | 12766886 | 12766906 | + | No |
| 2726868_adh | TTTGGTTGCTGAAAACGTAGA  | Chr.4 | 12778081 | 12778061 | - | No |
| 1802895_adh | TAATTCACAAATCCGTTTCAC  | Chr.4 | 12786918 | 12786898 | - | No |
| 2271564_adh | TGATGATGGTTGTGGTGGCAA  | Chr.4 | 12816260 | 12816280 | + | No |
| 1851712_adh | TAGATGTAGGAACATTCATAA  | Chr.4 | 12843773 | 12843793 | + | No |
| 2488575_adh | TGTAGGAACATTCATAAGACA  | Chr.4 | 12843777 | 12843797 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1978817_adh | TCCAGGTTGAAATTTGAAATG  | Chr.4 | 12865907 | 12865927 | + | No |
| 1828058_adh | TACGTCATGCAGAGCAAACGT  | Chr.4 | 12893452 | 12893472 | + | No |
| 1928553_adh | TATTGTTTGATATGTCGTGAA  | Chr.4 | 12902987 | 12903007 | + | No |
| 2733777_adh | TTTTAATGTGGAAGAAATGAG  | Chr.4 | 12915525 | 12915505 | - | No |
| 1888826_adh | TATAGGTTACTGAAGAAAAAG  | Chr.4 | 12924660 | 12924640 | - | No |
| 2189153_adh | TGAGAGTAAGCGTTGAATTGA  | Chr.4 | 12930673 | 12930653 | - | No |
| 2696475_adh | TTTAGCTGAACGAACGAGCAA  | Chr.4 | 12955747 | 12955727 | - | No |
| 1830816_adh | TACTCAAAAGACGCAGGAAAG  | Chr.4 | 12965079 | 12965059 | - | No |
| 1782003_adh | TAAGCAGTTGGCTTTGAGTCC  | Chr.4 | 12983195 | 12983175 | - | No |
| 1896805_adh | TATCGACGAGAAGAAGACACA  | Chr.4 | 12993438 | 12993418 | - | No |
| 1939522_adh | TCAAGGACAACAGAGGACACA  | Chr.4 | 13028424 | 13028444 | + | No |
| 2742361_adh | TTTTGCATGCAAATTTTTTCT  | Chr.4 | 13098910 | 13098930 | + | No |
| 2713589_adh | TTTGAAGACGACTACTGGATC  | Chr.4 | 13104409 | 13104389 | - | No |
| 2693862_adh | TTTACGCTCGAAGATCGTCAT  | Chr.4 | 13110118 | 13110098 | - | No |
| 2625954_adh | TTGAACAGACAATCATCTGAG  | Chr.4 | 13122244 | 13122264 | + | No |
| 2119656_adh | TGAACAAGATTGAACATTACA  | Chr.4 | 13163966 | 13163946 | - | No |
| 2713174_adh | TTTGAACCTGAAATCAGCATT  | Chr.4 | 13167217 | 13167197 | - | No |
| 1883920_adh | TATAAAAGACCGTCGTCACGC  | Chr.4 | 13189251 | 13189231 | - | No |
| 2387949_adh | TGGATACGCAGATCGAGCGCA  | Chr.4 | 13226950 | 13226930 | - | No |
| 1966977_adh | TCAGTGGATACGCAGATCGAG  | Chr.4 | 13226954 | 13226934 | - | No |
| 2291623_adh | TGCATTTTGTAGAATTCGGA   | Chr.4 | 13228048 | 13228028 | - | No |
| 2007642_adh | TCGCGAAACAAGAATTCGAA   | Chr.4 | 13228708 | 13228728 | + | No |
| 1895632_adh | TATCCCTGGTAGACGTCACCTC | Chr.4 | 13240552 | 13240532 | - | No |
| 2743734_adh | TTTTGTCAACCGCCGGTATCCC | Chr.4 | 13240567 | 13240547 | - | No |
| 2624814_adh | TTGAAACTACAGTACTCGTTA  | Chr.4 | 13260582 | 13260602 | + | No |
| 1930982_adh | TATTTTCTGTTGACTCGTCTT  | Chr.4 | 13294365 | 13294385 | + | No |
| 1762599_adh | TAAATTGTAGGAGAAAGGTGG  | Chr.4 | 13295550 | 13295570 | + | No |
| 2039695_adh | TCTCGCAATTCGTCGGAATT   | Chr.4 | 13297820 | 13297800 | - | No |
| 2583272_adh | TTATTGTCAGAAGTTTAACGT  | Chr.4 | 13298018 | 13298038 | + | No |
| 1958618_adh | TCAGAGAGCGAAGAATCATAG  | Chr.4 | 13298761 | 13298781 | + | No |
| 2004294_adh | TCGATGTAGATGGGAACGGTG  | Chr.4 | 13299224 | 13299244 | + | No |
| 2025531_adh | TCGTCGGTCTTCCAGATGGAT  | Chr.4 | 13324386 | 13324406 | + | No |
| 1832344_adh | TACTGAGGATCGTGTCAAGTG  | Chr.4 | 13324441 | 13324461 | + | No |
| 1826065_adh | TACGGATACAAACGAGAAGTC  | Chr.4 | 13326100 | 13326120 | + | No |
| 2741360_adh | TTTTGACTTTTTACGGCTGAA  | Chr.4 | 13334172 | 13334192 | + | No |
| 2656875_adh | TTGGAACACGAAAAATCAAA   | Chr.4 | 13349488 | 13349468 | - | No |
| 2595488_adh | TTCAATTTCTGCTTCAAAGACG | Chr.4 | 13353429 | 13353449 | + | No |
| 2618809_adh | TTCTGCTTCAAAGACGTTTTTC | Chr.4 | 13353434 | 13353454 | + | No |
| 2585264_adh | TTCAAAGACGTTTTCTCGAAT  | Chr.4 | 13353440 | 13353460 | + | No |
| 2583875_adh | TTATTTCTAAAGTTTCTGTTC  | Chr.4 | 13364497 | 13364517 | + | No |
| 2649670_adh | TTGCAGGAAAGACAGTCGAAG  | Chr.4 | 13370055 | 13370035 | - | No |
| 2520090_adh | TGTGTGGTGAATGTGAGCAAG  | Chr.4 | 13387083 | 13387103 | + | No |
| 2395674_adh | TGGATTTAGACGACTTATTCT  | Chr.4 | 13390790 | 13390770 | - | No |
| 2028457_adh | TCGTTGAAAAAGCACGTACA   | Chr.4 | 13395293 | 13395273 | - | No |
| 2618323_adh | TTCTGAGCACTTTGACAGCTT  | Chr.4 | 13400188 | 13400208 | + | No |
| 2668807_adh | TTGGGTTGTGGTGGGAGGGCA  | Chr.4 | 13400349 | 13400369 | + | No |
| 1926476_adh | TATTGCGATTTTTTAATATT   | Chr.4 | 13400955 | 13400975 | + | No |
| 1995260_adh | TCGAAATCAGTTGACAGCTCT  | Chr.4 | 13412978 | 13412958 | - | No |
| 2665160_adh | TTGGCACATTCTTCTGGAGAT  | Chr.4 | 13416000 | 13415980 | - | No |
| 2372639_adh | TGGAATTTCAAGATTGTTCTG  | Chr.4 | 13416100 | 13416120 | + | No |

|             |                       |       |          |          |   |     |
|-------------|-----------------------|-------|----------|----------|---|-----|
| 2626076_adh | TTGAACATTTAAAAATTTTCA | Chr.4 | 13420164 | 13420144 | - | No  |
| 2607166_adh | TTCGGAACTTTTTGGCGGCG  | Chr.4 | 13453457 | 13453437 | - | No  |
| 2707474_adh | TTTCGCTTGACAGCGTTGACG | Chr.4 | 13453720 | 13453740 | + | No  |
| 2488586_adh | TGTAGGAAGAGGGCACATTGA | Chr.4 | 13454821 | 13454841 | + | No  |
| 2414845_adh | TGGCTGCGTACTCCTCTTGGA | Chr.4 | 13455330 | 13455350 | + | No  |
| 2489505_adh | TGTAGTAGTACGGTAGGATTA | Chr.4 | 13465261 | 13465241 | - | No  |
| 1827229_adh | TACGGTAGCTCTTATACGGTA | Chr.4 | 13469755 | 13469735 | - | No  |
| 2707880_adh | TTTCGGCAGAATATCATAATA | Chr.4 | 13470329 | 13470349 | + | No  |
| 2281379_adh | TGCAACATATCTGACGCGCAA | Chr.4 | 13477672 | 13477692 | + | No  |
| 2607300_adh | TTCGGACAGATGCGACACGGA | Chr.4 | 13493086 | 13493066 | - | No  |
| 1978814_adh | TCCAGGTGTGTAATTCGGTAA | Chr.4 | 13504072 | 13504052 | - | No  |
| 2597020_adh | TTCCAGGTGTGTAATTCGGTA | Chr.4 | 13504073 | 13504053 | - | No  |
| 2278422_adh | TGATTTGAACGAGAAGCAGAG | Chr.4 | 13506866 | 13506886 | + | No  |
| 1753852_adh | TAAACAACGGAACGACAATAT | Chr.4 | 13506909 | 13506889 | - | No  |
| 2654136_adh | TTGCTAGAAAATTGTAGAAAG | Chr.4 | 13510391 | 13510371 | - | No  |
| 1975678_adh | TCATTTTTTGTCTTCGAGGAC | Chr.4 | 13512253 | 13512233 | - | No  |
| 2514500_adh | TGTGGAACAGAGAAGAATGCA | Chr.4 | 13529056 | 13529076 | + | No  |
| 2174014_adh | TGACTTGGATCATTACTTGCA | Chr.4 | 13531744 | 13531724 | - | No  |
| 2698250_adh | TTTATATCACGGGTTGTCATC | Chr.4 | 13558443 | 13558423 | - | No  |
| 1769689_adh | TAACATAATCGTGAATGAATA | Chr.4 | 13564838 | 13564818 | - | No  |
| 2736865_adh | TTTTATTAAATAACTATTTA  | Chr.4 | 13564926 | 13564906 | - | No  |
| 1959815_adh | TCAGATACTCAGTCAAAGACC | Chr.4 | 13565436 | 13565456 | + | No  |
| 2717919_adh | TTTGATCCTACGATGGTGAAT | Chr.4 | 13568044 | 13568024 | - | Yes |
| 2305333_adh | TGCTAACGTTTGGGCTTCACA | Chr.4 | 13593514 | 13593534 | + | No  |
| 1814621_adh | TACATTTTTACAATTCATATA | Chr.4 | 13598926 | 13598946 | + | No  |
| 2587722_adh | TTCAATCATCAACAAAGACTG | Chr.4 | 13600049 | 13600069 | + | No  |
| 2748349_adh | TTTTTTATACAGTTGACAAGA | Chr.4 | 13600919 | 13600899 | - | No  |
| 1787256_adh | TAAGTAAACACAAGACATTC  | Chr.4 | 13601249 | 13601229 | - | No  |
| 2323319_adh | TGGAAGCATAACTCGATTTGG | Chr.4 | 13604194 | 13604174 | - | No  |
| 1849481_adh | TAGAGTTGTAACAAAACATC  | Chr.4 | 13605489 | 13605469 | - | No  |
| 2745129_adh | TTTTTAGGTGTAGATGAAACA | Chr.4 | 13605907 | 13605887 | - | No  |
| 2134137_adh | TGAAGTAGGGCAATGGGTATA | Chr.4 | 13608803 | 13608823 | + | No  |
| 2747027_adh | TTTTTGCATCGAGGATATTTT | Chr.4 | 13609044 | 13609064 | + | No  |
| 2668867_adh | TTGGGTTTGTGCGCTATTGCT | Chr.4 | 13610103 | 13610083 | - | No  |
| 1833884_adh | TACTGTGAAAGATGATGCAGA | Chr.4 | 13618360 | 13618380 | + | No  |
| 1809195_adh | TACAAGTTCATATTCTGCATC | Chr.4 | 13618393 | 13618373 | - | No  |
| 1926120_adh | TATTGATTTTGAAACATTTTA | Chr.4 | 13619682 | 13619662 | - | Yes |
| 1806146_adh | TAATTTTTCATGCGTTCAGAA | Chr.4 | 13624643 | 13624663 | + | No  |
| 1957818_adh | TCAGAATAAAAGGTAATATTT | Chr.4 | 13634354 | 13634334 | - | No  |
| 1756597_adh | TAAAGACGTGGAAAAAAGACG | Chr.4 | 13635910 | 13635890 | - | No  |
| 1851531_adh | TAGATGGTAGAAAAATGGGTA | Chr.4 | 13641226 | 13641206 | - | Yes |
| 2132079_adh | TGAAGCTGGAAGGATTTATAT | Chr.4 | 13641532 | 13641512 | - | No  |
| 2737166_adh | TTTTCAACGATTGAGACTGGC | Chr.4 | 13641879 | 13641859 | - | No  |
| 2674570_adh | TTGTACTTTCAGATTCGGACA | Chr.4 | 13643818 | 13643838 | + | No  |
| 2548322_adh | TTAAGGAGAACATGAAAGATG | Chr.4 | 13646195 | 13646175 | - | No  |
| 2742049_adh | TTTTGATTTAAGTGTTTAGGG | Chr.4 | 13649411 | 13649431 | + | No  |
| 1761862_adh | TAAATGGTTTGCAGACATTTT | Chr.4 | 13650394 | 13650414 | + | No  |
| 2670745_adh | TTGGTGACTGGATAAATGGCA | Chr.4 | 13654370 | 13654350 | - | No  |
| 2643358_adh | TTGATAATTTTCATTTACTTA | Chr.4 | 13670512 | 13670532 | + | Yes |
| 2593761_adh | TTCATATCATTCTTTCTTACA | Chr.4 | 13672106 | 13672086 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2721033_adh | TTTGCAAGGATATATACGGAT  | Chr.4 | 13673722 | 13673742 | + | Yes |
| 2702841_adh | TTTCAGAAAGACGTAAAAATA  | Chr.4 | 13677915 | 13677935 | + | No  |
| 2046057_adh | TCTGAGAACATCGTGAAACAG  | Chr.4 | 13681153 | 13681133 | - | No  |
| 2576081_adh | TTATATGGGAAATGGGAAATA  | Chr.4 | 13681179 | 13681199 | + | Yes |
| 1957882_adh | TCAGAATCTAGGCTCGGCGAA  | Chr.4 | 13684756 | 13684776 | + | No  |
| 2590498_adh | TTCAGACGACGATCCGGTTAT  | Chr.4 | 13689227 | 13689207 | - | Yes |
| 1921491_adh | TATTAGATAGTCGAAAACTCA  | Chr.4 | 13691142 | 13691122 | - | No  |
| 1802854_adh | TAATTCAAAAACCGTCTTCAG  | Chr.4 | 13694502 | 13694522 | + | No  |
| 2552982_adh | TTACAAAAAAGTGGATGAAGG  | Chr.4 | 13696756 | 13696736 | - | Yes |
| 1867947_adh | TAGGGAACAAATGAAGCGGTA  | Chr.4 | 13697757 | 13697777 | + | No  |
| 1804667_adh | TAATTTAAAGCACGAGACTTA  | Chr.4 | 13700851 | 13700831 | - | No  |
| 1967089_adh | TCAGTGGTTTTATAGTAGTAG  | Chr.4 | 13704767 | 13704747 | - | No  |
| 1935490_adh | TCAAATGTTGATTTCTCGTAG  | Chr.4 | 13705107 | 13705087 | - | No  |
| 2605136_adh | TTCGATGCACCACATCGTCGA  | Chr.4 | 13705809 | 13705789 | - | No  |
| 2066706_adh | TGAAAACAAC TAGATGAATCT | Chr.4 | 13708384 | 13708404 | + | No  |
| 1967414_adh | TCAGTTCTCCAAGACGGACGG  | Chr.4 | 13709237 | 13709257 | + | No  |
| 2068186_adh | TGAAAAGAAATCGGAATAAAA  | Chr.4 | 13711225 | 13711245 | + | No  |
| 2582274_adh | TTATTGATCGCCTTCTACCAA  | Chr.4 | 13712737 | 13712717 | - | No  |
| 2670852_adh | TTGGTGATAGGTTTTTTGAGT  | Chr.4 | 13713147 | 13713167 | + | No  |
| 1872737_adh | TAGGTTTTTTGAGTTCTAGGA  | Chr.4 | 13713154 | 13713174 | + | No  |
| 2747024_adh | TTTTTGCAGTTGCTGGAAATG  | Chr.4 | 13716365 | 13716345 | - | No  |
| 1877037_adh | TAGTCTTTGTGCGAGTTTAC   | Chr.4 | 13718874 | 13718854 | - | No  |
| 1959768_adh | TCAGATAATGCAAATTTTGGC  | Chr.4 | 13719764 | 13719744 | - | No  |
| 2549749_adh | TTAATACTTGTTTGTCTCTAA  | Chr.4 | 13720142 | 13720162 | + | No  |
| 2046088_adh | TCTGAGAATATTTTTTACATA  | Chr.4 | 13720302 | 13720322 | + | No  |
| 1830228_adh | TACTAGCTGTAGTAACCGGAT  | Chr.4 | 13720431 | 13720451 | + | No  |
| 1812341_adh | TACAGCTAGTACTAATGTAAG  | Chr.4 | 13720441 | 13720421 | - | No  |
| 2703795_adh | TTTCATAGTGTACAAATATAT  | Chr.4 | 13721862 | 13721882 | + | No  |
| 2625777_adh | TTGAAATTTGCAGTTGAACTT  | Chr.4 | 13722780 | 13722800 | + | No  |
| 2119116_adh | TGAAATTTGCAGTTGAACTTT  | Chr.4 | 13722781 | 13722801 | + | No  |
| 1835936_adh | TACTTTACGTAAGTGAATAAA  | Chr.4 | 13723092 | 13723072 | - | No  |
| 2712547_adh | TTTGAAACACGAGAACAGCAA  | Chr.4 | 13724100 | 13724080 | - | No  |
| 2610943_adh | TTCGTAAAAAAGAATTTCAAG  | Chr.4 | 13724644 | 13724664 | + | No  |
| 2687603_adh | TTGTTTGATCAATCGTAGGAC  | Chr.4 | 13727050 | 13727030 | - | No  |
| 2746508_adh | TTTTTGAAATATGAGAAACGG  | Chr.4 | 13727397 | 13727417 | + | No  |
| 2687421_adh | TTGTTTGATCAGAGTATGAAT  | Chr.4 | 13731127 | 13731147 | + | No  |
| 2560191_adh | TTACTTGAATTTGAATAAATT  | Chr.4 | 13743954 | 13743934 | - | No  |
| 2269046_adh | TGATCAAGGAATCGGCTTTTA  | Chr.4 | 13745385 | 13745365 | - | No  |
| 1931710_adh | TCAAAAAACATGTAGTGATTG  | Chr.4 | 13746875 | 13746855 | - | Yes |
| 2649511_adh | TTGCAGATTCATGGGATGTAC  | Chr.4 | 13750135 | 13750115 | - | No  |
| 2721332_adh | TTTGCAGCATTCGGACAGAAA  | Chr.4 | 13750848 | 13750828 | - | No  |
| 2704380_adh | TTTCATTACATATGTTCCACG  | Chr.4 | 13753338 | 13753318 | - | Yes |
| 1821662_adh | TACGAACTTTTTTGTAATTTTT | Chr.4 | 13754534 | 13754514 | - | No  |
| 2032422_adh | TCTAGAGCTTTTGAAACGGTA  | Chr.4 | 13756175 | 13756195 | + | No  |
| 2497856_adh | TGTCGATGGGTCAATAAATAT  | Chr.4 | 13757730 | 13757750 | + | Yes |
| 2522444_adh | TGTTAAGACCTAAAAATTCAT  | Chr.4 | 13759721 | 13759701 | - | No  |
| 2594205_adh | TTCATCATGTTTTTCGGAATT  | Chr.4 | 13761130 | 13761150 | + | No  |
| 2700976_adh | TTTCAAAATCGTTATTTTCC   | Chr.4 | 13762435 | 13762455 | + | No  |
| 1961572_adh | TCAGATGTTAGATAGGTGAAT  | Chr.4 | 13764332 | 13764312 | - | Yes |
| 2550575_adh | TTAATCGGCTTTTAAAAATTT  | Chr.4 | 13768637 | 13768657 | + | No  |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2190757_adh | TGAGATAAATGCTGGAAGAAT   | Chr.4 | 13770937 | 13770917 | - | No  |
| 2602786_adh | TTTCGACAGAATTTTCGGCAATT | Chr.4 | 13777605 | 13777585 | - | No  |
| 2738221_adh | TTTTTCGACAGAATTTTCGGCAA | Chr.4 | 13777607 | 13777587 | - | No  |
| 2643661_adh | TTGATATCAACCACAAGCACG   | Chr.4 | 13777922 | 13777942 | + | No  |
| 2314376_adh | TGGAACGAGAACAAGACTGT    | Chr.4 | 13778177 | 13778197 | + | No  |
| 2237965_adh | TGAGGATGATTTGACGACGCT   | Chr.4 | 13794664 | 13794684 | + | No  |
| 1931058_adh | TATTTTGAGCTCAGCGCGGAA   | Chr.4 | 13798518 | 13798538 | + | No  |
| 1886746_adh | TATACACATGATTAATTTTAA   | Chr.4 | 13799709 | 13799729 | + | Yes |
| 1985067_adh | TCCGATTCCGACTAGAAGGCT   | Chr.4 | 13801037 | 13801017 | - | No  |
| 1910113_adh | TATGATACGGTTGATAAAAAG   | Chr.4 | 13808565 | 13808585 | + | No  |
| 2743556_adh | TTTTGTAGATAATGGAGCAGA   | Chr.4 | 13810882 | 13810862 | - | No  |
| 1943558_adh | TCAATTTTGGGATGACGAGCT   | Chr.4 | 13810912 | 13810892 | - | No  |
| 1979377_adh | TCCATAAAAATAGGATAAACT   | Chr.4 | 13813059 | 13813079 | + | No  |
| 2721842_adh | TTTGCCTACGCTATTATAAAA   | Chr.4 | 13814937 | 13814957 | + | No  |
| 2717373_adh | TTTGATACAGTGAATTCAAA    | Chr.4 | 13818259 | 13818279 | + | No  |
| 2259397_adh | TGATACAGTGAATTCAAAAA    | Chr.4 | 13818261 | 13818281 | + | No  |
| 2555755_adh | TTACCCAATTCGAAAGTTTGC   | Chr.4 | 13818340 | 13818360 | + | Yes |
| 2667235_adh | TTGGGAGTACAATGCTGTGGG   | Chr.4 | 13820898 | 13820878 | - | No  |
| 1874327_adh | TAGTAGACACAGTTGATACGA   | Chr.4 | 13821623 | 13821643 | + | Yes |
| 2005090_adh | TCGATTGGAACCACTAGACAC   | Chr.4 | 13822207 | 13822187 | - | No  |
| 2654666_adh | TTGCTGATTTACTTTCGCGGT   | Chr.4 | 13822338 | 13822318 | - | No  |
| 2717373_adh | TTTGATACAGTGAATTCAAA    | Chr.4 | 13823279 | 13823299 | + | No  |
| 2259397_adh | TGATACAGTGAATTCAAAAA    | Chr.4 | 13823281 | 13823301 | + | No  |
| 2655033_adh | TTGCTGTAAAAACGAGTTGAT   | Chr.4 | 13824129 | 13824149 | + | No  |
| 2593763_adh | TTCATATCCCAATTCGTTGTA   | Chr.4 | 13825642 | 13825662 | + | No  |
| 2558758_adh | TTACTCGACGAAAAAATTGGT   | Chr.4 | 13825864 | 13825884 | + | No  |
| 2721247_adh | TTTGCCTGAAGTACAAGTTT    | Chr.4 | 13827540 | 13827520 | - | No  |
| 2062674_adh | TCTTTTGAACTGTAATGCAA    | Chr.4 | 13827574 | 13827594 | + | No  |
| 2582223_adh | TTATTGACTTAGTATTTTGT    | Chr.4 | 13830198 | 13830178 | - | No  |
| 2649857_adh | TTGCAGTTTCTAGTGCCATTT   | Chr.4 | 13831209 | 13831189 | - | No  |
| 1926515_adh | TATTGCGTATGCAGTGCACCA   | Chr.4 | 13832150 | 13832130 | - | No  |
| 2002466_adh | TCGATAAAAATTTTGCAGAG    | Chr.4 | 13835887 | 13835867 | - | No  |
| 2312129_adh | TGCTTTTTAACATACCGTATT   | Chr.4 | 13836660 | 13836680 | + | No  |
| 2584121_adh | TTATTTGGAAAACATATATAA   | Chr.4 | 13837537 | 13837557 | + | No  |
| 1923339_adh | TATTCAAACGTTTATATCTTA   | Chr.4 | 13837775 | 13837795 | + | No  |
| 2172464_adh | TGACTGTTTCGTGTTCAAAAAG  | Chr.4 | 13838626 | 13838646 | + | No  |
| 2020162_adh | TCGGTTCTCGGTGATTGTGGA   | Chr.4 | 13841452 | 13841432 | - | No  |
| 1789884_adh | TAATAAAAAGTTGGGTTGAAA   | Chr.4 | 13841593 | 13841613 | + | No  |
| 2589049_adh | TTCAATTTTGTAACTGACGAC   | Chr.4 | 13843006 | 13843026 | + | No  |
| 2701058_adh | TTTCAAACGAATTCGTTATA    | Chr.4 | 13845128 | 13845108 | - | No  |
| 2592743_adh | TTCACTAGATATGGAAAAAAG   | Chr.4 | 13852085 | 13852065 | - | No  |
| 1929576_adh | TATTCAGTAGATATGGAAAA    | Chr.4 | 13852088 | 13852068 | - | No  |
| 2635499_adh | TTGACCGTAGAGGGCGATCGC   | Chr.4 | 13855703 | 13855723 | + | No  |
| 2585649_adh | TTCAACAAGTAGAATGACTCA   | Chr.4 | 13863421 | 13863441 | + | No  |
| 1935933_adh | TCAACAAGTAGAATGACTCAT   | Chr.4 | 13863422 | 13863442 | + | No  |
| 2614595_adh | TTCTACTTGTTGAATAATGGT   | Chr.4 | 13863434 | 13863414 | - | No  |
| 2689385_adh | TTTAAATAAATGCTGAACCCC   | Chr.4 | 13863688 | 13863668 | - | No  |
| 2650218_adh | TTGCATCCTTTATTTTATA     | Chr.4 | 13863904 | 13863884 | - | No  |
| 2617897_adh | TTCTGAATCGCATACGCATTT   | Chr.4 | 13870680 | 13870700 | + | Yes |
| 2686490_adh | TTGTTGTTAATTCGGATAAAC   | Chr.4 | 13882554 | 13882574 | + | No  |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2682931_adh | TTGTTAATTCGGATAAACTTT   | Chr.4 | 13882557 | 13882577 | + | No  |
| 2532636_adh | TGTTTCTAGAACAGATCGGAT   | Chr.4 | 13885452 | 13885472 | + | No  |
| 2270361_adh | TGATCTCTCTGTCTCGGCGTC   | Chr.4 | 13887669 | 13887649 | - | No  |
| 2527565_adh | TGTTGAACTTAGAGCTAGACA   | Chr.4 | 13888392 | 13888372 | - | No  |
| 2684499_adh | TTGTTGAACTTAGAGCTAGAC   | Chr.4 | 13888393 | 13888373 | - | No  |
| 2645982_adh | TTGATTCATACTCCACCATCA   | Chr.4 | 13893960 | 13893980 | + | No  |
| 2538055_adh | TTAAAAATTGTAGAAAACGTT   | Chr.4 | 13894573 | 13894593 | + | No  |
| 1806445_adh | TACAAAAATTCTACTGTTTCA   | Chr.4 | 13895820 | 13895840 | + | No  |
| 1907722_adh | TATGACATGAGAACTGTTAG    | Chr.4 | 13896611 | 13896631 | + | No  |
| 1925844_adh | TATTGAGGATGGTATTTAATA   | Chr.4 | 13900154 | 13900174 | + | No  |
| 2641310_adh | TTGAGGATGGTATTTAATATT   | Chr.4 | 13900156 | 13900176 | + | No  |
| 2743799_adh | TTTTGTCTGTGAAAATATGGTT  | Chr.4 | 13900945 | 13900965 | + | Yes |
| 1796336_adh | TAATATGGTCCCGGAATCAAT   | Chr.4 | 13903386 | 13903366 | - | No  |
| 2622429_adh | TTCTTCTTTTGCCTACCTTTT   | Chr.4 | 13903913 | 13903893 | - | Yes |
| 1920684_adh | TATTACATGAAAAATTTTCAA   | Chr.4 | 13905670 | 13905690 | + | No  |
| 2261135_adh | TGATAGTGTGTAATACGAAAA   | Chr.4 | 13905945 | 13905965 | + | No  |
| 2170476_adh | TGACTGGCATACACTCCCTTT   | Chr.4 | 13908695 | 13908715 | + | No  |
| 1881668_adh | TAGTTGGATGGTTGAAGAAGG   | Chr.4 | 13913682 | 13913662 | - | No  |
| 2737930_adh | TTTTCCCGATGGCACATGTGA   | Chr.4 | 13913896 | 13913876 | - | No  |
| 2639606_adh | TTGAGAATGGCCAACATTTTA   | Chr.4 | 13914576 | 13914556 | - | No  |
| 2712115_adh | TTTCTTTGCTTACAGAATACT   | Chr.4 | 13917192 | 13917212 | + | No  |
| 2016434_adh | TCGGGACGAAATTTAACTGT    | Chr.4 | 13917639 | 13917619 | - | No  |
| 2609086_adh | TTCCGGAGGAAATATTCGGGA   | Chr.4 | 13917654 | 13917634 | - | No  |
| 2544809_adh | TTAACAAATGACGGTAAATCT   | Chr.4 | 13917847 | 13917827 | - | No  |
| 2650358_adh | TTGCATCTGAAAGGAAGATTG   | Chr.4 | 13918081 | 13918101 | + | No  |
| 2640334_adh | TTGAGATTATTTTTGTGGTTT   | Chr.4 | 13919198 | 13919178 | - | No  |
| 2232264_adh | TGAGATTTTACAGATAAGATCAC | Chr.4 | 13919531 | 13919551 | + | No  |
| 2181917_adh | TGAGAATTCTAAAGCTAGGCT   | Chr.4 | 13920829 | 13920809 | - | No  |
| 2681242_adh | TTGTGCAGATGTTTCATGACCT  | Chr.4 | 13921027 | 13921047 | + | No  |
| 1761625_adh | TAAATGCCCAAACTATGCATA   | Chr.4 | 13924974 | 13924994 | + | No  |
| 2721273_adh | TTTGCAGAAATCTGGTAAAAG   | Chr.4 | 13926759 | 13926779 | + | No  |
| 2027713_adh | TCGTAAACCGGCTTTGAAATG   | Chr.4 | 13928217 | 13928237 | + | No  |
| 1790406_adh | TAATAAGATAATCCAGATAGG   | Chr.4 | 13928999 | 13929019 | + | No  |
| 1978073_adh | TCCAGATAGGTTTGCTTTACG   | Chr.4 | 13929010 | 13929030 | + | No  |
| 1752128_adh | TAAAATGATTTAATGTTTCAA   | Chr.4 | 13934135 | 13934155 | + | No  |
| 1925868_adh | TATTGAGTCGGTCAATTTAAA   | Chr.4 | 13937717 | 13937737 | + | Yes |
| 1830666_adh | TACTATGTGCGCATGATGGACT  | Chr.4 | 13939081 | 13939061 | - | No  |
| 2523355_adh | TGTTAGAACGCGGTATAGCAA   | Chr.4 | 13939636 | 13939616 | - | No  |
| 2683194_adh | TTGTTAGAACGCGGTATAGCA   | Chr.4 | 13939637 | 13939617 | - | No  |
| 2699380_adh | TTTATGTTCTACAATGACATC   | Chr.4 | 13944779 | 13944799 | + | Yes |
| 1994223_adh | TCCTTTTAATTTTATTTTCGGC  | Chr.4 | 13945840 | 13945860 | + | No  |
| 2475749_adh | TGGTTGACTCAAATATATTTT   | Chr.4 | 13950174 | 13950194 | + | No  |
| 2552677_adh | TTAATTTGAAATCACCAACCA   | Chr.4 | 13954622 | 13954642 | + | No  |
| 2533368_adh | TGTTTGTACAAGTTTTTGACC   | Chr.4 | 13955535 | 13955555 | + | No  |
| 2727319_adh | TTTGTACAAGTTTTTGACCCA   | Chr.4 | 13955537 | 13955557 | + | No  |
| 2532382_adh | TGTTTCCTTTTACTAAGCAGC   | Chr.4 | 13956044 | 13956024 | - | No  |
| 2550467_adh | TTAATCCTACTTAATACTGAA   | Chr.4 | 13958089 | 13958069 | - | Yes |
| 2691712_adh | TTTAATGGTAACGATTTTGG    | Chr.4 | 13960763 | 13960783 | + | No  |
| 2386742_adh | TGGATAACAAGTTGATAACCA   | Chr.4 | 13961364 | 13961344 | - | No  |
| 2069140_adh | TGAAAAGGGCAGTTTCAAAAA   | Chr.4 | 13972232 | 13972252 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2126653_adh | TGAACTTGGTGAAACAGTTAA  | Chr.4 | 13981474 | 13981494 | + | No  |
| 2742448_adh | TTTTGCGAGTAGAAAATGATT  | Chr.4 | 13984308 | 13984288 | - | Yes |
| 2552923_adh | TTAATTTTTCGAGTAGAAAAT  | Chr.4 | 13984312 | 13984292 | - | Yes |
| 2693036_adh | TTTAATTTTTCGAGTAGAAAA  | Chr.4 | 13984313 | 13984293 | - | Yes |
| 2274214_adh | TGATTAATCGACCCATTCATC  | Chr.4 | 13986094 | 13986074 | - | No  |
| 1859918_adh | TAGCTTTTCTCGATTTTATAA  | Chr.4 | 13986125 | 13986105 | - | No  |
| 2548913_adh | TTAAGTAGTGTGATGTTATAG  | Chr.4 | 13988697 | 13988677 | - | Yes |
| 1920211_adh | TATTAAGTAGTGTGATGTTAT  | Chr.4 | 13988699 | 13988679 | - | Yes |
| 1989892_adh | TCCTATTGACATGGACTCACT  | Chr.4 | 13989601 | 13989621 | + | No  |
| 1884023_adh | TATAAACTAAACACATGAACA  | Chr.4 | 13990392 | 13990412 | + | No  |
| 1886686_adh | TATACAACGACTACGACCAAT  | Chr.4 | 13991791 | 13991811 | + | No  |
| 2613045_adh | TTCGTTTCGATAATGGTTTTAT | Chr.4 | 13992531 | 13992551 | + | No  |
| 1919888_adh | TATTAATAATCGTTTGATATTA | Chr.4 | 13996118 | 13996138 | + | No  |
| 2712346_adh | TTTGAAAACGACTGATCGAAC  | Chr.4 | 13998063 | 13998083 | + | No  |
| 2057196_adh | TCTTCTTCCTGATCGTTTGAA  | Chr.4 | 13998322 | 13998302 | - | No  |
| 2558218_adh | TTACTAAAATTCATGCCAGTC  | Chr.4 | 13999445 | 13999465 | + | Yes |
| 1829386_adh | TACTAAGACATCGGAACACAA  | Chr.4 | 14000569 | 14000549 | - | Yes |
| 2523414_adh | TGTTAGACTTATTATTAATTT  | Chr.4 | 14000681 | 14000701 | + | No  |
| 2149487_adh | TGACAACAGAGTGAATGGTCT  | Chr.4 | 14001027 | 14001047 | + | No  |
| 2733943_adh | TTTTACAATTACGAATTTTGC  | Chr.4 | 14004186 | 14004206 | + | No  |
| 2581226_adh | TTATTATTTTGTGCAACTTC   | Chr.4 | 14007257 | 14007237 | - | Yes |
| 1918941_adh | TATGTGATGCTTTTTTCTCTA  | Chr.4 | 14007433 | 14007453 | + | No  |
| 2597979_adh | TTCCCCGTTACACGTTCTAC   | Chr.4 | 14008008 | 14008028 | + | Yes |
| 2733915_adh | TTTTAATTTTTTCGTCGCAAT  | Chr.4 | 14008188 | 14008208 | + | Yes |
| 1922028_adh | TATTATAGTTTCTCGACGGTG  | Chr.4 | 14008849 | 14008869 | + | Yes |
| 2575145_adh | TTATAGTTTCTCGACGGTGTG  | Chr.4 | 14008851 | 14008871 | + | Yes |
| 2047535_adh | TCTGATTGAGAACGTGAAATA  | Chr.4 | 14008899 | 14008879 | - | No  |
| 2587902_adh | TTCAATCTGAGGATTTTTGT   | Chr.4 | 14009098 | 14009118 | + | No  |
| 2140192_adh | TGAATATTTATAACTTTGAAA  | Chr.4 | 14009455 | 14009475 | + | Yes |
| 2654538_adh | TTGCTGAAGATACTTGGTTCT  | Chr.4 | 14011057 | 14011077 | + | No  |
| 2023692_adh | TCGTAGTAGAAGAATTGGTAA  | Chr.4 | 14014343 | 14014363 | + | No  |
| 1839018_adh | TAGAAGAATTGGTAAGTATGA  | Chr.4 | 14014349 | 14014369 | + | No  |
| 2055558_adh | TCTTCACAATATAAACTGGCT  | Chr.4 | 14015290 | 14015310 | + | No  |
| 2598456_adh | TTCCCTGTTGATGAAAGCAT   | Chr.4 | 14018568 | 14018588 | + | No  |
| 2748135_adh | TTTTTTAAGGACATTTTATTT  | Chr.4 | 14026157 | 14026177 | + | Yes |
| 2702389_adh | TTTCACAAAATATCACAAAA   | Chr.4 | 14028998 | 14029018 | + | No  |
| 2522059_adh | TGTTAAACAAGGCATGTGTAG  | Chr.4 | 14030110 | 14030090 | - | No  |
| 2236098_adh | TGAGGAAAAGGAAGAAATATG  | Chr.4 | 14034137 | 14034157 | + | No  |
| 2721213_adh | TTTGCCTAGACGACGAACAC   | Chr.4 | 14034540 | 14034560 | + | No  |
| 1766840_adh | TAACCCCTCGGCATCGCTCCT  | Chr.4 | 14034980 | 14034960 | - | No  |
| 2654153_adh | TTGCTAGAGAAAATTTAGTTT  | Chr.4 | 14036953 | 14036933 | - | No  |
| 2025208_adh | TCGTATTTCTTGTTGTGTTTT  | Chr.4 | 14037183 | 14037163 | - | Yes |
| 1806089_adh | TAATTTTGTGAATTTATCGGA  | Chr.4 | 14037754 | 14037774 | + | Yes |
| 1893865_adh | TATCATATTTTATTACGAATG  | Chr.4 | 14038471 | 14038491 | + | Yes |
| 2722404_adh | TTTGCTGACATTCATAATACA  | Chr.4 | 14039273 | 14039253 | - | Yes |
| 2742529_adh | TTTGTGCTGACATTCATAATAC | Chr.4 | 14039274 | 14039254 | - | Yes |
| 1943415_adh | TCAATTTTCAAATTTGGGAC   | Chr.4 | 14039350 | 14039370 | + | No  |
| 2030469_adh | TCTAATCAGGCGAACATAAT   | Chr.4 | 14042204 | 14042184 | - | No  |
| 2582161_adh | TTATTGACATTCGACATCTTT  | Chr.4 | 14042451 | 14042431 | - | No  |
| 2653449_adh | TTGCGTATGGCGTATCAGTTC  | Chr.4 | 14043525 | 14043545 | + | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1914268_adh | TATGGAGTCGATATATTTTGA  | Chr.4 | 14045235 | 14045215 | - | No  |
| 2583512_adh | TTATTTACTACGAGGATGAAA  | Chr.4 | 14045283 | 14045263 | - | No  |
| 1800132_adh | TAATGCGTCATCGTCGCGTCG  | Chr.4 | 14045392 | 14045412 | + | No  |
| 2583432_adh | TTATTTAAATCCATGAACACC  | Chr.4 | 14045714 | 14045694 | - | No  |
| 2046559_adh | TCTGAGTTGCAACTAGTTGAA  | Chr.4 | 14047246 | 14047266 | + | Yes |
| 2084114_adh | TGAAAGTCGGTTAAGCTACAA  | Chr.4 | 14047949 | 14047929 | - | No  |
| 1831793_adh | TACTGAAAGTCGGTTAAGCTA  | Chr.4 | 14047952 | 14047932 | - | No  |
| 2559035_adh | TTACTGAAAGTCGGTTAAGCT  | Chr.4 | 14047953 | 14047933 | - | No  |
| 2743580_adh | TTTTGTAGCTTTGAAAACAAG  | Chr.4 | 14051033 | 14051013 | - | No  |
| 1833309_adh | TACTGGATGGAATGCGTGCTC  | Chr.4 | 14051851 | 14051871 | + | No  |
| 2695222_adh | TTTAGACTAGAAAAACAAAGA  | Chr.4 | 14056184 | 14056164 | - | No  |
| 2031430_adh | TCTACAGTTTTTCGACGGAGG  | Chr.4 | 14060684 | 14060664 | - | No  |
| 2695219_adh | TTTAGACGTTTGCCAAGAATG  | Chr.4 | 14062019 | 14061999 | - | No  |
| 2532056_adh | TGTTTTATTTAGACGTTTGCC  | Chr.4 | 14062026 | 14062006 | - | No  |
| 2032636_adh | TCTAGCGAGAATGTGGGAAAT  | Chr.4 | 14071013 | 14070993 | - | No  |
| 2614892_adh | TTCTAGCGAGAATGTGGGAAA  | Chr.4 | 14071014 | 14070994 | - | No  |
| 1761329_adh | TAAATGACGTCCCGTAAATAA  | Chr.4 | 14076659 | 14076679 | + | No  |
| 2657807_adh | TTGGAATTGCATTGGAAAACT  | Chr.4 | 14085453 | 14085433 | - | No  |
| 2567575_adh | TTAGGAAGGACAAGAAGAAGG  | Chr.4 | 14085845 | 14085825 | - | No  |
| 2711912_adh | TTTCTTTAAAAGCTAGTGGAT  | Chr.4 | 14085938 | 14085918 | - | No  |
| 1887091_adh | TATACGAAAACAAGCACTTGA  | Chr.4 | 14086339 | 14086319 | - | No  |
| 2696411_adh | TTTAGCGGTAGATTGTTTTTC  | Chr.4 | 14088253 | 14088233 | - | No  |
| 1746097_adh | TAAAACTTATTATTTAGTAA   | Chr.4 | 14088618 | 14088598 | - | Yes |
| 1893240_adh | TATCAGAAGCAGAACATGGAA  | Chr.4 | 14089105 | 14089085 | - | No  |
| 2237322_adh | TGAGGACGTCATTGTGACATA  | Chr.4 | 14091569 | 14091549 | - | Yes |
| 2690863_adh | TTTAATAAACGGTTTTATTTA  | Chr.4 | 14091679 | 14091699 | + | No  |
| 2646464_adh | TTGATTGGCATGTACTCAAGT  | Chr.4 | 14093178 | 14093158 | - | Yes |
| 2720260_adh | TTTGATTGGCATGTACTCAAG  | Chr.4 | 14093179 | 14093159 | - | Yes |
| 1930238_adh | TATTTGATTGGCATGTACTCA  | Chr.4 | 14093181 | 14093161 | - | Yes |
| 2704543_adh | TTTCATTGAACCATATTTTAG  | Chr.4 | 14093662 | 14093642 | - | No  |
| 2701209_adh | TTTCAAATTAATACTCCTTTC  | Chr.4 | 14096955 | 14096975 | + | No  |
| 2740908_adh | TTTTGAATCCAAAGGAAAAGTA | Chr.4 | 14099485 | 14099505 | + | No  |
| 2630253_adh | TTGAATCCAAAGGAAAAGTAGA | Chr.4 | 14099487 | 14099507 | + | No  |
| 2733441_adh | TTTAAAGAAATGAATGGCAGAA | Chr.4 | 14099910 | 14099890 | - | No  |
| 2692935_adh | TTTAATTTATTGTGAAGACTG  | Chr.4 | 14100337 | 14100317 | - | Yes |
| 2689321_adh | TTTAAAGGCACACACGGTTTT  | Chr.4 | 14100612 | 14100592 | - | No  |
| 2699705_adh | TTTATTCACTCTAAAGGAAAC  | Chr.4 | 14100949 | 14100929 | - | Yes |
| 2736909_adh | TTTTATTTATTAGTTGAAGCA  | Chr.4 | 14104279 | 14104259 | - | No  |
| 2688721_adh | TTTAAAAATACGGCGTAAAAA  | Chr.4 | 14113694 | 14113674 | - | No  |
| 2658074_adh | TTGGACAGTTAGAAGGGAGGA  | Chr.4 | 14114627 | 14114647 | + | No  |
| 1795863_adh | TAATATCCATATTTACAAGGG  | Chr.4 | 14118240 | 14118260 | + | No  |
| 2574090_adh | TTATAATGAATATTTTGACA   | Chr.4 | 14118738 | 14118758 | + | Yes |
| 1856440_adh | TAGCGAGTAAGTGTGCGTTAA  | Chr.4 | 14120802 | 14120822 | + | No  |
| 2628533_adh | TTGAAGATTTGTTTTGCGCTC  | Chr.4 | 14121628 | 14121608 | - | Yes |
| 2582136_adh | TTATTGAATGAACCTTAGAAA  | Chr.4 | 14122666 | 14122646 | - | Yes |
| 1962526_adh | TCAGCCTGATGAAATTTTATT  | Chr.4 | 14123389 | 14123369 | - | Yes |
| 2582243_adh | TTATTGAGCAATCGATTCGGG  | Chr.4 | 14124691 | 14124671 | - | No  |
| 2560332_adh | TTACTTGTGCTAGAAAAATGT  | Chr.4 | 14126397 | 14126377 | - | Yes |
| 1926258_adh | TATTGCAGAATATGGACTACA  | Chr.4 | 14133006 | 14133026 | + | No  |
| 1919342_adh | TATGTTGCTTTACTTGGGAA   | Chr.4 | 14137163 | 14137143 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2551184_adh | TTAATGGAAAAATCCTGCATT  | Chr.4 | 14143170 | 14143190 | + | No  |
| 1769188_adh | TAACGGTAGAAAAATGAAAAAT | Chr.4 | 14143968 | 14143948 | - | No  |
| 2258535_adh | TGATAACGGTAGAAAAATGAA  | Chr.4 | 14143971 | 14143951 | - | No  |
| 2643252_adh | TTGATAACGGTAGAAAAATGA  | Chr.4 | 14143972 | 14143952 | - | No  |
| 1922037_adh | TATTATATAACAAGCAACAAA  | Chr.4 | 14144005 | 14144025 | + | No  |
| 2512428_adh | TGTGATTGGTCTTTTCTGAAC  | Chr.4 | 14149825 | 14149845 | + | No  |
| 2691087_adh | TTTAATATAAGGTACGGTACA  | Chr.4 | 14150178 | 14150198 | + | No  |
| 1782188_adh | TAAGCCAAGTATAGTAAACA   | Chr.4 | 14152189 | 14152209 | + | No  |
| 2153582_adh | TGACAGACATTATGCAATTAT  | Chr.4 | 14160842 | 14160822 | - | No  |
| 2669286_adh | TTGGTACAGATTCTTATTATG  | Chr.4 | 14160992 | 14160972 | - | No  |
| 2720202_adh | TTTGATTGCATTCCAAAATTA  | Chr.4 | 14164329 | 14164349 | + | Yes |
| 2697138_adh | TTTAGTCGGTTTAGTTTTTGT  | Chr.4 | 14165299 | 14165279 | - | No  |
| 2744155_adh | TTTTGTTCGCATAAGACACAA  | Chr.4 | 14167657 | 14167637 | - | No  |
| 2745449_adh | TTTTTATTAAGCAGAAACT    | Chr.4 | 14174858 | 14174878 | + | Yes |
| 2736390_adh | TTTTATTAAGCAGAACTA     | Chr.4 | 14174859 | 14174879 | + | Yes |
| 2640816_adh | TTGAGCCCGCTTATTGAAAAG  | Chr.4 | 14177678 | 14177658 | - | No  |
| 2714217_adh | TTTGAATCGGCTGCAGTGTAT  | Chr.4 | 14181330 | 14181350 | + | No  |
| 2088287_adh | TGAAATAGTCCTCGGTAAT    | Chr.4 | 14181383 | 14181403 | + | No  |
| 2580264_adh | TTATGTTAGATTGTTTTTCG   | Chr.4 | 14181574 | 14181554 | - | No  |
| 2699371_adh | TTTATGTTAGATTGTTTTTC   | Chr.4 | 14181575 | 14181555 | - | No  |
| 2300302_adh | TGCGCTCATTAGAAAAATTT   | Chr.4 | 14182013 | 14182033 | + | No  |
| 2420783_adh | TGGGAATGCCAGAATGTGACA  | Chr.4 | 14183855 | 14183875 | + | No  |
| 2381411_adh | TGGAGCGTGCTTGAATTATTT  | Chr.4 | 14191157 | 14191177 | + | No  |
| 2031218_adh | TCTACACTGACGCGCACACAA  | Chr.4 | 14193236 | 14193256 | + | No  |
| 2657609_adh | TTGGAATGAGCCGGAAGACTA  | Chr.4 | 14193765 | 14193785 | + | No  |
| 2342675_adh | TGGAATGAGCCGGAAGACTAT  | Chr.4 | 14193766 | 14193786 | + | No  |
| 1922109_adh | TATTATCATATCATTCAATTT  | Chr.4 | 14194166 | 14194186 | + | No  |
| 1974280_adh | TCATTGGATGATGGAAGAACC  | Chr.4 | 14197654 | 14197634 | - | Yes |
| 2552862_adh | TTAATTTGTTGTTGGCATTTT  | Chr.4 | 14203358 | 14203378 | + | No  |
| 1994496_adh | TCGAAAAATTGTAATTTTACA  | Chr.4 | 14203844 | 14203824 | - | No  |
| 1969133_adh | TCATAGGGTAACCGATTTTCA  | Chr.4 | 14219655 | 14219675 | + | Yes |
| 2541089_adh | TTAAAGATCAAAAGCACATAT  | Chr.4 | 14228310 | 14228290 | - | Yes |
| 1811804_adh | TACAGAATTTAAATATTTAA   | Chr.4 | 14230007 | 14229987 | - | No  |
| 2656080_adh | TTGCTTTTACTATGCTTC     | Chr.4 | 14232202 | 14232222 | + | Yes |
| 2694953_adh | TTTAGAAGACATTTAAACAT   | Chr.4 | 14237660 | 14237640 | - | No  |
| 2734437_adh | TTTTAGAAGACATTTAAACA   | Chr.4 | 14237661 | 14237641 | - | No  |
| 2072161_adh | TGAAACATCTTAAATCGTTAT  | Chr.4 | 14238711 | 14238731 | + | No  |
| 1944386_adh | TCACAATTCAACATTTTGT    | Chr.4 | 14243078 | 14243058 | - | No  |
| 2052630_adh | TCTGTGCTGACAGTGGAAGTT  | Chr.4 | 14243746 | 14243766 | + | No  |
| 2599940_adh | TTCCGTGACCAACTCCACTG   | Chr.4 | 14243776 | 14243756 | - | No  |
| 2688876_adh | TTTAAAGAACTCAAACAGC    | Chr.4 | 14244596 | 14244576 | - | Yes |
| 2587340_adh | TTCAAGTAGAAACATGAAAGT  | Chr.4 | 14245318 | 14245298 | - | No  |
| 2030587_adh | TCTAATCTGACAGCCGTTCTA  | Chr.4 | 14248796 | 14248776 | - | No  |
| 2549873_adh | TTAATAGATCGTTGATAAACA  | Chr.4 | 14252903 | 14252883 | - | No  |
| 2572038_adh | TTAGTGTAAGTGCTACAACG   | Chr.4 | 14254278 | 14254258 | - | No  |
| 2748272_adh | TTTTTTAGAAGGATAATATGA  | Chr.4 | 14254961 | 14254981 | + | No  |
| 2617411_adh | TTCTCTGCGTCTCTGGCTCT   | Chr.4 | 14260881 | 14260861 | - | No  |
| 2560218_adh | TTACTTGATTACGGCTCCATT  | Chr.4 | 14262202 | 14262182 | - | Yes |
| 1920682_adh | TATTACATCTTCTATTTTAA   | Chr.4 | 14263266 | 14263246 | - | Yes |
| 1973663_adh | TCATTATTGTAGTTGAGCATG  | Chr.4 | 14267522 | 14267542 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1927760_adh | TATTGTAGTTGAGCATGTTTT  | Chr.4 | 14267526 | 14267546 | + | No  |
| 2648968_adh | TTGCACATTACTTACGAAGAA  | Chr.4 | 14268353 | 14268333 | - | No  |
| 1936725_adh | TCAACGGCTGTACAAAAAGAA  | Chr.4 | 14273678 | 14273658 | - | Yes |
| 2625578_adh | TTGAAATGTCTGAAAATACGG  | Chr.4 | 14275284 | 14275304 | + | No  |
| 2618819_adh | TTCTGCTTGATTGTCTATCCT  | Chr.4 | 14280519 | 14280539 | + | Yes |
| 1772865_adh | TAACCTTCCAGACACCCTTGC  | Chr.4 | 14283580 | 14283600 | + | No  |
| 1864204_adh | TAGGAGTCCGCAAACGTTTTG  | Chr.4 | 14284569 | 14284589 | + | No  |
| 2715087_adh | TTTGACCTTATACAACGTGCA  | Chr.4 | 14284609 | 14284629 | + | No  |
| 2090936_adh | TGAAATCACAGTTTGATTGGA  | Chr.4 | 14286518 | 14286498 | - | No  |
| 2553002_adh | TTACAAAAGTCCATTTATTTT  | Chr.4 | 14286751 | 14286731 | - | Yes |
| 1774750_adh | TAAGAATTGTAAAGCCTTCTA  | Chr.4 | 14287072 | 14287092 | + | Yes |
| 2288543_adh | TGCAGGCGTATTTCCGTAAGC  | Chr.4 | 14288451 | 14288431 | - | No  |
| 2552605_adh | TTAATTTAGTCATTGGTGTTA  | Chr.4 | 14291722 | 14291742 | + | No  |
| 2586231_adh | TTCAACTATTTATCTGGATAA  | Chr.4 | 14292698 | 14292718 | + | No  |
| 2711402_adh | TTTCTTCAATTTTCTTAAAT   | Chr.4 | 14296168 | 14296148 | - | No  |
| 2549805_adh | TTAATAGACTAGGCCCTTTTA  | Chr.4 | 14298403 | 14298423 | + | No  |
| 2745191_adh | TTTTTAGTTTTCGTTGTGGAC  | Chr.4 | 14301749 | 14301769 | + | Yes |
| 2735035_adh | TTTTAGTTTTCGTTGTGGACA  | Chr.4 | 14301750 | 14301770 | + | Yes |
| 2697672_adh | TTTAGTTTTCGTTGTGGACAA  | Chr.4 | 14301751 | 14301771 | + | Yes |
| 2573561_adh | TTAGTTTTCGTTGTGGACAAT  | Chr.4 | 14301752 | 14301772 | + | Yes |
| 1883461_adh | TAGTTTTCGTTGTGGACAATT  | Chr.4 | 14301753 | 14301773 | + | Yes |
| 2709284_adh | TTTCGTTGTGGACAATTTGGT  | Chr.4 | 14301757 | 14301777 | + | Yes |
| 2514804_adh | TGTGGACAATTTGGTATTTAT  | Chr.4 | 14301763 | 14301783 | + | Yes |
| 2549424_adh | TTAATAAAAAAGTTATTCATA  | Chr.4 | 14302068 | 14302088 | + | Yes |
| 1873346_adh | TAGTAAGTTAGGCGTAATACT  | Chr.4 | 14302793 | 14302813 | + | No  |
| 2650899_adh | TTGCATTTGCTGAATTTGACA  | Chr.4 | 14304349 | 14304329 | - | No  |
| 2029318_adh | TCTAAACACGCTACTGCAGAA  | Chr.4 | 14310307 | 14310327 | + | No  |
| 1807288_adh | TACAAATTCGAATTTTGTACA  | Chr.4 | 14310719 | 14310739 | + | No  |
| 1788645_adh | TAAGTGAGGTAGCTAAACAT   | Chr.4 | 14318196 | 14318176 | - | No  |
| 2582083_adh | TTATTGAAAGCAGAGGTGGGC  | Chr.4 | 14321097 | 14321117 | + | No  |
| 2580533_adh | TTATTAATAAATGAAACAAAT  | Chr.4 | 14325234 | 14325214 | - | No  |
| 2581851_adh | TTATTCTATACAAAGCTAATG  | Chr.4 | 14326516 | 14326496 | - | No  |
| 2148092_adh | TGAATTTAACGAGAATACTGA  | Chr.4 | 14326852 | 14326832 | - | No  |
| 1834380_adh | TACTGTTTTCTTTTATTTAT   | Chr.4 | 14327837 | 14327857 | + | Yes |
| 1983821_adh | TCCGAACACAGCAATGAAAAA  | Chr.4 | 14330081 | 14330101 | + | No  |
| 2742228_adh | TTTTGCACTTTCTACTCAAAC  | Chr.4 | 14331427 | 14331407 | - | No  |
| 2576902_adh | TTATCACAGGAACAAGTAGGA  | Chr.4 | 14331437 | 14331457 | + | No  |
| 1892491_adh | TATCACAGGAACAAGTAGGAA  | Chr.4 | 14331438 | 14331458 | + | No  |
| 2046348_adh | TCTGAGGAAGATGTCTGAAGT  | Chr.4 | 14331992 | 14331972 | - | No  |
| 2665307_adh | TTGGCATCCACAACCTGATGAT | Chr.4 | 14333153 | 14333133 | - | No  |
| 2618572_adh | TTCTGCAGATAGGGAAGCAAA  | Chr.4 | 14334758 | 14334738 | - | No  |
| 1756731_adh | TAAAGAGAAGAACGATTAAAA  | Chr.4 | 14338227 | 14338207 | - | No  |
| 2560245_adh | TTACTTGATAGACTAATTAG   | Chr.4 | 14338812 | 14338832 | + | No  |
| 2707863_adh | TTTCGGATTTTGAATACGCAT  | Chr.4 | 14340851 | 14340871 | + | No  |
| 2608375_adh | TTTCGGATTTTGAATACGCATT | Chr.4 | 14340852 | 14340872 | + | No  |
| 1885151_adh | TATAAGGAAATGCGTATTCTGA | Chr.4 | 14340880 | 14340860 | - | No  |
| 2154664_adh | TGACAGTATAGGACCTTTTTT  | Chr.4 | 14341541 | 14341521 | - | No  |
| 2590921_adh | TTACAGCAAATCGAATTGTGTT | Chr.4 | 14343971 | 14343951 | - | No  |
| 2557363_adh | TTACGGCTAACTTTTGTCTATA | Chr.4 | 14345237 | 14345257 | + | Yes |
| 2585071_adh | TTCAAAATTTTCGGGCATTCA  | Chr.4 | 14350120 | 14350100 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2011418_adh | TCGGACCAGGGCTGTGCGGCT  | Chr.4 | 14351800 | 14351780 | - | No  |
| 2567480_adh | TTAGGAAAATACTTGATGCGC  | Chr.4 | 14352409 | 14352429 | + | No  |
| 1983416_adh | TCCCTGTAGAAAAGCACGACA  | Chr.4 | 14354170 | 14354150 | - | No  |
| 1989413_adh | TCCTAGAAGAATACGAATTAA  | Chr.4 | 14354627 | 14354607 | - | No  |
| 2579544_adh | TTATGGATTTTGGAGACATAA  | Chr.4 | 14356014 | 14355994 | - | No  |
| 1922739_adh | TATTATGGATTTTGGAGACAT  | Chr.4 | 14356016 | 14355996 | - | No  |
| 1791290_adh | TAATACATTAGAATGAGAAAT  | Chr.4 | 14358560 | 14358540 | - | No  |
| 2271079_adh | TGATGACAAAGTGGAGGAAAG  | Chr.4 | 14358720 | 14358700 | - | No  |
| 2701002_adh | TTTCAAAATTTGCAGCGAAAT  | Chr.4 | 14359080 | 14359060 | - | No  |
| 2611329_adh | TTCGTAGCGTAGCATGATTTT  | Chr.4 | 14359173 | 14359153 | - | Yes |
| 2693407_adh | TTTACATCTGATTTTGAATGA  | Chr.4 | 14361379 | 14361399 | + | No  |
| 2526248_adh | TGTTCCGCAGAAATCTCTCTT  | Chr.4 | 14361661 | 14361681 | + | Yes |
| 2666058_adh | TTGGCTATTAAACAACATATTC | Chr.4 | 14362646 | 14362626 | - | No  |
| 2592779_adh | TTCAGTAGTTGTCATGCCAGA  | Chr.4 | 14364010 | 14364030 | + | No  |
| 2595094_adh | TTCAATTCATATTCCTAGTTGG | Chr.4 | 14365785 | 14365805 | + | No  |
| 2071524_adh | TGAAACAGATAACAGAATTTA  | Chr.4 | 14368291 | 14368271 | - | Yes |
| 2634880_adh | TTGACAGAATTGGGATTTTCAG | Chr.4 | 14369153 | 14369133 | - | No  |
| 2549973_adh | TTAATATCATGTAAATCTAAA  | Chr.4 | 14372247 | 14372227 | - | No  |
| 2014995_adh | TCGGATTTTCAGATAGGAAGAA | Chr.4 | 14372724 | 14372704 | - | No  |
| 2595984_adh | TTCCAATTCCTAATCTAAATA  | Chr.4 | 14374484 | 14374504 | + | No  |
| 2741490_adh | TTTTGAGTTTTGTAGGTTTTT  | Chr.4 | 14375244 | 14375224 | - | No  |
| 1790384_adh | TAATAAGACCGTGGTAAATAT  | Chr.4 | 14378133 | 14378113 | - | Yes |
| 2736976_adh | TTTTATTTGGAGCATGATCAA  | Chr.4 | 14378871 | 14378851 | - | Yes |
| 2745524_adh | TTTTTATTTGGAGCATGATCA  | Chr.4 | 14378872 | 14378852 | - | Yes |
| 1860009_adh | TAGGAAAAAATTAGAAGACATT | Chr.4 | 14379725 | 14379705 | - | Yes |
| 2488535_adh | TGTAGGAAAAAATTAGAAGACA | Chr.4 | 14379727 | 14379707 | - | Yes |
| 2675080_adh | TTGTAGGAAAAAATTAGAAGAC | Chr.4 | 14379728 | 14379708 | - | Yes |
| 2728309_adh | TTTGTAGGAAAAAATTAGAAGA | Chr.4 | 14379729 | 14379709 | - | Yes |
| 2701210_adh | TTTCAAATTAATTTGACTTAT  | Chr.4 | 14380366 | 14380346 | - | No  |
| 2710351_adh | TTTCTGAAATTGGAATTCGAA  | Chr.4 | 14381468 | 14381488 | + | No  |
| 2702890_adh | TTTCAGACGAGCAAAAAACAA  | Chr.4 | 14385107 | 14385087 | - | No  |
| 2688988_adh | TTTAAACAACTTGAAACACGC  | Chr.4 | 14388775 | 14388755 | - | No  |
| 2742197_adh | TTTTGCACGGTTTCTGGTTTT  | Chr.4 | 14393463 | 14393483 | + | Yes |
| 1790814_adh | TAATAATGTCAGTTGAAAATG  | Chr.4 | 14393902 | 14393922 | + | No  |
| 1927093_adh | TATTGGCAAAACATCGATAAA  | Chr.4 | 14398596 | 14398576 | - | Yes |
| 2651730_adh | TTGCGAAGACTTTACATATCG  | Chr.4 | 14399862 | 14399882 | + | No  |
| 2566239_adh | TTAGCAACGGTATTGTAATCA  | Chr.4 | 14402275 | 14402295 | + | Yes |
| 2592116_adh | TTCAGGAATTCTTTAGCCGGT  | Chr.4 | 14402689 | 14402669 | - | No  |
| 1973205_adh | TCATTAAGGTTTAGAAATTTG  | Chr.4 | 14402733 | 14402713 | - | No  |
| 2275915_adh | TGATTCGTGGCTGGCATTATT  | Chr.4 | 14404046 | 14404026 | - | No  |
| 1926059_adh | TATTGATTCGTGGCTGGCATT  | Chr.4 | 14404049 | 14404029 | - | No  |
| 2582240_adh | TTATTGAGATGATTTTTCAAT  | Chr.4 | 14405869 | 14405849 | - | No  |
| 2572210_adh | TTAGTTAGGACATAATATGAT  | Chr.4 | 14405952 | 14405932 | - | Yes |
| 2733139_adh | TTTTAAATAAAAATTATTTTT  | Chr.4 | 14406528 | 14406548 | + | No  |
| 2721376_adh | TTTGCATACATGCGAACGCAA  | Chr.4 | 14407363 | 14407343 | - | No  |
| 2737760_adh | TTTTCATGTGGAGTAGTGGGC  | Chr.4 | 14408275 | 14408295 | + | No  |
| 2709936_adh | TTTCTCCTATCAACAAGCATC  | Chr.4 | 14410544 | 14410524 | - | No  |
| 1812654_adh | TACAGTAGAAAATGAAGAAAG  | Chr.4 | 14412863 | 14412843 | - | No  |
| 1774891_adh | TAAGACAAGTTTAATAAGTTA  | Chr.4 | 14414152 | 14414172 | + | No  |
| 2539105_adh | TTAAAATTATAATTAACATTT  | Chr.4 | 14414716 | 14414696 | - | Yes |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2703630_adh | TTTCAGTTT TAGAACAGGAGAA | Chr.4 | 14414785 | 14414805 | + | No  |
| 2573519_adh | TTAGTTT GTTTGGACATATAA  | Chr.4 | 14434968 | 14434948 | - | No  |
| 1921823_adh | TATTAGTTT GTTTGGACATAT  | Chr.4 | 14434970 | 14434950 | - | No  |
| 2581021_adh | TTATTAGTTT GTTTGGACATA  | Chr.4 | 14434971 | 14434951 | - | No  |
| 2736469_adh | TTTTATTAGTTT GTTTGGACA  | Chr.4 | 14434973 | 14434953 | - | No  |
| 2726610_adh | TTTGGTTAGACAGCTGAAAGA   | Chr.4 | 14436070 | 14436090 | + | No  |
| 2714410_adh | TTTGAATGTCTAGTGGAATGT   | Chr.4 | 14436185 | 14436165 | - | No  |
| 1919638_adh | TATGTTTCCGATGAAAACCTCA  | Chr.4 | 14437019 | 14437039 | + | No  |
| 1831816_adh | TACTGAACAATTTGGTGATGG   | Chr.4 | 14438721 | 14438741 | + | No  |
| 2530295_adh | TGTTGGTTTGTGTTTTGGCTA   | Chr.4 | 14440762 | 14440782 | + | No  |
| 1803088_adh | TAATTCCTTCTGAAATAACAA   | Chr.4 | 14444346 | 14444326 | - | Yes |
| 1761887_adh | TAAATGTATTTTTGTTTTGT    | Chr.4 | 14449127 | 14449107 | - | No  |
| 2013748_adh | TCGGATCAGAATCGCTTGTTA   | Chr.4 | 14450719 | 14450699 | - | No  |
| 1941271_adh | TCAATCAAAAAATGTCTAGGC   | Chr.4 | 14455510 | 14455530 | + | No  |
| 2712756_adh | TTTGAAATAGAGAACTTGAGAG  | Chr.4 | 14459117 | 14459137 | + | No  |
| 1923398_adh | TATTCAATAAGAATCCTTTTA   | Chr.4 | 14462612 | 14462592 | - | Yes |
| 2554122_adh | TTACAGAAGGACAAACAGAGT   | Chr.4 | 14471798 | 14471778 | - | Yes |
| 2277798_adh | TGATTTACAGAAGGACAAACA   | Chr.4 | 14471802 | 14471782 | - | Yes |
| 1981343_adh | TCCCTTTTCGTAAAACCTCTGA  | Chr.4 | 14472972 | 14472992 | + | No  |
| 1806557_adh | TACAAAATTAATATCCAAATA   | Chr.4 | 14474276 | 14474256 | - | No  |
| 2699657_adh | TTTATTATGTCCTGTAACCTGA  | Chr.4 | 14475657 | 14475677 | + | No  |
| 1922814_adh | TATTATGTCCTGTAACCTGAAA  | Chr.4 | 14475659 | 14475679 | + | No  |
| 2710725_adh | TTTCTGGGAGAAAAATTGAGTT  | Chr.4 | 14484957 | 14484937 | - | No  |
| 2681248_adh | TTGTGCAGTGGATACATTTTT   | Chr.4 | 14487440 | 14487460 | + | Yes |
| 1834049_adh | TACTGTTAGACGAAATTTCAA   | Chr.4 | 14489062 | 14489082 | + | No  |
| 2570802_adh | TTAGTAGTTTGTCTGATATATA  | Chr.4 | 14489144 | 14489164 | + | No  |
| 2687405_adh | TTGTTTGAGCGATCGTTAGGA   | Chr.4 | 14489300 | 14489320 | + | No  |
| 2742281_adh | TTTTGCAGTTATATTTTTGTT   | Chr.4 | 14492577 | 14492597 | + | Yes |
| 1830353_adh | TACTAGTTGTAAAAATTTGTA   | Chr.4 | 14493644 | 14493664 | + | No  |
| 2492434_adh | TGTATGTAACGTTGCTTAGAA   | Chr.4 | 14493810 | 14493830 | + | No  |
| 2259282_adh | TGATACAACGTAGAGTACTGG   | Chr.4 | 14494605 | 14494625 | + | No  |
| 2289424_adh | TGCAGTTGAAACACAAGTGAT   | Chr.4 | 14495493 | 14495513 | + | No  |
| 1867889_adh | TAGGGAAATAAAGACGATTTA   | Chr.4 | 14495755 | 14495775 | + | No  |
| 2533562_adh | TGTTTGTTTCAGCTTTTAAATT  | Chr.4 | 14496210 | 14496230 | + | Yes |
| 1771997_adh | TAACCTAAGAAAACGGACTAA   | Chr.4 | 14498200 | 14498220 | + | No  |
| 2003270_adh | TCGATATGAGAACAATAATTT   | Chr.4 | 14498347 | 14498327 | - | No  |
| 2711788_adh | TTTCTTGCTAGAACACAAATT   | Chr.4 | 14499560 | 14499580 | + | Yes |
| 2242705_adh | TGAGGTAGGCACAGAAATGAC   | Chr.4 | 14500647 | 14500667 | + | No  |
| 2706408_adh | TTTCCTTATCTTTTATGTTA    | Chr.4 | 14501394 | 14501374 | - | Yes |
| 2699890_adh | TTTATTCGTCAATTGCAAAAG   | Chr.4 | 14502017 | 14502037 | + | No  |
| 2657883_adh | TTGGACAAATTATAAGGAGAC   | Chr.4 | 14504054 | 14504034 | - | No  |
| 2706370_adh | TTTCCTTACATGCACTTGAAT   | Chr.4 | 14505274 | 14505294 | + | No  |
| 1867088_adh | TAGGCATGTGTGAGGTAGGCA   | Chr.4 | 14508040 | 14508060 | + | No  |
| 2701191_adh | TTTCAAATGAACGGATTTTTT   | Chr.4 | 14508235 | 14508215 | - | No  |
| 2602966_adh | TTCGACGCTTCTATTCTCTTC   | Chr.4 | 14508818 | 14508838 | + | Yes |
| 2699696_adh | TTTATTCAATTAGAGCAAAAT   | Chr.4 | 14510772 | 14510792 | + | No  |
| 1858904_adh | TAGCTGTTTGATAAGAGCATC   | Chr.4 | 14511658 | 14511638 | - | No  |
| 1939699_adh | TCAAGGCATCATTATTCAACT   | Chr.4 | 14512294 | 14512314 | + | No  |
| 2580679_adh | TTATTACTCGAGATACAAGCT   | Chr.4 | 14521219 | 14521239 | + | No  |
| 1801571_adh | TAATGTATGAAAACGTGCCGT   | Chr.4 | 14526277 | 14526257 | - | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2635656_adh | TTGACGAGAAGAAAAATTAAT  | Chr.4 | 14527016 | 14527036 | + | No  |
| 2562511_adh | TTAGAGACTATTGCATTGCTT  | Chr.4 | 14530234 | 14530254 | + | No  |
| 2724458_adh | TTTGGCGGGTAGATCAAACGG  | Chr.4 | 14532530 | 14532550 | + | No  |
| 2584780_adh | TTATTTTTTCTGATATAACGG  | Chr.4 | 14536504 | 14536524 | + | Yes |
| 2655240_adh | TTGCTTCATTGCCATTCTGCA  | Chr.4 | 14538496 | 14538516 | + | No  |
| 1890983_adh | TATATTTCCCATTAATAAATT  | Chr.4 | 14544002 | 14543982 | - | No  |
| 2745045_adh | TTTTTAGAAGAACGAATACAT  | Chr.4 | 14544031 | 14544011 | - | No  |
| 1749515_adh | TAAAAGCAGTAGTAATTTAAA  | Chr.4 | 14544871 | 14544891 | + | No  |
| 1919649_adh | TATGTTTCGTCTTTTTTAAAG  | Chr.4 | 14548368 | 14548348 | - | No  |
| 2588855_adh | TTCAATTCTGAAACAGAGTCA  | Chr.4 | 14548767 | 14548747 | - | No  |
| 2583716_adh | TTATTTCAATTCTGAAACAGA  | Chr.4 | 14548771 | 14548751 | - | No  |
| 1889617_adh | TATATAATACAAAAATATCTT  | Chr.4 | 14551019 | 14551039 | + | No  |
| 1943081_adh | TCAATTGATGGTTTTTTGTTT  | Chr.4 | 14552485 | 14552465 | - | Yes |
| 2123754_adh | TGAACGGTTGAAACGGGAGAA  | Chr.4 | 14554052 | 14554072 | + | No  |
| 2623512_adh | TTCTTTCTCCTACATTTTAAT  | Chr.4 | 14555003 | 14554983 | - | Yes |
| 2572230_adh | TTAGTTAGTTGATGTGATTGT  | Chr.4 | 14556073 | 14556093 | + | No  |
| 2714485_adh | TTTGAATTGAATACGAAGTCA  | Chr.4 | 14560241 | 14560221 | - | No  |
| 2623100_adh | TTCTTGTAACCTTTAAAAATCG | Chr.4 | 14561160 | 14561180 | + | No  |
| 2561422_adh | TTAGAAGAATATAATTTTTGG  | Chr.4 | 14561395 | 14561415 | + | Yes |
| 2055019_adh | TCTTATCAGGAACGCGAAACA  | Chr.4 | 14564220 | 14564200 | - | No  |
| 2737237_adh | TTTTCAATACAATGTACATCT  | Chr.4 | 14564710 | 14564730 | + | No  |
| 2701658_adh | TTTCAATACAATGTACATCTT  | Chr.4 | 14564711 | 14564731 | + | No  |
| 1763085_adh | TAACAAAGCAGGAGAATAGAA  | Chr.4 | 14565091 | 14565071 | - | No  |
| 2029231_adh | TCTAAAAATCGCTGACAATAC  | Chr.4 | 14565282 | 14565302 | + | Yes |
| 2546829_adh | TTAAGACATATATGTGGATTT  | Chr.4 | 14566071 | 14566051 | - | Yes |
| 1885205_adh | TATAAGTAGCTTATTATTTTG  | Chr.4 | 14567311 | 14567291 | - | No  |
| 2559071_adh | TTACTGAATATTACGCTGTA   | Chr.4 | 14568921 | 14568941 | + | No  |
| 2656020_adh | TTGCTTTGTCATCGTCGTCAT  | Chr.4 | 14569207 | 14569187 | - | No  |
| 1974235_adh | TCATTGCTGTGCAGATTCCTT  | Chr.4 | 14571944 | 14571964 | + | Yes |
| 2739127_adh | TTTTCTAGACGACATCAATTG  | Chr.4 | 14572075 | 14572055 | - | Yes |
| 2554689_adh | TTACATCGGACAGCGAGTGGA  | Chr.4 | 14574062 | 14574082 | + | No  |
| 2042746_adh | TCTCTGAAATTTGCATCAGTT  | Chr.4 | 14577619 | 14577599 | - | No  |
| 1886609_adh | TATAATTTGGCATCAATCTCT  | Chr.4 | 14580193 | 14580213 | + | No  |
| 2701216_adh | TTTCAAATTTTCATGTAGTTTG | Chr.4 | 14585602 | 14585582 | - | No  |
| 2712463_adh | TTTGAAAAGTGGAATGAAA    | Chr.4 | 14585858 | 14585878 | + | No  |
| 1886996_adh | TATACCCTAGTACAAACAATA  | Chr.4 | 14591011 | 14591031 | + | No  |
| 2561581_adh | TTAGAAGTCGTATACGCAGCC  | Chr.4 | 14592751 | 14592771 | + | No  |
| 2480405_adh | TGTAAAACTTAGGGCTGCGTA  | Chr.4 | 14592783 | 14592763 | - | No  |
| 2534777_adh | TGTTTTGTAGTTCAATTTTCAT | Chr.4 | 14597441 | 14597421 | - | No  |
| 1925441_adh | TATTGAATTTTGAAATATTTT  | Chr.4 | 14602112 | 14602132 | + | No  |
| 1889914_adh | TATATCAATTTTAAACATTG   | Chr.4 | 14602704 | 14602724 | + | No  |
| 2679220_adh | TTGTGAAATTGGTAGGGAGTG  | Chr.4 | 14606267 | 14606247 | - | No  |
| 2597548_adh | TTCCATTTGTTTTCTCAACTC  | Chr.4 | 14607457 | 14607477 | + | No  |
| 2597486_adh | TTCCATTAGTTTTCTCAATTC  | Chr.4 | 14608025 | 14608045 | + | No  |
| 1979979_adh | TCCATTAGTTTTCTCAATTCA  | Chr.4 | 14608026 | 14608046 | + | No  |
| 2025374_adh | TCGTCATTAGTATATGCTGCA  | Chr.4 | 14608234 | 14608254 | + | Yes |
| 2279880_adh | TGCAAACAGTGACTGATCAAA  | Chr.4 | 14609057 | 14609037 | - | No  |
| 2177595_adh | TGAGAAATCGTCGTCATTTCA  | Chr.4 | 14612876 | 14612896 | + | No  |
| 2292533_adh | TGCCAGCTGTAATGTGCGACGA | Chr.4 | 14613144 | 14613164 | + | No  |
| 1880692_adh | TAGTTCTGAAAGATCCCAATG  | Chr.4 | 14615317 | 14615337 | + | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2736247_adh | TTTTATGTGCAGTTGCAATAA  | Chr.4 | 14615681 | 14615701 | + | No  |
| 1846071_adh | TAGACTGTAGGTACCGGTACT  | Chr.4 | 14620232 | 14620252 | + | No  |
| 1909745_adh | TATGAGTATGACGGTAGTTTT  | Chr.4 | 14624603 | 14624623 | + | Yes |
| 1748783_adh | TAAAACTGTTTGATGAAAAAA  | Chr.4 | 14624893 | 14624873 | - | No  |
| 2736660_adh | TTTTATTGAGAAAAATGTTCA  | Chr.4 | 14626419 | 14626439 | + | No  |
| 1954100_adh | TCACTCAAGTTCAGACGGTAA  | Chr.4 | 14627717 | 14627737 | + | No  |
| 2689012_adh | TTTAAACAGCAATATGAACGA  | Chr.4 | 14629507 | 14629527 | + | No  |
| 1754338_adh | TAAACAGCAATATGAACGATG  | Chr.4 | 14629509 | 14629529 | + | No  |
| 2546321_adh | TAACTGATGTGTTCAACTTA   | Chr.4 | 14630186 | 14630166 | - | No  |
| 2037303_adh | TCTCAGAATTCGGATTTTTTA  | Chr.4 | 14630942 | 14630962 | + | No  |
| 1816264_adh | TACCATTGCTAACAGATTTTT  | Chr.4 | 14631339 | 14631319 | - | Yes |
| 2667369_adh | TTGGGATTGATGCAGTTTCAC  | Chr.4 | 14632838 | 14632818 | - | No  |
| 2734617_adh | TTTTAGATTTATACAGTTTTA  | Chr.4 | 14632944 | 14632924 | - | No  |
| 1886609_adh | TATAATTTGGCATCAATCTCT  | Chr.4 | 14633893 | 14633873 | - | No  |
| 2252069_adh | TGAGTAGTTAAATGAGCATA   | Chr.4 | 14634002 | 14634022 | + | No  |
| 2054040_adh | TCTTACAATGTAGTACTAGGC  | Chr.4 | 14634799 | 14634779 | - | No  |
| 2623781_adh | TTCTTTGTTTGATCAATTTT   | Chr.4 | 14635033 | 14635013 | - | Yes |
| 2684508_adh | TTGTTGAAGATGGCAAAAAC   | Chr.4 | 14640251 | 14640271 | + | No  |
| 2639622_adh | TTGAGACAAGAAAGTTTTGGT  | Chr.4 | 14640496 | 14640516 | + | No  |
| 2740551_adh | TTTTGAAACAAGTGGTTTTGA  | Chr.4 | 14640640 | 14640660 | + | No  |
| 2028560_adh | TCGTTGGGTAGACCATGGTTT  | Chr.4 | 14642180 | 14642160 | - | No  |
| 2053664_adh | TCTTAAATGAACAATGCGAAG  | Chr.4 | 14644692 | 14644672 | - | No  |
| 2635157_adh | TTGACAGTCAGATTGACAACA  | Chr.4 | 14645135 | 14645115 | - | No  |
| 2155237_adh | TGACATATTGAAACATCAACA  | Chr.4 | 14645425 | 14645405 | - | No  |
| 1956866_adh | TCAGAAACGCTATGAATATCT  | Chr.4 | 14646837 | 14646857 | + | No  |
| 2259217_adh | TGATAATTGATGATTAAGGGA  | Chr.4 | 14647441 | 14647421 | - | No  |
| 2142617_adh | TGAATCGTGTTTGAGAAAGTT  | Chr.4 | 14648674 | 14648694 | + | No  |
| 2142617_adh | TGAATCGTGTTTGAGAAAGTT  | Chr.4 | 14649637 | 14649657 | + | No  |
| 2582253_adh | TTATTGAGTAAATTGACACAT  | Chr.4 | 14651723 | 14651743 | + | No  |
| 2742246_adh | TTTTGCAGATCTCAAGCCAAG  | Chr.4 | 14652476 | 14652456 | - | No  |
| 2276552_adh | TGATTGCAGATATTTCAAAT   | Chr.4 | 14653837 | 14653857 | + | No  |
| 1799197_adh | TAATGAAAGAATTTGCAGAAA  | Chr.4 | 14655433 | 14655453 | + | No  |
| 2130416_adh | TGAAGCACAAAGCTGAATTCAA | Chr.4 | 14660603 | 14660583 | - | No  |
| 1806545_adh | TACAAAATCGAAAAAGTTTTA  | Chr.4 | 14660675 | 14660695 | + | No  |
| 1873153_adh | TAGTAACTAGGGACAGGGCAG  | Chr.4 | 14661092 | 14661072 | - | No  |
| 2119647_adh | TGAACAAGAGAGAAATGTCTGA | Chr.4 | 14661725 | 14661705 | - | No  |
| 2043850_adh | TCTGAACAAGAGAGAAATGTC  | Chr.4 | 14661727 | 14661707 | - | No  |
| 2617707_adh | TTCTGAACAAGAGAGAAATGT  | Chr.4 | 14661728 | 14661708 | - | No  |
| 2540560_adh | TTAAAGAAGTGACTAGACATA  | Chr.4 | 14665071 | 14665051 | - | No  |
| 2737607_adh | TTTTCATACTCTTTTCCTTTA  | Chr.4 | 14665642 | 14665622 | - | No  |
| 2716810_adh | TTTGAGCTCTATTTGACGGAA  | Chr.4 | 14666521 | 14666501 | - | No  |
| 2741436_adh | TTTTGAGCTCTATTTGACGGA  | Chr.4 | 14666522 | 14666502 | - | No  |
| 2665864_adh | TTGGCGTAGCCAGTAGTTCTC  | Chr.4 | 14666717 | 14666737 | + | No  |
| 1764529_adh | TAACACGACGAGGAGGGATAT  | Chr.4 | 14669513 | 14669493 | - | No  |
| 1867092_adh | TAGGCATTGCAGGTATCTTAA  | Chr.4 | 14670752 | 14670732 | - | No  |
| 2602824_adh | TTCGACATAGATGGCTTGAT   | Chr.4 | 14674149 | 14674129 | - | No  |
| 2692874_adh | TTTAATTTAATAACTCTTCGG  | Chr.4 | 14675148 | 14675128 | - | No  |
| 2582184_adh | TTATTGACTATGAGATCTGAA  | Chr.4 | 14675203 | 14675183 | - | Yes |
| 2581165_adh | TTATTATTGACTATGAGATCT  | Chr.4 | 14675206 | 14675186 | - | Yes |
| 2560958_adh | TTAGAAATTAAGGAGTTGGAT  | Chr.4 | 14676569 | 14676549 | - | No  |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2520855_adh | TGTGTTTCGGTGGACTTTTCAAA | Chr.4 | 14678604 | 14678584 | - | Yes |
| 2694341_adh | TTTACTCTGTGTTTCGGTGGAC  | Chr.4 | 14678611 | 14678591 | - | Yes |
| 1936221_adh | TCAACATTTGACCATAAATAA   | Chr.4 | 14679710 | 14679690 | - | No  |
| 2584081_adh | TTATTTGCATATAATACATAT   | Chr.4 | 14679936 | 14679956 | + | Yes |
| 1970211_adh | TCATATTTCGTATTTAACAGTA  | Chr.4 | 14680480 | 14680460 | - | Yes |
| 2737784_adh | TTTTCATTCTGTGTCGCCCTTA  | Chr.4 | 14684645 | 14684665 | + | No  |
| 2704533_adh | TTTCATTCTGTGTCGCCCTTAA  | Chr.4 | 14684646 | 14684666 | + | No  |
| 1756068_adh | TAAAGAAATATTTAATTTTGT   | Chr.4 | 14686332 | 14686352 | + | No  |
| 2486875_adh | TGTACGGGCTTCTGTTTGGCA   | Chr.4 | 14687970 | 14687990 | + | Yes |
| 2549281_adh | TTAAGTTAGAGTTTGAGACAG   | Chr.4 | 14693298 | 14693318 | + | No  |
| 2001326_adh | TCGAGAGTAATTTTTTGCATT   | Chr.4 | 14695087 | 14695107 | + | No  |
| 2562181_adh | TTAGACGATACTCGAAAGCTA   | Chr.4 | 14695583 | 14695603 | + | No  |
| 2035245_adh | TCTCAAACACTCACAAGCACA   | Chr.4 | 14699681 | 14699701 | + | No  |
| 2650922_adh | TTGCATTTTTAACAGCCTGAA   | Chr.4 | 14700896 | 14700916 | + | No  |
| 1813785_adh | TACATGCATTTAACAGAACTT   | Chr.4 | 14702227 | 14702247 | + | No  |
| 2288095_adh | TGCAGCAGTAGAAACTTTTAT   | Chr.4 | 14704407 | 14704427 | + | No  |
| 1937318_adh | TCAACTCCATGAAACTGTAAT   | Chr.4 | 14705383 | 14705403 | + | No  |
| 2289567_adh | TGCATAAATGAACGGTTATTT   | Chr.4 | 14708188 | 14708168 | - | Yes |
| 2582656_adh | TTATTGCGAACTATGTTTCCT   | Chr.4 | 14711370 | 14711350 | - | No  |
| 1921027_adh | TATTACTCGACGGAAAAAATC   | Chr.4 | 14714852 | 14714872 | + | No  |
| 2028613_adh | TCGTTGTGCGTTGACGTTTTTT  | Chr.4 | 14715058 | 14715038 | - | No  |
| 1966431_adh | TCAGTCGTTGTGCGTTGACGTT  | Chr.4 | 14715062 | 14715042 | - | No  |
| 2730830_adh | TTTGTTCTATTTCCTGACCGGC  | Chr.4 | 14715951 | 14715931 | - | Yes |
| 2740406_adh | TTTTCTTTTTGTTGTTGATTT   | Chr.4 | 14716108 | 14716088 | - | No  |
| 2714852_adh | TTTGACAGTATACGATAAATA   | Chr.4 | 14716978 | 14716998 | + | No  |
| 2596486_adh | TTCCACTCCAGAAGAAAAGAA   | Chr.4 | 14717254 | 14717234 | - | No  |
| 2278092_adh | TGATTTCCACTCCAGAAGAAA   | Chr.4 | 14717258 | 14717238 | - | No  |
| 2593445_adh | TTCATAAACTACTTTTGCTGC   | Chr.4 | 14717789 | 14717769 | - | Yes |
| 2676584_adh | TTGTATGATAGCTGTAATAAT   | Chr.4 | 14718160 | 14718140 | - | Yes |
| 2560282_adh | TTACTTGTATGATAGCTGTAA   | Chr.4 | 14718164 | 14718144 | - | Yes |
| 2042041_adh | TCTCTAGCTGGGACTATGTAC   | Chr.4 | 14720117 | 14720097 | - | No  |
| 2033376_adh | TCTAGTGGTATGTGCGGGCAA   | Chr.4 | 14723035 | 14723055 | + | No  |
| 1799434_adh | TAATGACACATTTTTTGAAT    | Chr.4 | 14723404 | 14723384 | - | No  |
| 2596747_adh | TTCCAGATGATGAACGGTAAT   | Chr.4 | 14723815 | 14723795 | - | Yes |
| 2396522_adh | TGGATTTTTAATACTGTTACA   | Chr.4 | 14724316 | 14724336 | + | No  |
| 2730334_adh | TTTGTTAATATCGTAAAAAGT   | Chr.4 | 14725173 | 14725153 | - | No  |
| 2480517_adh | TGTAATAATTAGCATTGGACAG  | Chr.4 | 14726905 | 14726925 | + | No  |
| 1887449_adh | TATACTGAATTTGCTTAATTT   | Chr.4 | 14727152 | 14727172 | + | No  |
| 1884593_adh | TATAACATGTGCATAAATAAT   | Chr.4 | 14727155 | 14727135 | - | No  |
| 2695387_adh | TTTAGAGGATTATATTTAAAA   | Chr.4 | 14729050 | 14729070 | + | No  |
| 1762961_adh | TAAATTTTTTAGACTTTCAAC   | Chr.4 | 14731139 | 14731119 | - | No  |
| 1814585_adh | TACATTTGTTGTGAAAAACCT   | Chr.4 | 14731609 | 14731589 | - | Yes |
| 2233228_adh | TGAGCACTAGAGAAAAGGAAA   | Chr.4 | 14732449 | 14732429 | - | No  |
| 1923790_adh | TATTCATCATTGCGTGG       | Chr.4 | 14732543 | 14732523 | - | Yes |
| 2307117_adh | TGCTCAAGAACTACCGACTTT   | Chr.4 | 14733771 | 14733791 | + | No  |
| 1867704_adh | TAGGCTTCGAAGAACACAGTC   | Chr.4 | 14733908 | 14733888 | - | No  |
| 1794754_adh | TAATAGAACTTCATCTTTAGA   | Chr.4 | 14734172 | 14734192 | + | No  |
| 2036331_adh | TCTCAACTGATGGTTCTCGAC   | Chr.4 | 14734890 | 14734910 | + | No  |
| 2577898_adh | TTATCGTATGTTGGTTTTTCA   | Chr.4 | 14735340 | 14735320 | - | No  |
| 2728968_adh | TTTGTCGATCGGATTAATTTT   | Chr.4 | 14739573 | 14739593 | + | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2710838_adh | TTTCTGTAGAGAAAAACAAAA  | Chr.4 | 14743016 | 14743036 | + | No  |
| 2701145_adh | TTTCAAAGGTATAAGGCATTT  | Chr.4 | 14743719 | 14743699 | - | No  |
| 2472963_adh | TGGTGTCAAAATTGGACGACC  | Chr.4 | 14747540 | 14747520 | - | No  |
| 2631460_adh | TTGAATGAGCAAATTAGAATT  | Chr.4 | 14749879 | 14749899 | + | No  |
| 1747066_adh | TAAAAATCAAAGAAAGCGTCA  | Chr.4 | 14751820 | 14751840 | + | No  |
| 2597538_adh | TTCCATTTCTGGCGGAAGGGG  | Chr.4 | 14751993 | 14751973 | - | No  |
| 2591012_adh | TTCAGCAGAGAACCTAGCAGC  | Chr.4 | 14752063 | 14752083 | + | No  |
| 2375908_adh | TGGACGAAATTGCAATATGTT  | Chr.4 | 14752776 | 14752796 | + | Yes |
| 2736622_adh | TTTTATTGAAAAGTGCAGAAA  | Chr.4 | 14753092 | 14753072 | - | No  |
| 2570583_adh | TTAGTAGGAAAGGAAATGCGG  | Chr.4 | 14753807 | 14753827 | + | No  |
| 1777281_adh | TAAGAGGCTGGCCACTTTTTTC | Chr.4 | 14754168 | 14754188 | + | No  |
| 2711468_adh | TTTCTTCGATTATCAACTAAA  | Chr.4 | 14755122 | 14755142 | + | No  |
| 2616104_adh | TTCTCAGATGGTATTTGAATC  | Chr.4 | 14756812 | 14756832 | + | Yes |
| 1804159_adh | TAATTGGTGCCTGCTATTAGA  | Chr.4 | 14756893 | 14756913 | + | Yes |
| 1940808_adh | TCAATAAACTTGAATAAGCAT  | Chr.4 | 14756949 | 14756969 | + | No  |
| 2626498_adh | TTGAACGTAATGAAGTGTGTT  | Chr.4 | 14757055 | 14757035 | - | No  |
| 2689131_adh | TTTAAACTGCAAACCTCCAAA  | Chr.4 | 14757202 | 14757222 | + | No  |
| 2643605_adh | TTGATAGGATGGTACTATTTTC | Chr.4 | 14763844 | 14763824 | - | No  |
| 1836684_adh | TAGAAAACGGATGAAAATGTA  | Chr.4 | 14764734 | 14764714 | - | No  |
| 1831749_adh | TACTCTTTGAATTGTTAGACA  | Chr.4 | 14765345 | 14765365 | + | No  |
| 2061719_adh | TCTTTGAATTGTTAGACATGA  | Chr.4 | 14765348 | 14765368 | + | No  |
| 1845096_adh | TAGACATGACTAGTAGTCGGA  | Chr.4 | 14765360 | 14765380 | + | No  |
| 2705710_adh | TTTCCGAGTTTTCTTCGCATA  | Chr.4 | 14767780 | 14767760 | - | No  |
| 2129425_adh | TGAAGAGGCAGGGTCCGGTTG  | Chr.4 | 14780819 | 14780799 | - | No  |
| 2413512_adh | TGGCGTGGAAGAAGTTGATGA  | Chr.4 | 14780837 | 14780817 | - | No  |
| 2272498_adh | TGATGGCGTGGAAGAAGTTGA  | Chr.4 | 14780840 | 14780820 | - | No  |
| 2391017_adh | TGGATGATGGCGTGGAAGAAG  | Chr.4 | 14780844 | 14780824 | - | No  |
| 2515569_adh | TGTGGATGATGGCGTGGAAGA  | Chr.4 | 14780846 | 14780826 | - | No  |
| 2385327_adh | TGGAGTGGATGACGACGACGA  | Chr.4 | 14780885 | 14780865 | - | No  |
| 1966973_adh | TCAGTGGAGTGGATGACGACG  | Chr.4 | 14780905 | 14780925 | + | No  |
| 2385327_adh | TGGAGTGGATGACGACGACGA  | Chr.4 | 14780909 | 14780929 | + | No  |
| 2515569_adh | TGTGGATGATGGCGTGGAAGA  | Chr.4 | 14780948 | 14780968 | + | No  |
| 2391017_adh | TGGATGATGGCGTGGAAGAAG  | Chr.4 | 14780950 | 14780970 | + | No  |
| 2272498_adh | TGATGGCGTGGAAGAAGTTGA  | Chr.4 | 14780954 | 14780974 | + | No  |
| 2413512_adh | TGGCGTGGAAGAAGTTGATGA  | Chr.4 | 14780957 | 14780977 | + | No  |
| 2129425_adh | TGAAGAGGCAGGGTCCGGTTG  | Chr.4 | 14780975 | 14780995 | + | No  |
| 2489736_adh | TGTAGTGATGATGATGGTTAT  | Chr.4 | 14787247 | 14787227 | - | No  |
| 2031172_adh | TCTACAATTCGGAAGTAAAAAT | Chr.4 | 14790516 | 14790536 | + | No  |
| 2681079_adh | TTGTGATGGAGAATGGAAAGG  | Chr.4 | 14792036 | 14792016 | - | No  |
| 2000789_adh | TCGACTTGAATTCCAAGTAGC  | Chr.4 | 14792496 | 14792516 | + | No  |
| 2688847_adh | TTTAAAACGCAATTTCAATCA  | Chr.4 | 14795774 | 14795794 | + | No  |
| 2716719_adh | TTTGAGCAGGTTAGTAGACGG  | Chr.4 | 14797354 | 14797334 | - | No  |
| 2607197_adh | TTCGGAAGCCGTTCAACAACA  | Chr.4 | 14797403 | 14797383 | - | No  |
| 2494953_adh | TGTCAGCGGTCGTTGATTGG   | Chr.4 | 14797527 | 14797547 | + | No  |
| 1993874_adh | TCCTTGTCGCACTGATTGGC   | Chr.4 | 14797549 | 14797569 | + | No  |
| 2278695_adh | TGATTTGGCTTTGGATTTGCT  | Chr.4 | 14797561 | 14797581 | + | No  |
| 2724647_adh | TTTGGCTTTGGATTTGTAAT   | Chr.4 | 14797564 | 14797584 | + | No  |
| 1754859_adh | TAAACGAGAAAAATCGGACGA  | Chr.4 | 14799560 | 14799580 | + | No  |
| 2119546_adh | TGAACAAACGTTGAATTTGAA  | Chr.4 | 14805705 | 14805685 | - | No  |
| 2459774_adh | TGGGTTGACGACGATGAAGGC  | Chr.4 | 14806927 | 14806947 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2008597_adh | TCGCTCTTACGGCACTCTATT  | Chr.4 | 14813694 | 14813714 | + | No  |
| 2126223_adh | TGAAGTGTGATTTTCGTGCCG  | Chr.4 | 14815871 | 14815851 | - | Yes |
| 2647046_adh | TTGATTTTGAAATTTGAAATT  | Chr.4 | 14816641 | 14816661 | + | No  |
| 1885632_adh | TATAATATTTAAATCGTTGTG  | Chr.4 | 14818368 | 14818388 | + | No  |
| 2543192_adh | TTAAATCGTTGTGAATGAAAA  | Chr.4 | 14818376 | 14818396 | + | No  |
| 2694680_adh | TTTACTTGAAGACAACATAAT  | Chr.4 | 14819995 | 14820015 | + | Yes |
| 2560176_adh | TTACTTGAAGACAACATAAT   | Chr.4 | 14819996 | 14820016 | + | Yes |
| 2627270_adh | TTGAAGACAACATAATTCTCA  | Chr.4 | 14820000 | 14820020 | + | Yes |
| 2735379_adh | TTTTATATGAAGACAACATAA  | Chr.4 | 14820465 | 14820485 | + | Yes |
| 2748264_adh | TTTTTTAGAAATTCGACGGAA  | Chr.4 | 14822271 | 14822251 | - | No  |
| 2576281_adh | TTATATTATCCGAAAGGCAAC  | Chr.4 | 14824892 | 14824872 | - | No  |
| 2038618_adh | TCTCCACAGAGGACTCAGACA  | Chr.4 | 14826214 | 14826234 | + | No  |
| 1788075_adh | TAAGTCTGATTGTTTACGGGA  | Chr.4 | 14826323 | 14826343 | + | No  |
| 1923874_adh | TATTCCAATAATGCACGACAA  | Chr.4 | 14830619 | 14830639 | + | No  |
| 1790825_adh | TAATAATTAAAGAGATCTTAT  | Chr.4 | 14831702 | 14831682 | - | No  |
| 2686392_adh | TTGTTGTATTTTCGTTCAATT  | Chr.4 | 14832003 | 14831983 | - | No  |
| 2644928_adh | TTGATGCAGTTTTTCTTTGGT  | Chr.4 | 14832227 | 14832247 | + | No  |
| 2271826_adh | TGATGCAGTTTTTCTTTGGTT  | Chr.4 | 14832228 | 14832248 | + | No  |
| 2618313_adh | TTCTGAGATTGTATTAAACCA  | Chr.4 | 14836714 | 14836694 | - | No  |
| 1784494_adh | TAAGGATAAGTATTAGTGTTA  | Chr.4 | 14838681 | 14838701 | + | No  |
| 2688728_adh | TTTAAAAATGCTTTGTAGAGC  | Chr.4 | 14839852 | 14839872 | + | No  |
| 2048819_adh | TCTGGAATAGGATCTAGGATC  | Chr.4 | 14842696 | 14842716 | + | No  |
| 2286802_adh | TGCACTGTAACGGTAGACTTT  | Chr.4 | 14842982 | 14842962 | - | No  |
| 2721475_adh | TTTGCATTTGTCTGTTGGCAAC | Chr.4 | 14843014 | 14843034 | + | No  |
| 2741916_adh | TTTTGATTGAATTCTGCAGGC  | Chr.4 | 14848436 | 14848456 | + | No  |
| 2583401_adh | TTATTGTTTTAGAATTTTAG   | Chr.4 | 14849044 | 14849064 | + | No  |
| 2688367_adh | TTGTTTTTAGAATTTAGTCG   | Chr.4 | 14849047 | 14849067 | + | No  |
| 1805957_adh | TAATTTTGAAGCGAATAATTG  | Chr.4 | 14852293 | 14852313 | + | No  |
| 2732922_adh | TTTTAAAAACAATTAACGT    | Chr.4 | 14853808 | 14853788 | - | Yes |
| 2618192_adh | TTCTGACGTGACTCGTTTCTA  | Chr.4 | 14853938 | 14853958 | + | No  |
| 2704764_adh | TTTCATTTTGCACGGGCGATT  | Chr.4 | 14854067 | 14854047 | - | No  |
| 2031908_adh | TCTACTGAATTTTGGCAATGA  | Chr.4 | 14855646 | 14855666 | + | No  |
| 2698469_adh | TTTATCATTGTTTATAATTAG  | Chr.4 | 14856904 | 14856924 | + | No  |
| 2618322_adh | TTCTGAGCACTGGACTTTTCA  | Chr.4 | 14857087 | 14857107 | + | No  |
| 2475005_adh | TGGTTCCGCTATAAATTATAT  | Chr.4 | 14860496 | 14860476 | - | No  |
| 2734727_adh | TTTTAGCTCGATTTTCACTTA  | Chr.4 | 14861175 | 14861195 | + | No  |
| 1920674_adh | TATTACATAAGAAATAAAAAA  | Chr.4 | 14862899 | 14862879 | - | Yes |
| 2735933_adh | TTTTATGATAATTGCTAATAG  | Chr.4 | 14864203 | 14864223 | + | No  |
| 2735422_adh | TTTTATCAACCAATTGAACTC  | Chr.4 | 14864591 | 14864611 | + | No  |
| 1775353_adh | TAAGACATGTGAAAAAGACC   | Chr.4 | 14864875 | 14864895 | + | No  |
| 2558692_adh | TTACTACAAGGTAGAAAGCT   | Chr.4 | 14866254 | 14866234 | - | No  |
| 2527867_adh | TGTTGACCATATAGACGAAAT  | Chr.4 | 14866734 | 14866754 | + | No  |
| 2745602_adh | TTTTTCAAGCACTACGTTTTT  | Chr.4 | 14867769 | 14867789 | + | No  |
| 2531636_adh | TGTTTAAAGTCGTACTATACAC | Chr.4 | 14870935 | 14870915 | - | No  |
| 2270609_adh | TGATCTGTTTCAAATATTATG  | Chr.4 | 14874408 | 14874428 | + | No  |
| 1920000_adh | TATTAATTTTCCACAGCCTA   | Chr.4 | 14874671 | 14874691 | + | Yes |
| 2743945_adh | TTTTGTGGAAGAACAGGAGAA  | Chr.4 | 14875749 | 14875769 | + | No  |
| 2582231_adh | TTATTGAGAACATAGCTTTTT  | Chr.4 | 14876096 | 14876076 | - | Yes |
| 1847229_adh | TAGAGAAGTAGAAGTCATTG   | Chr.4 | 14876487 | 14876467 | - | Yes |
| 2590847_adh | TTCAGATGCGAGAATAGTGCG  | Chr.4 | 14877457 | 14877437 | - | No  |

|             |                       |       |          |          |   |     |
|-------------|-----------------------|-------|----------|----------|---|-----|
| 2715699_adh | TTTGACTGGCTGAAATAAAAT | Chr.4 | 14879459 | 14879439 | - | No  |
| 2569930_adh | TTAGTAAGCTCTCGGAATTTT | Chr.4 | 14880812 | 14880832 | + | No  |
| 2742568_adh | TTTTGCTTATTCAGTCAAAC  | Chr.4 | 14881900 | 14881920 | + | No  |
| 2742568_adh | TTTTGCTTATTCAGTCAAAC  | Chr.4 | 14882131 | 14882111 | - | No  |
| 2700958_adh | TTTCAAAAGAAGAGCGTCGGT | Chr.4 | 14883574 | 14883554 | - | No  |
| 2037855_adh | TCTCATAAATAGGATGCCATT | Chr.4 | 14891666 | 14891646 | - | No  |
| 2695937_adh | TTTAGCATCATAAAAAATATT | Chr.4 | 14892987 | 14892967 | - | No  |
| 2579272_adh | TTATGGAAATGCGGTATTG   | Chr.4 | 14893632 | 14893612 | - | Yes |
| 2571285_adh | TTAGTCTATGCTTTGTACCCA | Chr.4 | 14895131 | 14895151 | + | No  |
| 1814170_adh | TACATTACTTTTTGAATTCTA | Chr.4 | 14897031 | 14897051 | + | No  |
| 1929074_adh | TATTTAATAGGCAATTCTTAA | Chr.4 | 14899085 | 14899065 | - | Yes |
| 2744904_adh | TTTTTACCTGACGTTCTCCAA | Chr.4 | 14899320 | 14899340 | + | No  |
| 2582337_adh | TTATTGCAATGAATTGAATGT | Chr.4 | 14899514 | 14899494 | - | No  |
| 1970343_adh | TCATCAAAATATTCAAATATT | Chr.4 | 14900641 | 14900621 | - | Yes |
| 2740222_adh | TTTTCTTCTTTGATTGTTTT  | Chr.4 | 14901566 | 14901546 | - | Yes |
| 2625906_adh | TTGAACACCATACAATCTTTA | Chr.4 | 14902983 | 14903003 | + | Yes |
| 2376933_adh | TGGACTATCAGTTTCAGGGAT | Chr.4 | 14904061 | 14904081 | + | No  |
| 2706262_adh | TTTCCTCTTTCTTATTACCTG | Chr.4 | 14908100 | 14908120 | + | No  |
| 2029224_adh | TCTAAAAAGTTTCTGAAACGG | Chr.4 | 14908758 | 14908778 | + | No  |
| 2053585_adh | TCTTAAATTTGAACTTTTAT  | Chr.4 | 14912889 | 14912869 | - | No  |
| 2373699_adh | TGGACACAACACGCATTTTTT | Chr.4 | 14914364 | 14914344 | - | No  |
| 2703914_adh | TTTCATCATTTTATTTTAAAT | Chr.4 | 14918330 | 14918350 | + | Yes |
| 2568602_adh | TTAGGCTTTATTAGGATTATT | Chr.4 | 14919147 | 14919167 | + | Yes |
| 2693280_adh | TTTACACTGCTGTAGAAACA  | Chr.4 | 14920481 | 14920501 | + | No  |
| 2658032_adh | TTGGACAGATGAAGTTTTTCA | Chr.4 | 14921240 | 14921260 | + | Yes |
| 2001593_adh | TCGAGGAAATCTGTTTGGCAA | Chr.4 | 14923206 | 14923226 | + | No  |
| 2647095_adh | TTGATTTTTATTTGTCTGAT  | Chr.4 | 14923691 | 14923671 | - | Yes |
| 2462094_adh | TGGTAATAGATGTTTCAAATA | Chr.4 | 14924235 | 14924215 | - | No  |
| 1806419_adh | TACAAAAACACGGTTCAAGCA | Chr.4 | 14925039 | 14925019 | - | No  |
| 2694991_adh | TTTAGAATTGGATGCTTATAC | Chr.4 | 14925600 | 14925580 | - | No  |
| 1790868_adh | TAATAATTTGATTTCTGATTA | Chr.4 | 14926845 | 14926865 | + | No  |
| 1771691_adh | TAAGTGGGCCTATGCTGATTA | Chr.4 | 14927106 | 14927126 | + | No  |
| 2698534_adh | TTTATCCGGCATCGTATCACA | Chr.4 | 14929467 | 14929447 | - | No  |
| 1942816_adh | TCAATTACTGTGGCATTAAAT | Chr.4 | 14930561 | 14930581 | + | No  |
| 1804174_adh | TAATTGGTTGTTGGCGTGTTT | Chr.4 | 14931475 | 14931455 | - | No  |
| 1901399_adh | TATGAAAGTCGAAGATCGTGC | Chr.4 | 14932484 | 14932504 | + | Yes |
| 1811010_adh | TACACGAGTCGCCCCAAAAAA | Chr.4 | 14937282 | 14937262 | - | No  |
| 1771691_adh | TAAGTGGGCCTATGCTGATTA | Chr.4 | 14939122 | 14939142 | + | No  |
| 2593731_adh | TTCATAGTTTCTGATATATAC | Chr.4 | 14940443 | 14940463 | + | No  |
| 2620282_adh | TTCTGTAAAGCAGCTTTCTT  | Chr.4 | 14940484 | 14940504 | + | No  |
| 2554521_adh | TTACATAGATATTTTCATATT | Chr.4 | 14945452 | 14945432 | - | No  |
| 2124984_adh | TGAAGTACGGGCTTTTGTTT  | Chr.4 | 14946283 | 14946263 | - | No  |
| 2452736_adh | TGGGGATGTTGCAAGCTTGAC | Chr.4 | 14949152 | 14949172 | + | No  |
| 2151575_adh | TGACAAGTAGAATGCGTACAA | Chr.4 | 14949721 | 14949741 | + | No  |
| 2711027_adh | TTTCTGTTTCTGTTGACAAAT | Chr.4 | 14950058 | 14950038 | - | Yes |
| 1921990_adh | TATTATAGAACGGACGAAACC | Chr.4 | 14951897 | 14951877 | - | No  |
| 1922928_adh | TATTATTATAGAACGGACGAA | Chr.4 | 14951900 | 14951880 | - | No  |
| 1929403_adh | TATTTATTATTATAGAACGGA | Chr.4 | 14951904 | 14951884 | - | No  |
| 2583625_adh | TTATTTATTATTATAGAACGG | Chr.4 | 14951905 | 14951885 | - | No  |
| 2736910_adh | TTTTATTATTATTATAGAAC  | Chr.4 | 14951907 | 14951887 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2590856_adh | TTCAGATGGGTCTCGTCGCGA  | Chr.4 | 14954930 | 14954950 | + | No  |
| 2615143_adh | TTCTAGTGAATTTTGTCTTT   | Chr.4 | 14955113 | 14955093 | - | No  |
| 2497891_adh | TGTCGCATGCGATCGCAAAT   | Chr.4 | 14956895 | 14956915 | + | No  |
| 2548710_adh | TTAAGGTTGGCGGGAGACAGT  | Chr.4 | 14961891 | 14961911 | + | No  |
| 1809191_adh | TACAAGTTAAAAAACGTCCAA  | Chr.4 | 14963511 | 14963491 | - | No  |
| 2590075_adh | TTCACTGTTTCAATGTCATAT  | Chr.4 | 14963636 | 14963656 | + | No  |
| 1924388_adh | TATTCGGACAGGCAAGATTTT  | Chr.4 | 14963685 | 14963705 | + | Yes |
| 2607312_adh | TTCGGACAGGCAAGATTTTGT  | Chr.4 | 14963687 | 14963707 | + | Yes |
| 2555651_adh | TTACCAGAAATCTACAACTT   | Chr.4 | 14963826 | 14963806 | - | No  |
| 1833443_adh | TACTGGGACTTCCTAAACGGT  | Chr.4 | 14964363 | 14964383 | + | Yes |
| 1790254_adh | TAATAACAATTGCAGACGGCT  | Chr.4 | 14964485 | 14964505 | + | Yes |
| 2720704_adh | TTTGATTTATGAACTGCAGAA  | Chr.4 | 14965342 | 14965362 | + | No  |
| 1901650_adh | TATGAACTGCAGAATGTTGGT  | Chr.4 | 14965349 | 14965369 | + | No  |
| 2728339_adh | TTTGTAGGTTTACGACATTAA  | Chr.4 | 14966766 | 14966786 | + | No  |
| 1748742_adh | TAAACTGGAAGCGCTGGGAA   | Chr.4 | 14966980 | 14967000 | + | No  |
| 2580888_adh | TTATTAGAAGTTCATCGGGTG  | Chr.4 | 14967082 | 14967102 | + | No  |
| 2561588_adh | TTAGAAGTTCATCGGGTGATT  | Chr.4 | 14967085 | 14967105 | + | No  |
| 2573719_adh | TTATAAATAAAAAACAATTTAA | Chr.4 | 14968030 | 14968050 | + | No  |
| 2501347_adh | TGTGAAATTGCGATTGGAGAA  | Chr.4 | 14968080 | 14968060 | - | Yes |
| 2689755_adh | TTTAACAAGTTGAAACATGCA  | Chr.4 | 14971500 | 14971480 | - | No  |
| 2635150_adh | TTGACAGTATGAGGAATTGAG  | Chr.4 | 14972032 | 14972012 | - | No  |
| 2738246_adh | TTTTCGACTGTCAATAAAAAT  | Chr.4 | 14972557 | 14972537 | - | No  |
| 2127535_adh | TGAAGACAAGAAAAAATGAAT  | Chr.4 | 14974787 | 14974767 | - | No  |
| 2656372_adh | TTGGAAAGATCAAATCTGCCA  | Chr.4 | 14975683 | 14975663 | - | No  |
| 1782893_adh | TAAGCGTTTTCAACGAAGACAC | Chr.4 | 14975731 | 14975711 | - | No  |
| 2724427_adh | TTTGGCGATGCTCTCAGTTGA  | Chr.4 | 14976357 | 14976377 | + | No  |
| 2699603_adh | TTTATTAGGTCTATCCTTTTC  | Chr.4 | 14976900 | 14976880 | - | No  |
| 2717643_adh | TTTGATATTGTAGATTCTCC   | Chr.4 | 14979618 | 14979638 | + | Yes |
| 1924188_adh | TATTCGAAATGACAACTAGA   | Chr.4 | 14980613 | 14980593 | - | No  |
| 2014726_adh | TCGGATTAGCGTTAGGTTTTTC | Chr.4 | 14981761 | 14981741 | - | No  |
| 1865178_adh | TAGGATCATGAAACAGAAGAA  | Chr.4 | 14982383 | 14982363 | - | No  |
| 2624619_adh | TTGAAAATTTTCATTTAACTT  | Chr.4 | 14983291 | 14983271 | - | No  |
| 2674732_adh | TTGTAGAAGTTGAAAACTAA   | Chr.4 | 14984914 | 14984934 | + | No  |
| 1978640_adh | TCCAGGACAAGACGGAACCTC  | Chr.4 | 14985760 | 14985740 | - | No  |
| 2733151_adh | TTTTAAATATTATTGGGCAAA  | Chr.4 | 14987984 | 14987964 | - | No  |
| 2474483_adh | TGGTTATTAAATGGTAGAAAA  | Chr.4 | 14989307 | 14989327 | + | No  |
| 1780480_adh | TAAGATTATAGAAGACGACTC  | Chr.4 | 14991702 | 14991722 | + | No  |
| 2638007_adh | TTGACTGGGCATATTTAAAAG  | Chr.4 | 14994937 | 14994957 | + | No  |
| 2747806_adh | TTTTTGTGCAAAAATACAAAC  | Chr.4 | 14995260 | 14995280 | + | No  |
| 2310256_adh | TGCTTATTATGCATGTAGAAT  | Chr.4 | 14995474 | 14995454 | - | No  |
| 1945067_adh | TCACAGGAGATTTTGCTCACA  | Chr.4 | 14997252 | 14997232 | - | Yes |
| 1929517_adh | TATTCACAGGAGATTTTGCT   | Chr.4 | 14997256 | 14997236 | - | Yes |
| 2147970_adh | TGAATTGTTGGTTCCCTGTGT  | Chr.4 | 14997832 | 14997812 | - | No  |
| 1766863_adh | TAACCCGTCGGTTTTCCAATT  | Chr.4 | 14999313 | 14999293 | - | No  |
| 1891705_adh | TATCAATTAGCTGAAGAATTT  | Chr.4 | 14999340 | 14999360 | + | No  |
| 2731036_adh | TTTGTTGAATTGTTGGAAAAT  | Chr.4 | 14999892 | 14999872 | - | No  |
| 2278968_adh | TGATTTGTTGAATTGTTGGAA  | Chr.4 | 14999895 | 14999875 | - | No  |
| 1925791_adh | TATTGACTGTATTTTGGTTTT  | Chr.4 | 15000593 | 15000613 | + | Yes |
| 2638530_adh | TTGACTGTATTTTGGTTTTTG  | Chr.4 | 15000595 | 15000615 | + | Yes |
| 1789891_adh | TAATAAAAATTCCTAAAAACT  | Chr.4 | 15001526 | 15001506 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1761449_adh | TAAATGATAATTTGAAAACAG  | Chr.4 | 15002980 | 15002960 | - | No  |
| 2580534_adh | TTATTAATAAGAGTTTAAACT  | Chr.4 | 15003004 | 15003024 | + | No  |
| 1836677_adh | TAGAAAACCGGGCTAACTAAA  | Chr.4 | 15003956 | 15003936 | - | No  |
| 2606569_adh | TTCGCGAGGATCTTCCTAGAG  | Chr.4 | 15007307 | 15007327 | + | No  |
| 2708688_adh | TTTCGTACGTAGATCTACAAA  | Chr.4 | 15031195 | 15031215 | + | No  |
| 2709694_adh | TTTCTAGCGCTGTTGTTTCGGT | Chr.4 | 15037201 | 15037221 | + | No  |
| 2614896_adh | TTCTAGCGCTGTTGTTTCGGTT | Chr.4 | 15037202 | 15037222 | + | No  |
| 2531193_adh | TGTTGTTTCGGTTTTTTATTTG | Chr.4 | 15037211 | 15037231 | + | No  |
| 2700800_adh | TTTATTTGTTTTGACGCTCGG  | Chr.4 | 15037224 | 15037244 | + | No  |
| 2584451_adh | TTATTTGTTTTGACGCTCGGA  | Chr.4 | 15037225 | 15037245 | + | No  |
| 2732822_adh | TTTGTTTTGACGCTCGGAAAA  | Chr.4 | 15037228 | 15037248 | + | No  |
| 2688275_adh | TTGTTTTGACGCTCGGAAAAT  | Chr.4 | 15037229 | 15037249 | + | No  |
| 2715211_adh | TTTGACGCTCGGAAAATTTAT  | Chr.4 | 15037233 | 15037253 | + | No  |
| 2513656_adh | TGTGCCAGCATAGTTTATTAT  | Chr.4 | 15037270 | 15037290 | + | No  |
| 2686066_adh | TTGTTGGAGCGCGTTTGCATT  | Chr.4 | 15048451 | 15048431 | - | No  |
| 2732092_adh | TTTGTTGGAGCGCGTTTGCAT  | Chr.4 | 15048452 | 15048432 | - | No  |
| 2688467_adh | TTGTTTTTGATCTTTTTGTT   | Chr.4 | 15052097 | 15052077 | - | Yes |
| 2572586_adh | TTAGTTGACTTGCTAAAAATG  | Chr.4 | 15053662 | 15053642 | - | No  |
| 1919894_adh | TATTAATAATTTCCATTTTGTG | Chr.4 | 15054702 | 15054722 | + | No  |
| 1940041_adh | TCAAGTAATGCTAGGAATTTT  | Chr.4 | 15055643 | 15055623 | - | No  |
| 2380770_adh | TGGAGATCGTATCACATTGGT  | Chr.4 | 15057765 | 15057785 | + | No  |
| 2712328_adh | TTTGAAAAATTACAGCAGGCG  | Chr.4 | 15058498 | 15058518 | + | No  |
| 2700895_adh | TTTATTTTTGCATTCTTCTCC  | Chr.4 | 15061240 | 15061260 | + | Yes |
| 2289640_adh | TGCATAATAATTTGTTTCTTT  | Chr.4 | 15066501 | 15066481 | - | Yes |
| 1774427_adh | TAAGAAGTTGGCATGTTTCAT  | Chr.4 | 15067226 | 15067246 | + | No  |
| 2683670_adh | TTGTTTCGAGACATCGTGGAAA | Chr.4 | 15069467 | 15069487 | + | No  |
| 1931254_adh | TATTTTTAAATTCTTGAAACA  | Chr.4 | 15071384 | 15071364 | - | No  |
| 1922388_adh | TATTATGAAAAGAAACAAGCA  | Chr.4 | 15072402 | 15072422 | + | No  |
| 2271619_adh | TGATGATTGATTTTGTTGGTG  | Chr.4 | 15075051 | 15075031 | - | No  |
| 2644902_adh | TTGATGATTGATTTTGTTGGT  | Chr.4 | 15075052 | 15075032 | - | No  |
| 2745508_adh | TTTTTATTGTTCTGGAATACT  | Chr.4 | 15083912 | 15083892 | - | No  |
| 2594989_adh | TTCACTACTGGCATCTTTTTT  | Chr.4 | 15085034 | 15085014 | - | No  |
| 1974420_adh | TCATTGTCCAGTTGCGAAAAA  | Chr.4 | 15086618 | 15086638 | + | No  |
| 2687400_adh | TTGTTTGACTTAAATGAAAC   | Chr.4 | 15086798 | 15086778 | - | Yes |
| 2736632_adh | TTTTATTGAAGAATTGGTTTT  | Chr.4 | 15087277 | 15087257 | - | No  |
| 1888237_adh | TATAGCAGAACATTACATAAA  | Chr.4 | 15089072 | 15089052 | - | No  |
| 1888233_adh | TATAGCAGAACATTAAATTAA  | Chr.4 | 15090069 | 15090049 | - | No  |
| 2560156_adh | TTACTTCTTTATTTACTTTAC  | Chr.4 | 15095119 | 15095139 | + | No  |
| 1832240_adh | TACTGACCAAACTCTCGGCA   | Chr.4 | 15095792 | 15095812 | + | No  |
| 2047699_adh | TCTGCAAAAACATGAATAGGA  | Chr.4 | 15096139 | 15096159 | + | No  |
| 2749455_adh | TTTTTGCATGATACTGAATA   | Chr.4 | 15097257 | 15097237 | - | No  |
| 1875358_adh | TAGTATCTTCGTTTTGGCAAT  | Chr.4 | 15102435 | 15102415 | - | No  |
| 2561852_adh | TTAGAATTGGAAGACGAGAAA  | Chr.4 | 15105611 | 15105591 | - | No  |
| 2017100_adh | TCGGGGCACGAACGGTTAATT  | Chr.4 | 15108249 | 15108229 | - | Yes |
| 2580495_adh | TTATTAACCAAGTGAATGAAA  | Chr.4 | 15110576 | 15110596 | + | No  |
| 2545138_adh | TTAACCAAGTGAATGAAAAAA  | Chr.4 | 15110579 | 15110599 | + | No  |
| 1935702_adh | TCAAATTGTTGAGACCGTCAA  | Chr.4 | 15111301 | 15111321 | + | No  |
| 1899189_adh | TATCTAAATCATCTCATAAAA  | Chr.4 | 15111736 | 15111756 | + | No  |
| 2052475_adh | TCTGTGAACAAAGATTAGGAA  | Chr.4 | 15112865 | 15112845 | - | No  |
| 2745370_adh | TTTTTATGCAAGAACTGGTTG  | Chr.4 | 15113457 | 15113437 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2742687_adh | TTTTGGAATGTAATTCTAACA  | Chr.4 | 15114066 | 15114046 | - | No  |
| 2618491_adh | TTCTGATTAGACTAAAAAGAA  | Chr.4 | 15118020 | 15118000 | - | Yes |
| 2278010_adh | TGATTTACAGCTATCAAAAG   | Chr.4 | 15120597 | 15120577 | - | No  |
| 2749722_adh | TTTTTTGTCAGAACACTTTTG  | Chr.4 | 15121360 | 15121340 | - | No  |
| 1774217_adh | TAAGAAGCGATTGGCAAAAAG  | Chr.4 | 15122199 | 15122179 | - | No  |
| 2682841_adh | TTGTTAAGAAGCGATTGGCAA  | Chr.4 | 15122203 | 15122183 | - | No  |
| 1756542_adh | TAAAGACACGAGGAAACTTAC  | Chr.4 | 15124552 | 15124532 | - | No  |
| 2272957_adh | TGATGTAGAAAAGAAATGGTG  | Chr.4 | 15125718 | 15125698 | - | No  |
| 2738445_adh | TTTTCGGAAACATATTAAT    | Chr.4 | 15126513 | 15126493 | - | No  |
| 2673557_adh | TTGTAAAAGTTTGAAAATTGC  | Chr.4 | 15126663 | 15126643 | - | No  |
| 2572931_adh | TTAGTTGTAAAAGTTTGAAAA  | Chr.4 | 15126667 | 15126647 | - | No  |
| 2693352_adh | TTTACAGCCAACATGAAACGG  | Chr.4 | 15126930 | 15126910 | - | No  |
| 2655304_adh | TTGCTTCTGAATACACAGTTT  | Chr.4 | 15128079 | 15128099 | + | No  |
| 2744113_adh | TTTTGTTAGTTGACATATTTT  | Chr.4 | 15128265 | 15128245 | - | No  |
| 1931233_adh | TATTTTGTTAGTTGACATATT  | Chr.4 | 15128267 | 15128247 | - | No  |
| 2619977_adh | TTCTGTATTTTAGGCTTGTTA  | Chr.4 | 15129193 | 15129173 | - | No  |
| 2633616_adh | TTGAATTATTAATTTTATTTT  | Chr.4 | 15133568 | 15133588 | + | Yes |
| 2710551_adh | TTTCTGCAAAAACCTGGAACGA | Chr.4 | 15136154 | 15136174 | + | No  |
| 2593384_adh | TTCAAGTTTAAAAAATATGGCT | Chr.4 | 15136551 | 15136571 | + | Yes |
| 2733076_adh | TTTTAACTGAATTGTTTGTA   | Chr.4 | 15136562 | 15136542 | - | Yes |
| 2578343_adh | TTATGAAGTTGAATGGGCATT  | Chr.4 | 15138010 | 15137990 | - | No  |
| 2736055_adh | TTTTATGGATTGTTCCGCATG  | Chr.4 | 15138555 | 15138575 | + | Yes |
| 1919108_adh | TATGTGGGTTGAAAACGACAT  | Chr.4 | 15142192 | 15142172 | - | No  |
| 2236975_adh | TGAGGAATAGAACAATTTCAA  | Chr.4 | 15144931 | 15144951 | + | No  |
| 1808666_adh | TACAAGTGTGTATGCTATGAA  | Chr.4 | 15147497 | 15147477 | - | No  |
| 2693131_adh | TTTACAAGTGTGTATGCTATG  | Chr.4 | 15147499 | 15147479 | - | No  |
| 1837693_adh | TAGAAATAGGATTAGAAAAAA  | Chr.4 | 15147790 | 15147810 | + | No  |
| 2630195_adh | TTGAATCAGAACAATGGTACC  | Chr.4 | 15150502 | 15150482 | - | No  |
| 1975225_adh | TCATTTGAAGACCATTTTGAT  | Chr.4 | 15151142 | 15151122 | - | No  |
| 2619575_adh | TTCTGGGTTGGAGTCACACGT  | Chr.4 | 15155340 | 15155360 | + | No  |
| 1975890_adh | TCCAAAGTCTGGACAAAACGA  | Chr.4 | 15155977 | 15155957 | - | No  |
| 2723213_adh | TTTGGACAAAGAAAGTTTCAA  | Chr.4 | 15157412 | 15157392 | - | No  |
| 1967418_adh | TCAGTTCTGAAAGCTCAAAAC  | Chr.4 | 15158319 | 15158299 | - | No  |
| 2742364_adh | TTTTGCATGGATATATGTCTT  | Chr.4 | 15158535 | 15158555 | + | Yes |
| 2721447_adh | TTTGCATGGATATATGTCTTT  | Chr.4 | 15158536 | 15158556 | + | Yes |
| 2351206_adh | TGGAATGGAATTTGCAGATAA  | Chr.4 | 15159401 | 15159421 | + | No  |
| 2351206_adh | TGGAATGGAATTTGCAGATAA  | Chr.4 | 15160662 | 15160642 | - | No  |
| 2721447_adh | TTTGCATGGATATATGTCTTT  | Chr.4 | 15161527 | 15161507 | - | Yes |
| 2742364_adh | TTTTGCATGGATATATGTCTT  | Chr.4 | 15161528 | 15161508 | - | Yes |
| 1967418_adh | TCAGTTCTGAAAGCTCAAAAC  | Chr.4 | 15161744 | 15161764 | + | No  |
| 2723213_adh | TTTGGACAAAGAAAGTTTCAA  | Chr.4 | 15162651 | 15162671 | + | No  |
| 2517603_adh | TGTGGTGAAATGAGCATAGGA  | Chr.4 | 15164552 | 15164532 | - | No  |
| 1754392_adh | TAAACAGGCATGGAACCAT    | Chr.4 | 15165390 | 15165410 | + | No  |
| 2734361_adh | TTTTACTTCAAAGTGAAGCTT  | Chr.4 | 15165917 | 15165937 | + | No  |
| 2585223_adh | TTCAAAGTGAAGCTTTACTTG  | Chr.4 | 15165923 | 15165943 | + | No  |
| 1932370_adh | TCAAATACTGAGTAGGAAAT   | Chr.4 | 15166073 | 15166093 | + | Yes |
| 2581889_adh | TTATTCTGAAGTGAAGGCAAT  | Chr.4 | 15171407 | 15171427 | + | No  |
| 1932062_adh | TCAAACGGGCAAGATTTTAT   | Chr.4 | 15173198 | 15173218 | + | No  |
| 2549901_adh | TTAATAGGCGTCTTTCAATTC  | Chr.4 | 15173980 | 15173960 | - | No  |
| 1886679_adh | TATACAAATTTGTTAGAAATTT | Chr.4 | 15174718 | 15174698 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2587849_adh | TTCAATCGTTGCTGAATGGCG  | Chr.4 | 15175852 | 15175872 | + | Yes |
| 2745730_adh | TTTTTCAGTTTCCAACGACAT  | Chr.4 | 15176607 | 15176587 | - | No  |
| 2550324_adh | TTAATCATAAAAACTTGGATA  | Chr.4 | 15178593 | 15178573 | - | No  |
| 2532677_adh | TGTTTCTCTTCAAGTAGATAT  | Chr.4 | 15180894 | 15180914 | + | Yes |
| 2710224_adh | TTTCTCTTCAAGTAGATATCG  | Chr.4 | 15180896 | 15180916 | + | Yes |
| 1881117_adh | TAGTTGGACTCCGGATGGTAA  | Chr.4 | 15186875 | 15186895 | + | No  |
| 1925183_adh | TATTCTTCGTCGCGCTCAAAC  | Chr.4 | 15191632 | 15191612 | - | No  |
| 2700604_adh | TTTATTTAAAATCGTCGAAAA  | Chr.4 | 15193886 | 15193866 | - | No  |
| 1804836_adh | TAATTTATTTAAAATCGTCGA  | Chr.4 | 15193889 | 15193869 | - | No  |
| 2502372_adh | TGTGAAGGCGATGCAGATGAC  | Chr.4 | 15194558 | 15194578 | + | No  |
| 2287951_adh | TGCAGATGACGACTTTTAACA  | Chr.4 | 15194569 | 15194589 | + | No  |
| 1804339_adh | TAATTGTGGAATTAACGGGA   | Chr.4 | 15194594 | 15194614 | + | No  |
| 2502372_adh | TGTGAAGGCGATGCAGATGAC  | Chr.4 | 15196138 | 15196158 | + | No  |
| 2287951_adh | TGCAGATGACGACTTTTAACA  | Chr.4 | 15196149 | 15196169 | + | No  |
| 1804339_adh | TAATTGTGGAATTAACGGGA   | Chr.4 | 15196174 | 15196194 | + | No  |
| 2060406_adh | TCTTTACATTCATTGGGCATA  | Chr.4 | 15197113 | 15197093 | - | Yes |
| 2490732_adh | TGTATATTCAAGTGGAACACA  | Chr.4 | 15202811 | 15202791 | - | No  |
| 2692730_adh | TTTAATTTAAAACAGTTGAGC  | Chr.4 | 15205908 | 15205928 | + | No  |
| 2552532_adh | TTAATTTAAAACAGTTGAGCA  | Chr.4 | 15205909 | 15205929 | + | No  |
| 2679383_adh | TTGTGAAGCGAACAACAAATT  | Chr.4 | 15206379 | 15206359 | - | No  |
| 1808776_adh | TACAAGACCAATAAAAGTTTC  | Chr.4 | 15206693 | 15206713 | + | No  |
| 1807424_adh | TACAACAGCTTGAGGATCATG  | Chr.4 | 15209906 | 15209886 | - | No  |
| 2679383_adh | TTGTGAAGCGAACAACAAATT  | Chr.4 | 15210063 | 15210083 | + | No  |
| 1974251_adh | TCATTGGACCATTTCAGAGCAA | Chr.4 | 15211020 | 15211040 | + | No  |
| 1923441_adh | TATTCACAAAGAAGGTTCTTT  | Chr.4 | 15211786 | 15211766 | - | No  |
| 2577122_adh | TTATCATCAGGTTGAAGATTT  | Chr.4 | 15211908 | 15211928 | + | Yes |
| 2620904_adh | TTCTTATAGCAGAATGGGAAA  | Chr.4 | 15214860 | 15214840 | - | No  |
| 2158613_adh | TGACATGTTTCATTTGAACATC | Chr.4 | 15218718 | 15218698 | - | No  |
| 2700991_adh | TTTCAAAATGAGGGCATGTAA  | Chr.4 | 15220661 | 15220641 | - | No  |
| 1749470_adh | TAAAAGCACTGATTAGGACAC  | Chr.4 | 15221086 | 15221106 | + | No  |
| 1901098_adh | TATGAAACAGTAGGTTTTTTTC | Chr.4 | 15221713 | 15221693 | - | No  |
| 1786209_adh | TAAGGTAAATTTTAAAACATA  | Chr.4 | 15222331 | 15222351 | + | Yes |
| 1786209_adh | TAAGGTAAATTTTAAAACATA  | Chr.4 | 15224651 | 15224631 | - | Yes |
| 1901098_adh | TATGAAACAGTAGGTTTTTTTC | Chr.4 | 15225269 | 15225289 | + | No  |
| 2573948_adh | TTATAAGAACTCATAAAAATA  | Chr.4 | 15237882 | 15237902 | + | No  |
| 1975364_adh | TCATTTGTAGGCATATCATTA  | Chr.4 | 15242109 | 15242089 | - | No  |
| 1892792_adh | TATCACATTTTTGAATTTTTG  | Chr.4 | 15244563 | 15244583 | + | No  |
| 2651439_adh | TTGCCTCGGATGTACCATGGT  | Chr.4 | 15245718 | 15245698 | - | Yes |
| 2060020_adh | TCTTGTTATCGAGTAAAAACG  | Chr.4 | 15247302 | 15247322 | + | No  |
| 2261261_adh | TGATATAAACTAGGTGAAACG  | Chr.4 | 15252945 | 15252925 | - | No  |
| 2719032_adh | TTTGATGGAAGCTGATAATGA  | Chr.4 | 15254115 | 15254135 | + | No  |
| 2377033_adh | TGGACTCACGGCATTTAACAC  | Chr.4 | 15258097 | 15258077 | - | No  |
| 1922863_adh | TATTATTACCAATTCGTCATG  | Chr.4 | 15258789 | 15258809 | + | No  |
| 2555452_adh | TTACCAATTCGTCATGTTTAT  | Chr.4 | 15258794 | 15258814 | + | No  |
| 1877069_adh | TAGTGAACCGGCGATCTTGT   | Chr.4 | 15258876 | 15258856 | - | No  |
| 2042492_adh | TCTCTCGCCGTGTGCTTCATG  | Chr.4 | 15259480 | 15259500 | + | Yes |
| 2054568_adh | TCTTAGTACATAGTAGGTGAA  | Chr.4 | 15261336 | 15261316 | - | Yes |
| 2738017_adh | TTTTCCGGTGGCGATTCCCTAA | Chr.4 | 15265680 | 15265700 | + | Yes |
| 1885203_adh | TATAAGTACGGCTCCTTTTTTA | Chr.4 | 15269298 | 15269318 | + | No  |
| 1774369_adh | TAAGAAGTCTGTGGAATGGC   | Chr.4 | 15272340 | 15272320 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2504076_adh | TGTGACGTCAAGGAGGGAAAAC | Chr.4 | 15272402 | 15272382 | - | No  |
| 2528762_adh | TGTTGAGATGGTGATTCTTAA  | Chr.4 | 15273543 | 15273563 | + | No  |
| 2489732_adh | TGTAGTGATCAATACGGAAGG  | Chr.4 | 15274108 | 15274088 | - | No  |
| 1974284_adh | TCATTGGATTAGACGCTAATT  | Chr.4 | 15275152 | 15275172 | + | No  |
| 2664059_adh | TTGGATTAGACGCTAATTTTT  | Chr.4 | 15275155 | 15275175 | + | No  |
| 2392776_adh | TGGATTAGACGCTAATTTTTG  | Chr.4 | 15275156 | 15275176 | + | No  |
| 2069736_adh | TGAAAATAAAGAAAATCTGGC  | Chr.4 | 15276640 | 15276620 | - | No  |
| 1802968_adh | TAATTCATTCTTCAAATGTCT  | Chr.4 | 15277406 | 15277386 | - | No  |
| 1940078_adh | TCAAGTAGACAGAAACAAATA  | Chr.4 | 15278937 | 15278917 | - | No  |
| 2279685_adh | TGCAAAAAATGAAAAGATTG   | Chr.4 | 15279254 | 15279274 | + | No  |
| 2071828_adh | TGAAACAGTAGAATAATTTGA  | Chr.4 | 15280020 | 15280040 | + | No  |
| 2610071_adh | TTCGGTGAATTAATTCGGTGT  | Chr.4 | 15280284 | 15280304 | + | No  |
| 2655898_adh | TTGCTTTATAAAAAAGTATAC  | Chr.4 | 15285034 | 15285014 | - | No  |
| 2007263_adh | TCGCATTTTTAAAAATCGCA   | Chr.4 | 15286614 | 15286634 | + | No  |
| 2628454_adh | TTGAAGATGCCTTTTATGTTT  | Chr.4 | 15287024 | 15287004 | - | No  |
| 2002638_adh | TCGATACTCCGAAACGACATA  | Chr.4 | 15289174 | 15289154 | - | No  |
| 2657551_adh | TTGGAATCGTCACTTTCTGCT  | Chr.4 | 15295708 | 15295728 | + | Yes |
| 2558659_adh | TTACTATTAGAATTGTTGAAA  | Chr.4 | 15295771 | 15295791 | + | No  |
| 2644027_adh | TTGATCATATTAAGAATATTT  | Chr.4 | 15297226 | 15297246 | + | No  |
| 2553878_adh | TTACACGACTCATGTACTGAT  | Chr.4 | 15298053 | 15298073 | + | Yes |
| 1748908_adh | TAAAAGAAATAGATTTGATGT  | Chr.4 | 15300576 | 15300556 | - | No  |
| 2133801_adh | TGAAGTAAGCTCACAAAATTA  | Chr.4 | 15300738 | 15300718 | - | No  |
| 2274016_adh | TGATGTTTGAAGCTAGAAAGA  | Chr.4 | 15301562 | 15301582 | + | No  |
| 2053350_adh | TCTGTTGGTGAAGGTTGGATA  | Chr.4 | 15303683 | 15303663 | - | No  |
| 2583235_adh | TTATTGTACCTTTGTAGATTG  | Chr.4 | 15304535 | 15304555 | + | No  |
| 1921749_adh | TATTAGTATCTAAGGGCTACC  | Chr.4 | 15307822 | 15307802 | - | Yes |
| 2588858_adh | TTCAATTCTGTTGTGGATGCT  | Chr.4 | 15309381 | 15309361 | - | No  |
| 2602033_adh | TTCGAACTATTCTGGCCAAC   | Chr.4 | 15311658 | 15311638 | - | No  |
| 2180230_adh | TGAGAAGATGTAAGAGAGACG  | Chr.4 | 15312171 | 15312191 | + | No  |
| 2141992_adh | TGAATCCACGGCATCTCACTT  | Chr.4 | 15313054 | 15313034 | - | No  |
| 1889466_adh | TATAGTTTCTCTACTGTTTTT  | Chr.4 | 15318061 | 15318041 | - | No  |
| 2550274_adh | TTAATCAGAAAAGACTGAGAC  | Chr.4 | 15318179 | 15318159 | - | No  |
| 2602033_adh | TTCGAACTATTCTGGCCAAC   | Chr.4 | 15319018 | 15318998 | - | No  |
| 1791701_adh | TAATACGATCGTTGGGGGTGA  | Chr.4 | 15319367 | 15319347 | - | No  |
| 2553689_adh | TTACAATTTTAATTTTAATGT  | Chr.4 | 15322564 | 15322584 | + | No  |
| 1934603_adh | TCAAATCGGTTATAAACTTTA  | Chr.4 | 15329903 | 15329923 | + | No  |
| 2659282_adh | TTGGAGACAACTACGTCAAT   | Chr.4 | 15330492 | 15330512 | + | No  |
| 2147773_adh | TGAATTGTCACGATACTGAAA  | Chr.4 | 15333983 | 15333963 | - | No  |
| 2276277_adh | TGATTGAATTGTCACGATACT  | Chr.4 | 15333987 | 15333967 | - | No  |
| 1760527_adh | TAAATCATTTTATTTTGATCG  | Chr.4 | 15334994 | 15335014 | + | No  |
| 1893222_adh | TATCAGAAAGTAGCATGTTCC  | Chr.4 | 15335533 | 15335553 | + | No  |
| 2595050_adh | TTCAATTAGTTTGCCGTCTTTC | Chr.4 | 15336481 | 15336461 | - | No  |
| 2704476_adh | TTTCATTAGTTTGCCGTCTTT  | Chr.4 | 15336482 | 15336462 | - | No  |
| 2563465_adh | TTAGATAATTAGGTAGATCAG  | Chr.4 | 15337612 | 15337632 | + | No  |
| 2714454_adh | TTTGAATTAATACTGCAGA    | Chr.4 | 15339048 | 15339068 | + | No  |
| 1924985_adh | TATTCTGCAGTATATTAATTC  | Chr.4 | 15339071 | 15339051 | - | Yes |
| 2594992_adh | TTCAATTAGAACAACGTTTTTT | Chr.4 | 15341081 | 15341101 | + | No  |
| 1923501_adh | TATTCAGATCTTGGTTTTTTT  | Chr.4 | 15345759 | 15345739 | - | Yes |
| 2581289_adh | TTATTCAGATCTTGGTTTTTTT | Chr.4 | 15345760 | 15345740 | - | Yes |
| 1902084_adh | TATGAATAGAGACAATTTCAA  | Chr.4 | 15346801 | 15346821 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1925977_adh | TATTGATCCAATTTCAATTTT  | Chr.4 | 15349571 | 15349551 | - | No  |
| 1802191_adh | TAATTTAAATAGAAAAAAGGCA | Chr.4 | 15350162 | 15350182 | + | No  |
| 2488080_adh | TGTAGATTGGAGAGTAATTTTC | Chr.4 | 15352065 | 15352085 | + | Yes |
| 2420901_adh | TGGGAATGTCATGCTTGAAAT  | Chr.4 | 15356947 | 15356967 | + | No  |
| 2643955_adh | TTGATATTTTAATTGTTTTTG  | Chr.4 | 15358283 | 15358263 | - | No  |
| 2739493_adh | TTTTCTGAGAATATGACGATG  | Chr.4 | 15361461 | 15361481 | + | No  |
| 2040192_adh | TCTCGGCGATGAAAAAATAAC  | Chr.4 | 15362519 | 15362539 | + | No  |
| 1790708_adh | TAATAATAAGTTTCTGGACAA  | Chr.4 | 15366394 | 15366374 | - | No  |
| 2675092_adh | TTGTAGGAAATTATAACATTA  | Chr.4 | 15367573 | 15367553 | - | No  |
| 2124592_adh | TGAACTCCAGAAGAAAACATT  | Chr.4 | 15371909 | 15371929 | + | No  |
| 2615497_adh | TTCTATCTTACTATTAAATGT  | Chr.4 | 15371945 | 15371925 | - | No  |
| 1946275_adh | TCACATTAATAAATACAATTG  | Chr.4 | 15377204 | 15377184 | - | No  |
| 2171614_adh | TGACTGTGAAGACCAAACCAA  | Chr.4 | 15377607 | 15377627 | + | No  |
| 2739209_adh | TTTTCTCAAGAAGTCCTCAAT  | Chr.4 | 15378751 | 15378771 | + | No  |
| 2688162_adh | TTGTTTTAGCGGATTTTTTAC  | Chr.4 | 15387734 | 15387714 | - | No  |
| 2732775_adh | TTTGTTTTAGCGGATTTTTTA  | Chr.4 | 15387735 | 15387715 | - | No  |
| 2744558_adh | TTTTGTTTTAGCGGATTTTTT  | Chr.4 | 15387736 | 15387716 | - | No  |
| 2389625_adh | TGGATCCAATTGTTGAATTTT  | Chr.4 | 15388255 | 15388235 | - | No  |
| 2650708_adh | TTGCATTACCGACTCAACATA  | Chr.4 | 15389206 | 15389226 | + | No  |
| 2044216_adh | TCTGAAGCATACACTGAAAAT  | Chr.4 | 15390084 | 15390104 | + | No  |
| 2691291_adh | TTTAATCGGAGTGGCGTTTTG  | Chr.4 | 15390869 | 15390889 | + | Yes |
| 2700867_adh | TTTATTTTGTTTTTAAATACT  | Chr.4 | 15392783 | 15392803 | + | No  |
| 2276062_adh | TGATTCTGACACACAAAAGAC  | Chr.4 | 15392927 | 15392907 | - | No  |
| 1923028_adh | TATTATTCGTCTAATGAAACT  | Chr.4 | 15393024 | 15393044 | + | No  |
| 2640573_adh | TTGAGCACGTCATATTTTTAT  | Chr.4 | 15395074 | 15395094 | + | No  |
| 2311593_adh | TGCTTTAGAACGCTCACAGAA  | Chr.4 | 15395713 | 15395733 | + | No  |
| 2314244_adh | TGGAAACATAGCATTGATACT  | Chr.4 | 15396477 | 15396497 | + | No  |
| 1745581_adh | TAAAAAAGTAGCAGCCGACAT  | Chr.4 | 15398079 | 15398099 | + | No  |
| 2553203_adh | TTACAAAGTTGCTTCAATGTG  | Chr.4 | 15399418 | 15399438 | + | No  |
| 2071889_adh | TGAAACAGTGGAATTTTTAAA  | Chr.4 | 15400161 | 15400181 | + | No  |
| 2029931_adh | TCTAACTTTGCAAAGATTTGA  | Chr.4 | 15400501 | 15400481 | - | Yes |
| 2700877_adh | TTTATTTTATGTATATTCGA   | Chr.4 | 15401452 | 15401432 | - | Yes |
| 1808737_adh | TACAAGAACATCGAACCAAAT  | Chr.4 | 15403854 | 15403834 | - | Yes |
| 2019164_adh | TCGGTGTCGGACTTAATCGAA  | Chr.4 | 15404251 | 15404231 | - | No  |
| 2688470_adh | TTGTTTTTGGATTCATATTTA  | Chr.4 | 15404680 | 15404700 | + | No  |
| 1757639_adh | TAAAGCTGAAATTATATAACT  | Chr.4 | 15405896 | 15405916 | + | No  |
| 1889918_adh | TATATCACATTTGATGACCAT  | Chr.4 | 15408424 | 15408404 | - | No  |
| 1878997_adh | TAGTGGTCTGCCAAAGAACAC  | Chr.4 | 15410455 | 15410475 | + | Yes |
| 1919284_adh | TATGTTATGTTATGTTATGTT  | Chr.4 | 15410987 | 15411007 | + | Yes |
| 1919284_adh | TATGTTATGTTATGTTATGTT  | Chr.4 | 15410992 | 15411012 | + | Yes |
| 1919284_adh | TATGTTATGTTATGTTATGTT  | Chr.4 | 15410997 | 15411017 | + | No  |
| 1855565_adh | TAGCCAAAGCATAAATAGCGA  | Chr.4 | 15412180 | 15412160 | - | No  |
| 2704485_adh | TTTCATTATTATCTAATCCTT  | Chr.4 | 15412395 | 15412415 | + | Yes |
| 2737799_adh | TTTTCATTTAAGTATCTCGGG  | Chr.4 | 15413053 | 15413073 | + | No  |
| 1893296_adh | TATCAGAGCAGAGCAAAATGT  | Chr.4 | 15413858 | 15413838 | - | No  |
| 2027708_adh | TCGTTAAAGTTTCCAGACCGT  | Chr.4 | 15414179 | 15414159 | - | No  |
| 1957838_adh | TCAGAATACTCCCATTACGAA  | Chr.4 | 15414475 | 15414455 | - | Yes |
| 1814507_adh | TACATTGTTTATAGGCAAAC   | Chr.4 | 15415017 | 15414997 | - | No  |
| 1861857_adh | TAGGAATTACTAAAGACTGTT  | Chr.4 | 15416824 | 15416844 | + | No  |
| 2704632_adh | TTTCATTGTTTTACATTTTTC  | Chr.4 | 15417211 | 15417191 | - | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2595591_adh | TTCATTTTTTGAGCCCGTCTC  | Chr.4 | 15417755 | 15417775 | + | Yes |
| 2271021_adh | TGATGAATAATAGAAAATGCT  | Chr.4 | 15419703 | 15419683 | - | No  |
| 2271021_adh | TGATGAATAATAGAAAATGCT  | Chr.4 | 15420957 | 15420977 | + | No  |
| 2595591_adh | TTCATTTTTTGAGCCCGTCTC  | Chr.4 | 15422905 | 15422885 | - | Yes |
| 2704632_adh | TTTCATTGTTTTACATTTTTTC | Chr.4 | 15423449 | 15423469 | + | Yes |
| 1861857_adh | TAGGAATTACTAAAGACTGTT  | Chr.4 | 15423836 | 15423816 | - | No  |
| 2136101_adh | TGAAGTTTGGATACAATCAAA  | Chr.4 | 15428412 | 15428392 | - | No  |
| 2136101_adh | TGAAGTTTGGATACAATCAAA  | Chr.4 | 15428839 | 15428859 | + | No  |
| 2640002_adh | TTGAGAGGGACGAGTTTATTT  | Chr.4 | 15430012 | 15430032 | + | Yes |
| 1891090_adh | TATATTTTTTGTGTTGCATTA  | Chr.4 | 15432450 | 15432470 | + | Yes |
| 1931529_adh | TATTTTTTGTGTTGCATTA    | Chr.4 | 15432452 | 15432472 | + | Yes |
| 1789457_adh | TAAGTTGTCAACGGTAATGAA  | Chr.4 | 15433578 | 15433598 | + | No  |
| 1965113_adh | TCAGGTTCACTGTGAAACGGT  | Chr.4 | 15435116 | 15435096 | - | No  |
| 2468735_adh | TGGTATTGCTAGATTTTGGGT  | Chr.4 | 15435786 | 15435766 | - | No  |
| 2625889_adh | TTGAACAATGGACTGAAGACT  | Chr.4 | 15437782 | 15437802 | + | No  |
| 1886901_adh | TATACATCTCTATTTTCTATG  | Chr.4 | 15438200 | 15438220 | + | No  |
| 1917364_adh | TATGTAAATAAGTTGGATCGC  | Chr.4 | 15439098 | 15439118 | + | No  |
| 1931465_adh | TATTTTTTAAAGGTTTTTTTC  | Chr.4 | 15440419 | 15440399 | - | No  |
| 2402854_adh | TGGCACAATGGACATTTGATT  | Chr.4 | 15443486 | 15443466 | - | No  |
| 2237980_adh | TGAGGATGGACATGAGCTCGT  | Chr.4 | 15445529 | 15445509 | - | No  |
| 2044119_adh | TCTGAAGAAAGGGATGATGTG  | Chr.4 | 15471106 | 15471086 | - | No  |
| 2690390_adh | TTTAAGATTTAATTGTTTGGT  | Chr.4 | 15474221 | 15474241 | + | No  |
| 2590532_adh | TTCAGACTAGAAAATGACGCA  | Chr.4 | 15474460 | 15474440 | - | No  |
| 2733976_adh | TTTTACACTCTGATGACGTCA  | Chr.4 | 15476726 | 15476706 | - | No  |
| 2028445_adh | TCGTTGCTCGCATGATATAAT  | Chr.4 | 15480387 | 15480407 | + | No  |
| 2665319_adh | TTGGCATCTTGAATAAAATTT  | Chr.4 | 15480733 | 15480713 | - | No  |
| 1831391_adh | TACTCGTATTTTAGTGAATCA  | Chr.4 | 15480844 | 15480824 | - | No  |
| 2546225_adh | TTAACTCTGCATAAAATTA    | Chr.4 | 15480952 | 15480932 | - | No  |
| 2546225_adh | TTAACTCTGCATAAAATTA    | Chr.4 | 15482238 | 15482258 | + | No  |
| 1831391_adh | TACTCGTATTTTAGTGAATCA  | Chr.4 | 15482346 | 15482366 | + | No  |
| 2665319_adh | TTGGCATCTTGAATAAAATTT  | Chr.4 | 15482457 | 15482477 | + | No  |
| 2404161_adh | TGGCAGTAGATATTTAGTTTT  | Chr.4 | 15482691 | 15482711 | + | No  |
| 2259598_adh | TGATACGCTGAATTGAATAAT  | Chr.4 | 15483013 | 15483033 | + | No  |
| 2700885_adh | TTTATTTTCTTATTTCCAGG   | Chr.4 | 15487481 | 15487501 | + | No  |
| 2584947_adh | TTCAAAACACTACAGTTAGCA  | Chr.4 | 15487784 | 15487764 | - | No  |
| 2714201_adh | TTTGAATCAGATCAGGTATTT  | Chr.4 | 15488892 | 15488912 | + | No  |
| 1811112_adh | TACACGGCAAATTTTATATAG  | Chr.4 | 15495759 | 15495779 | + | No  |
| 2599024_adh | TTCCGCGTGCAGACTTCTTAT  | Chr.4 | 15496102 | 15496122 | + | No  |
| 2698316_adh | TTTATATTATATTTCTAGGCA  | Chr.4 | 15497894 | 15497914 | + | Yes |
| 2700971_adh | TTTCAAATATTTTCATTTTC   | Chr.4 | 15498593 | 15498573 | - | No  |
| 2576662_adh | TTATATTTACCCCTAAATTTTC | Chr.4 | 15505065 | 15505045 | - | Yes |
| 1799366_adh | TAATGAATTCGGCCAATTATT  | Chr.4 | 15508271 | 15508291 | + | No  |
| 2301260_adh | TGCGGAGGCAAACGATGGAAG  | Chr.4 | 15510917 | 15510937 | + | No  |
| 2706258_adh | TTTCCTCTGTTTTTCGAACAA  | Chr.4 | 15513375 | 15513395 | + | No  |
| 2706258_adh | TTTCCTCTGTTTTTCGAACAA  | Chr.4 | 15522442 | 15522422 | - | No  |
| 1990086_adh | TCCTCCCTGGATCAGTCGGTA  | Chr.4 | 15522628 | 15522608 | - | No  |
| 2472274_adh | TGGTGGATTTTAGGCGATTTT  | Chr.4 | 15526577 | 15526557 | - | No  |
| 2232558_adh | TGAGATTTTGCGGAAATTGGC  | Chr.4 | 15527048 | 15527068 | + | No  |
| 2738647_adh | TTTTCGGGCAGAAATTGTGAA  | Chr.4 | 15530594 | 15530574 | - | No  |
| 2608432_adh | TTCGGCAATTTTCGGGCAGAA  | Chr.4 | 15530602 | 15530582 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2279248_adh | TGATTTTCTGGCGGAAAAAGA  | Chr.4 | 15530794 | 15530814 | + | No  |
| 2477774_adh | TGGTTTCGTAGAAAGATTTTA  | Chr.4 | 15531442 | 15531422 | - | No  |
| 1800820_adh | TAATGGTGTACGCCTATATCC  | Chr.4 | 15532622 | 15532602 | - | Yes |
| 2626016_adh | TTGAACAGTGAAGCAGAACTT  | Chr.4 | 15535847 | 15535867 | + | No  |
| 2733738_adh | TTTTAATGGGTGATCATGGAC  | Chr.4 | 15536497 | 15536477 | - | No  |
| 2618508_adh | TTCTGATTGCACAACTTTAAT  | Chr.4 | 15538529 | 15538509 | - | No  |
| 1875060_adh | TAGTATAAAAAATCACAATTTT | Chr.4 | 15538620 | 15538600 | - | Yes |
| 2254376_adh | TGAGTGTAGGCGTCTCTTGTT  | Chr.4 | 15540020 | 15540000 | - | No  |
| 2305497_adh | TGCTAATGAGTGTAGGCGTCT  | Chr.4 | 15540026 | 15540006 | - | No  |
| 2595975_adh | TTCCAATTAAATTGATTTGGA  | Chr.4 | 15540262 | 15540282 | + | Yes |
| 2127346_adh | TGAAGAAGTGCAACTTTTGAT  | Chr.4 | 15541814 | 15541834 | + | No  |
| 2732798_adh | TTTGTTTTCGCGTCGTCATCA  | Chr.4 | 15541872 | 15541852 | - | Yes |
| 2138567_adh | TGAATAGATTTTTGGGCCCAA  | Chr.4 | 15544127 | 15544147 | + | No  |
| 1866725_adh | TAGGATTTGTGAATGGTTAAT  | Chr.4 | 15544288 | 15544268 | - | No  |
| 2745465_adh | TTTTTATTCAAGAACTTATAT  | Chr.4 | 15545640 | 15545660 | + | No  |
| 1758223_adh | TAAAGGTGCAGTAGGTCAATG  | Chr.4 | 15546251 | 15546271 | + | No  |
| 2683537_adh | TTGTTTCAGATACTGGTCCTTG | Chr.4 | 15547413 | 15547433 | + | No  |
| 1824407_adh | TACGATTATTTGAACAAATAA  | Chr.4 | 15548196 | 15548216 | + | No  |
| 2540208_adh | TTAAAGAAACCTGAGGATTCA  | Chr.4 | 15561010 | 15560990 | - | Yes |
| 2699250_adh | TTTATGGTGAAATTTAAAGAA  | Chr.4 | 15561023 | 15561003 | - | Yes |
| 1933938_adh | TCAAAGTGAAACAGGACACAG  | Chr.4 | 15561603 | 15561623 | + | No  |
| 1851712_adh | TAGATGTAGGAACATTCATAA  | Chr.4 | 15562634 | 15562614 | - | No  |
| 1872097_adh | TAGGTGTTTGGAACCTATCTG  | Chr.4 | 15563855 | 15563835 | - | Yes |
| 1938500_adh | TCAAGACAGCAGACAGAATTT  | Chr.4 | 15564717 | 15564737 | + | No  |
| 2542660_adh | TTAAATCAGCATTTTGAAAAA  | Chr.4 | 15564834 | 15564854 | + | No  |
| 2482836_adh | TGTAATAATGGAACCGGATT   | Chr.4 | 15567412 | 15567392 | - | No  |
| 2549471_adh | TTAATAAATCCCAATTGGCAA  | Chr.4 | 15567812 | 15567792 | - | No  |
| 2690875_adh | TTTAATAAATCCCAATTGGCA  | Chr.4 | 15567813 | 15567793 | - | No  |
| 2700624_adh | TTTATTTAATACATTTTTTCA  | Chr.4 | 15568622 | 15568602 | - | Yes |
| 1919989_adh | TATTAAATTAATTTTCTACGG  | Chr.4 | 15568940 | 15568920 | - | Yes |
| 2237432_adh | TGAGGACTTTATTTAAAAACA  | Chr.4 | 15569301 | 15569281 | - | No  |
| 2617905_adh | TTCTGAATGAGCTTCAACTAA  | Chr.4 | 15569619 | 15569599 | - | No  |
| 2699444_adh | TTTATTAAGAAAAAGGGGAAT  | Chr.4 | 15572606 | 15572626 | + | Yes |
| 1752173_adh | TAAAATGCAATAAATGAAATT  | Chr.4 | 15574813 | 15574793 | - | No  |
| 2561847_adh | TTAGAATTGACAAGTTGGGAT  | Chr.4 | 15583387 | 15583367 | - | No  |
| 2478220_adh | TGGTTTGCAACACTTGTTACA  | Chr.4 | 15583504 | 15583524 | + | No  |
| 2579124_adh | TTATGCCTAAGTAGAGTTTAT  | Chr.4 | 15584289 | 15584269 | - | No  |
| 2699378_adh | TTTATGTTTCGTGGGACTATAA | Chr.4 | 15587496 | 15587516 | + | No  |
| 1954089_adh | TCACTATTTTCTGTGATTGTA  | Chr.4 | 15587747 | 15587727 | - | No  |
| 2729397_adh | TTTGTGAATTGAAGTTGCATC  | Chr.4 | 15587887 | 15587907 | + | No  |
| 2553297_adh | TTACAACCTGGTTTCTAGTGT  | Chr.4 | 15588464 | 15588444 | - | No  |
| 2271542_adh | TGATGATGCTAATGACAAATA  | Chr.4 | 15589996 | 15589976 | - | Yes |
| 1930171_adh | TATTTGAATCAATTTAATTTT  | Chr.4 | 15596897 | 15596877 | - | No  |
| 2566435_adh | TTAGCATAAATTTCTGAACATA | Chr.4 | 15596903 | 15596923 | + | No  |
| 2733150_adh | TTTTAAATATTAAAGTAGAAA  | Chr.4 | 15601040 | 15601060 | + | No  |
| 2560512_adh | TTACTTTGGCAAACCTAATAC  | Chr.4 | 15602004 | 15601984 | - | No  |
| 1796029_adh | TAATATCTGTTTTATCCTGTA  | Chr.4 | 15602876 | 15602896 | + | Yes |
| 2474494_adh | TGGTTATTCCTCTTTGTCTCGG | Chr.4 | 15604652 | 15604672 | + | Yes |
| 1924149_adh | TATTCCTCTTTGTCTCGGTTTT | Chr.4 | 15604656 | 15604676 | + | Yes |
| 2321092_adh | TGGAAGTAGAGGAATCTTAAA  | Chr.4 | 15605491 | 15605511 | + | Yes |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2612055_adh | TTCGTCTAAAACTGTAAATTC   | Chr.4 | 15605713 | 15605733 | + | Yes |
| 2562164_adh | TTAGACGAAACAGATAGAACG   | Chr.4 | 15605721 | 15605701 | - | No  |
| 1814627_adh | TACATTTTTCTCATAGCACGG   | Chr.4 | 15610642 | 15610622 | - | No  |
| 1967701_adh | TCAGTTTATCGTACAAATTTT   | Chr.4 | 15611408 | 15611388 | - | No  |
| 2550751_adh | TTAATCTTGAATAGTATAATA   | Chr.4 | 15611702 | 15611682 | - | Yes |
| 1831170_adh | TACTCCTTCGGCTATATTTAC   | Chr.4 | 15612107 | 15612127 | + | Yes |
| 2521543_adh | TGTGTTTGTGCAATTAACAAA   | Chr.4 | 15614825 | 15614805 | - | No  |
| 2572084_adh | TTAGTGTGTTTGTGCAATTAA   | Chr.4 | 15614829 | 15614809 | - | No  |
| 1921769_adh | TATTAGTGTGTTTGTGCAATT   | Chr.4 | 15614831 | 15614811 | - | No  |
| 1977076_adh | TCCACAAATTTCTGTTTTGTT   | Chr.4 | 15620899 | 15620879 | - | No  |
| 1901134_adh | TATGAAACCGTAGATAATTGT   | Chr.4 | 15621119 | 15621099 | - | No  |
| 2729419_adh | TTTGTGACAGAACGCATTTTT   | Chr.4 | 15621157 | 15621177 | + | No  |
| 1922395_adh | TATTATGAACAACAAAAACA    | Chr.4 | 15621847 | 15621867 | + | No  |
| 2747851_adh | TTTTTGTTAAAGTGGACAATA   | Chr.4 | 15624681 | 15624701 | + | No  |
| 2611369_adh | TTCGTAGTATAGTAGAAAACC   | Chr.4 | 15625036 | 15625016 | - | No  |
| 1829060_adh | TACGTTGGAAACATTATTATT   | Chr.4 | 15628397 | 15628377 | - | No  |
| 1859631_adh | TAGCTTCATTAATTTTTTAAT   | Chr.4 | 15629054 | 15629074 | + | No  |
| 2606555_adh | TTCGCGAATATAAAAACTTCA   | Chr.4 | 15629309 | 15629329 | + | Yes |
| 2008265_adh | TCGCTAAACAGACAAAAATG    | Chr.4 | 15631092 | 15631072 | - | No  |
| 2530358_adh | TGTTGTACCGTCGGTATAAAT   | Chr.4 | 15657494 | 15657474 | - | No  |
| 2747925_adh | TTTTTGTTGATGCATTTTTGA   | Chr.4 | 15657729 | 15657709 | - | No  |
| 2675041_adh | TTGTAGCATTTTATAAAAAAC   | Chr.4 | 15658913 | 15658933 | + | No  |
| 1807084_adh | TACAAAGTTCAAGATTCGGAT   | Chr.4 | 15661819 | 15661799 | - | No  |
| 2592502_adh | TTCAGGTTACTTTTTTACTGA   | Chr.4 | 15661882 | 15661862 | - | No  |
| 2634769_adh | TTGACACACGGATGCGAATAG   | Chr.4 | 15662982 | 15662962 | - | No  |
| 1912440_adh | TATGCACGGTCTTGATATTC    | Chr.4 | 15663300 | 15663280 | - | No  |
| 2706735_adh | TTTCGAAGTTTGAATCGGCCT   | Chr.4 | 15666203 | 15666223 | + | No  |
| 1839506_adh | TAGAAGGAACGGCGGACATAA   | Chr.4 | 15666710 | 15666690 | - | Yes |
| 2561495_adh | TTAGAAGGAACGGCGGACATA   | Chr.4 | 15666711 | 15666691 | - | Yes |
| 2305307_adh | TGCTAACACAGTTGTTTGAAT   | Chr.4 | 15667377 | 15667357 | - | Yes |
| 2742626_adh | TTTTGGAAAGACGACTTTGTT   | Chr.4 | 15667760 | 15667780 | + | No  |
| 2558395_adh | TTACTAGACGAATGCTAATAG   | Chr.4 | 15669195 | 15669175 | - | No  |
| 2736425_adh | TTTTATTAGACGTGTTGAAAA   | Chr.4 | 15669417 | 15669437 | + | No  |
| 2742626_adh | TTTTGGAAAGACGACTTTGTT   | Chr.4 | 15669635 | 15669655 | + | No  |
| 2706735_adh | TTTCGAAGTTTGAATCGGCCT   | Chr.4 | 15670283 | 15670303 | + | No  |
| 2681216_adh | TTGTGCAATTGCTAAAAACAG   | Chr.4 | 15674806 | 15674786 | - | No  |
| 2003875_adh | TCGATGAACTTTTGAACCTAAC  | Chr.4 | 15677149 | 15677129 | - | No  |
| 2605050_adh | TTTCGATGAACTTTTGAACCTAA | Chr.4 | 15677150 | 15677130 | - | No  |
| 2127140_adh | TGAAGAAGACGGACAAAGCCA   | Chr.4 | 15677263 | 15677243 | - | Yes |
| 2605050_adh | TTTCGATGAACTTTTGAACCTAA | Chr.4 | 15677861 | 15677881 | + | No  |
| 2003875_adh | TCGATGAACTTTTGAACCTAAC  | Chr.4 | 15677862 | 15677882 | + | No  |
| 2332202_adh | TGGAATATGAAAGAGAATGAA   | Chr.4 | 15679109 | 15679089 | - | No  |
| 2522440_adh | TGTTAAGAATGCCACTGCAAC   | Chr.4 | 15681611 | 15681631 | + | No  |
| 2044797_adh | TCTGAATGGATTTGATGAACC   | Chr.4 | 15684170 | 15684150 | - | No  |
| 2723392_adh | TTTGGACTAGAGTTTACGGA    | Chr.4 | 15684342 | 15684322 | - | No  |
| 2723392_adh | TTTGGACTAGAGTTTACGGA    | Chr.4 | 15686677 | 15686697 | + | No  |
| 2044797_adh | TCTGAATGGATTTGATGAACC   | Chr.4 | 15686849 | 15686869 | + | No  |
| 2554520_adh | TTACATAGATAACAATATTTTC  | Chr.4 | 15690240 | 15690260 | + | Yes |
| 1813158_adh | TACATAGATAACAATATTTTC   | Chr.4 | 15690241 | 15690261 | + | Yes |
| 2733562_adh | TTTTAAGTAGAAATCGTGGCA   | Chr.4 | 15696630 | 15696650 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2690743_adh | TTTAAGTAGAAATCGTGGCAA  | Chr.4 | 15696631 | 15696651 | + | No  |
| 2701163_adh | TTTCAAATAGAAGCTTTTGGTA | Chr.4 | 15698281 | 15698301 | + | No  |
| 2737451_adh | TTTTTCAGAGAGTCAGGATACA | Chr.4 | 15700046 | 15700026 | - | No  |
| 2046572_adh | TCTGATAAAAAAGCGAAATAA  | Chr.4 | 15701830 | 15701850 | + | No  |
| 2601724_adh | TTCGAAATCATATAACACTTA  | Chr.4 | 15706299 | 15706279 | - | No  |
| 1872769_adh | TAGTAAAAGGGCATTGAACT   | Chr.4 | 15706992 | 15706972 | - | Yes |
| 2554844_adh | TTACATGAGTCATATCATTAC  | Chr.4 | 15710157 | 15710137 | - | Yes |
| 2042338_adh | TCTCTCAGCCTACGACCAAAA  | Chr.4 | 15711317 | 15711297 | - | Yes |
| 2544369_adh | TTAAATTCGTGTCCTATTCCCT | Chr.4 | 15711596 | 15711576 | - | No  |
| 2549243_adh | TTAAGTGACCTTCAACACTA   | Chr.4 | 15711976 | 15711956 | - | No  |
| 2552287_adh | TTAATTGGTTTGGTGTGATTG  | Chr.4 | 15712083 | 15712063 | - | Yes |
| 2699589_adh | TTTATTAGATGAGTGTGTCAG  | Chr.4 | 15712745 | 15712725 | - | Yes |
| 2736428_adh | TTTTATTAGATGAGTGTGTCA  | Chr.4 | 15712746 | 15712726 | - | Yes |
| 2053100_adh | TCTGTTCCGTAGAAGAAAAC   | Chr.4 | 15713985 | 15713965 | - | No  |
| 1893624_adh | TATCAGTTGTGATATCAAAAC  | Chr.4 | 15714163 | 15714143 | - | Yes |
| 1923440_adh | TATTCAATTTTTATGTAGAGA  | Chr.4 | 15716601 | 15716621 | + | No  |
| 2669374_adh | TTGGTACGTCTGACATCTTAC  | Chr.4 | 15717802 | 15717782 | - | No  |
| 1874849_adh | TAGTAGTAAAAAGCCGATAT   | Chr.4 | 15722728 | 15722748 | + | No  |
| 2557869_adh | TTACGTAGGGTTTCGAAACTA  | Chr.4 | 15723242 | 15723222 | - | No  |
| 2571401_adh | TTAGTGAAATTTGAGTCGGTT  | Chr.4 | 15724083 | 15724063 | - | Yes |
| 2601078_adh | TTCTGTTCATGTGCGCTGC    | Chr.4 | 15724957 | 15724977 | + | No  |
| 2664826_adh | TTGGATTTTAAAAAATATTTA  | Chr.4 | 15732058 | 15732038 | - | No  |
| 2650144_adh | TTGCATATCCTATAAAGCCAT  | Chr.4 | 15732427 | 15732447 | + | No  |
| 2573456_adh | TTAGTTTGATTGTTCTATGGA  | Chr.4 | 15733765 | 15733785 | + | No  |
| 2710854_adh | TTTCTGTAGCTAGATTTGCAT  | Chr.4 | 15738296 | 15738316 | + | No  |
| 2573456_adh | TTAGTTTGATTGTTCTATGGA  | Chr.4 | 15738830 | 15738850 | + | No  |
| 2573456_adh | TTAGTTTGATTGTTCTATGGA  | Chr.4 | 15740913 | 15740893 | - | No  |
| 2710854_adh | TTTCTGTAGCTAGATTTGCAT  | Chr.4 | 15741447 | 15741427 | - | No  |
| 2134942_adh | TGAAGTGACCGAAGCTTGACG  | Chr.4 | 15745993 | 15745973 | - | No  |
| 1968543_adh | TCATACAATGGGTCTTTTGGT  | Chr.4 | 15747097 | 15747117 | + | No  |
| 2580477_adh | TTATTAAACTGTGAATTTAGT  | Chr.4 | 15749610 | 15749630 | + | No  |
| 2554236_adh | TTACAGCAAATTTTCTGAAGA  | Chr.4 | 15750836 | 15750856 | + | No  |
| 2305671_adh | TGCTACAGTTTTTCCATATTC  | Chr.4 | 15755325 | 15755345 | + | No  |
| 2700799_adh | TTTATTTGTTTTATTGATTAG  | Chr.4 | 15755664 | 15755684 | + | No  |
| 2732780_adh | TTTGTTTTATTGATTAGCATA  | Chr.4 | 15755668 | 15755688 | + | No  |
| 2066623_adh | TGAAAACAAAAAATGTATATA  | Chr.4 | 15757734 | 15757754 | + | No  |
| 2703802_adh | TTTCATAGTTGATTGCAGAAA  | Chr.4 | 15759919 | 15759899 | - | No  |
| 2741897_adh | TTTTGATTATTTTGTAGCAT   | Chr.4 | 15760654 | 15760634 | - | No  |
| 2625967_adh | TTGAACAGCATTGCTCCGTCG  | Chr.4 | 15764124 | 15764104 | - | No  |
| 1943358_adh | TCAATTTGCTCAAGAATCATA  | Chr.4 | 15764575 | 15764555 | - | No  |
| 2659713_adh | TTGGAGCATATTTTGACAAT   | Chr.4 | 15769029 | 15769009 | - | No  |
| 1771683_adh | TAAGTGGGAGAATGACTCGTT  | Chr.4 | 15770760 | 15770740 | - | No  |
| 1931221_adh | TATTTTGTGGAAAGTTGTTGC  | Chr.4 | 15771190 | 15771210 | + | No  |
| 2654152_adh | TTGCTAGACTTAGATAAAGCT  | Chr.4 | 15772369 | 15772349 | - | No  |
| 2479136_adh | TGGTTTTGAAAATGTTTGGCA  | Chr.4 | 15772739 | 15772719 | - | No  |
| 1794868_adh | TAATAGATACTTGCATTTTCC  | Chr.4 | 15772947 | 15772967 | + | No  |
| 2556081_adh | TTACCGCTGTATTTAAACTG   | Chr.4 | 15773160 | 15773180 | + | No  |
| 1794552_adh | TAATACTGTTTCACTATTTCC  | Chr.4 | 15773389 | 15773409 | + | No  |
| 2584773_adh | TTATTTTTTCAGTTTTTGAAT  | Chr.4 | 15777333 | 15777353 | + | Yes |
| 2693312_adh | TTTACAGAATCTACGTAACT   | Chr.4 | 15779075 | 15779095 | + | Yes |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 1920793_adh | TATTACGAAGAGATAATACTA   | Chr.4 | 15779896 | 15779916 | + | No  |
| 2578090_adh | TTATCTCTTCGTAATAAAACA   | Chr.4 | 15779911 | 15779891 | - | No  |
| 2706276_adh | TTTCCTGAGTTCTGCTTGAAA   | Chr.4 | 15786300 | 15786280 | - | No  |
| 1992660_adh | TCCTTATGGAAGAAGATGA     | Chr.4 | 15792645 | 15792665 | + | No  |
| 2527476_adh | TGTTGAAATTTGCGCCTTGT    | Chr.4 | 15793882 | 15793902 | + | No  |
| 2620576_adh | TTCTTACTGAATTAGAAAACG   | Chr.4 | 15794753 | 15794773 | + | No  |
| 1832207_adh | TACTGAATTAGAAAACGGATT   | Chr.4 | 15794757 | 15794777 | + | No  |
| 2145243_adh | TGAATTAGAAAACGGATTTTC   | Chr.4 | 15794760 | 15794780 | + | No  |
| 1746261_adh | TAAAAAGATATATGACAATTC   | Chr.4 | 15804932 | 15804912 | - | No  |
| 2318679_adh | TGGAACAAGAAAATTCGAAGA   | Chr.4 | 15805032 | 15805012 | - | No  |
| 2631491_adh | TTGAATGATATGACAAATTTT   | Chr.4 | 15807569 | 15807589 | + | No  |
| 1926854_adh | TATTGGACACAACACAAGAAC   | Chr.4 | 15810896 | 15810916 | + | Yes |
| 2657985_adh | TTGGACACAACACAAGAACCA   | Chr.4 | 15810898 | 15810918 | + | Yes |
| 2592984_adh | TTCAGTGACTCGTATTAGCGT   | Chr.4 | 15813195 | 15813175 | - | No  |
| 2004547_adh | TCGATTATAAGCTCACACGGA   | Chr.4 | 15816625 | 15816605 | - | No  |
| 2617667_adh | TTCTGAAACAGTAGAAAAAGT   | Chr.4 | 15817835 | 15817815 | - | No  |
| 2722664_adh | TTTGCTTCGTTGGTTTATTAC   | Chr.4 | 15818894 | 15818874 | - | No  |
| 2269092_adh | TGATCACCAAGAATTCGGTTA   | Chr.4 | 15821084 | 15821064 | - | Yes |
| 2463291_adh | TGGTAGGCGTCATTAAAACCG   | Chr.4 | 15824887 | 15824907 | + | Yes |
| 2733706_adh | TTTTAATGACGCCTACCAATT   | Chr.4 | 15824904 | 15824884 | - | No  |
| 1813240_adh | TACATATCCTTCAAACCAATT   | Chr.4 | 15825197 | 15825177 | - | Yes |
| 2613599_adh | TTCGTTTGTATGTGTTGTAA    | Chr.4 | 15831766 | 15831786 | + | No  |
| 1932390_adh | TCAAAATCAGTCGGGCATTTA   | Chr.4 | 15831867 | 15831847 | - | No  |
| 2705964_adh | TTTCCTACGAATTATTTATTA   | Chr.4 | 15834110 | 15834090 | - | No  |
| 2691324_adh | TTTAATCGTTCGTAGAATGTA   | Chr.4 | 15837418 | 15837438 | + | No  |
| 2028042_adh | TCGTTTCGTAGAATGTATTTGT  | Chr.4 | 15837423 | 15837443 | + | No  |
| 2500671_adh | TGTGAAACCGTATTTTTTGT    | Chr.4 | 15837866 | 15837846 | - | No  |
| 2620501_adh | TTCTTAAGGTTTTTGTACGA    | Chr.4 | 15838134 | 15838154 | + | No  |
| 1803104_adh | TAATTCGACCTGCAATGACAA   | Chr.4 | 15838636 | 15838616 | - | No  |
| 2640371_adh | TTGAGATTTTTAATATCTTCT   | Chr.4 | 15839376 | 15839356 | - | No  |
| 2594228_adh | TTCATCCCTCTCGTCAACATA   | Chr.4 | 15841434 | 15841454 | + | Yes |
| 1784621_adh | TAAGGATTTTCATCGTTTCAGT  | Chr.4 | 15842130 | 15842150 | + | No  |
| 2288055_adh | TGCAGCAAACAAACGTGTTTC   | Chr.4 | 15844233 | 15844213 | - | No  |
| 2700420_adh | TTTATTGGGCTAAACGACTGA   | Chr.4 | 15844536 | 15844556 | + | Yes |
| 2743967_adh | TTTTGTGGCTTATCTAAATCC   | Chr.4 | 15844918 | 15844938 | + | Yes |
| 2313380_adh | TGGA AAAACATGAGGATGTAGT | Chr.4 | 15845952 | 15845972 | + | No  |
| 1968019_adh | TCATAAAACGTTATACTTACA   | Chr.4 | 15846390 | 15846410 | + | No  |
| 1990815_adh | TCCTCTGAAAATTTTCGCAA    | Chr.4 | 15850038 | 15850018 | - | No  |
| 2576589_adh | TTATATTGCATTTTTTATGTG   | Chr.4 | 15850095 | 15850115 | + | No  |
| 2579885_adh | TTATGTAGATATCATCCGCAC   | Chr.4 | 15851702 | 15851682 | - | No  |
| 2029260_adh | TCTAAAAGTAAACGGATTAAT   | Chr.4 | 15857813 | 15857833 | + | No  |
| 1920277_adh | TATTAATCCGTTTACTTTTAG   | Chr.4 | 15857834 | 15857814 | - | No  |
| 2643263_adh | TTGATAACTCTTGAAGAGGTT   | Chr.4 | 15860054 | 15860034 | - | No  |
| 2413620_adh | TGGCGTGTTCTGCAGAAAACC   | Chr.4 | 15861534 | 15861554 | + | No  |
| 1797018_adh | TAATATTAGATTGCCCCGTAC   | Chr.4 | 15864166 | 15864146 | - | No  |
| 1809219_adh | TACAATAAACTTTATTCAAA    | Chr.4 | 15865174 | 15865194 | + | No  |
| 2674033_adh | TTGTAATATTTGTAGAAAAAA   | Chr.4 | 15865178 | 15865158 | - | No  |
| 1901527_adh | TATGAACAAAGTGAAACAGCA   | Chr.4 | 15866096 | 15866116 | + | No  |
| 1747355_adh | TAAAAATTTGTTTTGAACAG    | Chr.4 | 15866200 | 15866180 | - | No  |
| 1953009_adh | TCACGAAGGATATGGCATTAA   | Chr.4 | 15866935 | 15866915 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2625854_adh | TTGAACAACCTTCAACGACGAA | Chr.4 | 15867051 | 15867071 | + | No  |
| 1923377_adh | TATTCAAGTAGAGTCGGAAAT  | Chr.4 | 15869043 | 15869063 | + | No  |
| 2577028_adh | TTATCAGCAATCAGAGTGCAA  | Chr.4 | 15876200 | 15876180 | - | No  |
| 1755256_adh | TAAACTAATTTCTTCGCATG   | Chr.4 | 15877916 | 15877936 | + | No  |
| 2038406_adh | TCTCATGTAGAAAAGAATTTG  | Chr.4 | 15879330 | 15879310 | - | No  |
| 2593255_adh | TTCAGTTCTATGGTTTCATTC  | Chr.4 | 15881116 | 15881136 | + | Yes |
| 1807101_adh | TACAAATAAAAAATGGGAATTA | Chr.4 | 15881549 | 15881569 | + | No  |
| 1790929_adh | TAATACACATTTATTTAGAAC  | Chr.4 | 15882394 | 15882414 | + | No  |
| 1813926_adh | TACATGGTGCATGCAGCGTAC  | Chr.4 | 15889610 | 15889590 | - | No  |
| 2453207_adh | TGGGGCGTGTTTTTGACTGTA  | Chr.4 | 15889759 | 15889739 | - | No  |
| 1919985_adh | TATTAAATGTTAGAAATCCAT  | Chr.4 | 15890632 | 15890652 | + | No  |
| 1967345_adh | TCAGTTCCCAAAAAATAATCGT | Chr.4 | 15890876 | 15890856 | - | No  |
| 2469060_adh | TGGTATTTTTAGTGTGATGGA  | Chr.4 | 15890952 | 15890972 | + | No  |
| 2005401_adh | TCGCAAAAATGTTTAATTCTG  | Chr.4 | 15891444 | 15891464 | + | No  |
| 2515474_adh | TGTGGATAGGTGTTGGAATTC  | Chr.4 | 15893078 | 15893058 | - | No  |
| 2583683_adh | TTATTTCAATATTGTTCCGTT  | Chr.4 | 15895291 | 15895271 | - | No  |
| 2691022_adh | TTTAATAGTGTAGAAAAGTGG  | Chr.4 | 15896802 | 15896822 | + | No  |
| 2580185_adh | TTATGTGGAGTAATGGTTGAT  | Chr.4 | 15898290 | 15898270 | - | No  |
| 2737557_adh | TTTTCAGTATGTTCAAAGGAA  | Chr.4 | 15898518 | 15898538 | + | No  |
| 1923368_adh | TATTCAAGAAGAATTTCAAAT  | Chr.4 | 15898893 | 15898873 | - | No  |
| 2532141_adh | TGTTTCACATGGTATAATGGT  | Chr.4 | 15899883 | 15899903 | + | No  |
| 2551201_adh | TTAATGGAAGATAGGGAAATC  | Chr.4 | 15900516 | 15900496 | - | No  |
| 2601090_adh | TTCTGTGTTTGCAAGACAACT  | Chr.4 | 15902383 | 15902403 | + | Yes |
| 2580667_adh | TTATTACGGTCGATCTTGTTT  | Chr.4 | 15903158 | 15903178 | + | No  |
| 1883846_adh | TATAAAAATGAGGCGGAACAT  | Chr.4 | 15903634 | 15903614 | - | No  |
| 2700851_adh | TTTATTTTGAATCTGTAACAG  | Chr.4 | 15903665 | 15903685 | + | No  |
| 2588909_adh | TTCAATTGTAGACTGAGGGCT  | Chr.4 | 15904368 | 15904388 | + | Yes |
| 2325540_adh | TGGAAGGTAAAAAATATTTAA  | Chr.4 | 15905953 | 15905933 | - | No  |
| 2703686_adh | TTTCATAATGATAACGGATCT  | Chr.4 | 15906536 | 15906556 | + | Yes |
| 2732166_adh | TTTGTTGGCTGATATTCCTAC  | Chr.4 | 15908526 | 15908506 | - | No  |
| 1836686_adh | TAGAAAACGGCTGAAAATGGT  | Chr.4 | 15910197 | 15910177 | - | No  |
| 1956979_adh | TCAGAAATACTGTAGTAGGTG  | Chr.4 | 15910426 | 15910446 | + | No  |
| 2655039_adh | TTGCTGTAGACTTCACAGATA  | Chr.4 | 15910468 | 15910488 | + | No  |
| 2710259_adh | TTTCTCTTGAATCCTGAAGAC  | Chr.4 | 15913073 | 15913093 | + | No  |
| 1762881_adh | TAAATTTTATTCATAAGCCAC  | Chr.4 | 15913642 | 15913622 | - | No  |
| 2588069_adh | TTCAATGATAGTTACAATTAA  | Chr.4 | 15913876 | 15913896 | + | Yes |
| 2700074_adh | TTTATTGAGACTTGAGACTAC  | Chr.4 | 15914671 | 15914691 | + | No  |
| 1762952_adh | TAAATTTTCAAACAACCTTCG  | Chr.4 | 15917210 | 15917230 | + | No  |
| 2043631_adh | TCTGAAAAGCCAAAAAGATCG  | Chr.4 | 15919872 | 15919892 | + | No  |
| 1867080_adh | TAGGCATGTAGGTAGGCATTT  | Chr.4 | 15926042 | 15926062 | + | No  |
| 2595434_adh | TTCAATTAATCTTTAGGAACC  | Chr.4 | 15927665 | 15927645 | - | Yes |
| 2623229_adh | TTCTTTAAGTACATAAGTATC  | Chr.4 | 15927962 | 15927942 | - | Yes |
| 2711920_adh | TTTCTTTAAGTACATAAGTAT  | Chr.4 | 15927963 | 15927943 | - | Yes |
| 1981607_adh | TCCCGGCCGGGGAGAACTTTT  | Chr.4 | 15932029 | 15932049 | + | No  |
| 2716897_adh | TTTGAGGCAAGTAAATGATTT  | Chr.4 | 15934383 | 15934363 | - | No  |
| 2539370_adh | TTAAACACAGCGCGCGCGGA   | Chr.4 | 15939918 | 15939938 | + | No  |
| 1911845_adh | TATGATTACAGGAGTGGCAGA  | Chr.4 | 15941867 | 15941887 | + | No  |
| 2716315_adh | TTTGAGAAAGGAACTCATCGT  | Chr.4 | 15943194 | 15943174 | - | No  |
| 2491780_adh | TGTATGATCATGTTGTGCGGT  | Chr.4 | 15943759 | 15943739 | - | No  |
| 2740448_adh | TTTTGAAAAGAAATAGACGAC  | Chr.4 | 15944675 | 15944695 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2048214_adh | TCTGCCTGATTGTGAGGAGTC  | Chr.4 | 15945362 | 15945342 | - | No  |
| 2514488_adh | TGTGGAACAAATAGATGACAT  | Chr.4 | 15948534 | 15948554 | + | No  |
| 1878664_adh | TAGTGGACGAGAAAAAGGCGG  | Chr.4 | 15951475 | 15951495 | + | No  |
| 2486265_adh | TGTAATTTTCAAACGGACATT  | Chr.4 | 15955413 | 15955393 | - | No  |
| 2745827_adh | TTTTTCCAGAATGTAGAAGAG  | Chr.4 | 15955841 | 15955821 | - | No  |
| 2721202_adh | TTTGCACGTTATCTGACAGAC  | Chr.4 | 15959110 | 15959090 | - | No  |
| 2682341_adh | TTGTGTGCCGTCGTTGGTTTT  | Chr.4 | 15959594 | 15959614 | + | Yes |
| 1822903_adh | TACGAGAAATTAGGAATTTAA  | Chr.4 | 15960203 | 15960183 | - | No  |
| 2659500_adh | TTGGAGACTTTATGCAGAACAA | Chr.4 | 15960736 | 15960716 | - | Yes |
| 2575243_adh | TTATATAGTAGTTGAACCCCA  | Chr.4 | 15961461 | 15961481 | + | No  |
| 1833132_adh | TACTGGAAGATTGATACTTTT  | Chr.4 | 15962012 | 15962032 | + | No  |
| 2593405_adh | TTCAGTTTCGGAGATTCAAAC  | Chr.4 | 15963049 | 15963069 | + | No  |
| 2734383_adh | TTTTACTTTTGAAGATAATTA  | Chr.4 | 15966053 | 15966033 | - | Yes |
| 1813207_adh | TACATAGTTGAGAGGTTTTTT  | Chr.4 | 15967424 | 15967404 | - | No  |
| 1902886_adh | TATGACAATGCAATTCAAATG  | Chr.4 | 15969482 | 15969462 | - | No  |
| 2719124_adh | TTTGATGGGACGGAGGCAATC  | Chr.4 | 15970056 | 15970076 | + | No  |
| 2708821_adh | TTTCGTATGAGTGCTTAACCT  | Chr.4 | 15970428 | 15970408 | - | No  |
| 2698311_adh | TTTATATGTGTTTTTCACAGTG | Chr.4 | 15974404 | 15974384 | - | No  |
| 2738606_adh | TTTTCGGATTAAAGCAATACA  | Chr.4 | 15976758 | 15976738 | - | No  |
| 1811541_adh | TACACTTATGGAAACAATTTT  | Chr.4 | 15978398 | 15978378 | - | Yes |
| 2029719_adh | TCTAACTCGTAAGATGTCAGT  | Chr.4 | 15982804 | 15982784 | - | No  |
| 1877981_adh | TAGTGATTGAGTAGTAATGCA  | Chr.4 | 15986558 | 15986578 | + | No  |
| 2276410_adh | TGATTGAGTAGAAATGCAAGG  | Chr.4 | 15988051 | 15988071 | + | Yes |
| 2251064_adh | TGAGTAGAAATGCAAGGTTGA  | Chr.4 | 15988055 | 15988075 | + | Yes |
| 1803911_adh | TAATTGCATAACTTTTATTTT  | Chr.4 | 15988715 | 15988695 | - | Yes |
| 2552213_adh | TTAATTGCATAACTTTTATTT  | Chr.4 | 15988716 | 15988696 | - | Yes |
| 1834640_adh | TACTTATACTTTCCAAGAATT  | Chr.4 | 15989615 | 15989595 | - | No  |
| 2700089_adh | TTTATTGATGCCTCTCAAGCC  | Chr.4 | 15989693 | 15989713 | + | No  |
| 2677791_adh | TTGTCCATACGTTTCTCACAA  | Chr.4 | 15992093 | 15992113 | + | No  |
| 1921662_adh | TATTAGGATTTCACTAGAAGA  | Chr.4 | 15997205 | 15997185 | - | No  |
| 1762997_adh | TAACAAAAATATCATACAATT  | Chr.4 | 15998465 | 15998485 | + | No  |
| 2749130_adh | TTTTTTCTTTATATATCATTT  | Chr.4 | 15999499 | 15999479 | - | Yes |
| 2062830_adh | TCTTTTGTATTTTGACGAACA  | Chr.4 | 16003941 | 16003921 | - | No  |
| 1807120_adh | TACAAATAGCTGAAGAACAAC  | Chr.4 | 16004679 | 16004699 | + | No  |
| 1802727_adh | TAATTATTAGAAAATGAATCC  | Chr.4 | 16005853 | 16005873 | + | No  |
| 1797324_adh | TAATATTTGTGATAACTACGT  | Chr.4 | 16006043 | 16006023 | - | Yes |
| 1814869_adh | TACCAATCGTCTGACTTCCAG  | Chr.4 | 16006560 | 16006540 | - | No  |
| 2031846_adh | TCTACTATCTCACAAAGCTGTA | Chr.4 | 16006834 | 16006814 | - | No  |
| 2181581_adh | TGAGAATGCACAGGAAGGAAA  | Chr.4 | 16007291 | 16007311 | + | No  |
| 2552022_adh | TTAATTCTAGGCGGATCAAAT  | Chr.4 | 16009687 | 16009667 | - | Yes |
| 2537503_adh | TTAAAAAATATATGAAGAAAAG | Chr.4 | 16010157 | 16010137 | - | No  |
| 2500111_adh | TGTCTTCATTTTACAAAGCAT  | Chr.4 | 16011791 | 16011811 | + | Yes |
| 1810468_adh | TACACAAGTTTCAAAAAATAT  | Chr.4 | 16013112 | 16013092 | - | No  |
| 2126811_adh | TGAACTTTTTAATCGGCACAA  | Chr.4 | 16013827 | 16013807 | - | No  |
| 2749487_adh | TTTTTTGCTGATGGAAACAAA  | Chr.4 | 16017628 | 16017608 | - | No  |
| 1834764_adh | TACTTCAATTAAATAAAATTA  | Chr.4 | 16017914 | 16017894 | - | No  |
| 2738697_adh | TTTTCGGTCAATGCGGACACA  | Chr.4 | 16021835 | 16021855 | + | No  |
| 1944720_adh | TCACAGAAAACATACGCATAA  | Chr.4 | 16022575 | 16022555 | - | No  |
| 1890110_adh | TATATCGTTTTTTAATTTAAT  | Chr.4 | 16022907 | 16022927 | + | Yes |
| 1812141_adh | TACAGATTGTTACAGAAAGGT  | Chr.4 | 16023428 | 16023408 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2692167_adh | TTTAATGTTCATATACTGGAT  | Chr.4 | 16023562 | 16023542 | - | Yes |
| 2691011_adh | TTTAATAGCAGTTTTTATTTA  | Chr.4 | 16024885 | 16024865 | - | No  |
| 2151571_adh | TGACAAGTACTGTTTCAGAAT  | Chr.4 | 16027290 | 16027270 | - | No  |
| 1833559_adh | TACTGGTGATTGAGAGACGCA  | Chr.4 | 16028773 | 16028753 | - | No  |
| 2010955_adh | TCGGAATCAGATATATAAGGC  | Chr.4 | 16029020 | 16029040 | + | No  |
| 2743788_adh | TTTTGTGCGCTTTAGGTTCAAT | Chr.4 | 16029885 | 16029905 | + | Yes |
| 2538966_adh | TTAAAATAGATCGCCAATAGA  | Chr.4 | 16035963 | 16035943 | - | No  |
| 2672024_adh | TTGGTTCATCGTTTAGTGTAT  | Chr.4 | 16037699 | 16037679 | - | No  |
| 1931923_adh | TCAAAAATGTTTCAAAAATTA  | Chr.4 | 16039320 | 16039340 | + | No  |
| 2735997_adh | TTTTATGCCATGCAGCAGTTG  | Chr.4 | 16039959 | 16039939 | - | No  |
| 2620701_adh | TTCTTAGGGCTTTTGGCAAAT  | Chr.4 | 16040150 | 16040170 | + | No  |
| 1929416_adh | TATTTATTCTTGAACGGCTAG  | Chr.4 | 16041040 | 16041060 | + | No  |
| 2699973_adh | TTTATTCTTGAACGGCTAGGA  | Chr.4 | 16041042 | 16041062 | + | No  |
| 2701509_adh | TTTCAAGACTGTGCCAGTTAA  | Chr.4 | 16041582 | 16041562 | - | No  |
| 1745309_adh | TAAAAACAATATTAATTTTT   | Chr.4 | 16042988 | 16042968 | - | No  |
| 2727213_adh | TTTGTAATAACTGAAGCAAAT  | Chr.4 | 16043234 | 16043254 | + | No  |
| 1965965_adh | TCAGTAGCACTCGGCATGTTT  | Chr.4 | 16043680 | 16043660 | - | No  |
| 2549719_adh | TTAATACTACATTTTCACGAA  | Chr.4 | 16045603 | 16045623 | + | No  |
| 1793901_adh | TAATACTACATTTTCACGAAA  | Chr.4 | 16045604 | 16045624 | + | No  |
| 2576716_adh | TTATATTTGATTTCTTTTATG  | Chr.4 | 16050819 | 16050839 | + | No  |
| 1830902_adh | TACTCAGTTTGTTACATTTCA  | Chr.4 | 16050906 | 16050886 | - | No  |
| 2026241_adh | TCGTGCAGGTAGATGGAACT   | Chr.4 | 16051881 | 16051901 | + | No  |
| 2311514_adh | TGCTTGTTGAGACGAATTGAA  | Chr.4 | 16052145 | 16052125 | - | Yes |
| 2542168_adh | TTAAATACATGTTTACAGTT   | Chr.4 | 16053068 | 16053048 | - | No  |
| 2148194_adh | TGAATTTATGAACCTGTAGAA  | Chr.4 | 16054703 | 16054683 | - | No  |
| 2730767_adh | TTTGTTCCGAATACATTGTAA  | Chr.4 | 16055391 | 16055411 | + | No  |
| 1993059_adh | TCCTTCTGAACACGGCTGTCT  | Chr.4 | 16056498 | 16056518 | + | No  |
| 2558225_adh | TTACTAACTGATACAAAAAT   | Chr.4 | 16057578 | 16057558 | - | No  |
| 2711403_adh | TTTCTTCACAAACAACGGTTT  | Chr.4 | 16062514 | 16062494 | - | No  |
| 1863845_adh | TAGGAGGAAGAATTGTGCATA  | Chr.4 | 16062734 | 16062714 | - | No  |
| 2607260_adh | TTCCGAATTAAGGTGTTTTAT  | Chr.4 | 16071079 | 16071099 | + | No  |
| 2286040_adh | TGCACAGCACGCTATCATTTA  | Chr.4 | 16071791 | 16071811 | + | No  |
| 2388879_adh | TGGATATCATAGAAATGTCAT  | Chr.4 | 16072556 | 16072576 | + | No  |
| 2620114_adh | TTCTGTCTTGTGGAAAATGGC  | Chr.4 | 16072804 | 16072784 | - | No  |
| 2561352_adh | TTAGAACTTCTCAAAAAATAA  | Chr.4 | 16073114 | 16073094 | - | No  |
| 1921247_adh | TATTAGAACTTCTCAAAAAAT  | Chr.4 | 16073116 | 16073096 | - | No  |
| 2006625_adh | TCGCAGTCTGTATTCCCGTTA  | Chr.4 | 16073193 | 16073173 | - | Yes |
| 2723844_adh | TTTGGAGTGTGGTCATCAAAC  | Chr.4 | 16073769 | 16073749 | - | No  |
| 2490729_adh | TGTATATTAGGCTCCGTTTTT  | Chr.4 | 16074313 | 16074293 | - | No  |
| 2009407_adh | TCGCTGTATATTAGGCTCCGT  | Chr.4 | 16074317 | 16074297 | - | No  |
| 2732861_adh | TTTGTTTTTACTCGCTGGATA  | Chr.4 | 16076043 | 16076023 | - | No  |
| 2700844_adh | TTTATTTTCTGATATCAGGTT  | Chr.4 | 16078025 | 16078045 | + | No  |
| 2615254_adh | TTCTATAGGTGCATCTAATAA  | Chr.4 | 16078491 | 16078471 | - | No  |
| 1941294_adh | TCAATCACATAGACGTATCTT  | Chr.4 | 16078790 | 16078810 | + | Yes |
| 2258840_adh | TGATAAGCGTAATGTGTCGGA  | Chr.4 | 16079217 | 16079237 | + | Yes |
| 2549440_adh | TTAATAAAACAACAACAAAAT  | Chr.4 | 16079645 | 16079665 | + | No  |
| 1877912_adh | TAGTGATAGAACATACAATTT  | Chr.4 | 16079804 | 16079824 | + | No  |
| 2742517_adh | TTTTGCTCTATACTTTTATAC  | Chr.4 | 16080100 | 16080120 | + | No  |
| 1893620_adh | TATCAGTTGGTTATATCGGCA  | Chr.4 | 16080621 | 16080601 | - | No  |
| 1917749_adh | TATGTAGTAACGATAGTGCGG  | Chr.4 | 16081103 | 16081123 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1790228_adh | TAATAAATTTACCCCAAATGT  | Chr.4 | 16082177 | 16082197 | + | No  |
| 2639987_adh | TTGAGAGGACCATGTCAAATG  | Chr.4 | 16082279 | 16082259 | - | Yes |
| 1957799_adh | TCAGAAGTCTTTCTTGCCCTT  | Chr.4 | 16088413 | 16088393 | - | No  |
| 2745056_adh | TTTTTAGACGAGCAAGAGCGA  | Chr.4 | 16091669 | 16091649 | - | No  |
| 2553655_adh | TTACAATTCAAGAAAAAAGTA  | Chr.4 | 16092116 | 16092096 | - | No  |
| 1913323_adh | TATGCTTGATTTGAAAACGT   | Chr.4 | 16096301 | 16096321 | + | No  |
| 1804658_adh | TAATTTAAACAATAAAAAAT   | Chr.4 | 16097388 | 16097368 | - | No  |
| 1829122_adh | TACGTTTCAGTTCAGTGCTAA  | Chr.4 | 16098115 | 16098095 | - | No  |
| 2715019_adh | TTTGACCACAAGAGGCGATCA  | Chr.4 | 16099768 | 16099788 | + | No  |
| 2635327_adh | TTGACCACAAGAGGCGATCAA  | Chr.4 | 16099769 | 16099789 | + | No  |
| 2644712_adh | TTGATGACAATGGTTTATGAA  | Chr.4 | 16099957 | 16099977 | + | No  |
| 2377631_adh | TGGACTGATACTTCACAGATT  | Chr.4 | 16100280 | 16100300 | + | No  |
| 1829372_adh | TACTAACTAGTGCAGTACACG  | Chr.4 | 16100637 | 16100617 | - | Yes |
| 2573367_adh | TTAGTTTATATTTTATCCCT   | Chr.4 | 16104979 | 16104999 | + | Yes |
| 2655286_adh | TTGCTTCTAAATGAAAACCTG  | Chr.4 | 16105429 | 16105449 | + | No  |
| 2748386_adh | TTTTTTATGAAGCTGCAGACA  | Chr.4 | 16105675 | 16105695 | + | No  |
| 2745348_adh | TTTTTATGAAGCTGCAGACAA  | Chr.4 | 16105676 | 16105696 | + | No  |
| 1829372_adh | TACTAACTAGTGCAGTACACG  | Chr.4 | 16108337 | 16108357 | + | Yes |
| 2377631_adh | TGGACTGATACTTCACAGATT  | Chr.4 | 16108694 | 16108674 | - | No  |
| 2644712_adh | TTGATGACAATGGTTTATGAA  | Chr.4 | 16109017 | 16108997 | - | No  |
| 2635327_adh | TTGACCACAAGAGGCGATCAA  | Chr.4 | 16109205 | 16109185 | - | No  |
| 2715019_adh | TTTGACCACAAGAGGCGATCA  | Chr.4 | 16109206 | 16109186 | - | No  |
| 2649223_adh | TTGCAGAAAAAATGGTCGGAA  | Chr.4 | 16112032 | 16112012 | - | No  |
| 2007130_adh | TCGCATTCTGAAAGGTTGGTT  | Chr.4 | 16116395 | 16116415 | + | Yes |
| 2744156_adh | TTTTGTTCGGAAATTTGAAAA  | Chr.4 | 16116476 | 16116456 | - | No  |
| 2686382_adh | TTGTTGTATCTTGGATTCTAT  | Chr.4 | 16116637 | 16116657 | + | No  |
| 1759306_adh | TAAAGTTTTGAATCGTTGACA  | Chr.4 | 16117196 | 16117176 | - | Yes |
| 2029693_adh | TCTAACTAGACACTCGGAAGA  | Chr.4 | 16119073 | 16119053 | - | No  |
| 2268086_adh | TGATATTCTAGTTGGAATTCT  | Chr.4 | 16123625 | 16123645 | + | Yes |
| 2747741_adh | TTTTTGTTAGTTTCGCATTG   | Chr.4 | 16125886 | 16125866 | - | No  |
| 2686144_adh | TTGTTGGATTTGTTGAGTGCA  | Chr.4 | 16126478 | 16126458 | - | No  |
| 2741087_adh | TTTTGACGCTACTAATTTGTT  | Chr.4 | 16126494 | 16126474 | - | No  |
| 2071864_adh | TGAAACAGTGACTTGCTTTTC  | Chr.4 | 16134465 | 16134445 | - | No  |
| 2069605_adh | TGAAAAGTGACTCGTTTTGAA  | Chr.4 | 16136550 | 16136570 | + | No  |
| 2673693_adh | TTGTAACACGATTGAATGGAC  | Chr.4 | 16137088 | 16137068 | - | No  |
| 2712558_adh | TTTGAAACAGTAGATTTTTCA  | Chr.4 | 16138715 | 16138695 | - | No  |
| 1919557_adh | TATGTTGTAGTCAATTTTTCA  | Chr.4 | 16140258 | 16140278 | + | No  |
| 1926136_adh | TATTGCAACGAAGCCTTGACT  | Chr.4 | 16144713 | 16144733 | + | No  |
| 1806108_adh | TAATTTTTAAAGACAGTGCGC  | Chr.4 | 16144887 | 16144867 | - | No  |
| 2700616_adh | TTTATTTAACCGTCGTTTCATT | Chr.4 | 16146978 | 16146998 | + | No  |
| 2583439_adh | TTATTTAACCGTCGTTTCATTA | Chr.4 | 16146979 | 16146999 | + | No  |
| 1929030_adh | TATTTAACCGTCGTTTCATTAT | Chr.4 | 16146980 | 16147000 | + | No  |
| 2689899_adh | TTTAACCGTCGTTTCATTATAT | Chr.4 | 16146982 | 16147002 | + | No  |
| 1829500_adh | TACTACAACATATGGCTAACT  | Chr.4 | 16147548 | 16147528 | - | No  |
| 2626246_adh | TTGAACCTGAGGCATTGGAAT  | Chr.4 | 16147720 | 16147740 | + | No  |
| 1825744_adh | TACGGACAACGGATAATGTTG  | Chr.4 | 16148464 | 16148484 | + | No  |
| 2551672_adh | TTAATTTAAATGTCCGGAATG  | Chr.4 | 16150384 | 16150364 | - | No  |
| 1888449_adh | TATAGGCATATGGATAGGTGT  | Chr.4 | 16155677 | 16155657 | - | No  |
| 2482348_adh | TGTAAGTAAACTAGTATCGA   | Chr.4 | 16156043 | 16156023 | - | No  |
| 1887119_adh | TATACGAGATGGGGTTTCCAA  | Chr.4 | 16156241 | 16156261 | + | No  |

|             |                       |       |          |          |   |     |
|-------------|-----------------------|-------|----------|----------|---|-----|
| 1891055_adh | TATATTTTCAGTCAAGTCGTG | Chr.4 | 16163543 | 16163563 | + | No  |
| 1889898_adh | TATATATTTCTTCGAGAATTT | Chr.4 | 16163579 | 16163599 | + | No  |
| 2688939_adh | TTTAAATAAGAAAAATAAT   | Chr.4 | 16163962 | 16163982 | + | No  |
| 2699365_adh | TTTATGTGTAGATGCATTGTT | Chr.4 | 16166601 | 16166621 | + | No  |
| 2308455_adh | TGCTGAGGAACCTTGATGGAT | Chr.4 | 16168404 | 16168384 | - | No  |
| 2011026_adh | TCGGAATGGAGCAGGAGTACA | Chr.4 | 16169026 | 16169006 | - | No  |
| 2721367_adh | TTTGCAGTTTCTATCTATAAC | Chr.4 | 16171174 | 16171194 | + | Yes |
| 1941825_adh | TCAATGAATTTAATAGATTTG | Chr.4 | 16174725 | 16174705 | - | Yes |
| 1973912_adh | TCATTCTGTGCATTCTTTTTT | Chr.4 | 16177578 | 16177598 | + | Yes |
| 1989351_adh | TCCTACTAAAATTTATTAATT | Chr.4 | 16179100 | 16179080 | - | Yes |
| 2699467_adh | TTTATTAATGTGGAGCTCCGA | Chr.4 | 16179328 | 16179308 | - | No  |
| 2561885_adh | TTAGAATTTTCGATGCAGGTG | Chr.4 | 16179481 | 16179461 | - | No  |
| 2696990_adh | TTTAGTAGACACATCTCATCG | Chr.4 | 16179862 | 16179842 | - | Yes |
| 2734874_adh | TTTTAGTAGACACATCTCATC | Chr.4 | 16179863 | 16179843 | - | Yes |
| 2702594_adh | TTTCACGGTTCATTTTTCATA | Chr.4 | 16180670 | 16180690 | + | No  |
| 2737469_adh | TTTTCAGCAGATTTCACTCTA | Chr.4 | 16186112 | 16186092 | - | No  |
| 1925925_adh | TATTGATAAGTTTCGACGGAT | Chr.4 | 16186306 | 16186286 | - | No  |
| 1764124_adh | TAACAATTTTATGAAATGTAT | Chr.4 | 16186369 | 16186349 | - | No  |
| 1936702_adh | TCAACGGCAAGAATAGTCTAT | Chr.4 | 16187423 | 16187443 | + | No  |
| 1806564_adh | TACAAAATTTTGAAGGATCGA | Chr.4 | 16187482 | 16187462 | - | No  |
| 2729206_adh | TTTGTCTTATAAAATATTGTC | Chr.4 | 16188658 | 16188678 | + | No  |
| 2286660_adh | TGCACTGAAAAACGGCAATTT | Chr.4 | 16190248 | 16190228 | - | No  |
| 1917305_adh | TATGGTTTTAGGTTTCAATCA | Chr.4 | 16193618 | 16193638 | + | No  |
| 1913183_adh | TATGCTCCGTACAGTTTTCTA | Chr.4 | 16193908 | 16193888 | - | No  |
| 2549385_adh | TTAAGTTTCAGGCATTATTCG | Chr.4 | 16194768 | 16194748 | - | Yes |
| 2633826_adh | TTGAATTGAGCAAGAAACGTT | Chr.4 | 16199030 | 16199050 | + | No  |
| 2025904_adh | TCGTGACGTCATTTTCTACA  | Chr.4 | 16203675 | 16203655 | - | No  |
| 2311393_adh | TGCTTGATTTCGTTATGGGG  | Chr.4 | 16203754 | 16203734 | - | No  |
| 1941067_adh | TCAATAGAACAAAAATTGAAA | Chr.4 | 16203909 | 16203889 | - | Yes |
| 2744702_adh | TTTTTAAAGTAGGAGTATATC | Chr.4 | 16203928 | 16203908 | - | No  |
| 2677295_adh | TTGTATTGTTTGAAACGGTAA | Chr.4 | 16205415 | 16205395 | - | No  |
| 2744702_adh | TTTTTAAAGTAGGAGTATATC | Chr.4 | 16206600 | 16206580 | - | No  |
| 1754433_adh | TAAACAGTGGAATTAGGAATT | Chr.4 | 16208645 | 16208625 | - | Yes |
| 1885790_adh | TATAATCTCAAGTGCATCCTC | Chr.4 | 16211706 | 16211686 | - | No  |
| 1921921_adh | TATTATAATCTCAAGTGCATC | Chr.4 | 16211709 | 16211689 | - | No  |
| 1885790_adh | TATAATCTCAAGTGCATCCTC | Chr.4 | 16211781 | 16211761 | - | No  |
| 1921921_adh | TATTATAATCTCAAGTGCATC | Chr.4 | 16211784 | 16211764 | - | No  |
| 1921780_adh | TATTAGTTGAACAGTAATCTC | Chr.4 | 16213820 | 16213840 | + | No  |
| 2584266_adh | TTATTTGTGGAATAAAATTTT | Chr.4 | 16217638 | 16217658 | + | No  |
| 2722962_adh | TTTGGAATAGAAGGTGCAAA  | Chr.4 | 16218000 | 16218020 | + | No  |
| 1926866_adh | TATTGGACCAAAAAGCTAAAA | Chr.4 | 16218962 | 16218942 | - | No  |
| 2681123_adh | TTGTGATTTCGTTAAACTTTA | Chr.4 | 16219603 | 16219583 | - | No  |
| 2730161_adh | TTTGTGTTTTGGATTTTTGCA | Chr.4 | 16220101 | 16220121 | + | No  |
| 2682719_adh | TTGTGTTTTGGATTTTTGCAT | Chr.4 | 16220102 | 16220122 | + | No  |
| 2718146_adh | TTTGATCGAAGGTAAATATA  | Chr.4 | 16226444 | 16226464 | + | Yes |
| 1917397_adh | TATGTAAATTTGTAGGAACAA | Chr.4 | 16227361 | 16227381 | + | No  |
| 2688738_adh | TTTAAAAATTGTCGAGGTTTG | Chr.4 | 16228812 | 16228832 | + | No  |
| 2538056_adh | TTAAAAATTGTCGAGGTTTGT | Chr.4 | 16228813 | 16228833 | + | No  |
| 1807235_adh | TACAAATGCTGCGTTCATTGG | Chr.4 | 16236413 | 16236433 | + | No  |
| 2541724_adh | TTAAAGTATGTTTGTGCAACT | Chr.4 | 16237038 | 16237018 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1945459_adh | TCACAGTAAAACTTCTCTGA   | Chr.4 | 16239003 | 16238983 | - | Yes |
| 2127486_adh | TGAAGAATGTGCTTAAATTAT  | Chr.4 | 16239618 | 16239638 | + | No  |
| 2047360_adh | TCTGATGTTGGCAGAAGCACA  | Chr.4 | 16241067 | 16241047 | - | No  |
| 2724314_adh | TTTGGCAGCAGGTGTGAATTC  | Chr.4 | 16241943 | 16241923 | - | No  |
| 2646792_adh | TTGATTTAGTGCATACAATGG  | Chr.4 | 16254966 | 16254946 | - | Yes |
| 1922464_adh | TATTATGATGAAACGTTTCAG  | Chr.4 | 16255472 | 16255492 | + | No  |
| 2526346_adh | TGTTCTGACTGATATACGACAT | Chr.4 | 16255844 | 16255864 | + | No  |
| 2669693_adh | TTGGTAGAAACACATTTAGAA  | Chr.4 | 16256785 | 16256805 | + | No  |
| 1975803_adh | TCCAAAGAAACCCATTCTTTT  | Chr.4 | 16259657 | 16259677 | + | No  |
| 1934040_adh | TCAAATACAAGTAGACGTAAT  | Chr.4 | 16266552 | 16266532 | - | No  |
| 1931519_adh | TATTTTTTGTGAACTGGGGTT  | Chr.4 | 16268035 | 16268015 | - | No  |
| 1745884_adh | TAAAAACCAGTCCGGATGGAA  | Chr.4 | 16269347 | 16269367 | + | No  |
| 2594170_adh | TTCATCATCGGAAAACGAGAA  | Chr.4 | 16270364 | 16270344 | - | Yes |
| 1835025_adh | TACTTCTTATCTTTTAAAATC  | Chr.4 | 16270944 | 16270924 | - | No  |
| 1942926_adh | TCAATTCAGAATTTTGTAGCAA | Chr.4 | 16273361 | 16273341 | - | No  |
| 2269027_adh | TGATCAACTTTGTACGGTATT  | Chr.4 | 16274305 | 16274285 | - | No  |
| 1795254_adh | TAATAGTACATTTTTGAAACA  | Chr.4 | 16275773 | 16275753 | - | No  |
| 2748007_adh | TTTTTGTTTCTTTAAAACCAC  | Chr.4 | 16275786 | 16275806 | + | No  |
| 1830388_adh | TACTATACGATGTTCTCTTAA  | Chr.4 | 16279104 | 16279124 | + | Yes |
| 2056806_adh | TCTTCGTATTGAGAACGTCTT  | Chr.4 | 16279369 | 16279389 | + | No  |
| 2601157_adh | TTCTTAGACTGCGTGTTTCA   | Chr.4 | 16281245 | 16281265 | + | No  |
| 2741942_adh | TTTTGATTGGCATATTCTGGT  | Chr.4 | 16285556 | 16285576 | + | No  |
| 2741942_adh | TTTTGATTGGCATATTCTGGT  | Chr.4 | 16286043 | 16286063 | + | No  |
| 2741942_adh | TTTTGATTGGCATATTCTGGT  | Chr.4 | 16286206 | 16286226 | + | No  |
| 1834768_adh | TACTTCACCTTCAATTTACGG  | Chr.4 | 16286594 | 16286574 | - | No  |
| 2069041_adh | TGAAAAGGATAAGATTGGAGA  | Chr.4 | 16287398 | 16287418 | + | No  |
| 2561143_adh | TTAGAACCGCTGCGATTCAAC  | Chr.4 | 16291948 | 16291968 | + | No  |
| 2707873_adh | TTTCGGCAATACTACATATTC  | Chr.4 | 16292356 | 16292336 | - | No  |
| 2130605_adh | TGAAGCAGAGTGCGGTAGACC  | Chr.4 | 16294988 | 16295008 | + | No  |
| 2061710_adh | TCTTTGAAGTGTTGGGATACT  | Chr.4 | 16295166 | 16295146 | - | No  |
| 2053794_adh | TCTTAACGGATATTGTCACAA  | Chr.4 | 16301552 | 16301572 | + | No  |
| 1814679_adh | TACCAAATTTTCGTAACGAGAC | Chr.4 | 16304556 | 16304576 | + | No  |
| 2738235_adh | TTTTCGACTACAGAAATAAAT  | Chr.4 | 16305581 | 16305601 | + | No  |
| 1899592_adh | TATCTCGATCCTCGCGTAAAT  | Chr.4 | 16309392 | 16309372 | - | No  |
| 2144161_adh | TGAATGGACGGTATGGAATAA  | Chr.4 | 16316830 | 16316810 | - | No  |
| 2669743_adh | TTGGTAGAGCGCATTTTTTGT  | Chr.4 | 16323284 | 16323304 | + | No  |
| 2053794_adh | TCTTAACGGATATTGTCACAA  | Chr.4 | 16330865 | 16330885 | + | No  |
| 1754120_adh | TAAACAATGCATTTGTATTAA  | Chr.4 | 16338672 | 16338692 | + | No  |
| 1866952_adh | TAGGCACGTAAACAGACAAAG  | Chr.4 | 16351785 | 16351765 | - | No  |
| 2735565_adh | TTTTATCGAAAAGTTGTCTTA  | Chr.4 | 16356890 | 16356910 | + | No  |
| 1900973_adh | TATGAAAAGTAGAAATATGCT  | Chr.4 | 16358869 | 16358849 | - | No  |
| 2584088_adh | TTATTTGCATTAATTAATAA   | Chr.4 | 16359595 | 16359615 | + | No  |
| 1979401_adh | TCCATAATTGGTAGAAAACGA  | Chr.4 | 16367923 | 16367903 | - | No  |
| 1836401_adh | TACTTTTCTCAGCGGTACAAC  | Chr.4 | 16370413 | 16370393 | - | No  |
| 2717780_adh | TTTGATCATAGAGAAGTTCTG  | Chr.4 | 16371054 | 16371034 | - | No  |
| 2634736_adh | TTGACAATCGTAAATTATTTT  | Chr.4 | 16372157 | 16372177 | + | Yes |
| 2549882_adh | TTAATAGCAGAGATAGAGTAA  | Chr.4 | 16374108 | 16374128 | + | Yes |
| 2698392_adh | TTTATCAAGGTATTGAAATGG  | Chr.4 | 16374511 | 16374491 | - | No  |
| 2744928_adh | TTTTTACGGTTACTAGAAACA  | Chr.4 | 16374535 | 16374555 | + | No  |
| 2734209_adh | TTTTACGGTTACTAGAAACAT  | Chr.4 | 16374536 | 16374556 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2697699_adh | TTTATAAAAAATTATCGGAACT | Chr.4 | 16375543 | 16375563 | + | No  |
| 2704649_adh | TTTCATTTAACTCGTATTGGT  | Chr.4 | 16380592 | 16380612 | + | No  |
| 2019063_adh | TCGGTGGCAAGGGAAGTTATA  | Chr.4 | 16380780 | 16380760 | - | No  |
| 1790844_adh | TAATAATTCGTCGTAAAACCA  | Chr.4 | 16381854 | 16381874 | + | Yes |
| 2121600_adh | TGAACATTTTGAAATAGTGGA  | Chr.4 | 16383013 | 16382993 | - | No  |
| 1776279_adh | TAAGACTGTTACGAAATAATT  | Chr.4 | 16384086 | 16384106 | + | No  |
| 2667639_adh | TTGGGCTTAAAGGTATGTTAA  | Chr.4 | 16387271 | 16387291 | + | No  |
| 2559212_adh | TTACTGCGATGGATTTACAGA  | Chr.4 | 16389819 | 16389839 | + | Yes |
| 2620548_adh | TTCTTACGACGAAACAGTAGA  | Chr.4 | 16391300 | 16391280 | - | Yes |
| 2558897_adh | TTACTCTCTGAAACAGTAATT  | Chr.4 | 16391332 | 16391352 | + | No  |
| 2314009_adh | TGGAATAATTTATAGAATTTTA | Chr.4 | 16392048 | 16392068 | + | No  |
| 2671670_adh | TTGGTTAGAATTTTTTAAAAA  | Chr.4 | 16393676 | 16393656 | - | No  |
| 2081456_adh | TGAAAGCCTTTTTTATTATAA  | Chr.4 | 16393686 | 16393706 | + | No  |
| 1845529_adh | TAGACTAAAGGGAATGGCGGA  | Chr.4 | 16399972 | 16399992 | + | No  |
| 2744909_adh | TTTTTACGAATTCGGGCATT   | Chr.4 | 16415177 | 16415157 | - | No  |
| 2714215_adh | TTTGAATCGGAATTTGTCGTC  | Chr.4 | 16415271 | 16415291 | + | No  |
| 2037707_adh | TCTCAGTAGAGCGTATTTTCA  | Chr.4 | 16419306 | 16419326 | + | No  |
| 2412177_adh | TGGCGATTTTTTGGTAGAAAAA | Chr.4 | 16425830 | 16425850 | + | No  |
| 2630071_adh | TTGAATATCATGGTTAGTCTC  | Chr.4 | 16434589 | 16434569 | - | Yes |
| 2748250_adh | TTTTTTACTGTTTCTCGGAAA  | Chr.4 | 16436187 | 16436167 | - | No  |
| 2538023_adh | TTAAAAATGCATTCCAATTC   | Chr.4 | 16436236 | 16436256 | + | No  |
| 1919274_adh | TATGTTATCGATAAACAAATT  | Chr.4 | 16438154 | 16438174 | + | No  |
| 2629171_adh | TTGAAGTCCTAGCAATTTTAT  | Chr.4 | 16438275 | 16438255 | - | No  |
| 1812450_adh | TACAGGAATTGTTGAAATTGT  | Chr.4 | 16439184 | 16439164 | - | No  |
| 2488890_adh | TGTAGGGCTGTACAAATCGGC  | Chr.4 | 16440577 | 16440597 | + | No  |
| 2145219_adh | TGAATTACTGTAGTTTTCGCC  | Chr.4 | 16442989 | 16443009 | + | No  |
| 2586438_adh | TTCAAGAATTACGGATGCCGC  | Chr.4 | 16443686 | 16443706 | + | No  |
| 2694827_adh | TTTAGAACAAAAGAAGTGAT   | Chr.4 | 16444328 | 16444308 | - | No  |
| 2538023_adh | TTAAAAATGCATTCCAATTC   | Chr.4 | 16445880 | 16445900 | + | No  |
| 2531705_adh | TGTTTACGCTAGAAAAGTTCA  | Chr.4 | 16446333 | 16446313 | - | No  |
| 2703190_adh | TTTCAGGAGGACATTGGCAAT  | Chr.4 | 16446531 | 16446551 | + | No  |
| 2699426_adh | TTTATTAATAATATGTATGAAT | Chr.4 | 16446876 | 16446896 | + | No  |
| 1968572_adh | TCATACATATTTTAATAAATT  | Chr.4 | 16446894 | 16446874 | - | No  |
| 2033973_adh | TCTATAGACATCATTTTCAGAA | Chr.4 | 16447061 | 16447041 | - | No  |
| 2526754_adh | TGTTCTATAGACATCATTTCA  | Chr.4 | 16447064 | 16447044 | - | No  |
| 2321171_adh | TGGAACTCTCCGAGATTTGAA  | Chr.4 | 16452261 | 16452281 | + | No  |
| 1929766_adh | TATTTCGAACGACATTTATTA  | Chr.4 | 16452491 | 16452511 | + | No  |
| 2689858_adh | TTTAACATTCAATACTATA    | Chr.4 | 16456720 | 16456740 | + | No  |
| 2737779_adh | TTTTCATTATTATTTCCGGCT  | Chr.4 | 16456914 | 16456894 | - | Yes |
| 2653500_adh | TTGCGTCATCAACGGCCACTT  | Chr.4 | 16464208 | 16464228 | + | No  |
| 1928419_adh | TATTGTTGACTTTCAATTA    | Chr.4 | 16464648 | 16464668 | + | No  |
| 2578748_adh | TTATGATCAAAATTCGAGTAG  | Chr.4 | 16465212 | 16465192 | - | Yes |
| 2578748_adh | TTATGATCAAAATTCGAGTAG  | Chr.4 | 16465447 | 16465467 | + | Yes |
| 1928419_adh | TATTGTTGACTTTCAATTA    | Chr.4 | 16466011 | 16465991 | - | Yes |
| 2618242_adh | TTCTGACTAATAGTGGAAGAA  | Chr.4 | 16467155 | 16467175 | + | No  |
| 1977708_adh | TCCACTGAAACGAAGAAGAAG  | Chr.4 | 16470930 | 16470910 | - | No  |
| 1924697_adh | TATTCTAAGTGTTTACAGATC  | Chr.4 | 16471499 | 16471519 | + | Yes |
| 2001467_adh | TCGAGCATTCTGTAGGCTATA  | Chr.4 | 16472556 | 16472536 | - | No  |
| 2595001_adh | TTCATTAGAGAGTAGGATCAC  | Chr.4 | 16473557 | 16473577 | + | No  |
| 2745874_adh | TTTTTCCGTCGTCTTGACTT   | Chr.4 | 16473690 | 16473670 | - | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1895327_adh | TATCATTTTCTCAAAGAATTT  | Chr.4 | 16476639 | 16476659 | + | Yes |
| 1977708_adh | TCCACTGAAACGAAGAAGAAG  | Chr.4 | 16481167 | 16481187 | + | No  |
| 2703174_adh | TTTCAGGAAGGCAACTACGAG  | Chr.4 | 16481653 | 16481673 | + | No  |
| 2034525_adh | TCTATGGGATACAGCTGGACA  | Chr.4 | 16486095 | 16486075 | - | No  |
| 1746834_adh | TAAAAAGTGGAATTCGGTTG   | Chr.4 | 16493092 | 16493112 | + | No  |
| 2619613_adh | TTCTGGTGGATCGTGTTTTCG  | Chr.4 | 16495101 | 16495081 | - | No  |
| 2619613_adh | TTCTGGTGGATCGTGTTTTCG  | Chr.4 | 16495291 | 16495311 | + | No  |
| 2352800_adh | TGGAATGGCAAAATGGATGGG  | Chr.4 | 16501983 | 16501963 | - | No  |
| 2089932_adh | TGAAATATTGTGGACGACGAG  | Chr.4 | 16502176 | 16502196 | + | No  |
| 2664866_adh | TTGGATTTTGATGGTAAATTG  | Chr.4 | 16504348 | 16504368 | + | No  |
| 2703174_adh | TTTCAGGAAGGCAACTACGAG  | Chr.4 | 16506620 | 16506600 | - | No  |
| 1977708_adh | TCCACTGAAACGAAGAAGAAG  | Chr.4 | 16507147 | 16507127 | - | No  |
| 1941011_adh | TCAATACGTTTTACGCGTTT   | Chr.4 | 16507292 | 16507312 | + | No  |
| 2622726_adh | TTCTTGATTCTGTTAGTTTTT  | Chr.4 | 16508476 | 16508496 | + | No  |
| 2688730_adh | TTTAAAAATTAATCAAATTC   | Chr.4 | 16510452 | 16510472 | + | Yes |
| 2551169_adh | TTAATGCTAGTGGATGAGAAG  | Chr.4 | 16522197 | 16522217 | + | Yes |
| 2306098_adh | TGCTAGTGGATGAGAAGCTTC  | Chr.4 | 16522201 | 16522221 | + | Yes |
| 1878728_adh | TAGTGGATGAGAAGCTTCTTC  | Chr.4 | 16522204 | 16522224 | + | Yes |
| 1953421_adh | TCACGGTTTAAATATTTGGGA  | Chr.4 | 16522282 | 16522262 | - | No  |
| 2544481_adh | TTAAATTGGATCGAGGTTTTA  | Chr.4 | 16524502 | 16524522 | + | No  |
| 2616864_adh | TTCTCTAAGAAAAAATTATTG  | Chr.4 | 16526370 | 16526350 | - | No  |
| 2744688_adh | TTTTTAAAGAATCTTTGCGG   | Chr.4 | 16526667 | 16526687 | + | No  |
| 2647100_adh | TTGATTTTTCGGTATGCCAGA  | Chr.4 | 16527534 | 16527554 | + | No  |
| 2651863_adh | TTGCGAATTCGACAAGTAATA  | Chr.4 | 16528245 | 16528225 | - | No  |
| 2674259_adh | TTGTACATATAAAAGTTTTTT  | Chr.4 | 16528317 | 16528297 | - | No  |
| 1973824_adh | TCATTCGACTATTGATTTTGT  | Chr.4 | 16529705 | 16529685 | - | No  |
| 1848363_adh | TAGAGGATATACGGTAATTGA  | Chr.4 | 16531281 | 16531301 | + | No  |
| 2742527_adh | TTTTGCTGAATTAATAATAA   | Chr.4 | 16537796 | 16537776 | - | No  |
| 2567593_adh | TTAGGAAGGTTTTCAAGAGAA  | Chr.4 | 16540095 | 16540115 | + | No  |
| 2722878_adh | TTTGGAATGCGGCAAAGCAG   | Chr.4 | 16540639 | 16540619 | - | No  |
| 2700382_adh | TTTATTGGATAGTCTCACGGT  | Chr.4 | 16543782 | 16543802 | + | No  |
| 2740948_adh | TTTTGAATTCTAGAAGCGTGG  | Chr.4 | 16545061 | 16545081 | + | No  |
| 2602379_adh | TTCGAATAGAACAACACGCTG  | Chr.4 | 16546796 | 16546776 | - | No  |
| 1974403_adh | TCATTGTACAATATTTATTT   | Chr.4 | 16549879 | 16549899 | + | No  |
| 1918433_adh | TATGTCACGTCTCTGGCAGC   | Chr.4 | 16550823 | 16550803 | - | No  |
| 2707239_adh | TTTCGCAAAACATCGGATTTT  | Chr.4 | 16551223 | 16551243 | + | Yes |
| 2506242_adh | TGTGAGTATAGAAAGTTTGAA  | Chr.4 | 16556673 | 16556653 | - | Yes |
| 2617164_adh | TTCTCTCTGCATATATCTCAT  | Chr.4 | 16556962 | 16556982 | + | Yes |
| 2563894_adh | TTAGATCAGTGCTGTGCGGCT  | Chr.4 | 16557149 | 16557169 | + | Yes |
| 1919992_adh | TATTAATTGAAAATTGAATA   | Chr.4 | 16557420 | 16557400 | - | No  |
| 1890244_adh | TATATGAGGAACGGGGGACAA  | Chr.4 | 16557529 | 16557509 | - | No  |
| 2575996_adh | TTATATGAGGAACGGGGGACAA | Chr.4 | 16557530 | 16557510 | - | No  |
| 1930162_adh | TATTTGAAGACTGTTGAACAT  | Chr.4 | 16559093 | 16559073 | - | No  |
| 1925441_adh | TATTGAATTTTGAAATATTC   | Chr.4 | 16561738 | 16561758 | + | No  |
| 2618331_adh | TTCTGAGGAGAATATTTATAA  | Chr.4 | 16562825 | 16562805 | - | No  |
| 2559648_adh | TTACTGTGTGTCCGTTAGGAA  | Chr.4 | 16563236 | 16563216 | - | Yes |
| 2746779_adh | TTTTTGAGGCTTGAAAACCTGA | Chr.4 | 16563971 | 16563951 | - | No  |
| 1960096_adh | TCAGATATTAACGTATAATTC  | Chr.4 | 16564351 | 16564331 | - | No  |
| 1922931_adh | TATTATTATCGTCGAAATGTT  | Chr.4 | 16566169 | 16566149 | - | Yes |
| 1926273_adh | TATTGCAGATTGAGGTGAATA  | Chr.4 | 16567086 | 16567066 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1797157_adh | TAATATTGCAGATTGAGGTGA  | Chr.4 | 16567089 | 16567069 | - | No  |
| 1923166_adh | TATTATTTCTTTGCTGGCATG  | Chr.4 | 16568413 | 16568393 | - | No  |
| 2587342_adh | TTCAAGTAGAAGTTGTGCTAA  | Chr.4 | 16571786 | 16571806 | + | No  |
| 2551024_adh | TTAATGACGTGCTCCTTATAT  | Chr.4 | 16573405 | 16573425 | + | No  |
| 1925405_adh | TATTGAATAGGCTGGCTTGAT  | Chr.4 | 16577938 | 16577958 | + | No  |
| 2160548_adh | TGACGAAATCGGAAGAAAATT  | Chr.4 | 16581979 | 16581999 | + | No  |
| 1935967_adh | TCAACAATGAAGTAGCTGATT  | Chr.4 | 16587469 | 16587489 | + | No  |
| 2124051_adh | TGAAGTAGCTGATTGAATGCC  | Chr.4 | 16587476 | 16587496 | + | No  |
| 2269065_adh | TGATCAAGTAGTCTTTTAAAT  | Chr.4 | 16588119 | 16588139 | + | No  |
| 2563747_adh | TTAGATATTCGGAATTAGAAG  | Chr.4 | 16588908 | 16588928 | + | No  |
| 2714574_adh | TTTGAATTTTCTCTGCAGAC   | Chr.4 | 16592718 | 16592698 | - | No  |
| 1872763_adh | TAGTAAACTTTGGTATAAAAT  | Chr.4 | 16593283 | 16593303 | + | No  |
| 1923847_adh | TATTCATTCGGACAAAAATTT  | Chr.4 | 16596062 | 16596042 | - | No  |
| 2670903_adh | TTGGTGCAGAATAGCTGATCC  | Chr.4 | 16597031 | 16597051 | + | Yes |
| 2594581_adh | TTCATGACTGACATTCATTTT  | Chr.4 | 16598651 | 16598671 | + | Yes |
| 1819346_adh | TACCCTGTTTGTCAACTTTA   | Chr.4 | 16600370 | 16600350 | - | No  |
| 2744726_adh | TTTTTAACAAGATGTTGAAAC  | Chr.4 | 16606708 | 16606688 | - | No  |
| 2062248_adh | TCTTTGTAGAGATTTAATCAA  | Chr.4 | 16606971 | 16606951 | - | No  |
| 1967963_adh | TCAGTTTTGTTTATTATTTCA  | Chr.4 | 16607451 | 16607431 | - | No  |
| 2732976_adh | TTTTAAAAATTAATAGTTCA   | Chr.4 | 16607975 | 16607995 | + | No  |
| 2402127_adh | TGGCAAGTAAAGTAGTATGTA  | Chr.4 | 16608724 | 16608704 | - | No  |
| 2025042_adh | TCGTATGTCGTATGGAATTTG  | Chr.4 | 16610275 | 16610295 | + | Yes |
| 2689329_adh | TTTAAAGGTGAAGTAGCGAAA  | Chr.4 | 16610439 | 16610459 | + | No  |
| 2541675_adh | TTAAAGGTGAAGTAGCGAAAT  | Chr.4 | 16610440 | 16610460 | + | No  |
| 2694795_adh | TTTAGAAAATGAAAAGGTCAC  | Chr.4 | 16613510 | 16613530 | + | No  |
| 1931127_adh | TATTTTGCAGGTATAATATAA  | Chr.4 | 16613642 | 16613662 | + | No  |
| 1835619_adh | TACTTGGGCATCTTTTCAGAA  | Chr.4 | 16613898 | 16613918 | + | No  |
| 2545912_adh | TTAACTAAGTAAAGGGCATTC  | Chr.4 | 16614583 | 16614563 | - | Yes |
| 2580507_adh | TTATTAAGTAAAGGGGCA     | Chr.4 | 16614586 | 16614566 | - | Yes |
| 1794798_adh | TAATAGACTGATCTGACTGTA  | Chr.4 | 16616291 | 16616311 | + | Yes |
| 1925229_adh | TATTCTTTTCGGTATTATTTTT | Chr.4 | 16617102 | 16617122 | + | No  |
| 2582047_adh | TTATTCTTTTAAAGTTGTTCT  | Chr.4 | 16617739 | 16617759 | + | Yes |
| 2689155_adh | TTTAAAGAAAACATTATGCCA  | Chr.4 | 16619385 | 16619405 | + | No  |
| 1935448_adh | TCAAATGTGGCATTTTCTGAG  | Chr.4 | 16620058 | 16620038 | - | No  |
| 2739168_adh | TTTTCTATCCCGCATTACTTA  | Chr.4 | 16620205 | 16620185 | - | Yes |
| 1790704_adh | TAATAATAAACAAATGTTCCGG | Chr.4 | 16621905 | 16621925 | + | Yes |
| 2051676_adh | TCTGTAAGCTTGGTTGATTTT  | Chr.4 | 16622345 | 16622365 | + | No  |
| 2657703_adh | TTGGAATGTAAATCGCGCCTA  | Chr.4 | 16622993 | 16623013 | + | Yes |
| 2287326_adh | TGCAGACTTGAGGCGCAAATA  | Chr.4 | 16623277 | 16623297 | + | No  |
| 2596989_adh | TTCCAGGGAGACATATTTGAT  | Chr.4 | 16629572 | 16629552 | - | No  |
| 2580939_adh | TTATTAGATAGAGACTGCATG  | Chr.4 | 16629744 | 16629764 | + | No  |
| 1921487_adh | TATTAGATAGAGACTGCATGA  | Chr.4 | 16629745 | 16629765 | + | No  |
| 2563549_adh | TTAGATAGAGACTGCATGATT  | Chr.4 | 16629747 | 16629767 | + | No  |
| 1847392_adh | TAGAGACTGCATGATTTTGC   | Chr.4 | 16629752 | 16629772 | + | No  |
| 2740833_adh | TTTTGAAGATTTTGGACGAT   | Chr.4 | 16632288 | 16632268 | - | No  |
| 2632851_adh | TTGAATGTAACTTGAAACGGT  | Chr.4 | 16633944 | 16633924 | - | No  |
| 2714341_adh | TTTGAATGTAACTTGAAACGG  | Chr.4 | 16633945 | 16633925 | - | No  |
| 2709423_adh | TTTCTAAATTTGATAGTCATA  | Chr.4 | 16635375 | 16635355 | - | No  |
| 1797176_adh | TAATATTGGTAGAATGAAAAT  | Chr.4 | 16635488 | 16635508 | + | Yes |
| 2554390_adh | TTACAGTAACACCGGTCGAAA  | Chr.4 | 16637596 | 16637616 | + | No  |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 1845094_adh | TAGACATCTCTAACAGCAAAA   | Chr.4 | 16640211 | 16640191 | - | Yes |
| 2369081_adh | TGGAATTATCATGTTGGAATT   | Chr.4 | 16656215 | 16656195 | - | No  |
| 1790138_adh | TAATAAATATTCTTTCGGCTA   | Chr.4 | 16660021 | 16660001 | - | No  |
| 2699422_adh | TTTATTA AAAACGTACGGAAAA | Chr.4 | 16660961 | 16660941 | - | No  |
| 2745447_adh | TTTTTATTA AAAACGTACGGAA | Chr.4 | 16660963 | 16660943 | - | No  |
| 2689575_adh | TTTAAATTAATACAGAATCTT   | Chr.4 | 16662272 | 16662252 | - | No  |
| 2527415_adh | TGTTGAAAATGAAGGTAGTAT   | Chr.4 | 16662863 | 16662843 | - | Yes |
| 1834077_adh | TACTGTTCTAGCATTTTGAGG   | Chr.4 | 16663159 | 16663139 | - | No  |
| 2560195_adh | TTACTTGACTGTGCAAGACCA   | Chr.4 | 16664683 | 16664703 | + | Yes |
| 1927237_adh | TATTGGTAGAAACATTTTCAC   | Chr.4 | 16670340 | 16670320 | - | Yes |
| 2714300_adh | TTTGAATGCGTTCAACTCACA   | Chr.4 | 16672030 | 16672010 | - | No  |
| 2311730_adh | TGCTTTCGTGATTTTGTCGTT   | Chr.4 | 16672203 | 16672183 | - | Yes |
| 2584491_adh | TTATTTTATCGAAGAATTTTT   | Chr.4 | 16673020 | 16673040 | + | No  |
| 1937328_adh | TCAACTCGAAAAATATTCTTG   | Chr.4 | 16673114 | 16673134 | + | Yes |
| 2572118_adh | TTAGTTAACTTGTAATTCTAG   | Chr.4 | 16674763 | 16674783 | + | No  |
| 2649917_adh | TTGCATAACGGCTTGCATTTT   | Chr.4 | 16676325 | 16676305 | - | Yes |
| 2659088_adh | TTGGACTTGGTGATAATTGTA   | Chr.4 | 16677163 | 16677143 | - | No  |
| 2550605_adh | TTAATCGTGGCATAACATACT   | Chr.4 | 16678061 | 16678081 | + | No  |
| 1834793_adh | TACTTCATCTCGTTCCAAAAT   | Chr.4 | 16678387 | 16678367 | - | No  |
| 2305680_adh | TGCTACATTAATAAACTCGGT   | Chr.4 | 16682433 | 16682453 | + | No  |
| 2573679_adh | TTATAAACTGTAAACAGTGT    | Chr.4 | 16683547 | 16683527 | - | No  |
| 2060800_adh | TCTTTCATTAGTATTCCGTCG   | Chr.4 | 16685203 | 16685223 | + | No  |
| 2001169_adh | TCGAGAATACAACGAAAACAT   | Chr.4 | 16685406 | 16685426 | + | No  |
| 2721345_adh | TTTGCAGGAGTGCTTTGATTT   | Chr.4 | 16685728 | 16685708 | - | No  |
| 2027377_adh | TCGTGTAATGAAGTTTGCTTA   | Chr.4 | 16687952 | 16687972 | + | Yes |
| 2174259_adh | TGACTTGTTAAAACAGAAGAT   | Chr.4 | 16690845 | 16690825 | - | No  |
| 1795778_adh | TAATATATTTTACTTTACAAT   | Chr.4 | 16691937 | 16691957 | + | Yes |
| 1827241_adh | TACGGTATAACAAATTCAACT   | Chr.4 | 16699178 | 16699198 | + | No  |
| 2687187_adh | TTGTTTCGACTGTCATCGTTA   | Chr.4 | 16701997 | 16702017 | + | No  |
| 2706971_adh | TTTCGACTGTCATCGTTAACC   | Chr.4 | 16702000 | 16702020 | + | No  |
| 2034893_adh | TCTATTCATGAGCTCATTAAT   | Chr.4 | 16702236 | 16702216 | - | No  |
| 1920097_adh | TATTAACCTTAAGTAGATAAAT  | Chr.4 | 16702722 | 16702742 | + | No  |
| 2546501_adh | TTAACTTAAGTAGATAAAATGA  | Chr.4 | 16702724 | 16702744 | + | No  |
| 2538902_adh | TTAAAAGGTATCCAACGAAAT   | Chr.4 | 16703090 | 16703110 | + | No  |
| 2052282_adh | TCTGTCATCATGCAACTCAAA   | Chr.4 | 16703437 | 16703457 | + | No  |
| 2290556_adh | TGCATGATGACAGAAGAAACA   | Chr.4 | 16703450 | 16703430 | - | No  |
| 2060295_adh | TCTTGTTTAGCGAGACGAATA   | Chr.4 | 16704174 | 16704154 | - | No  |
| 2645727_adh | TTGATGTTTGAGTAGAATGAA   | Chr.4 | 16705087 | 16705107 | + | No  |
| 1831451_adh | TACTCTATAGAATTTACAATA   | Chr.4 | 16705992 | 16705972 | - | Yes |
| 1919925_adh | TATTAAGAACGAACAAACGG    | Chr.4 | 16706524 | 16706544 | + | No  |
| 1923379_adh | TATTCAAGTAGATAATTTTAT   | Chr.4 | 16707657 | 16707677 | + | Yes |
| 2701945_adh | TTTCAATTAGGCGCTGTAACA   | Chr.4 | 16708098 | 16708118 | + | No  |
| 2588779_adh | TTCAATTAGGCGCTGTAACAG   | Chr.4 | 16708099 | 16708119 | + | No  |
| 2740952_adh | TTTTGAATTGGATACTCATTA   | Chr.4 | 16708605 | 16708625 | + | No  |
| 2566220_adh | TTAGCAAAAGTTCACTTATTT   | Chr.4 | 16709810 | 16709790 | - | No  |
| 2695877_adh | TTTAGCAAAAGTTCACTTATT   | Chr.4 | 16709811 | 16709791 | - | No  |
| 2740952_adh | TTTTGAATTGGATACTCATTA   | Chr.4 | 16716518 | 16716538 | + | No  |
| 2717126_adh | TTTGAGTTATTGCAGGTGTGT   | Chr.4 | 16718005 | 16718025 | + | No  |
| 1835927_adh | TACTTTAATGAAATCATATTA   | Chr.4 | 16718744 | 16718724 | - | No  |
| 2050079_adh | TCTGGCCAACTTTGACTATAA   | Chr.4 | 16719993 | 16719973 | - | Yes |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2701160_adh | TTTCAAATAACAGAGACTGTG  | Chr.4 | 16720877 | 16720857 | - | No  |
| 1866699_adh | TAGGATTTCTGCAGTACACGC  | Chr.4 | 16722311 | 16722291 | - | No  |
| 2254023_adh | TGAGTGGACGAGAAAAAGGAG  | Chr.4 | 16722526 | 16722546 | + | No  |
| 1877406_adh | TAGTGAATCCAATATTCGGTA  | Chr.4 | 16724245 | 16724265 | + | No  |
| 2697909_adh | TTTATACAGTTTTTGCTGTTT  | Chr.4 | 16724756 | 16724776 | + | No  |
| 1923485_adh | TATTCAGAAATTTGGTAAAAT  | Chr.4 | 16726252 | 16726232 | - | No  |
| 1974030_adh | TCATTGATATTTTGAACCTGA  | Chr.4 | 16726445 | 16726465 | + | No  |
| 1918257_adh | TATGTATTTAAGTATAATTTT  | Chr.4 | 16727106 | 16727086 | - | No  |
| 1990838_adh | TCCTCTGACGTTGTACCATTT  | Chr.4 | 16727385 | 16727405 | + | No  |
| 2624236_adh | TTGAAAAAAGATGATTTGCAG  | Chr.4 | 16727560 | 16727540 | - | No  |
| 2586096_adh | TTCAACGGGATGGTTAAACAG  | Chr.4 | 16728905 | 16728925 | + | No  |
| 2554107_adh | TTACAGAAAGCTATATTTTGG  | Chr.4 | 16739890 | 16739870 | - | No  |
| 2132079_adh | TGAAGCTGGAAGGATTTATAT  | Chr.4 | 16745150 | 16745170 | + | No  |
| 2739905_adh | TTTTCTGTTTTCTGGCATTGT  | Chr.4 | 16748315 | 16748295 | - | Yes |
| 2567276_adh | TTAGCTCTTTTACTACGGCCG  | Chr.4 | 16751732 | 16751752 | + | No  |
| 1811747_adh | TACAGAAGTCGACGAAACAAA  | Chr.4 | 16765567 | 16765587 | + | No  |
| 1810690_adh | TACACAGCGACGATTTTTGAT  | Chr.4 | 16766486 | 16766506 | + | No  |
| 1810690_adh | TACACAGCGACGATTTTTGAT  | Chr.4 | 16769816 | 16769796 | - | No  |
| 2119385_adh | TGAAATTTTGGAGCATAGAAA  | Chr.4 | 16771560 | 16771580 | + | No  |
| 2474393_adh | TGGTTAGTGTGCATTTTATTT  | Chr.4 | 16771721 | 16771741 | + | No  |
| 2601067_adh | TTCTGTGCTTGCTGAAAATG   | Chr.4 | 16772617 | 16772637 | + | No  |
| 1992248_adh | TCCTGTGCTTGCTGAAAATGT  | Chr.4 | 16772618 | 16772638 | + | No  |
| 2649765_adh | TTGCAGTACTTTCTTATAGTT  | Chr.4 | 16773832 | 16773812 | - | Yes |
| 1882860_adh | TAGTTTCAAATATTAGGATTG  | Chr.4 | 16773993 | 16774013 | + | No  |
| 2088349_adh | TGAAATAGTGGCAATTGATAC  | Chr.4 | 16774312 | 16774292 | - | No  |
| 2701667_adh | TTTCAATAGAATACAACATTT  | Chr.4 | 16774938 | 16774918 | - | No  |
| 1766759_adh | TAACCATAAGTTCGTATCAA   | Chr.4 | 16780004 | 16780024 | + | No  |
| 1791024_adh | TAATACAGTTTCAATCGCATT  | Chr.4 | 16781041 | 16781021 | - | No  |
| 2668348_adh | TTGGGTCCTGACACGAAAAAG  | Chr.4 | 16782164 | 16782184 | + | No  |
| 2706011_adh | TTTCTATAACCTAATTTCTCT  | Chr.4 | 16784857 | 16784877 | + | No  |
| 2596044_adh | TTCCACACGTAGAAAAAGAAG  | Chr.4 | 16788322 | 16788342 | + | No  |
| 1930090_adh | TATTTCTTCTCTGATTCGTC   | Chr.4 | 16790677 | 16790697 | + | No  |
| 2326405_adh | TGGAAGTACTGCAAAGAAGTA  | Chr.4 | 16790797 | 16790817 | + | No  |
| 2700172_adh | TTTATTGCTTGTTATTATACTT | Chr.4 | 16791585 | 16791605 | + | No  |
| 2649468_adh | TTGCAGAGTTCAAGTGAAAAA  | Chr.4 | 16792401 | 16792381 | - | No  |
| 2618324_adh | TTCTGAGCATTGCAGTCGTCA  | Chr.4 | 16793118 | 16793138 | + | No  |
| 2628704_adh | TTGAAGCTCGGCATCAAGTAG  | Chr.4 | 16793423 | 16793403 | - | Yes |
| 2538698_adh | TTAAAAGAATTTAAAGCCATA  | Chr.4 | 16795690 | 16795670 | - | No  |
| 1995202_adh | TCGAAAGTTAGGCTAATTATA  | Chr.4 | 16796283 | 16796263 | - | No  |
| 1781284_adh | TAAGCAAATTCGCAATATTAT  | Chr.4 | 16797228 | 16797248 | + | No  |
| 2541623_adh | TTAAAGGCTGGCTTACTGTTA  | Chr.4 | 16799169 | 16799149 | - | No  |
| 2518474_adh | TGTGTAAGAAAGACATATCAA  | Chr.4 | 16800648 | 16800628 | - | No  |
| 2699154_adh | TTTATGGAAAGTGGACAAAAC  | Chr.4 | 16802402 | 16802382 | - | No  |
| 1797194_adh | TAATATTGTAGATCTACGGCA  | Chr.4 | 16802741 | 16802761 | + | No  |
| 1927584_adh | TATTGTAGATCTACGGCAGGA  | Chr.4 | 16802744 | 16802764 | + | No  |
| 2648399_adh | TTGCAACTGAAGAATCAAAAT  | Chr.4 | 16805986 | 16805966 | - | Yes |
| 2685719_adh | TTGTTGCAACTGAAGAATCAA  | Chr.4 | 16805989 | 16805969 | - | Yes |
| 2120081_adh | TGAACACTGACTGAAAATGGT  | Chr.4 | 16806841 | 16806861 | + | No  |
| 2728640_adh | TTTGTCAAAATATGCAGAACA  | Chr.4 | 16807323 | 16807303 | - | No  |
| 2549590_adh | TTAATAATTTGAAAAAATGTT  | Chr.4 | 16808344 | 16808324 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2549590_adh | TTAATAATTTGAAAAAATGTT  | Chr.4 | 16809284 | 16809304 | + | No  |
| 2738864_adh | TTTTCGTTCTGTCTGAATATTT | Chr.4 | 16811452 | 16811432 | - | No  |
| 2699896_adh | TTTATTCGTTATGTATTTTTT  | Chr.4 | 16811976 | 16811956 | - | Yes |
| 2736574_adh | TTTTATTCGTTATGTATTTTTT | Chr.4 | 16811977 | 16811957 | - | Yes |
| 1919414_adh | TATGTTGACGTAGAGCGAATT  | Chr.4 | 16812360 | 16812340 | - | Yes |
| 1962316_adh | TCAGCATAAAAAATTTTAAGCC | Chr.4 | 16812770 | 16812750 | - | Yes |
| 2560961_adh | TTAGAAATTGAAGAATTGGTA  | Chr.4 | 16814265 | 16814245 | - | Yes |
| 1921983_adh | TATTATAGAAAAATACGATCG  | Chr.4 | 16815642 | 16815622 | - | Yes |
| 2659600_adh | TTGGAGATATATAGTGGTTTG  | Chr.4 | 16820064 | 16820044 | - | No  |
| 2583065_adh | TTATTGGAGATATATAGTGGT  | Chr.4 | 16820067 | 16820047 | - | No  |
| 1798872_adh | TAATCTGAATGTCGTGATGAT  | Chr.4 | 16820320 | 16820340 | + | Yes |
| 1891245_adh | TATCAAAGGCTGTAAATAAAT  | Chr.4 | 16821272 | 16821292 | + | No  |
| 2657627_adh | TTGGAATGCATGTAGTAGGCC  | Chr.4 | 16821392 | 16821412 | + | No  |
| 2688922_adh | TTTAAAAGTGTCTGGAAATTA  | Chr.4 | 16822323 | 16822343 | + | No  |
| 2538922_adh | TTAAAAGTGTCTGGAAATTAT  | Chr.4 | 16822324 | 16822344 | + | No  |
| 2144892_adh | TGAATGTGGCAATTAAAGTTT  | Chr.4 | 16822570 | 16822550 | - | No  |
| 1973987_adh | TCATTGAATGTGGCAATTAAA  | Chr.4 | 16822574 | 16822554 | - | No  |
| 2699627_adh | TTTATTATAACCTAACTGTCC  | Chr.4 | 16832079 | 16832059 | - | No  |
| 1909800_adh | TATGAGTTTTGAGTCTGGGTT  | Chr.4 | 16833878 | 16833858 | - | No  |
| 1927976_adh | TATTGTGAGAAGGGTGCAACA  | Chr.4 | 16835691 | 16835711 | + | No  |
| 2747756_adh | TTTTTGTCAGGTCTCGACAC   | Chr.4 | 16844990 | 16845010 | + | No  |
| 2458477_adh | TGGGTGACTTGGAGTGC GGCT | Chr.4 | 16845294 | 16845274 | - | No  |
| 2608432_adh | TTCGGCAATTTTCGGGCAGAA  | Chr.4 | 16845681 | 16845701 | + | No  |
| 2744839_adh | TTTTTAATGTTTTCGTTGTAT  | Chr.4 | 16849161 | 16849141 | - | No  |
| 2747096_adh | TTTTTGCGGGAAAATCTTTGGT | Chr.4 | 16863677 | 16863697 | + | No  |
| 1920675_adh | TATTACATACATTAAATTCAG  | Chr.4 | 16870343 | 16870363 | + | Yes |
| 2561153_adh | TTAGAACCTCGGCTAGCTAGT  | Chr.4 | 16872364 | 16872384 | + | No  |
| 1890943_adh | TATATTGTTCTGGGATCTTAT  | Chr.4 | 16873086 | 16873066 | - | Yes |
| 2571168_adh | TTAGTCGAGAACGGAACCTTCA | Chr.4 | 16873211 | 16873191 | - | No  |
| 2699594_adh | TTTATTAGCTTGTACGATTTT  | Chr.4 | 16874435 | 16874415 | - | No  |
| 2674532_adh | TTGTACTTAAAACGTCAGCGA  | Chr.4 | 16875012 | 16875032 | + | No  |
| 1937996_adh | TCAACTTGATGGTAAGTAATC  | Chr.4 | 16879317 | 16879297 | - | No  |
| 2595511_adh | TTCAATTTGCCAAGTATTTGGA | Chr.4 | 16885229 | 16885209 | - | No  |
| 2569954_adh | TTAGTAATATTCGGTGGTTAT  | Chr.4 | 16887528 | 16887508 | - | Yes |
| 2733956_adh | TTTTACACAGTTTTGAAGCGC  | Chr.4 | 16889188 | 16889168 | - | No  |
| 1923217_adh | TATTATTTGTGTTTCATGAAGG | Chr.4 | 16889575 | 16889595 | + | Yes |
| 2646803_adh | TTGATTTATGACATGTTGGAG  | Chr.4 | 16890068 | 16890088 | + | No  |
| 2578421_adh | TTATGACATGTTGGAGTTTTT  | Chr.4 | 16890073 | 16890093 | + | No  |
| 1925273_adh | TATTGAAACTTTTTGATTGTA  | Chr.4 | 16892087 | 16892067 | - | No  |
| 2733735_adh | TTTTAATGGGAATTTGTCATG  | Chr.4 | 16894934 | 16894914 | - | No  |
| 1941447_adh | TCAATCCTCTGATCGTGAACG  | Chr.4 | 16897126 | 16897106 | - | No  |
| 2625889_adh | TTGAACAATGGACTGAAGACT  | Chr.4 | 16898881 | 16898901 | + | No  |
| 1917364_adh | TATGTAAATAAGTTGGATCGC  | Chr.4 | 16900155 | 16900175 | + | No  |
| 1745768_adh | TAAAAACAATACATTCATTTA  | Chr.4 | 16901531 | 16901551 | + | No  |
| 2162608_adh | TGACGTTTTTCAGAATTGAGTA | Chr.4 | 16907941 | 16907921 | - | Yes |
| 2744844_adh | TTTTTAATTCACGATCGTTCA  | Chr.4 | 16911712 | 16911732 | + | No  |
| 2733808_adh | TTTTAATTCACGATCGTTCAA  | Chr.4 | 16911713 | 16911733 | + | No  |
| 2551909_adh | TTAATTCACGATCGTTCAAAT  | Chr.4 | 16911715 | 16911735 | + | No  |
| 2600598_adh | TCCTCCTGTCAGACTTCGGT   | Chr.4 | 16915265 | 16915285 | + | No  |
| 1990134_adh | TCCTCCTGTCAGACTTCGGTT  | Chr.4 | 16915266 | 16915286 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2113976_adh | TGAAATTACTGTAGTGATGAT  | Chr.4 | 16916543 | 16916523 | - | No  |
| 2055669_adh | TCTTCATAAATCAACGACATG  | Chr.4 | 16917982 | 16917962 | - | No  |
| 2055669_adh | TCTTCATAAATCAACGACATG  | Chr.4 | 16918246 | 16918266 | + | No  |
| 1886710_adh | TATACAAGCTGAACAAAGACG  | Chr.4 | 16918947 | 16918927 | - | No  |
| 2566357_adh | TTAGCAGAAACTGTTTTATTT  | Chr.4 | 16919648 | 16919668 | + | No  |
| 2559247_adh | TTACTGCTTGTAACATATAAT  | Chr.4 | 16924322 | 16924342 | + | Yes |
| 2697484_adh | TTTAGTTCAAAGATCTGGTTT  | Chr.4 | 16930376 | 16930356 | - | No  |
| 2001209_adh | TCGAGACGATGAAGACGACCA  | Chr.4 | 16930813 | 16930833 | + | No  |
| 2066326_adh | TGAAAAATATAAAATCCTGAA  | Chr.4 | 16940174 | 16940154 | - | No  |
| 2748514_adh | TTTTTTCACGGAGATTGTGCA  | Chr.4 | 16958181 | 16958161 | - | No  |
| 1762500_adh | TAAATTGCAGTTCTACGTGTT  | Chr.4 | 16965421 | 16965401 | - | No  |
| 1917116_adh | TATGGTTGCATACGCCGTAAT  | Chr.4 | 16968045 | 16968025 | - | No  |
| 2712511_adh | TTTGAAAATGTAATTGAATCT  | Chr.4 | 16973240 | 16973260 | + | No  |
| 2712511_adh | TTTGAAAATGTAATTGAATCT  | Chr.4 | 16974235 | 16974255 | + | No  |
| 1839309_adh | TAGAAGATTTTGAAAGCACAT  | Chr.4 | 16975112 | 16975132 | + | Yes |
| 1929761_adh | TATTCCTTTTTTGAATTTTG   | Chr.4 | 16978230 | 16978210 | - | Yes |
| 1923482_adh | TATTCACCTGCAGAGAAATCA  | Chr.4 | 16984631 | 16984611 | - | No  |
| 2043696_adh | TCTGAAACGGTAGAAAATTTA  | Chr.4 | 16984665 | 16984685 | + | No  |
| 2734031_adh | TTTTACATTCACCTAAAAATA  | Chr.4 | 16984943 | 16984923 | - | No  |
| 1829105_adh | TACGTTGTTTGTACAAATTAT  | Chr.4 | 16986257 | 16986237 | - | No  |
| 2558172_adh | TTACGTTGTTTGTACAAATTA  | Chr.4 | 16986258 | 16986238 | - | No  |
| 1921507_adh | TATTAGATCATGTAGAGAAAA  | Chr.4 | 16987486 | 16987506 | + | Yes |
| 2563993_adh | TTAGATCATGTAGAGAAAAAT  | Chr.4 | 16987488 | 16987508 | + | Yes |
| 2043696_adh | TCTGAAACGGTAGAAAATTTA  | Chr.4 | 16988247 | 16988267 | + | No  |
| 1943408_adh | TCAATTTTAGCATTAAATGACA | Chr.4 | 16988464 | 16988444 | - | No  |
| 2500692_adh | TGTGAAACGGTAGAAAATTCA  | Chr.4 | 16990723 | 16990743 | + | No  |
| 1805077_adh | TAATTTCTGAAGACCTTTTTT  | Chr.4 | 16991291 | 16991311 | + | No  |
| 2128067_adh | TGAAGACTACTCCTGAAAATG  | Chr.4 | 16992265 | 16992285 | + | Yes |
| 2745162_adh | TTTTTAGTTCAATGAAATTTA  | Chr.4 | 16992458 | 16992478 | + | No  |
| 1925245_adh | TATTCCTTTAGAAGCAGAATT  | Chr.4 | 16993461 | 16993441 | - | No  |
| 2500692_adh | TGTGAAACGGTAGAAAATTCA  | Chr.4 | 16993496 | 16993516 | + | No  |
| 1819771_adh | TACCGGTACAGAGAGTGTAGT  | Chr.4 | 17011608 | 17011588 | - | No  |
| 2746092_adh | TTTTTCGGCATACAACATCAA  | Chr.4 | 17012182 | 17012162 | - | No  |
| 2562222_adh | TTAGACGTAAGAAAAAAC     | Chr.4 | 17017888 | 17017868 | - | No  |
| 1921414_adh | TATTAGACGTAAGAAAAAAC   | Chr.4 | 17017890 | 17017870 | - | No  |
| 1798939_adh | TAATCTGTGTGTCATATTGCC  | Chr.4 | 17018708 | 17018728 | + | Yes |
| 2592910_adh | TTAGTCGTCTAGGTTTCTAC   | Chr.4 | 17018977 | 17018997 | + | Yes |
| 2721971_adh | TTTGCGCAAGATCGAAAATAA  | Chr.4 | 17025552 | 17025572 | + | No  |
| 1883882_adh | TATAAACTCTAATTGCGGAA   | Chr.4 | 17027588 | 17027608 | + | No  |
| 2559722_adh | TTACTTAACAATTGGTTTCTC  | Chr.4 | 17027935 | 17027915 | - | Yes |
| 2641184_adh | TTGAGGACGCGCAGGGAAGCA  | Chr.4 | 17029526 | 17029506 | - | No  |
| 1760822_adh | TAAATCGGTATTAACAAACAA  | Chr.4 | 17031584 | 17031564 | - | No  |
| 2668929_adh | TTGGTAAATCGGTATTAACAA  | Chr.4 | 17031588 | 17031568 | - | No  |
| 2721971_adh | TTTGCGCAAGATCGAAAATAA  | Chr.4 | 17032106 | 17032126 | + | No  |
| 2712555_adh | TTTGAAACAGCCGTAAACGCAG | Chr.4 | 17037054 | 17037034 | - | Yes |
| 2631634_adh | TTGAATGCAGATCAAAATAAC  | Chr.4 | 17037853 | 17037873 | + | No  |
| 2136996_adh | TGAATAATATAAAATCCTCAA  | Chr.4 | 17041561 | 17041541 | - | No  |
| 1940663_adh | TCAAGTTCGATAGCACGTTGT  | Chr.4 | 17041829 | 17041849 | + | Yes |
| 2546310_adh | TTAACTGAGTCTGAATGTAA   | Chr.4 | 17042732 | 17042712 | - | Yes |
| 1802291_adh | TAATTAATAGCATGAAAGTTT  | Chr.4 | 17042778 | 17042798 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1996569_adh | TCGAAGGATACATGACCAAAA  | Chr.4 | 17047548 | 17047528 | - | No  |
| 1849706_adh | TAGATACATAATAAATACTAA  | Chr.4 | 17052124 | 17052104 | - | No  |
| 2305933_adh | TGCTAGATACATAATAAATAC  | Chr.4 | 17052127 | 17052107 | - | No  |
| 1797246_adh | TAATATTGTTTGTGGAAGCGT  | Chr.4 | 17052295 | 17052275 | - | No  |
| 2549234_adh | TTAAGTGTTTCACGAATTTTT  | Chr.4 | 17058361 | 17058341 | - | No  |
| 2644842_adh | TTGATGAGTGGAAGTTTTAAA  | Chr.4 | 17063082 | 17063062 | - | Yes |
| 2644842_adh | TTGATGAGTGGAAGTTTTAAA  | Chr.4 | 17063213 | 17063193 | - | No  |
| 2050356_adh | TCTGGGCAAAGTTATGACGGA  | Chr.4 | 17064579 | 17064599 | + | No  |
| 2644842_adh | TTGATGAGTGGAAGTTTTAAA  | Chr.4 | 17065996 | 17066016 | + | Yes |
| 2487405_adh | TGTAGAAAAGAAGATTCAAAAC | Chr.4 | 17067311 | 17067291 | - | No  |
| 2300031_adh | TGCGCATAGAATTTTTTAATT  | Chr.4 | 17087383 | 17087363 | - | No  |
| 2716815_adh | TTTGAGCTCTTCATTTTTCGT  | Chr.4 | 17087687 | 17087707 | + | No  |
| 2412748_adh | TGGCGGCAAAAATTAGACATT  | Chr.4 | 17089713 | 17089693 | - | No  |
| 2738634_adh | TTTTCGGCTTATTTTCGTTAT  | Chr.4 | 17090226 | 17090246 | + | No  |
| 1750044_adh | TAAAAGTACGGGAATGTCTAG  | Chr.4 | 17095287 | 17095267 | - | No  |
| 2130280_adh | TGAAGATTGGAATTCGATATA  | Chr.4 | 17115820 | 17115800 | - | No  |
| 2578330_adh | TTATGAAGGAAGAGGACGCCG  | Chr.4 | 17118072 | 17118052 | - | No  |
| 2749543_adh | TTTTTTGGCTAAAATTCGTGA  | Chr.4 | 17119358 | 17119338 | - | No  |
| 2083715_adh | TGAAAGTAGATGAATGAGACA  | Chr.4 | 17126704 | 17126724 | + | No  |
| 2748723_adh | TTTTTTCCGATGGGTGGCGTG  | Chr.4 | 17136741 | 17136761 | + | No  |
| 1943078_adh | TCAATTGATCTCGGAACGATG  | Chr.4 | 17143221 | 17143241 | + | No  |
| 1827620_adh | TACGTAAATTATTATAACCCT  | Chr.4 | 17143391 | 17143371 | - | Yes |
| 2702870_adh | TTTCAGAATCTGAAC TTCCAA | Chr.4 | 17147716 | 17147736 | + | No  |
| 2588139_adh | TTCAATGCATTTTGCGACATT  | Chr.4 | 17151913 | 17151893 | - | Yes |
| 2749865_adh | TTTTTTGTTTGATCACGTGAG  | Chr.4 | 17153527 | 17153547 | + | No  |
| 2705748_adh | TTTCCGCAATCAAATACGGTT  | Chr.4 | 17153951 | 17153971 | + | Yes |
| 1827600_adh | TACGGTTTTGAAATTGGCTAC  | Chr.4 | 17153965 | 17153985 | + | Yes |
| 2679410_adh | TTGTGAAGTTGGGATAGGTAT  | Chr.4 | 17156582 | 17156602 | + | No  |
| 1927964_adh | TATTGTGAAGTTGGAATTTAA  | Chr.4 | 17157207 | 17157227 | + | No  |
| 2741373_adh | TTTTGAGACAATACTTTTGCT  | Chr.4 | 17159528 | 17159548 | + | No  |
| 2388627_adh | TGGATAGGAGAAAAACAGCAA  | Chr.4 | 17159564 | 17159544 | - | No  |
| 2660926_adh | TTGGATAGGAGAAAAACAGCA  | Chr.4 | 17159565 | 17159545 | - | No  |
| 2624860_adh | TTGAAACTGCAGGAAATTCGA  | Chr.4 | 17161595 | 17161575 | - | No  |
| 2272886_adh | TGATGTAAAATGGTTGGAAGA  | Chr.4 | 17162958 | 17162978 | + | Yes |
| 1824642_adh | TACGCACACCAGATCGTCGTT  | Chr.4 | 17166361 | 17166381 | + | No  |
| 2596631_adh | TTCCAGAAACTATTGAAGCAG  | Chr.4 | 17172348 | 17172328 | - | Yes |
| 2159239_adh | TGACATTTGGAGCAGTGGAAC  | Chr.4 | 17174429 | 17174449 | + | No  |
| 2269899_adh | TGATCGGAGAGTGCGTTTAGT  | Chr.4 | 17181423 | 17181403 | - | No  |
| 2644338_adh | TTGATCGGAGAGTGCGTTTAG  | Chr.4 | 17181424 | 17181404 | - | No  |
| 1813556_adh | TACATCTTTCAAATTTAAAAT  | Chr.4 | 17184075 | 17184095 | + | No  |
| 1749479_adh | TAAAAGCAGAAAAGGAAGCGT  | Chr.4 | 17184202 | 17184182 | - | No  |
| 2488097_adh | TGTAGATTTGCGGCGAGACC   | Chr.4 | 17188473 | 17188453 | - | No  |
| 2712128_adh | TTTCTTTGTAGTTTTCTTAGA  | Chr.4 | 17189824 | 17189804 | - | Yes |
| 2688944_adh | TTTAAAATATTCGGTTTCAAC  | Chr.4 | 17193033 | 17193013 | - | No  |
| 1836629_adh | TAGAAAAATAGAATTACATCA  | Chr.4 | 17197399 | 17197379 | - | Yes |
| 1798397_adh | TAATCGACGAATATTTTACT   | Chr.4 | 17200198 | 17200178 | - | Yes |
| 2564317_adh | TTAGATCGGTATATATATAGG  | Chr.4 | 17202007 | 17201987 | - | Yes |
| 1962150_adh | TCAGCAATGAAGTTATTGCAT  | Chr.4 | 17202562 | 17202542 | - | Yes |
| 2641809_adh | TTGAGTAATTAAGACAGAA    | Chr.4 | 17203445 | 17203465 | + | Yes |
| 1979953_adh | TCCATTACCGTTGAATGCATT  | Chr.4 | 17205962 | 17205942 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2554442_adh | TTACAGTTAGAGAAGCATTAA  | Chr.4 | 17207567 | 17207547 | - | Yes |
| 1766716_adh | TAACCAGTGAAGCAAATTTCC  | Chr.4 | 17208722 | 17208742 | + | No  |
| 2676627_adh | TTGTATGCGGTTGATTTTGAG  | Chr.4 | 17213529 | 17213509 | - | No  |
| 2548489_adh | TTAAGGCTATTATTTCACTGA  | Chr.4 | 17213684 | 17213704 | + | Yes |
| 2159160_adh | TGACATTGTTGGCATTTTACG  | Chr.4 | 17221729 | 17221709 | - | No  |
| 2701353_adh | TTTCAACGTACATAACTTCCT  | Chr.4 | 17223599 | 17223619 | + | Yes |
| 2549553_adh | TTAATAATCCGAAGCAATTGA  | Chr.4 | 17233386 | 17233366 | - | No  |
| 2021827_adh | TCGTACACTTTAAGAAGTTTT  | Chr.4 | 17236088 | 17236108 | + | No  |
| 1924417_adh | TATTCGGCTCAACTTTTTAAC  | Chr.4 | 17237412 | 17237432 | + | Yes |
| 2583295_adh | TTATTGTGACTATATTTACAA  | Chr.4 | 17238808 | 17238828 | + | Yes |
| 2665147_adh | TTGGCAATTGTGGCAAATGTG  | Chr.4 | 17239816 | 17239836 | + | No  |
| 1755465_adh | TAAACTCTTCTAAAAAAGATA  | Chr.4 | 17260771 | 17260751 | - | Yes |
| 1798873_adh | TAATCTGAATTTTCCCAGGAG  | Chr.4 | 17267184 | 17267204 | + | No  |
| 2003809_adh | TCGATCTGATCAGAAGTTTGC  | Chr.4 | 17274500 | 17274480 | - | No  |
| 2469280_adh | TGGTCATAAACAAAGACATCG  | Chr.4 | 17277904 | 17277884 | - | No  |
| 2706537_adh | TTTCGAAATCAAAATGGACTG  | Chr.4 | 17278304 | 17278284 | - | No  |
| 2035377_adh | TCTCAACACTTTTCTGTAGGC  | Chr.4 | 17278601 | 17278621 | + | No  |
| 2744808_adh | TTTTTAATCATTGTTCTCGAC  | Chr.4 | 17278832 | 17278852 | + | No  |
| 2250637_adh | TGAGTACAAAGGAGAGAACAA  | Chr.4 | 17279287 | 17279307 | + | No  |
| 2288344_adh | TGCAGCTATCGCTTACGGACT  | Chr.4 | 17279506 | 17279526 | + | No  |
| 2620741_adh | TTCTTAGTCGCCTGTACAATT  | Chr.4 | 17280104 | 17280124 | + | No  |
| 1999911_adh | TCGACCTCCTCGATCGTTGGT  | Chr.4 | 17281136 | 17281116 | - | No  |
| 2749397_adh | TTTTTTGATCTCGGTTTTTAT  | Chr.4 | 17281153 | 17281173 | + | No  |
| 2032809_adh | TCTAGGCGAATAACGGTTTGG  | Chr.4 | 17281259 | 17281239 | - | No  |
| 2013692_adh | TCGGATATTTGTGTGACGTCT  | Chr.4 | 17281355 | 17281375 | + | No  |
| 2634674_adh | TTGACAAAGAAAGAAATGGAT  | Chr.4 | 17281394 | 17281414 | + | No  |
| 2609151_adh | TTCGGGATTGTTGTTCAAGGC  | Chr.4 | 17308053 | 17308073 | + | No  |
| 2016777_adh | TCGGGATTGTTGTTCAAGGCG  | Chr.4 | 17308054 | 17308074 | + | No  |
| 2234739_adh | TGAGCTCCGCATACGCTAAAT  | Chr.4 | 17309165 | 17309185 | + | No  |
| 2734615_adh | TTTTAGATTGCGTTTTAAAAA  | Chr.4 | 17311310 | 17311330 | + | No  |
| 2046319_adh | TCTGAGCGGTTGACATTCATA  | Chr.4 | 17316114 | 17316094 | - | No  |
| 2029161_adh | TCGTTTTTTACTCTAAAAACT  | Chr.4 | 17323870 | 17323890 | + | No  |
| 2749032_adh | TTTTTCTCTTGATTGTCTCA   | Chr.4 | 17331352 | 17331372 | + | No  |
| 2463615_adh | TGGTAGTAGACGGAATAGCTG  | Chr.4 | 17342642 | 17342662 | + | No  |
| 2148466_adh | TGAATTTGCAGAATGTATCTC  | Chr.4 | 17343577 | 17343557 | - | No  |
| 2722851_adh | TTTGGAAAAAGTAGAAAACTC  | Chr.4 | 17348889 | 17348869 | - | No  |
| 2707843_adh | TTTCGGATTAGGATGGTTTGA  | Chr.4 | 17364874 | 17364854 | - | No  |
| 2005355_adh | TCGATTTTCAGCATGTTTTCC  | Chr.4 | 17380136 | 17380116 | - | No  |
| 2553367_adh | TTACAAC TAGAGAAACGTTTT | Chr.4 | 17397974 | 17397994 | + | No  |
| 2708950_adh | TTTCGTCTCAAGAAGAAGCTA  | Chr.4 | 17400382 | 17400402 | + | No  |
| 1797881_adh | TAATCAGTGACGCAATCTTTA  | Chr.4 | 17415717 | 17415697 | - | No  |
| 2560517_adh | TTACTTTGTACAGGTTGCTTG  | Chr.4 | 17422257 | 17422237 | - | No  |
| 1922862_adh | TATTATTACATGCTTTCTGAC  | Chr.4 | 17423026 | 17423006 | - | No  |
| 1836689_adh | TAGAAAACGTCACGAAGTGGT  | Chr.4 | 17428688 | 17428708 | + | No  |
| 2061721_adh | TCTTTGAATTTTGAAGATCAT  | Chr.4 | 17432791 | 17432771 | - | No  |
| 2533986_adh | TGTTTGTTTGAAATCTAGGCC  | Chr.4 | 17436860 | 17436840 | - | No  |
| 1942148_adh | TCAATGGAGCATCGAACTCTT  | Chr.4 | 17439716 | 17439696 | - | No  |
| 2732874_adh | TTTGTTTTTGATCTAGGTAGT  | Chr.4 | 17451324 | 17451304 | - | No  |
| 2037275_adh | TCTCAGAAGACGTAGTGGTGC  | Chr.4 | 17463405 | 17463385 | - | No  |
| 2233692_adh | TGAGCCAGTTGCCCAAGAAGA  | Chr.4 | 17471176 | 17471156 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1971778_adh | TCATGAATTTTTGACTTGACG  | Chr.4 | 17474658 | 17474638 | - | No  |
| 1973718_adh | TCATTCAGTAGGTGGCATTAA  | Chr.4 | 17482148 | 17482168 | + | No  |
| 2508067_adh | TGTGATCATTAGAATCGGCGC  | Chr.4 | 17490993 | 17490973 | - | No  |
| 2557208_adh | TTACGGAAGAACGAACATAAA  | Chr.5 | 5099     | 5079     | - | No  |
| 2274360_adh | TGATTACGGAAGAACGAACATA | Chr.5 | 5102     | 5082     | - | No  |
| 1852452_adh | TAGATTTGAGTTGGAATTTTT  | Chr.5 | 30758    | 30778    | + | No  |
| 2666803_adh | TTGGGAAGTCTGCGGCTAAAC  | Chr.5 | 100493   | 100513   | + | No  |
| 2039311_adh | TCTCCTTTTCGTTGTTCTCCT  | Chr.5 | 100648   | 100628   | - | No  |
| 2039311_adh | TCTCCTTTTCGTTGTTCTCCT  | Chr.5 | 100934   | 100954   | + | No  |
| 1961324_adh | TCAGATGCCACAAGCTTAAGC  | Chr.5 | 103990   | 103970   | - | No  |
| 1930522_adh | TATTTGTAGTTTTCGCTCGTA  | Chr.5 | 104522   | 104502   | - | No  |
| 2521399_adh | TGTGTTTATCGTAAATCGGCG  | Chr.5 | 104711   | 104731   | + | No  |
| 1807595_adh | TACAACGAAGAAAAGAAAACA  | Chr.5 | 131359   | 131339   | - | No  |
| 2328196_adh | TGGAATAAAAAGAAGCATGGA  | Chr.5 | 146145   | 146125   | - | No  |
| 2119809_adh | TGAACAATACGGATCGTCAAA  | Chr.5 | 157201   | 157221   | + | No  |
| 1821444_adh | TACGAAAAATCGACGGGATCA  | Chr.5 | 243087   | 243107   | + | No  |
| 1919890_adh | TATTAATAATAGGGTCGTTAA  | Chr.5 | 290096   | 290116   | + | No  |
| 2694253_adh | TTTACTCTGAAAAATTGAAAA  | Chr.5 | 305545   | 305525   | - | No  |
| 2640931_adh | TTGAGCGGCAGCAGCGAATAC  | Chr.5 | 311704   | 311724   | + | No  |
| 2748722_adh | TTTTTCCGATGGGTGGCATG   | Chr.5 | 311969   | 311989   | + | No  |
| 2458840_adh | TGGGTGGCATGGAGAACGGCT  | Chr.5 | 311979   | 311999   | + | No  |
| 2701422_adh | TTCAACTATTTTCGGCGTTT   | Chr.5 | 347845   | 347865   | + | No  |
| 1838843_adh | TAGAACTGGTATTTGAAGGGG  | Chr.5 | 349199   | 349179   | - | No  |
| 2733669_adh | TTTTAATCGAATTTCTGTCGG  | Chr.5 | 410499   | 410519   | + | No  |
| 2733669_adh | TTTTAATCGAATTTCTGTCGG  | Chr.5 | 411109   | 411089   | - | No  |
| 1838899_adh | TAGAACTTGCTCTATTTCGAA  | Chr.5 | 411406   | 411426   | + | No  |
| 1866745_adh | TAGGATTTTATAATGGAGCAT  | Chr.5 | 412569   | 412549   | - | No  |
| 2046357_adh | TCTGAGGAGAAATTTAGAAA   | Chr.5 | 517685   | 517665   | - | No  |
| 1812953_adh | TACAGTTGTGACCTCATAAAT  | Chr.5 | 553833   | 553853   | + | No  |
| 2027977_adh | TCGTTCCAGAATAAACAGTA   | Chr.5 | 580026   | 580046   | + | No  |
| 2718260_adh | TTTGATCGTCAACTGTGAGGT  | Chr.5 | 647070   | 647090   | + | Yes |
| 1849424_adh | TAGAGTTGAGATCACTGGACC  | Chr.5 | 725846   | 725826   | - | No  |
| 1971565_adh | TCATCTGGATGGAGACCTCTC  | Chr.5 | 726635   | 726615   | - | No  |
| 2574187_adh | TTATACAAAGACACACAAT    | Chr.5 | 727978   | 727958   | - | No  |
| 2560631_adh | TTAGAAAACGGCAATAAATCA  | Chr.5 | 775147   | 775127   | - | No  |
| 2588745_adh | TTCAATGTTTGAAGCGAGAAA  | Chr.5 | 775360   | 775380   | + | No  |
| 2742371_adh | TTTTGCATTGGAACGTTGACA  | Chr.5 | 776844   | 776864   | + | No  |
| 1790133_adh | TAATAAATACATACCTATATT  | Chr.5 | 814682   | 814702   | + | No  |
| 2709970_adh | TTTCTCGATTAGAATGGGTTT  | Chr.5 | 856838   | 856858   | + | No  |
| 2308276_adh | TGCTGAATCATACTTTGCTCT  | Chr.5 | 862195   | 862215   | + | No  |
| 2411275_adh | TGGCCTGAGAAAGTAAAAATC  | Chr.5 | 903962   | 903942   | - | No  |
| 2135957_adh | TGAAGTTGGCTCAGAAACAGA  | Chr.5 | 904077   | 904097   | + | No  |
| 2666070_adh | TTGGCTCAGAAACAGAAGATG  | Chr.5 | 904082   | 904102   | + | No  |
| 2142325_adh | TGAATCGGCAAAAAATTAATC  | Chr.5 | 953783   | 953803   | + | No  |
| 1990766_adh | TCCTCTCGGACAAGGCAACAA  | Chr.5 | 965065   | 965045   | - | No  |
| 2705373_adh | TTCCCGCATTTATTGTAGCA   | Chr.5 | 992153   | 992173   | + | No  |
| 1806267_adh | TAATTTTGCAGCTCGACATT   | Chr.5 | 1019990  | 1019970  | - | No  |
| 2515733_adh | TGTGGATTTGAGACTTTGCA   | Chr.5 | 1022729  | 1022749  | + | No  |
| 2538093_adh | TTAAAAATTTGAGGAAAGCCA  | Chr.5 | 1066958  | 1066938  | - | No  |
| 2447877_adh | TGGGATTATTCAGAAGGTTCT  | Chr.5 | 1084949  | 1084929  | - | No  |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 2656728_adh | TTGGAACGAGTAGAGGATTAT   | Chr.5 | 1094496 | 1094516 | + | No |
| 2656728_adh | TTGGAACGAGTAGAGGATTAT   | Chr.5 | 1097996 | 1098016 | + | No |
| 2733120_adh | TTTTAAAGGTGGTGTATTTAG   | Chr.5 | 1152829 | 1152809 | - | No |
| 2746204_adh | TTTTTCTCAACCAGTGGACGA   | Chr.5 | 1155814 | 1155834 | + | No |
| 2031144_adh | TCTACAAGGAGAAAAATGACGA  | Chr.5 | 1178608 | 1178628 | + | No |
| 2537472_adh | TAAAAAACTTAAGCGGGCAA    | Chr.5 | 1197648 | 1197668 | + | No |
| 2271567_adh | TGATGATGTAGACGCAGACGT   | Chr.5 | 1207945 | 1207965 | + | No |
| 2422369_adh | TGGGACTGTTTTCCAAAGGAG   | Chr.5 | 1270954 | 1270974 | + | No |
| 2717776_adh | TTTGATCAGTTTGAAATCAA    | Chr.5 | 1276044 | 1276024 | - | No |
| 2051487_adh | TCTGGTTCGGAATCAGGAGAA   | Chr.5 | 1279306 | 1279286 | - | No |
| 2052645_adh | TCTGTGGAAAGTGAAGTACTG   | Chr.5 | 1286189 | 1286209 | + | No |
| 2747718_adh | TTTTTGATAGATCAAACCGGTG  | Chr.5 | 1312607 | 1312627 | + | No |
| 2616777_adh | TTCTCGTAGTAAATCGTTGGC   | Chr.5 | 1319449 | 1319429 | - | No |
| 2472016_adh | TGGTGGAGCTCTTCGACGGCT   | Chr.5 | 1379793 | 1379773 | - | No |
| 1887894_adh | TATAGAAATGTAGAAAACGAG   | Chr.5 | 1383505 | 1383485 | - | No |
| 1999464_adh | TCGAATTTTGAAGCCGTCTCC   | Chr.5 | 1383631 | 1383611 | - | No |
| 1924237_adh | TATTCGAATTTTGAAGCCGTC   | Chr.5 | 1383634 | 1383614 | - | No |
| 1959156_adh | TCAGAGGAATAATTACTTGAA   | Chr.5 | 1383751 | 1383771 | + | No |
| 2469212_adh | TGGTCAGAATTGTACGGTAAA   | Chr.5 | 1426442 | 1426462 | + | No |
| 2734226_adh | TTTACGTAAAGCAGGGAAAA    | Chr.5 | 1429258 | 1429238 | - | No |
| 2729059_adh | TTTGTCGTATTTTTTCGGTTC   | Chr.5 | 1429786 | 1429766 | - | No |
| 2316293_adh | TGGAAGATTTTTAGAGCGAA    | Chr.5 | 1471719 | 1471699 | - | No |
| 2553230_adh | TTACAAATGAACTGCAGACAA   | Chr.5 | 1495731 | 1495751 | + | No |
| 2528763_adh | TGTTGAGATGGTGGAGCCGGT   | Chr.5 | 1496083 | 1496063 | - | No |
| 2307252_adh | TGCTCAGGGCTGAAATGGTTG   | Chr.5 | 1504276 | 1504296 | + | No |
| 2742955_adh | TTTTGGGAAGTAACGTGATTA   | Chr.5 | 1505476 | 1505496 | + | No |
| 2546747_adh | TTAAGAAGACTCCCATTGACA   | Chr.5 | 1561622 | 1561642 | + | No |
| 2706258_adh | TTTCTCTGTTTTTCGAACAA    | Chr.5 | 1587912 | 1587932 | + | No |
| 2746270_adh | TTTTTCTGCGGTAAATCTGAA   | Chr.5 | 1590250 | 1590230 | - | No |
| 2382012_adh | TGGAGGAGAAGCAGAAGTAAA   | Chr.5 | 1658059 | 1658039 | - | No |
| 1819426_adh | TACCGAAAAAGTTCTCGTCTT   | Chr.5 | 1659616 | 1659596 | - | No |
| 2618860_adh | TTCTGGAACCTCCACATGGGCA  | Chr.5 | 1685852 | 1685872 | + | No |
| 2296173_adh | TGCGAATTAAGCGGCAGAACT   | Chr.5 | 1773379 | 1773399 | + | No |
| 2585186_adh | TTCAAACGGTTGATCTCGATT   | Chr.5 | 1797126 | 1797106 | - | No |
| 2729426_adh | TTTGTGACAGTGAATAAAAAA   | Chr.5 | 1801851 | 1801831 | - | No |
| 2579737_adh | TTATGGTCTTTGGAACACAAA   | Chr.5 | 1830767 | 1830787 | + | No |
| 2579737_adh | TTATGGTCTTTGGAACACAAA   | Chr.5 | 1841242 | 1841222 | - | No |
| 2043641_adh | TCTGAAAATCGGGGACTAGGT   | Chr.5 | 1843172 | 1843192 | + | No |
| 2733928_adh | TTTTACAAC TAGAATCGAGCC  | Chr.5 | 1857771 | 1857791 | + | No |
| 2335573_adh | TGGAATCGGCTTGATTTTGCT   | Chr.5 | 1870346 | 1870326 | - | No |
| 2236763_adh | TGAGGAAGGGGAGAAGTAGAA   | Chr.5 | 1871900 | 1871880 | - | No |
| 2603633_adh | TTTCGAGAAGGAATATTTTCGT  | Chr.5 | 1872032 | 1872052 | + | No |
| 1976754_adh | TCCAATCGGAGATGTTGCTAC   | Chr.5 | 1873739 | 1873759 | + | No |
| 2744839_adh | TTTTTAATGTTTTCGTTGTAT   | Chr.5 | 1877525 | 1877505 | - | No |
| 2047711_adh | TCTGCAAAGTGGACTATTTTA   | Chr.5 | 1893164 | 1893184 | + | No |
| 2001415_adh | TCGAGCAATTATGAATATGAG   | Chr.5 | 1919507 | 1919487 | - | No |
| 2744703_adh | TTTTTAAAGTCGATGGACGGC   | Chr.5 | 1931562 | 1931582 | + | No |
| 2749335_adh | TTTTTTGACTGAAAAGGCGTT   | Chr.5 | 1975134 | 1975114 | - | No |
| 2056603_adh | TCTTCGGATTTCATTGCAAAAGT | Chr.5 | 2004977 | 2004997 | + | No |
| 2591918_adh | TTCAGGAAAAATTGTCGAAAA   | Chr.5 | 2008673 | 2008693 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 1963262_adh | TCAGGAAAAATTGTCGAAAAC  | Chr.5 | 2008674 | 2008694 | + | No  |
| 2604899_adh | TTGATCGTTGAAGGACGGAT   | Chr.5 | 2065755 | 2065775 | + | No  |
| 2673424_adh | TTGGTTTTCGGTTGTTTTCGT  | Chr.5 | 2067676 | 2067696 | + | No  |
| 2738748_adh | TTTTCGGTTGTTTTCGTCATT  | Chr.5 | 2067680 | 2067700 | + | No  |
| 2031581_adh | TCTACGAGAAGGCTGCCTAAG  | Chr.5 | 2069018 | 2069038 | + | No  |
| 1848318_adh | TAGAGGAGAAGCTGACGACTG  | Chr.5 | 2072770 | 2072750 | - | No  |
| 2717098_adh | TTTGAGTGTAGAAGAAAAAAG  | Chr.5 | 2090354 | 2090334 | - | No  |
| 2171022_adh | TGACTGTACGGAGATTCGGAA  | Chr.5 | 2115218 | 2115238 | + | No  |
| 2724350_adh | TTTGGCATCATTCGGAATCAC  | Chr.5 | 2129815 | 2129835 | + | No  |
| 1812458_adh | TACAGGAGAAGATGAACAAAA  | Chr.5 | 2161316 | 2161336 | + | No  |
| 2710346_adh | TTTCTGAAATACTAAAAATAA  | Chr.5 | 2191713 | 2191733 | + | No  |
| 2667318_adh | TTGGGATGAAAGATGAGATGA  | Chr.5 | 2207065 | 2207045 | - | No  |
| 2162208_adh | TGACGTCGAGACGGAATTGCT  | Chr.5 | 2255434 | 2255454 | + | No  |
| 1851712_adh | TAGATGTAGGAACATTCATAA  | Chr.5 | 2266401 | 2266381 | - | No  |
| 2712969_adh | TTTGAACATGAGGGCATGTAA  | Chr.5 | 2282489 | 2282469 | - | No  |
| 2692967_adh | TTTAATTTGAACATGAGGGCA  | Chr.5 | 2282494 | 2282474 | - | No  |
| 1972742_adh | TCATGGTAGACAGGCGCGGTT  | Chr.5 | 2286225 | 2286245 | + | No  |
| 2288744_adh | TGCAGTAGAGCGCGTTTGCAG  | Chr.5 | 2387399 | 2387419 | + | No  |
| 2288744_adh | TGCAGTAGAGCGCGTTTGCAG  | Chr.5 | 2495678 | 2495698 | + | No  |
| 1935646_adh | TCAAATTGGGAAAATCGAACG  | Chr.5 | 2603237 | 2603257 | + | No  |
| 1805139_adh | TAATTTGAAGAAGAGCATTTT  | Chr.5 | 2606368 | 2606388 | + | No  |
| 2368351_adh | TGGAATGTTTTGTAGTTTTTA  | Chr.5 | 2606519 | 2606539 | + | No  |
| 1836341_adh | TACTTTGGGATTTTCGTCGTT  | Chr.5 | 2654161 | 2654181 | + | No  |
| 2584954_adh | TTCAAACCGCGTATTTCTCTA  | Chr.5 | 2682750 | 2682770 | + | No  |
| 2699703_adh | TTTATTCACGCGGAATTTTGG  | Chr.5 | 2694578 | 2694558 | - | No  |
| 2585574_adh | TTCAAATGTACACTAAATAAC  | Chr.5 | 2697668 | 2697648 | - | No  |
| 2734497_adh | TTTTAGACGTGTGGAAGACGA  | Chr.5 | 2698581 | 2698561 | - | No  |
| 1847248_adh | TAGAGAAGTTGTTGCTGAAAA  | Chr.5 | 2722017 | 2722037 | + | Yes |
| 1847248_adh | TAGAGAAGTTGTTGCTGAAAA  | Chr.5 | 2724164 | 2724184 | + | No  |
| 2048433_adh | TCTGCTCAAATGGACTCGGAC  | Chr.5 | 2810624 | 2810644 | + | No  |
| 2745624_adh | TTTTTCAATTGTTGAGCGAAT  | Chr.5 | 2879745 | 2879725 | - | No  |
| 2010873_adh | TCGGAAGTAGAATACACGTAA  | Chr.5 | 2954001 | 2953981 | - | No  |
| 2299327_adh | TGCGATGGTAAAAAGCAAAAA  | Chr.5 | 3020739 | 3020719 | - | No  |
| 2746316_adh | TTTTTCTGTTTTCTGTCAATTG | Chr.5 | 3033452 | 3033472 | + | No  |
| 2161827_adh | TGACGGGAGATTTGAGCCATC  | Chr.5 | 3057096 | 3057116 | + | No  |
| 2159209_adh | TGACATTTATATAATTTTTTA  | Chr.5 | 3088093 | 3088073 | - | No  |
| 2121730_adh | TGAACCAAGTCCTTGTTGAACG | Chr.5 | 3134755 | 3134735 | - | No  |
| 2705743_adh | TTTCCGATTGTAGTGATAAAC  | Chr.5 | 3158768 | 3158748 | - | No  |
| 1851518_adh | TAGATGGGTGTAGTGTGGCC   | Chr.5 | 3193307 | 3193327 | + | No  |
| 1812606_adh | TACAGGTTGGAAGAACGCATT  | Chr.5 | 3195319 | 3195339 | + | No  |
| 2515215_adh | TGTGGAGCTCTAACAGTTGGC  | Chr.5 | 3259359 | 3259339 | - | No  |
| 1793922_adh | TAATACTCAAAAAGTCGTCAA  | Chr.5 | 3278399 | 3278379 | - | No  |
| 2542024_adh | TTAAATAACGAACATATTTTG  | Chr.5 | 3361988 | 3362008 | + | No  |
| 2679187_adh | TTGTGAAAGTGGCAAAAAACC  | Chr.5 | 3480983 | 3480963 | - | No  |
| 2043819_adh | TCTGAAATTGGGAAGACTATG  | Chr.5 | 3507819 | 3507799 | - | No  |
| 2017209_adh | TCGGGGTACTGTAGTAGTGCT  | Chr.5 | 3520131 | 3520151 | + | No  |
| 2048794_adh | TCTGGAAGCTCGGCTATTTTA  | Chr.5 | 3557440 | 3557460 | + | No  |
| 1839805_adh | TAGAAGTCGTAAAAAACAAAC  | Chr.5 | 3558826 | 3558806 | - | No  |
| 1797890_adh | TAATCAGTTTTTTTAACCCATA | Chr.5 | 3564318 | 3564298 | - | No  |
| 1797890_adh | TAATCAGTTTTTTTAACCCATA | Chr.5 | 3571307 | 3571327 | + | No  |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 2042866_adh | TCTCTGAGCACTGCGACACGG | Chr.5 | 3580859 | 3580839 | - | No |
| 1768071_adh | TAACGAGCTGGTCGTAGAGGT | Chr.5 | 3585153 | 3585133 | - | No |
| 2552114_adh | TTAATTGAATAGAAATTAATA | Chr.5 | 3587890 | 3587910 | + | No |
| 2065352_adh | TGAAAAACACGAGGCGTAGAC | Chr.5 | 3685879 | 3685859 | - | No |
| 2721784_adh | TTTGCCGCAAAATCGATTGAA | Chr.5 | 3754260 | 3754240 | - | No |
| 2734576_adh | TTTTAGATAAGATGTCCTGAC | Chr.5 | 3825308 | 3825288 | - | No |
| 2480345_adh | TGTAATAATACACTGATAGCA | Chr.5 | 3878837 | 3878857 | + | No |
| 2746012_adh | TTTTTCGATTTTCAGTTTTCC | Chr.5 | 3885568 | 3885548 | - | No |
| 1919925_adh | TATTAAAGAACGAACAAACGG | Chr.5 | 3935468 | 3935488 | + | No |
| 2687446_adh | TTGTTTGATTTGTGGCAGGCT | Chr.5 | 3962536 | 3962516 | - | No |
| 2709428_adh | TTTCTAACGAACGTCATGGAA | Chr.5 | 4034413 | 4034433 | + | No |
| 2717171_adh | TTTGATAAAAAGCATGCCGTC | Chr.5 | 4045039 | 4045059 | + | No |
| 2589739_adh | TTCACGGTAGCACAGAACTA  | Chr.5 | 4063717 | 4063737 | + | No |
| 2263654_adh | TGATATCTTTTATTCAAAAAA | Chr.5 | 4064326 | 4064346 | + | No |
| 1889977_adh | TATATCATTACGGTAAATTTT | Chr.5 | 4070794 | 4070814 | + | No |
| 2050362_adh | TCTGGGCAGTGGAGCGCATTT | Chr.5 | 4147891 | 4147911 | + | No |
| 2737138_adh | TTTTCAAATCTTTTCTCGCAT | Chr.5 | 4175854 | 4175874 | + | No |
| 2701188_adh | TTTCAAATCTTTTCTCGCATA | Chr.5 | 4175855 | 4175875 | + | No |
| 2517259_adh | TGTGGTATCATAGGCGTGTTT | Chr.5 | 4177273 | 4177253 | - | No |
| 1929564_adh | TATTCAGATCAAAGTTCGGC  | Chr.5 | 4182418 | 4182398 | - | No |
| 2051788_adh | TCTGTACCGGTAATATTTGAA | Chr.5 | 4185645 | 4185625 | - | No |
| 2559450_adh | TTACTGTAGAGCTGATGGCGA | Chr.5 | 4192110 | 4192130 | + | No |
| 2737249_adh | TTTTCAATCCGAATATGTGTT | Chr.5 | 4194626 | 4194606 | - | No |
| 2339184_adh | TGGAATGAAAAGAAATTTTTT | Chr.5 | 4202001 | 4201981 | - | No |
| 2632749_adh | TTGAATGTAAATCAGTCTGTA | Chr.5 | 4238525 | 4238545 | + | No |
| 2568697_adh | TTAGGGACGGTTTTGTATAAA | Chr.5 | 4264995 | 4264975 | - | No |
| 1973739_adh | TCATTCATTCGCATCGACTTC | Chr.5 | 4284459 | 4284479 | + | No |
| 1942078_adh | TCAATGCGGGAAAATCTGAAA | Chr.5 | 4332962 | 4332982 | + | No |
| 2738866_adh | TTTTCGTTGAAGAGGACCAAA | Chr.5 | 4338075 | 4338055 | - | No |
| 2712680_adh | TTTGAAAGGCAATTAACGGGG | Chr.5 | 4338923 | 4338943 | + | No |
| 2747667_adh | TTTTTGTTGTTTTTAGATGG  | Chr.5 | 4346872 | 4346852 | - | No |
| 1898611_adh | TATCGGTTTTGTGCTACAAGA | Chr.5 | 4347069 | 4347089 | + | No |
| 2197550_adh | TGAGATCAGAATACGAATGTG | Chr.5 | 4349680 | 4349660 | - | No |
| 1963469_adh | TCAGGAAGAAGTCGAAGAAAC | Chr.5 | 4401330 | 4401310 | - | No |
| 2616476_adh | TTCTCGACTATTTCTGCTTAG | Chr.5 | 4411842 | 4411822 | - | No |
| 2552615_adh | TTAATTTATGGAGATGTTTAT | Chr.5 | 4433302 | 4433282 | - | No |
| 2748289_adh | TTTTTTAGCGGATTTTGTCGA | Chr.5 | 4442763 | 4442743 | - | No |
| 2705783_adh | TTTCCGGAATACGCAAAAATG | Chr.5 | 4470865 | 4470885 | + | No |
| 1809050_adh | TACAAGGAGGGAAAGCTTAAG | Chr.5 | 4484419 | 4484439 | + | No |
| 1811203_adh | TACACGTGATTTTCGTATAAT | Chr.5 | 4570356 | 4570336 | - | No |
| 2410208_adh | TGGCATTGTGAGAGAGAAAGG | Chr.5 | 4570379 | 4570359 | - | No |
| 2005260_adh | TCGATTTGCAGAGGATTTCTC | Chr.5 | 4570478 | 4570498 | + | No |
| 2721308_adh | TTTGCAGAGGATTTCTCAGGT | Chr.5 | 4570482 | 4570502 | + | No |
| 2164535_adh | TGACTAGAGAAACATTCACCA | Chr.5 | 4589875 | 4589895 | + | No |
| 2015701_adh | TCGGCTCTGAAAGAAGAATGT | Chr.5 | 4628737 | 4628757 | + | No |
| 2301504_adh | TGCGGCAGGAATATGATATTT | Chr.5 | 4651114 | 4651094 | - | No |
| 2313874_adh | TGGAATAATAGAAGTAAAAA  | Chr.5 | 4657537 | 4657557 | + | No |
| 1777367_adh | TAAGAGGGCTAAATCAAACAG | Chr.5 | 4686808 | 4686788 | - | No |
| 1880641_adh | TAGTTCGGATATTATTCAAT  | Chr.5 | 4689073 | 4689093 | + | No |
| 2413896_adh | TGGCTACTGGATTACGGAAC  | Chr.5 | 4735494 | 4735514 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2723766_adh | TTTGGAGGAAGAACAAGAAGA  | Chr.5 | 4757997 | 4758017 | + | No |
| 2607107_adh | TTCGGAAAGGCGTTTTAATCA  | Chr.5 | 4758807 | 4758787 | - | No |
| 2260225_adh | TGATACTTTCTGCATAGATCA  | Chr.5 | 4788108 | 4788088 | - | No |
| 2281379_adh | TGCAACATATCTGACGCGCAA  | Chr.5 | 4818038 | 4818018 | - | No |
| 1784162_adh | TAAGGAATTCGAGGGATGGAA  | Chr.5 | 4820104 | 4820084 | - | No |
| 2625330_adh | TTGAAAGTTGATGCAAAAGCC  | Chr.5 | 4827087 | 4827067 | - | No |
| 2501307_adh | TGTGAAATGGGCGGAGACGAG  | Chr.5 | 4827122 | 4827102 | - | No |
| 2590979_adh | TTCAGCAATCGAGAGACATTA  | Chr.5 | 4833105 | 4833085 | - | No |
| 2028450_adh | TCGTTGCTGCTTTTCTCGTCG  | Chr.5 | 4890232 | 4890252 | + | No |
| 2308777_adh | TGCTGCTTTTCTCGTCGTGGT  | Chr.5 | 4890236 | 4890256 | + | No |
| 2700622_adh | TTTATTTAATAACCAGGCATG  | Chr.5 | 4891686 | 4891706 | + | No |
| 1991596_adh | TCCTGGACAGACTTAATGACG  | Chr.5 | 4902176 | 4902196 | + | No |
| 2700893_adh | TTTATTTTGTAGCTAATTTCTG | Chr.5 | 4915695 | 4915675 | - | No |
| 2661067_adh | TTGGATATGAAAATGAATGTA  | Chr.5 | 4924330 | 4924350 | + | No |
| 2100793_adh | TGAAATGAAAATAAAAATTTA  | Chr.5 | 4951937 | 4951957 | + | No |
| 1939376_adh | TCAAGCTCGTCACTAATAATT  | Chr.5 | 4994647 | 4994627 | - | No |
| 1756347_adh | TAAAGAACATGGACGGTTGTT  | Chr.5 | 5032428 | 5032448 | + | No |
| 2531543_adh | TGTTTAAACCGGAAAACCTGA  | Chr.5 | 5047098 | 5047078 | - | No |
| 2561501_adh | TTAGAAGGAGTCGGGAAGAAA  | Chr.5 | 5047518 | 5047538 | + | No |
| 2022102_adh | TCGTAGAATTCATCTATAAAA  | Chr.5 | 5052113 | 5052133 | + | No |
| 2274708_adh | TGATTAGAGTCACTGAAAAAT  | Chr.5 | 5054892 | 5054872 | - | No |
| 2311654_adh | TGCTTTCAGAACAGTCCTCTC  | Chr.5 | 5104361 | 5104341 | - | No |
| 1755995_adh | TAAAGAAAAATCGTCGTCATC  | Chr.5 | 5107970 | 5107950 | - | No |
| 2229510_adh | TGAGATTCATAGCGTTCTTCG  | Chr.5 | 5110726 | 5110706 | - | No |
| 1826769_adh | TACGGGACGCAGAAAAACTAA  | Chr.5 | 5124643 | 5124623 | - | No |
| 1883829_adh | TATAAAAACTGACAATGGCAT  | Chr.5 | 5168113 | 5168133 | + | No |
| 1888418_adh | TATAGGAATTCGGTACGACCA  | Chr.5 | 5173117 | 5173137 | + | No |
| 1888418_adh | TATAGGAATTCGGTACGACCA  | Chr.5 | 5173500 | 5173520 | + | No |
| 2140064_adh | TGAATATGTGGAAGAGAAAAC  | Chr.5 | 5173612 | 5173592 | - | No |
| 2723890_adh | TTTGGATAGAATTCAGCATGT  | Chr.5 | 5181647 | 5181627 | - | No |
| 2471149_adh | TGGTGACTGACTGTTTCTTTT  | Chr.5 | 5269269 | 5269289 | + | No |
| 1998319_adh | TCGAATGCCCTTTTCCGCTTG  | Chr.5 | 5315315 | 5315295 | - | No |
| 2062551_adh | TCTTTTCATTTTGTTCGGA    | Chr.5 | 5350661 | 5350681 | + | No |
| 2038767_adh | TCTCCATTACTGTAGCAGAGA  | Chr.5 | 5362199 | 5362179 | - | No |
| 2732960_adh | TTTTAAAAATATTCGGCTAAA  | Chr.5 | 5385274 | 5385294 | + | No |
| 2605440_adh | TTCGATTAACAGTATTTGCAT  | Chr.5 | 5434665 | 5434685 | + | No |
| 1890150_adh | TATATCTGTTTCTCGGTTTAT  | Chr.5 | 5437958 | 5437938 | - | No |
| 2697070_adh | TTTAGTCAGGGAAAAGTTGCA  | Chr.5 | 5439379 | 5439399 | + | No |
| 2616498_adh | TTCTCGATCATGTCAGGAGAA  | Chr.5 | 5471762 | 5471742 | - | No |
| 2061324_adh | TCTTTCTGGAAACGACCGCAG  | Chr.5 | 5475218 | 5475198 | - | No |
| 1979270_adh | TCCAGTTGAACAAGTAGTGAA  | Chr.5 | 5478183 | 5478163 | - | No |
| 2287282_adh | TGCAGACGTCGCACAAATTGG  | Chr.5 | 5478274 | 5478294 | + | No |
| 2597686_adh | TTCCCAGTACACAAATAATTA  | Chr.5 | 5481432 | 5481452 | + | No |
| 2616186_adh | TTCTCATTAATTAACGTTCTGA | Chr.5 | 5505082 | 5505062 | - | No |
| 2326436_adh | TGGAAGTAGTGGATGAAACAT  | Chr.5 | 5510095 | 5510075 | - | No |
| 2566621_adh | TTAGCGAATCGCGGACGCAAA  | Chr.5 | 5536389 | 5536369 | - | No |
| 2728631_adh | TTTGTATTTTAATTTGTCTGGG | Chr.5 | 5538154 | 5538134 | - | No |
| 1929559_adh | TATTCAGAACTTCAAGCCAA   | Chr.5 | 5583888 | 5583868 | - | No |
| 2641785_adh | TTGAGTAAGCGAATTTTGAA   | Chr.5 | 5583933 | 5583913 | - | No |
| 2561297_adh | TTAGAACTCATTTTCAGAGGTT | Chr.5 | 5584505 | 5584485 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2015176_adh | TCGGCAAGAATGAAAAGAACA  | Chr.5 | 5600365 | 5600345 | - | No |
| 2708035_adh | TTTCGGGCTTCTAAAGCGCTT  | Chr.5 | 5601725 | 5601705 | - | No |
| 2263779_adh | TGATATGAAGAACATAAAAGT  | Chr.5 | 5602348 | 5602328 | - | No |
| 2462163_adh | TGGTAATGATATGAAGAACAT  | Chr.5 | 5602354 | 5602334 | - | No |
| 2683210_adh | TTGTTAGAGAGTGAGAGACGG  | Chr.5 | 5619507 | 5619527 | + | No |
| 2309841_adh | TGCTGTTCTGACTGATCGTAA  | Chr.5 | 5651535 | 5651515 | - | No |
| 2289340_adh | TGCAGTGTGATAAGCATGTA   | Chr.5 | 5654186 | 5654166 | - | No |
| 2749535_adh | TTTTTTGGCAAATTTGCATAA  | Chr.5 | 5684669 | 5684649 | - | No |
| 2728078_adh | TTTGTACTCCTCTCGGACAAA  | Chr.5 | 5684763 | 5684783 | + | No |
| 2590109_adh | TTCAC TTGGACAGGAAGACAC | Chr.5 | 5705919 | 5705899 | - | No |
| 2066312_adh | TGAAAAATAGAGACTAGAGAC  | Chr.5 | 5712337 | 5712317 | - | No |
| 1891399_adh | TATCAACATTTGATCGTCCGT  | Chr.5 | 5712804 | 5712824 | + | No |
| 2692408_adh | TTTAATTGACGACATTTTGTG  | Chr.5 | 5717371 | 5717351 | - | No |
| 2658437_adh | TTGGACGCAGAATCGACGCTT  | Chr.5 | 5717562 | 5717582 | + | No |
| 2390782_adh | TGGATGAATTAGGCATTGAAT  | Chr.5 | 5753078 | 5753058 | - | No |
| 2020512_adh | TCGGTTGAACGCGGATTCGCT  | Chr.5 | 5754801 | 5754821 | + | No |
| 1901057_adh | TATGAAAATTGTGAAAATAA   | Chr.5 | 5756443 | 5756463 | + | No |
| 1935910_adh | TCAACAAGGTAGATCAAAAAGT | Chr.5 | 5761858 | 5761878 | + | No |
| 2390782_adh | TGGATGAATTAGGCATTGAAT  | Chr.5 | 5763257 | 5763237 | - | No |
| 2576718_adh | TTATATTTGCAAACTGAAATT  | Chr.5 | 5763814 | 5763794 | - | No |
| 2390782_adh | TGGATGAATTAGGCATTGAAT  | Chr.5 | 5770931 | 5770951 | + | No |
| 2570016_adh | TTAGTACGAAACATATCGAAT  | Chr.5 | 5776607 | 5776587 | - | No |
| 1753742_adh | TAAAATTTTCGCAGGTGAGA   | Chr.5 | 5778438 | 5778458 | + | No |
| 1944745_adh | TCACAGAATGCTAACGGAACA  | Chr.5 | 5802485 | 5802505 | + | No |
| 2107235_adh | TGAAATGGCAAAATGTATGTA  | Chr.5 | 5808852 | 5808832 | - | No |
| 2286471_adh | TGCACGGCAGTGAAGAAAAAG  | Chr.5 | 5825601 | 5825581 | - | No |
| 2596969_adh | TTCCAGGAGGATGCATTCAAT  | Chr.5 | 5836334 | 5836314 | - | No |
| 2651390_adh | TTGCCTACATGCGTGCGCGCG  | Chr.5 | 5865766 | 5865746 | - | No |
| 1919615_adh | TATGTTTAGAAAAAGGGATGA  | Chr.5 | 5871914 | 5871894 | - | No |
| 2031990_adh | TCTACTGGTGTGAGAACAGGA  | Chr.5 | 5918268 | 5918288 | + | No |
| 2625230_adh | TTGAAAGTAACTTCTGTCTGGT | Chr.5 | 5939748 | 5939728 | - | No |
| 1835051_adh | TACTTCTTGCACTCTTTGTAA  | Chr.5 | 5950521 | 5950541 | + | No |
| 1812999_adh | TACATAAACTAGGGTTACGA   | Chr.5 | 5965299 | 5965279 | - | No |
| 2718416_adh | TTTGATCTAACTGTGATGCA   | Chr.5 | 5991991 | 5991971 | - | No |
| 2600507_adh | TTCTATTCTGATCTTCCGAC   | Chr.5 | 5999472 | 5999452 | - | No |
| 2549341_adh | TTAAGTTGGAATAATAAAT    | Chr.5 | 6003948 | 6003968 | + | No |
| 2144674_adh | TGAATGTAGGAATGATTGGCA  | Chr.5 | 6019149 | 6019169 | + | No |
| 1807361_adh | TACAACAATGAAAGCGGCCTC  | Chr.5 | 6022714 | 6022694 | - | No |
| 2128951_adh | TGAAGACTGTTGAGAAGGAAA  | Chr.5 | 6099309 | 6099289 | - | No |
| 2740979_adh | TTTTGACAAATTGAAGACTGT  | Chr.5 | 6099320 | 6099300 | - | No |
| 1940359_adh | TCAAGTCAGGAACGATCTTTG  | Chr.5 | 6099396 | 6099376 | - | No |
| 2000711_adh | TCGACTGTGGAGGTGGATACG  | Chr.5 | 6100197 | 6100177 | - | No |
| 2742521_adh | TTTTGCTCTTGTTGCGTTTCA  | Chr.5 | 6100664 | 6100644 | - | No |
| 2624386_adh | TTGAAAAGAACAGAAACAGCT  | Chr.5 | 6100998 | 6101018 | + | No |
| 2674725_adh | TTGTAGAAGTCAAAGTAGGAG  | Chr.5 | 6145871 | 6145851 | - | No |
| 1878290_adh | TAGTGACCAACAGTTGAGAA   | Chr.5 | 6183334 | 6183314 | - | No |
| 1847119_adh | TAGAGAACTCGAAGAACAAC   | Chr.5 | 6199719 | 6199699 | - | No |
| 2280015_adh | TGCAAACTGTTCAAGAATTC   | Chr.5 | 6200439 | 6200419 | - | No |
| 1901888_adh | TATGAAGGTGAGAAATGACGT  | Chr.5 | 6208931 | 6208951 | + | No |
| 1811664_adh | TACAGAAAGAAGACAAGAATA  | Chr.5 | 6221163 | 6221143 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2617382_adh | TTCTCTGATAGTAGCTACCAA  | Chr.5 | 6245626 | 6245646 | + | No |
| 1955306_adh | TCACTTCCGTAGAACAAGCAT  | Chr.5 | 6257836 | 6257816 | - | No |
| 2654556_adh | TTGCTGAATGGGTTCAAACAA  | Chr.5 | 6260791 | 6260771 | - | No |
| 2703121_adh | TTTCAGCTGATTTGCATAAAT  | Chr.5 | 6268230 | 6268250 | + | No |
| 2591891_adh | TTCAGCTGATTTGCATAAATT  | Chr.5 | 6268231 | 6268251 | + | No |
| 2602347_adh | TTCGAAGTTTTTCAGATGGGAT | Chr.5 | 6281391 | 6281411 | + | No |
| 2703120_adh | TTTCAGCTGAGACGACGAGTA  | Chr.5 | 6285546 | 6285566 | + | No |
| 1888893_adh | TATAGTAAGTTAACGAGCTAA  | Chr.5 | 6295536 | 6295556 | + | No |
| 1888893_adh | TATAGTAAGTTAACGAGCTAA  | Chr.5 | 6297087 | 6297107 | + | No |
| 1888893_adh | TATAGTAAGTTAACGAGCTAA  | Chr.5 | 6298463 | 6298483 | + | No |
| 2697473_adh | TTTAGTTAGGCATTATGGAAT  | Chr.5 | 6312392 | 6312412 | + | No |
| 2174623_adh | TGACTTTGGAAAATTGGAAGT  | Chr.5 | 6341658 | 6341678 | + | No |
| 2029396_adh | TCTAAAGAACTTCGGATATTC  | Chr.5 | 6388817 | 6388837 | + | No |
| 2557253_adh | TTACGGAGACTGTGCATCTAT  | Chr.5 | 6393875 | 6393855 | - | No |
| 1977265_adh | TCCACCAAAGAACAAGACTGT  | Chr.5 | 6394841 | 6394821 | - | No |
| 1893118_adh | TATCACTGCATGCCAAACTCG  | Chr.5 | 6395254 | 6395234 | - | No |
| 1985909_adh | TCCGGACTTTTCATCAACGGA  | Chr.5 | 6395653 | 6395633 | - | No |
| 2680679_adh | TTGTGATCCATCGTCTGTCTG  | Chr.5 | 6396116 | 6396096 | - | No |
| 2055096_adh | TCTTATCGTTGACGGATTCAA  | Chr.5 | 6396236 | 6396216 | - | No |
| 2530629_adh | TGTTGTCAACGGAAAGAACGC  | Chr.5 | 6397634 | 6397614 | - | No |
| 2712045_adh | TTTCTTTCATGTACATATGTG  | Chr.5 | 6401489 | 6401469 | - | No |
| 2557253_adh | TTACGGAGACTGTGCATCTAT  | Chr.5 | 6402522 | 6402502 | - | No |
| 1977265_adh | TCCACCAAAGAACAAGACTGT  | Chr.5 | 6403488 | 6403468 | - | No |
| 1893118_adh | TATCACTGCATGCCAAACTCG  | Chr.5 | 6403901 | 6403881 | - | No |
| 1985909_adh | TCCGGACTTTTCATCAACGGA  | Chr.5 | 6404300 | 6404280 | - | No |
| 2680679_adh | TTGTGATCCATCGTCTGTCTG  | Chr.5 | 6404763 | 6404743 | - | No |
| 2055096_adh | TCTTATCGTTGACGGATTCAA  | Chr.5 | 6404883 | 6404863 | - | No |
| 2530629_adh | TGTTGTCAACGGAAAGAACGC  | Chr.5 | 6406281 | 6406261 | - | No |
| 2608209_adh | TTCGGATCAGGAGACACCGTC  | Chr.5 | 6407525 | 6407505 | - | No |
| 2595952_adh | TTCCAATATTTAAGATGGTCG  | Chr.5 | 6425840 | 6425820 | - | No |
| 2610102_adh | TTCGGTGGAACAATTTATCAA  | Chr.5 | 6434882 | 6434902 | + | No |
| 2269038_adh | TGATCAAGACTGTTCGATATTG | Chr.5 | 6435007 | 6435027 | + | No |
| 1927091_adh | TATTGGATTTTATACTTTTAA  | Chr.5 | 6438245 | 6438225 | - | No |
| 2418388_adh | TGGGAAGTAGTTCAGAGCAGA  | Chr.5 | 6447833 | 6447853 | + | No |
| 1912441_adh | TATGCACGTAAGAACCGGACA  | Chr.5 | 6473912 | 6473892 | - | No |
| 1989912_adh | TCCTATTTTCGATTCAAAAGT  | Chr.5 | 6484921 | 6484941 | + | No |
| 1891032_adh | TATATTTTAAATTTCTGAAAT  | Chr.5 | 6487441 | 6487461 | + | No |
| 2028554_adh | TCGTTGGGACGGACATGTCTGA | Chr.5 | 6488448 | 6488428 | - | No |
| 1993963_adh | TCCTTTAATAGTTGGATAAGA  | Chr.5 | 6496684 | 6496704 | + | No |
| 2269771_adh | TGATCGAGTTGTGAAGTGGAT  | Chr.5 | 6514176 | 6514196 | + | No |
| 2716806_adh | TTTGAGCTCCAGGATTGTGCT  | Chr.5 | 6516346 | 6516326 | - | No |
| 2741460_adh | TTTTGAGTACGGTAGGCGGCG  | Chr.5 | 6533493 | 6533473 | - | No |
| 2379387_adh | TGGAGAAAGGACAGGCCGGCA  | Chr.5 | 6545084 | 6545064 | - | No |
| 2314256_adh | TGGAAACATGAACAAGAAACA  | Chr.5 | 6589557 | 6589577 | + | No |
| 2695450_adh | TTTAGATATGTTTCGGAATTGC | Chr.5 | 6591094 | 6591114 | + | No |
| 2580528_adh | TTATTAAGTTCGTTAGATATA  | Chr.5 | 6591675 | 6591655 | - | No |
| 2651741_adh | TTGCGAAGCAATTCGGTGAA   | Chr.5 | 6591731 | 6591711 | - | No |
| 2699872_adh | TTTATTCGGGGCATTCTTCTT  | Chr.5 | 6611613 | 6611593 | - | No |
| 2609123_adh | TTCGGGATAATCGATAATCGG  | Chr.5 | 6656904 | 6656924 | + | No |
| 2053001_adh | TCTGTGTTGTTGGAGAATGCA  | Chr.5 | 6657590 | 6657610 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2690223_adh | TTTAAGAATTCAAACCACGGC  | Chr.5 | 6671982 | 6671962 | - | No |
| 2124637_adh | TGAAGCTCGAAGCTTCTGGCAC | Chr.5 | 6673379 | 6673359 | - | No |
| 2626613_adh | TTGAAGCTCGAAGCTTCTGGCA | Chr.5 | 6673380 | 6673360 | - | No |
| 2124637_adh | TGAAGCTCGAAGCTTCTGGCAC | Chr.5 | 6673778 | 6673758 | - | No |
| 2626613_adh | TTGAAGCTCGAAGCTTCTGGCA | Chr.5 | 6673779 | 6673759 | - | No |
| 2124637_adh | TGAAGCTCGAAGCTTCTGGCAC | Chr.5 | 6673978 | 6673958 | - | No |
| 2626613_adh | TTGAAGCTCGAAGCTTCTGGCA | Chr.5 | 6673979 | 6673959 | - | No |
| 2707526_adh | TTTCGGAAGGAGATATTAGAT  | Chr.5 | 6708697 | 6708677 | - | No |
| 2616467_adh | TTCTCGAATTGTTGCATTA    | Chr.5 | 6709189 | 6709169 | - | No |
| 2054915_adh | TCTTATACTGAAGTCGTAGAA  | Chr.5 | 6714994 | 6714974 | - | No |
| 2568079_adh | TTAGGAGAAGTGGAAGAAAGTT | Chr.5 | 6732383 | 6732363 | - | No |
| 1808830_adh | TACAAGATCACATGTTGTCCG  | Chr.5 | 6746136 | 6746156 | + | No |
| 2554439_adh | TTACAGTGTGATGATGAGCTT  | Chr.5 | 6748726 | 6748746 | + | No |
| 2011298_adh | TCGGACAGCCAAGACAGGTGT  | Chr.5 | 6766214 | 6766194 | - | No |
| 2319227_adh | TGGAACCAACAAGCTCGCATC  | Chr.5 | 6766956 | 6766936 | - | No |
| 2090971_adh | TGAAATCACTGACGAGAAGAA  | Chr.5 | 6767208 | 6767188 | - | No |
| 2716215_adh | TTTGACTTCGAGCAATACAGG  | Chr.5 | 6783186 | 6783206 | + | No |
| 2639037_adh | TTGACTTCGAGCAATACAGGA  | Chr.5 | 6783187 | 6783207 | + | No |
| 2058970_adh | TCTTGGCCTAAAGAAAATCGA  | Chr.5 | 6785210 | 6785190 | - | No |
| 2532159_adh | TGTTTCAGACAAGTAAGACTA  | Chr.5 | 6788138 | 6788158 | + | No |
| 2059754_adh | TCTTGTGACTGTGGCTTCGGC  | Chr.5 | 6831183 | 6831203 | + | No |
| 2680404_adh | TTGTGACTGTGGCTTCGGCCG  | Chr.5 | 6831185 | 6831205 | + | No |
| 2059754_adh | TCTTGTGACTGTGGCTTCGGC  | Chr.5 | 6835651 | 6835671 | + | No |
| 2680404_adh | TTGTGACTGTGGCTTCGGCCG  | Chr.5 | 6835653 | 6835673 | + | No |
| 1813633_adh | TACATGATCGGTCAAAGAAAAG | Chr.5 | 6840090 | 6840110 | + | No |
| 2701583_adh | TTTCAAGCTTGAACGATTCCA  | Chr.5 | 6843854 | 6843834 | - | No |
| 2714048_adh | TTTGAAGTAGAAGTTCCAACG  | Chr.5 | 6846690 | 6846710 | + | No |
| 2701583_adh | TTTCAAGCTTGAACGATTCCA  | Chr.5 | 6848119 | 6848099 | - | No |
| 2043586_adh | TCTCTTTTGAATGCAGGCTTA  | Chr.5 | 6877818 | 6877838 | + | No |
| 2119881_adh | TGAACACAAAAGGAGGATTCA  | Chr.5 | 6912577 | 6912557 | - | No |
| 2488074_adh | TGTAGATTCTCAGAAGCCGAT  | Chr.5 | 6918067 | 6918047 | - | No |
| 2727139_adh | TTTGTAATGAGGGCATGTAA   | Chr.5 | 6928012 | 6927992 | - | No |
| 1810506_adh | TACACAATTTAAAGCTGATAT  | Chr.5 | 6945925 | 6945905 | - | No |
| 2712321_adh | TTTGAAAAAGGGCATGTAATA  | Chr.5 | 6945966 | 6945946 | - | No |
| 2714431_adh | TTTGAATGTTAGACTGTGAAA  | Chr.5 | 6947893 | 6947873 | - | No |
| 2259596_adh | TGATACGCTAGAATGGCAAAA  | Chr.5 | 7004697 | 7004717 | + | No |
| 2705921_adh | TTTCCGTTCTGCTGTTGGCAT  | Chr.5 | 7060577 | 7060597 | + | No |
| 2405051_adh | TGGCATCGATAAACTGGTCTT  | Chr.5 | 7060592 | 7060612 | + | No |
| 1829296_adh | TACTAAAGAACTTTAGCGGAA  | Chr.5 | 7060700 | 7060680 | - | No |
| 1981591_adh | TCCCGGCATGGGAAGTTTATT  | Chr.5 | 7069743 | 7069723 | - | No |
| 1939616_adh | TCAAGGAGCTGACGAAGAAAC  | Chr.5 | 7076666 | 7076686 | + | No |
| 2621074_adh | TTCTTCACTCCATTGATGACC  | Chr.5 | 7078700 | 7078720 | + | No |
| 1901743_adh | TATGAAGACTGTGGTAGATAG  | Chr.5 | 7078780 | 7078800 | + | No |
| 2237905_adh | TGAGGATGAACAGAAGAAGGA  | Chr.5 | 7080915 | 7080935 | + | No |
| 2711939_adh | TTTCTTTAGAATTCAAGAAAA  | Chr.5 | 7098015 | 7098035 | + | No |
| 2505755_adh | TGTGAGAGAGATAGACATATA  | Chr.5 | 7111606 | 7111626 | + | No |
| 2715259_adh | TTTGACGGGATATGCTCTATG  | Chr.5 | 7132390 | 7132410 | + | No |
| 2679028_adh | TTGTCTTGAAGAATGATGCTC  | Chr.5 | 7180903 | 7180883 | - | No |
| 1936529_adh | TCAACGAAGAAGACCTGGCTT  | Chr.5 | 7190511 | 7190491 | - | No |
| 1802754_adh | TAATTATTCAGAGAGGGCTCA  | Chr.5 | 7193419 | 7193399 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2569573_adh | TTAGGTTGACGAATGGTCCTA  | Chr.5 | 7196452 | 7196432 | - | No |
| 2714731_adh | TTTGACACTCTTGATTGCGACT | Chr.5 | 7196567 | 7196547 | - | No |
| 1970262_adh | TCATATTGGCAGAGACAGAAT  | Chr.5 | 7199214 | 7199194 | - | No |
| 1827264_adh | TACGGTATTCATATTGGCAGA  | Chr.5 | 7199222 | 7199202 | - | No |
| 2010566_adh | TCGGAACCATTAGAAGGATAC  | Chr.5 | 7243566 | 7243546 | - | No |
| 2374216_adh | TGGACAGTATGAAGTAAAAAG  | Chr.5 | 7243871 | 7243851 | - | No |
| 2658064_adh | TTGGACAGTATGAAGTAAAA   | Chr.5 | 7243872 | 7243852 | - | No |
| 2747347_adh | TTTTTGGGACTTGGCAATATC  | Chr.5 | 7345439 | 7345459 | + | No |
| 2674742_adh | TTGTAGAATATGGTACAGAAG  | Chr.5 | 7345858 | 7345838 | - | No |
| 2043772_adh | TCTGAAAGTAGAACGACCTTT  | Chr.5 | 7386534 | 7386554 | + | No |
| 2043829_adh | TCTGAAATTTTAGAAGAACAC  | Chr.5 | 7387882 | 7387862 | - | No |
| 2714054_adh | TTTGAAGTCAAAGAAATCAGA  | Chr.5 | 7448003 | 7448023 | + | No |
| 1939169_adh | TCAAGCATCGTCTAAATGAGG  | Chr.5 | 7510237 | 7510217 | - | No |
| 2621812_adh | TTCTTCGGTTTAACTAATAAA  | Chr.5 | 7519173 | 7519193 | + | No |
| 2566695_adh | TTAGCGCAGAATCCAATTTAA  | Chr.5 | 7575735 | 7575755 | + | No |
| 2072971_adh | TGAAACGAAAGACATTTAGAA  | Chr.5 | 7602195 | 7602215 | + | No |
| 1885727_adh | TATAATCGATTGTTTTGGTCA  | Chr.5 | 7622155 | 7622135 | - | No |
| 1888265_adh | TATAGCATTGCAGCGGTCTGT  | Chr.5 | 7643132 | 7643152 | + | No |
| 2686668_adh | TTGTTTAAATCTTGTGCGTCA  | Chr.5 | 7674753 | 7674733 | - | No |
| 1953599_adh | TCACGTGTTTAAATGGATTGAC | Chr.5 | 7695484 | 7695464 | - | No |
| 2601617_adh | TTCGAAAAGAAAAATCATCGG  | Chr.5 | 7732049 | 7732029 | - | No |
| 1745472_adh | TAAAAAAGATTGTATCCGTTT  | Chr.5 | 7774974 | 7774954 | - | No |
| 1774194_adh | TAAGAAGCAAAAGCAAAATCG  | Chr.5 | 7776016 | 7775996 | - | No |
| 2634710_adh | TTGACAAGCAAGACAAGAAAA  | Chr.5 | 7777000 | 7777020 | + | No |
| 2598041_adh | TTCCCGATAAGTTTAGACGCC  | Chr.5 | 7803833 | 7803853 | + | No |
| 2620274_adh | TTCTGTGTTTGGTGAGAACGG  | Chr.5 | 7804135 | 7804115 | - | No |
| 2027525_adh | TCGTGTCTCGGAGCAGGATGA  | Chr.5 | 7812619 | 7812639 | + | No |
| 2062683_adh | TCTTTTGAATGTGGATGAGCA  | Chr.5 | 7824322 | 7824342 | + | No |
| 1953104_adh | TCACGATTGTGATGACGGACT  | Chr.5 | 7837386 | 7837366 | - | No |
| 2058326_adh | TCTTGCCGAAGGAACTACAGA  | Chr.5 | 7837479 | 7837459 | - | No |
| 2740573_adh | TTTTGAAAGGTATAAAACCGC  | Chr.5 | 7890059 | 7890039 | - | No |
| 2741344_adh | TTTTGACTTTAGCTGACTGTT  | Chr.5 | 7893917 | 7893897 | - | No |
| 2527278_adh | TGTTCTTCTCGCGGAAAGGCA  | Chr.5 | 7981002 | 7980982 | - | No |
| 2714573_adh | TTTGAATTTTGGATTTGCATA  | Chr.5 | 7981070 | 7981090 | + | No |
| 2728564_adh | TTTGTATGCATTCAGGTGACT  | Chr.5 | 7984058 | 7984078 | + | No |
| 1995765_adh | TCGAACTCTGCACATGACGAT  | Chr.5 | 8014175 | 8014155 | - | No |
| 2717101_adh | TTTGAGTGTAGCAGTTTTCGA  | Chr.5 | 8014719 | 8014699 | - | No |
| 1931060_adh | TATTTTGAGTGTAGCAGTTTT  | Chr.5 | 8014722 | 8014702 | - | No |
| 2545073_adh | TTAACATCGTATTTGACGACA  | Chr.5 | 8015142 | 8015122 | - | No |
| 2652447_adh | TTGCGGAATGTGGATTTACGG  | Chr.5 | 8024927 | 8024907 | - | No |
| 2595085_adh | TTCAATCAGAAGGATTTGGC   | Chr.5 | 8029220 | 8029240 | + | No |
| 1957747_adh | TCAGAAGGATTTTGGCCCGTT  | Chr.5 | 8029225 | 8029245 | + | No |
| 1825594_adh | TACGGAAACACAAAATACTGA  | Chr.5 | 8037274 | 8037294 | + | No |
| 2740093_adh | TTTTCTTCGAGTCAAAAAGCA  | Chr.5 | 8045848 | 8045868 | + | No |
| 2677717_adh | TTGTCATCACTTCGCTCGGAG  | Chr.5 | 8057876 | 8057856 | - | No |
| 2016520_adh | TCGGGAGACGTGATAATTGAT  | Chr.5 | 8101829 | 8101849 | + | No |
| 1767226_adh | TAACCGTAAGATAATTTGGCA  | Chr.5 | 8120539 | 8120559 | + | No |
| 2727123_adh | TTTGTAAGACAATTTGACGG   | Chr.5 | 8147025 | 8147005 | - | No |
| 2610965_adh | TTCGTAAAGTAGAAGAAGCCA  | Chr.5 | 8197971 | 8197951 | - | No |
| 1987627_adh | TCCGTAGAGACTCACTCAAAC  | Chr.5 | 8200888 | 8200868 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2680581_adh | TTGTGAGCTCACAGGAGAACG  | Chr.5 | 8206061 | 8206081 | + | No |
| 1896506_adh | TATCCTTAGGTCGCTGGTTCG  | Chr.5 | 8247507 | 8247527 | + | No |
| 2481614_adh | TGTAACGTCGTAGATTGGGCAA | Chr.5 | 8247760 | 8247740 | - | No |
| 2595835_adh | TTCCAAGAAAGTATAAGCAGC  | Chr.5 | 8247812 | 8247832 | + | No |
| 2321400_adh | TGGAAGTGTAGAAGAGTATAA  | Chr.5 | 8247816 | 8247796 | - | No |
| 2656951_adh | TTGGAAGTGTAGAAGAGTATA  | Chr.5 | 8247817 | 8247797 | - | No |
| 2711829_adh | TTTCTTGGAAGTGTAGAAGAG  | Chr.5 | 8247821 | 8247801 | - | No |
| 2028223_adh | TCGTTGACAAGCGGAGAGACG  | Chr.5 | 8248074 | 8248094 | + | No |
| 2001246_adh | TCGAGAGAAGAATTTTGGCG   | Chr.5 | 8265074 | 8265054 | - | No |
| 2739525_adh | TTTTCTGCAGAAATGAATTGC  | Chr.5 | 8267520 | 8267500 | - | No |
| 2314160_adh | TGGAACAAGAGAATGGGATT   | Chr.5 | 8267635 | 8267615 | - | No |
| 1899604_adh | TATCTCGGAAACATCACCATC  | Chr.5 | 8272582 | 8272602 | + | No |
| 2703849_adh | TTTCATATTTTTCAGAACAAC  | Chr.5 | 8280874 | 8280854 | - | No |
| 2404503_adh | TGGCATAATTGTAGGAACGTA  | Chr.5 | 8299693 | 8299713 | + | No |
| 2038545_adh | TCTCATTTTTGTGACGTGTCT  | Chr.5 | 8302675 | 8302655 | - | No |
| 2310244_adh | TGCTTATGATTGTTTGGCAGA  | Chr.5 | 8313815 | 8313795 | - | No |
| 2310244_adh | TGCTTATGATTGTTTGGCAGA  | Chr.5 | 8317015 | 8317035 | + | No |
| 2702497_adh | TTTACCACACTACTTGAATA   | Chr.5 | 8322208 | 8322228 | + | No |
| 1953599_adh | TCACGTGTTTAATGGATTGAC  | Chr.5 | 8325167 | 8325147 | - | No |
| 2063331_adh | TCTTTTTTAAAGTGTCTGTA   | Chr.5 | 8355680 | 8355700 | + | No |
| 2711697_adh | TTTCTTGACGTTGGATAATTT  | Chr.5 | 8359270 | 8359250 | - | No |
| 2029094_adh | TCGTTTTCTTGACGTTGGATA  | Chr.5 | 8359274 | 8359254 | - | No |
| 2527381_adh | TGTTGAAAAACGGAAGTAAA   | Chr.5 | 8359368 | 8359388 | + | No |
| 2577176_adh | TTATCATGAAGGCGGACATC   | Chr.5 | 8359730 | 8359710 | - | No |
| 2262022_adh | TGATATCATTAGTTGTATCAA  | Chr.5 | 8360045 | 8360065 | + | No |
| 2158686_adh | TGACATTAATACTTAGATTGC  | Chr.5 | 8401576 | 8401596 | + | No |
| 1972174_adh | TCATGATTTTCGAGCGGTATTT | Chr.5 | 8413846 | 8413866 | + | No |
| 1994270_adh | TCCTTTTCAATTGTCGGGATT  | Chr.5 | 8424939 | 8424919 | - | No |
| 2601553_adh | TTCTTTTCAATTGTCGGGAT   | Chr.5 | 8424940 | 8424920 | - | No |
| 2617730_adh | TTCTGAACATTTAGAAGCTTC  | Chr.5 | 8460879 | 8460859 | - | No |
| 2745225_adh | TTTTTATAGTAAGCGACACAG  | Chr.5 | 8475414 | 8475394 | - | No |
| 2610906_adh | TTCGGTTTTTATAGTAAGCGA  | Chr.5 | 8475419 | 8475399 | - | No |
| 2737894_adh | TTTTCCATCAAGTCGGCGTGC  | Chr.5 | 8476915 | 8476895 | - | No |
| 2737894_adh | TTTTCCATCAAGTCGGCGTGC  | Chr.5 | 8486207 | 8486187 | - | No |
| 2737894_adh | TTTTCCATCAAGTCGGCGTGC  | Chr.5 | 8487010 | 8487030 | + | No |
| 2610906_adh | TTCGGTTTTTATAGTAAGCGA  | Chr.5 | 8488506 | 8488526 | + | No |
| 2745225_adh | TTTTTATAGTAAGCGACACAG  | Chr.5 | 8488511 | 8488531 | + | No |
| 2326151_adh | TGGAAGGTGAGAATGCTAAAA  | Chr.5 | 8498692 | 8498712 | + | No |
| 2126569_adh | TGAAGTTGAGAGCATGGAGCA  | Chr.5 | 8501085 | 8501105 | + | No |
| 2301097_adh | TGCGGAGAACAGTTTACTCGC  | Chr.5 | 8517787 | 8517767 | - | No |
| 2604170_adh | TTGAGTGTAGGCACAGTTAA   | Chr.5 | 8559141 | 8559161 | + | No |
| 2133172_adh | TGAAGGCCTAGAAGTTGACGA  | Chr.5 | 8605281 | 8605261 | - | No |
| 2738587_adh | TTTTCGGAGTTCTCGTGTGCA  | Chr.5 | 8615157 | 8615177 | + | No |
| 1923404_adh | TATTCAATAGGTTTTTCGGCAA | Chr.5 | 8622731 | 8622751 | + | No |
| 2296915_adh | TGCGAGACCGTGTGATGCATT  | Chr.5 | 8628879 | 8628899 | + | No |
| 1826732_adh | TACGGGAAAACAGTGGGACGA  | Chr.5 | 8629471 | 8629491 | + | No |
| 2043351_adh | TCTCTTGCATAGACTCTTTCA  | Chr.5 | 8641608 | 8641588 | - | No |
| 2004501_adh | TCGATTACATTTGTAGATTTT  | Chr.5 | 8668396 | 8668416 | + | No |
| 1994097_adh | TCCTTTCTTTTTTAGTCGGCG  | Chr.5 | 8726414 | 8726434 | + | No |
| 2035434_adh | TCTCAACCAACTTTGGCCACT  | Chr.5 | 8746616 | 8746636 | + | No |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 2622016_adh | TTCTTCTCGTTGGGACGGCTG | Chr.5 | 8785891 | 8785911 | + | No |
| 2424759_adh | TGGGAGTTTAGTTGTCGGGAA | Chr.5 | 8796396 | 8796416 | + | No |
| 2217299_adh | TGAGATGAAACAATGTATGTA | Chr.5 | 8808239 | 8808259 | + | No |
| 1853306_adh | TAGCAAGCAGTTTCAGTCTAC | Chr.5 | 8818401 | 8818381 | - | No |
| 2696463_adh | TTTAGCTCAATTTTTGTGTTT | Chr.5 | 8828015 | 8828035 | + | No |
| 1933925_adh | TCAAAGTCGCGTCGACGGTGA | Chr.5 | 8831975 | 8831955 | - | No |
| 2027013_adh | TCGTGGACTTCTCACCGGTCT | Chr.5 | 8833543 | 8833523 | - | No |
| 1990973_adh | TCCTCTTTTCGGCATCCTCAT | Chr.5 | 8841439 | 8841459 | + | No |
| 2042523_adh | TCTCTCGTAGAAGGAGCAGAA | Chr.5 | 8852596 | 8852616 | + | No |
| 1853306_adh | TAGCAAGCAGTTTCAGTCTAC | Chr.5 | 8860495 | 8860475 | - | No |
| 2696463_adh | TTTAGCTCAATTTTTGTGTTT | Chr.5 | 8870109 | 8870129 | + | No |
| 1933925_adh | TCAAAGTCGCGTCGACGGTGA | Chr.5 | 8874069 | 8874049 | - | No |
| 2027013_adh | TCGTGGACTTCTCACCGGTCT | Chr.5 | 8875637 | 8875617 | - | No |
| 1990973_adh | TCCTCTTTTCGGCATCCTCAT | Chr.5 | 8883534 | 8883554 | + | No |
| 2042523_adh | TCTCTCGTAGAAGGAGCAGAA | Chr.5 | 8894691 | 8894711 | + | No |
| 2733200_adh | TTTTAAATTTTTGACGGACC  | Chr.5 | 8922547 | 8922567 | + | No |
| 2318245_adh | TGGAAATGCAGAAGAAGGAAG | Chr.5 | 8939768 | 8939788 | + | No |
| 2723278_adh | TTTGGACATTGCAGGAGGTAT | Chr.5 | 8947898 | 8947878 | - | No |
| 2740567_adh | TTTTGAAAGATGAACCGGCAC | Chr.5 | 8948811 | 8948831 | + | No |
| 2712653_adh | TTTGAAAGATGAACCGGCACC | Chr.5 | 8948812 | 8948832 | + | No |
| 2173386_adh | TGACTTGAAAAGAATTATGCA | Chr.5 | 9024843 | 9024863 | + | No |
| 2504846_adh | TGTGACTGTAAAGACGGATTT | Chr.5 | 9054495 | 9054475 | - | No |
| 2004067_adh | TCGATGATTATTTAACGGTTT | Chr.5 | 9065020 | 9065040 | + | No |
| 2374599_adh | TGGACCATAGAGAAAATGATA | Chr.5 | 9071690 | 9071710 | + | No |
| 2377367_adh | TGGACTGAAAAATAGTAAAAT | Chr.5 | 9077517 | 9077497 | - | No |
| 1912393_adh | TATGCAAGAAGTACATTGCCG | Chr.5 | 9087116 | 9087136 | + | No |
| 2414417_adh | TGGCTCAGATGGAACGTCAAT | Chr.5 | 9087694 | 9087674 | - | No |
| 2414417_adh | TGGCTCAGATGGAACGTCAAT | Chr.5 | 9090155 | 9090175 | + | No |
| 1912393_adh | TATGCAAGAAGTACATTGCCG | Chr.5 | 9090733 | 9090713 | - | No |
| 2701613_adh | TTTCAAGTAAAACGTACGTCA | Chr.5 | 9091063 | 9091083 | + | No |
| 2046621_adh | TCTGATAATGGAGAAAAACTG | Chr.5 | 9175247 | 9175227 | - | No |
| 2296843_adh | TGCGACTTCTTTTCTCTTCTT | Chr.5 | 9175436 | 9175456 | + | No |
| 1958603_adh | TCAGAGAGATTATTGGACCAT | Chr.5 | 9179378 | 9179358 | - | No |
| 1782205_adh | TAAGCCAGAAAATTGCTCAAC | Chr.5 | 9203373 | 9203393 | + | No |
| 2035065_adh | TCTATTGTTGCATCGCTGGAT | Chr.5 | 9206752 | 9206772 | + | No |
| 2341732_adh | TGGAATGAAGAGGGGATTGTA | Chr.5 | 9259782 | 9259802 | + | No |
| 2468565_adh | TGGTATTACGTTGATCTCAAT | Chr.5 | 9316211 | 9316231 | + | No |
| 1811848_adh | TACAGACGAAACATCATAACT | Chr.5 | 9323012 | 9322992 | - | No |
| 2748296_adh | TTTTTTAGGATTCATAAAAGT | Chr.5 | 9323080 | 9323100 | + | No |
| 2733884_adh | TTTTAATTTGAAGTTTAAAAC | Chr.5 | 9328609 | 9328589 | - | No |
| 2689361_adh | TTTAAAGTGAATTCGTCATGA | Chr.5 | 9344561 | 9344581 | + | No |
| 2089550_adh | TGAAATATCGGAGTGTCTGCA | Chr.5 | 9346973 | 9346953 | - | No |
| 2554517_adh | TTACATAGAGCAGAATGAATC | Chr.5 | 9350002 | 9349982 | - | No |
| 2119924_adh | TGAACACAGAATTTGGGAAGA | Chr.5 | 9382631 | 9382611 | - | No |
| 1756773_adh | TAAAGAGCTGTAGAAGATGGT | Chr.5 | 9383541 | 9383521 | - | No |
| 2617955_adh | TTCTGAATTTCTAGAATACTT | Chr.5 | 9392184 | 9392204 | + | No |
| 2737606_adh | TTTTCATACTATTTTCAAAT  | Chr.5 | 9396482 | 9396502 | + | No |
| 2539042_adh | TTAAAATGACGGGGGTATAAT | Chr.5 | 9423319 | 9423339 | + | No |
| 2659273_adh | TTGGAGAATTGGTGTCTTGTT | Chr.5 | 9425818 | 9425838 | + | No |
| 2500374_adh | TGTCTTTGATTGATTGTGATG | Chr.5 | 9425846 | 9425866 | + | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 2681063_adh | TTGTGATGAAATCTTTGACAG  | Chr.5 | 9425859 | 9425879 | + | No |
| 2017209_adh | TCGGGGTACTGTAGTAGTGCT  | Chr.5 | 9439805 | 9439785 | - | No |
| 1858889_adh | TAGCTGTTACATCTTGCGGAA  | Chr.5 | 9446454 | 9446474 | + | No |
| 1770084_adh | TAAGTAGGCGGCAAGAAGGTG  | Chr.5 | 9483532 | 9483512 | - | No |
| 2669943_adh | TTGGTATAGCAGTGTAAGTT   | Chr.5 | 9494418 | 9494438 | + | No |
| 2061305_adh | TCTTTCTGAACACTCTGAAGA  | Chr.5 | 9503849 | 9503869 | + | No |
| 2595467_adh | TTCAATTTCAAGCGTTCGGACA | Chr.5 | 9513807 | 9513827 | + | No |
| 2587109_adh | TTCAAGCGTTCGGACACCAGC  | Chr.5 | 9513812 | 9513832 | + | No |
| 2002477_adh | TCGATAAACTGTTTTGTGCG   | Chr.5 | 9544325 | 9544305 | - | No |
| 2010245_adh | TCGGAAACATGTTCGGACACA  | Chr.5 | 9544463 | 9544483 | + | No |
| 1825754_adh | TACGGACAGCGAGTTGGAGAT  | Chr.5 | 9544854 | 9544874 | + | No |
| 1999550_adh | TCGACAACGGCGGCGAGAAGA  | Chr.5 | 9550460 | 9550440 | - | No |
| 2380618_adh | TGGAGAGTATCAGCTGAAGAA  | Chr.5 | 9551937 | 9551957 | + | No |
| 1985914_adh | TCCGGAGAATAAGAGCATGGT  | Chr.5 | 9568491 | 9568471 | - | No |
| 2054024_adh | TCTTAATTTTCGGTATTTTCT  | Chr.5 | 9583019 | 9582999 | - | No |
| 2620523_adh | TTCTTAATTTTCGGTATTTTC  | Chr.5 | 9583020 | 9583000 | - | No |
| 2513523_adh | TGTGCAGTTTGAATGTAAAAA  | Chr.5 | 9583045 | 9583025 | - | No |
| 2153340_adh | TGACACTGTGCAGTTTGAATG  | Chr.5 | 9583051 | 9583031 | - | No |
| 2309337_adh | TGCTGTAGGTCATGGTGCAAG  | Chr.5 | 9583134 | 9583154 | + | No |
| 2380892_adh | TGGAGATTGTAATGAAGAGCG  | Chr.5 | 9632163 | 9632143 | - | No |
| 2747747_adh | TTTTTGATTGTTTGTGAA     | Chr.5 | 9645705 | 9645725 | + | No |
| 2613634_adh | TCGTTTTATTCGTTAAACG    | Chr.5 | 9645759 | 9645779 | + | No |
| 2700713_adh | TTATTTTCGTTAAACGTGGAC  | Chr.5 | 9645764 | 9645784 | + | No |
| 2558680_adh | TTACTCAAAAATGACGCGAC   | Chr.5 | 9651265 | 9651285 | + | No |
| 1931748_adh | TCAAAAATGACGCGACTAGC   | Chr.5 | 9651269 | 9651289 | + | No |
| 2172935_adh | TGACTTCATGTAGATGGTTGT  | Chr.5 | 9652585 | 9652565 | - | No |
| 2618863_adh | TTCTGGAACTTTAAGAAGATA  | Chr.5 | 9668634 | 9668614 | - | No |
| 2630147_adh | TTGAATCAAAAAGCATTTTTA  | Chr.5 | 9679782 | 9679762 | - | No |
| 2326403_adh | TGGAAGTACTCTGTTAAAGC   | Chr.5 | 9692757 | 9692737 | - | No |
| 2234499_adh | TGAGCTATCGAGTACTGGACA  | Chr.5 | 9693779 | 9693799 | + | No |
| 2740564_adh | TTTTGAACTGTAAATTAATT   | Chr.5 | 9695807 | 9695827 | + | No |
| 2231763_adh | TGAGATTGTTGAGAGTGACGT  | Chr.5 | 9696721 | 9696741 | + | No |
| 2032806_adh | TCTAGGCATGAATGAGAAAGA  | Chr.5 | 9704701 | 9704721 | + | No |
| 2645138_adh | TTGATGGATCTGATTTTGAAG  | Chr.5 | 9727773 | 9727753 | - | No |
| 2119637_adh | TGAACAAGACGTAGCTACTGT  | Chr.5 | 9728036 | 9728016 | - | No |
| 1885910_adh | TATAATGATGAACAAGACGTA  | Chr.5 | 9728044 | 9728024 | - | No |
| 2744021_adh | TTTTGTGTGGACAGACGGACA  | Chr.5 | 9730967 | 9730947 | - | No |
| 1991965_adh | TCCTGGCCAGTAGATGTGTAA  | Chr.5 | 9731379 | 9731399 | + | No |
| 2669943_adh | TTGGTATAGCAGTGTAAGTT   | Chr.5 | 9760765 | 9760745 | - | No |
| 1944405_adh | TCACAATTTTGGAAGTCGACA  | Chr.5 | 9761871 | 9761891 | + | No |
| 1776541_adh | TAAGAGAATGTGTACTGTTAT  | Chr.5 | 9774775 | 9774755 | - | No |
| 2627313_adh | TTGAAGACCAGTATTGTTGAG  | Chr.5 | 9784591 | 9784571 | - | No |
| 2681808_adh | TTGTGGGAGTTGAGAAATAAC  | Chr.5 | 9786885 | 9786865 | - | No |
| 2711565_adh | TTTCTTCTATTTTCGTGCGAA  | Chr.5 | 9789870 | 9789850 | - | No |
| 2745054_adh | TTTTTAGAATGTGAAACAAC   | Chr.5 | 9815259 | 9815239 | - | No |
| 1929035_adh | TATTTAACGGTAAGCCTGTCA  | Chr.5 | 9856256 | 9856236 | - | No |
| 1753078_adh | TAAAATTATTCGTAGGTTTCA  | Chr.5 | 9856511 | 9856491 | - | No |
| 2042684_adh | TCTCTCTGCATTGATCAACGG  | Chr.5 | 9856756 | 9856776 | + | No |
| 2558645_adh | TTACTATTAAGAGTTGGCAAG  | Chr.5 | 9946886 | 9946906 | + | No |
| 2311651_adh | TGCTTTCAATGCAGCTTGTCG  | Chr.5 | 9960278 | 9960258 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2174342_adh | TGACTTTAGCAGTTGTATCCC  | Chr.5 | 9977581  | 9977601  | + | No |
| 2389185_adh | TGGATATGGAAGTCGATGAGG  | Chr.5 | 9980667  | 9980647  | - | No |
| 2035167_adh | TCTATTTTCACGCTGACGCTT  | Chr.5 | 9980699  | 9980679  | - | No |
| 2325187_adh | TGGAAGGGAAAGAGGAAAAAG  | Chr.5 | 9981081  | 9981101  | + | No |
| 2560643_adh | TTAGAAAAGTTACTCTCGGCT  | Chr.5 | 9981158  | 9981138  | - | No |
| 2380917_adh | TGGAGCAAAAGAATACGCTGT  | Chr.5 | 9990087  | 9990067  | - | No |
| 2747183_adh | TTTTTGGAAGATTGAGATGAA  | Chr.5 | 10003400 | 10003380 | - | No |
| 2516266_adh | TGTGGGAAAAGACGCCGATCA  | Chr.5 | 10005555 | 10005575 | + | No |
| 2414225_adh | TGGCTAGCATGACTGTTTTTT  | Chr.5 | 10019074 | 10019054 | - | No |
| 2504495_adh | TGTGACTAGTATATAAAGGCT  | Chr.5 | 10020249 | 10020269 | + | No |
| 1929744_adh | TATTCCTCAAGACTCACATC   | Chr.5 | 10023448 | 10023468 | + | No |
| 2606179_adh | TTCGCAAATAAGGAAGATTGT  | Chr.5 | 10055965 | 10055985 | + | No |
| 2741038_adh | TTTTGACCCCATTTGTATGAT  | Chr.5 | 10076790 | 10076810 | + | No |
| 2709905_adh | TTTCTCATTGATTTTCGGATA  | Chr.5 | 10078284 | 10078264 | - | No |
| 2526878_adh | TGTTCTCTTTCGTCTCGCGGA  | Chr.5 | 10091260 | 10091240 | - | No |
| 2531659_adh | TGTTTAATTAATTGTAAGAAC  | Chr.5 | 10091798 | 10091818 | + | No |
| 2597746_adh | TTCCCCAAAGATCGAATGGGA  | Chr.5 | 10160892 | 10160872 | - | No |
| 2161703_adh | TGACGGAGTGATTACATGCA   | Chr.5 | 10171929 | 10171909 | - | No |
| 2692301_adh | TTTAATTCAGTTGAGCTCCTA  | Chr.5 | 10176785 | 10176765 | - | No |
| 2148206_adh | TGAATTTATTCGGGTCTGCAG  | Chr.5 | 10177865 | 10177845 | - | No |
| 2737244_adh | TTTTCAATATTCGGCTTCATG  | Chr.5 | 10200952 | 10200972 | + | No |
| 2287923_adh | TGCAGATCGTGATGGAAAAAT  | Chr.5 | 10202783 | 10202763 | - | No |
| 2699141_adh | TTTATGCGTATAAGTAGAAGA  | Chr.5 | 10204886 | 10204866 | - | No |
| 2502991_adh | TGTGAATTCACTCTTGCAGAT  | Chr.5 | 10212404 | 10212384 | - | No |
| 2554255_adh | TTACAGCAGGATTAGAAAAGTT | Chr.5 | 10212536 | 10212556 | + | No |
| 1866709_adh | TAGGATTTGAGGCATATTTAC  | Chr.5 | 10228822 | 10228842 | + | No |
| 2233756_adh | TGAGCCGTCGTATCCCTGGAC  | Chr.5 | 10238797 | 10238777 | - | No |
| 1776582_adh | TAAGAGACGGAGAATGAGAAA  | Chr.5 | 10247983 | 10247963 | - | No |
| 2046490_adh | TCTGAGTAGGCATTGAGCATT  | Chr.5 | 10254470 | 10254490 | + | No |
| 2587331_adh | TTCAAGTAATAACTGACAGCA  | Chr.5 | 10255335 | 10255315 | - | No |
| 2294699_adh | TGCCTCTGAACATAACAGAAA  | Chr.5 | 10255469 | 10255449 | - | No |
| 2623461_adh | TTCTTTCCTGTCGTTGAAATT  | Chr.5 | 10298145 | 10298165 | + | No |
| 2734588_adh | TTTTAGATCGATTATGGACAT  | Chr.5 | 10310958 | 10310938 | - | No |
| 2034389_adh | TCTATGAAGAACATAAAAATT  | Chr.5 | 10338640 | 10338620 | - | No |
| 2623856_adh | TTCTTTTCTGTATATTTTAAT  | Chr.5 | 10338680 | 10338660 | - | No |
| 2704025_adh | TTTCATCGTCCCATTAACAAT  | Chr.5 | 10342131 | 10342151 | + | No |
| 1830194_adh | TACTAGATTGGCTAGCTTTGA  | Chr.5 | 10342865 | 10342845 | - | No |
| 1938555_adh | TCAAGACTGAAGCATATGAAT  | Chr.5 | 10349818 | 10349838 | + | No |
| 2313652_adh | TGGAAGAGCTGGAACCAAGAA  | Chr.5 | 10351142 | 10351122 | - | No |
| 1783778_adh | TAAGGAAAGATGTATTTATAA  | Chr.5 | 10353063 | 10353043 | - | No |
| 2258892_adh | TGATAAGGAAAGATGTATTTA  | Chr.5 | 10353066 | 10353046 | - | No |
| 2343026_adh | TGGAATGATAAGGAAAGATGT  | Chr.5 | 10353071 | 10353051 | - | No |
| 1833158_adh | TACTGGAATGATAAGGAAAGA  | Chr.5 | 10353074 | 10353054 | - | No |
| 1834661_adh | TACTTATCGATCCAATTCGG   | Chr.5 | 10353114 | 10353094 | - | No |
| 2011174_adh | TCGGACAAAATAATGGCAGTG  | Chr.5 | 10353229 | 10353249 | + | No |
| 2589623_adh | TTACGCGGACAAGGTGTTTT   | Chr.5 | 10356071 | 10356051 | - | No |
| 2648778_adh | TTGCAATAGAGGACGAGAAGT  | Chr.5 | 10362173 | 10362153 | - | No |
| 2506640_adh | TGTGATAATGATTGCAGAAAA  | Chr.5 | 10366697 | 10366677 | - | No |
| 2737471_adh | TTTTCAGCAGTATCGTCGTTT  | Chr.5 | 10406390 | 10406370 | - | No |
| 2730039_adh | TTTGTGTATAATTAGTGTGAA  | Chr.5 | 10406492 | 10406512 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2746486_adh | TTTTTGAAACGAGCACATGAC  | Chr.5 | 10426454 | 10426474 | + | No |
| 1831818_adh | TACTGAACATATTTGACGCGC  | Chr.5 | 10436506 | 10436486 | - | No |
| 2672224_adh | TTGGTTCTAGAACTATAATTA  | Chr.5 | 10441336 | 10441356 | + | No |
| 1774239_adh | TAAGAAGGAAAAAGACAAATA  | Chr.5 | 10459993 | 10460013 | + | No |
| 1773091_adh | TAAGAAAAATAAGTTGTTGAG  | Chr.5 | 10470056 | 10470036 | - | No |
| 1745423_adh | TAAAAAAGAAGAAGAAACAGA  | Chr.5 | 10481309 | 10481289 | - | No |
| 2489567_adh | TGTAGTATGATCTCGTGGCAT  | Chr.5 | 10511874 | 10511894 | + | No |
| 2665322_adh | TTGGCATCTTTTGGCAGTTTC  | Chr.5 | 10526146 | 10526166 | + | No |
| 2602094_adh | TTCAAGAAGTTGGAATCAT    | Chr.5 | 10536338 | 10536358 | + | No |
| 2148197_adh | TGAATTTATGCAGAAAATGAG  | Chr.5 | 10542235 | 10542215 | - | No |
| 2616470_adh | TTCTCGACAAATTTATTTACC  | Chr.5 | 10577185 | 10577205 | + | No |
| 2036775_adh | TCTCAATTTTTTGAATGAG    | Chr.5 | 10579014 | 10578994 | - | No |
| 1988440_adh | TCCGTGAATTCAGAGCAGAGT  | Chr.5 | 10595256 | 10595276 | + | No |
| 2592752_adh | TTCAGTAGGAATGTCGTCATC  | Chr.5 | 10597510 | 10597530 | + | No |
| 1937341_adh | TCAACTCGGATGGCACCAAAC  | Chr.5 | 10598346 | 10598366 | + | No |
| 2732933_adh | TTTTAAAAAATTGTGGACGGT  | Chr.5 | 10648045 | 10648025 | - | No |
| 2061591_adh | TCTTTGAAAGCACGGATCAAT  | Chr.5 | 10657861 | 10657841 | - | No |
| 2015196_adh | TCGGCAATCTTAGCGGTGTTTC | Chr.5 | 10661294 | 10661314 | + | No |
| 2739652_adh | TTTTCTGTAGGGCGGCAATTC  | Chr.5 | 10661594 | 10661574 | - | No |
| 2053581_adh | TCTTAAAAGCAAAAGTAGCGT  | Chr.5 | 10661880 | 10661900 | + | No |
| 1777967_adh | TAAGATACTGCAGGAATGAAA  | Chr.5 | 10669123 | 10669103 | - | No |
| 2729698_adh | TTTGTGCAACTGTACTCGATC  | Chr.5 | 10686024 | 10686044 | + | No |
| 2394674_adh | TGGATTGGTTACGGTATTCTC  | Chr.5 | 10704159 | 10704179 | + | No |
| 2706976_adh | TTTCGACTGTTTTGTAGCAT   | Chr.5 | 10706295 | 10706315 | + | No |
| 1969055_adh | TCATAGCACCCGAATGTAGAT  | Chr.5 | 10712075 | 10712055 | - | No |
| 1985362_adh | TCCGCGCAGATAATATCATAA  | Chr.5 | 10720431 | 10720411 | - | No |
| 1875521_adh | TAGTATGGCACTCCCTAATAG  | Chr.5 | 10733439 | 10733459 | + | No |
| 2389348_adh | TGGATCAAGAAAGGACAAAAA  | Chr.5 | 10760509 | 10760529 | + | No |
| 1820249_adh | TACCTGAAGAAGTACAATTAA  | Chr.5 | 10762766 | 10762786 | + | No |
| 2617982_adh | TTCTGACACTGAGAGAATCGT  | Chr.5 | 10771066 | 10771086 | + | No |
| 1821545_adh | TACGAAATTAGAAGAATTGTA  | Chr.5 | 10773709 | 10773689 | - | No |
| 1994548_adh | TCGAAAAGCGGTGGTTTTGAA  | Chr.5 | 10808026 | 10808006 | - | No |
| 2700917_adh | TTTCAAAAAACAACGTGCGTC  | Chr.5 | 10809009 | 10809029 | + | No |
| 1995497_adh | TCGAACCAGAAAACGATACAT  | Chr.5 | 10813935 | 10813915 | - | No |
| 2617385_adh | TTCTCTGATCATGACGGAAGG  | Chr.5 | 10827069 | 10827089 | + | No |
| 2315077_adh | TGGAAAGAAAAGAAGCGAAGA  | Chr.5 | 10855034 | 10855014 | - | No |
| 1901489_adh | TATGAAATTCTGATGATCCAA  | Chr.5 | 10884896 | 10884876 | - | No |
| 2290005_adh | TGCATAGTTTTAGAAATTCGG  | Chr.5 | 10890096 | 10890116 | + | No |
| 2391001_adh | TGGATGATGGACAACAACAAC  | Chr.5 | 10894657 | 10894637 | - | No |
| 2130714_adh | TGAAGCAGTAGAGCGCACTTG  | Chr.5 | 10894743 | 10894763 | + | No |
| 2590069_adh | TTCACTGTTACAACGAAAAAT  | Chr.5 | 10894746 | 10894726 | - | No |
| 1971256_adh | TCATCGTCGGAGCTTAATTGG  | Chr.5 | 10896872 | 10896852 | - | No |
| 2739667_adh | TTTTCTGTCTCTTTTCGGTT   | Chr.5 | 10897241 | 10897221 | - | No |
| 1994016_adh | TCCTTTCAGTTTTCTGTCTGTC | Chr.5 | 10897250 | 10897230 | - | No |
| 2039134_adh | TCTCCTCGAACATCGTCATTC  | Chr.5 | 10897269 | 10897249 | - | No |
| 1845017_adh | TAGACAGCAAAATACTTCGAA  | Chr.5 | 10897463 | 10897483 | + | No |
| 2127879_adh | TGAAGACGATACATGTAGAAT  | Chr.5 | 10938451 | 10938431 | - | No |
| 2702962_adh | TTTCAGATGAGCTTTACTAAC  | Chr.5 | 10965521 | 10965501 | - | No |
| 2608579_adh | TTCGGCGCCAAGAATCAGGTT  | Chr.5 | 10965607 | 10965587 | - | No |
| 1852046_adh | TAGATTCTCCGACTCGTTGGT  | Chr.5 | 10965774 | 10965794 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1835668_adh | TACTTGGTTGGAGAACGTCTT  | Chr.5 | 10966393 | 10966413 | + | No |
| 2486540_adh | TGTACCAAAGACTGGAGAAGT  | Chr.5 | 10967301 | 10967321 | + | No |
| 2531761_adh | TGTTTACTCTGAGTCGGAAAG  | Chr.5 | 10967812 | 10967832 | + | No |
| 1884085_adh | TATAAAGGACCCGGTATCACT  | Chr.5 | 10967854 | 10967874 | + | No |
| 2621919_adh | TTCTTCGTTTTTCGGTCGTCGT | Chr.5 | 10967971 | 10967991 | + | No |
| 2693394_adh | TTTACATCAGTGCTGTGCGGC  | Chr.5 | 11003601 | 11003581 | - | No |
| 1971829_adh | TCATGAGAAGACGAAGAATGA  | Chr.5 | 11028649 | 11028669 | + | No |
| 2410975_adh | TGGCCGAACAAACACGTACGG  | Chr.5 | 11029324 | 11029304 | - | No |
| 2604907_adh | TTCGATCGTTTGCGCTGTAGC  | Chr.5 | 11039542 | 11039522 | - | No |
| 2692311_adh | TTTAATTTCGATCGTTTGCGCT | Chr.5 | 11039547 | 11039527 | - | No |
| 2515535_adh | TGTGGATCTCCAAGCAAGAAT  | Chr.5 | 11072053 | 11072033 | - | No |
| 2049822_adh | TCTGGATCGGAGGATCTATCC  | Chr.5 | 11072101 | 11072081 | - | No |
| 1821653_adh | TACGAACCTTCCTGACGGACAA | Chr.5 | 11072452 | 11072432 | - | No |
| 2000776_adh | TCGACTTCGAGCAAGAAATGG  | Chr.5 | 11072508 | 11072488 | - | No |
| 2057873_adh | TCTTGACTTGGCTGGACGTGA  | Chr.5 | 11072639 | 11072619 | - | No |
| 2000395_adh | TCGACTCTGGAGATGGTGTCA  | Chr.5 | 11072712 | 11072692 | - | No |
| 2379589_adh | TGGAGAAGATCTGGCATCACA  | Chr.5 | 11072925 | 11072905 | - | No |
| 1914002_adh | TATGGAGAAGATCTGGCATCA  | Chr.5 | 11072927 | 11072907 | - | No |
| 2434838_adh | TGGGATGATATGGAGAAGATC  | Chr.5 | 11072935 | 11072915 | - | No |
| 1931340_adh | TATTTTTCGCGTCGACTCGGT  | Chr.5 | 11076050 | 11076030 | - | No |
| 2515535_adh | TGTGGATCTCCAAGCAAGAAT  | Chr.5 | 11076941 | 11076921 | - | No |
| 2049822_adh | TCTGGATCGGAGGATCTATCC  | Chr.5 | 11076989 | 11076969 | - | No |
| 1821653_adh | TACGAACCTTCCTGACGGACAA | Chr.5 | 11077339 | 11077319 | - | No |
| 2057873_adh | TCTTGACTTGGCTGGACGTGA  | Chr.5 | 11077526 | 11077506 | - | No |
| 2434838_adh | TGGGATGATATGGAGAAGATC  | Chr.5 | 11081335 | 11081355 | + | No |
| 1914002_adh | TATGGAGAAGATCTGGCATCA  | Chr.5 | 11081343 | 11081363 | + | No |
| 2379589_adh | TGGAGAAGATCTGGCATCACA  | Chr.5 | 11081345 | 11081365 | + | No |
| 2000395_adh | TCGACTCTGGAGATGGTGTCA  | Chr.5 | 11081558 | 11081578 | + | No |
| 2057873_adh | TCTTGACTTGGCTGGACGTGA  | Chr.5 | 11081631 | 11081651 | + | No |
| 2000776_adh | TCGACTTCGAGCAAGAAATGG  | Chr.5 | 11081762 | 11081782 | + | No |
| 1821653_adh | TACGAACCTTCCTGACGGACAA | Chr.5 | 11081818 | 11081838 | + | No |
| 2049822_adh | TCTGGATCGGAGGATCTATCC  | Chr.5 | 11082168 | 11082188 | + | No |
| 2515535_adh | TGTGGATCTCCAAGCAAGAAT  | Chr.5 | 11082216 | 11082236 | + | No |
| 2495878_adh | TGTCATGAGGGCAGAGACGAA  | Chr.5 | 11121398 | 11121378 | - | No |
| 2378871_adh | TGGACTTCAGGAGGCCAAGAA  | Chr.5 | 11123411 | 11123391 | - | No |
| 2391457_adh | TGGATGGAGAAGAAGACACTG  | Chr.5 | 11147516 | 11147536 | + | No |
| 2712436_adh | TTTGAAAAGGGAAGTAGAATG  | Chr.5 | 11171161 | 11171181 | + | No |
| 1991449_adh | TCCTGCGGACGGCATTTCCTT  | Chr.5 | 11174780 | 11174760 | - | No |
| 2648858_adh | TTGCAATTAGGAAATGGAATA  | Chr.5 | 11175794 | 11175814 | + | No |
| 1877212_adh | TAGTGAACCTCAAGTGGGTAGA | Chr.5 | 11177161 | 11177181 | + | No |
| 2066336_adh | TGAAAAATATACATCAAAATT  | Chr.5 | 11180602 | 11180582 | - | No |
| 1811091_adh | TACACGCTTACTCATCGTTCA  | Chr.5 | 11200415 | 11200395 | - | No |
| 1959112_adh | TCAGAGCTCATTAGAAGCTGCA | Chr.5 | 11209643 | 11209663 | + | No |
| 2743729_adh | TTTTGTCAACTGTCTTCGGC   | Chr.5 | 11226219 | 11226239 | + | No |
| 2282500_adh | TGCAAGGTAGATTCATAATAT  | Chr.5 | 11238797 | 11238777 | - | No |
| 2610444_adh | TTCGGTTATCTAAAACGTGGA  | Chr.5 | 11279614 | 11279594 | - | No |
| 2692288_adh | TTTAATTCAAGTATGCGCTAT  | Chr.5 | 11280823 | 11280843 | + | No |
| 1919648_adh | TATGTTTCGGAGTTCTTTTAT  | Chr.5 | 11305914 | 11305894 | - | No |
| 2540751_adh | TTAAAGACATGTTTGCTTTCA  | Chr.5 | 11328830 | 11328850 | + | No |
| 2728634_adh | TTTGTATTTTCTTAGGACACA  | Chr.5 | 11357535 | 11357515 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1891181_adh | TATCAAACGGCCGTTACTAAA  | Chr.5 | 11369878 | 11369858 | - | Yes |
| 1783818_adh | TAAGGAAATCACGTAGAATGG  | Chr.5 | 11374015 | 11373995 | - | No  |
| 1912290_adh | TATGATTTTGTCCATTGAACA  | Chr.5 | 11384125 | 11384105 | - | No  |
| 1901583_adh | TATGAACCATTGGAAGAGTAA  | Chr.5 | 11385462 | 11385442 | - | No  |
| 2732818_adh | TTTGTTTTGAACATAGGTGGA  | Chr.5 | 11388779 | 11388799 | + | No  |
| 1901583_adh | TATGAACCATTGGAAGAGTAA  | Chr.5 | 11389725 | 11389745 | + | No  |
| 2618299_adh | TTCTGAGACGCAACGACGAAT  | Chr.5 | 11412664 | 11412644 | - | No  |
| 1883999_adh | TATAAACATAGACGGAGGATA  | Chr.5 | 11478318 | 11478338 | + | No  |
| 1798528_adh | TAATCGGAACTTCGGATGCAG  | Chr.5 | 11479919 | 11479899 | - | No  |
| 1901583_adh | TATGAACCATTGGAAGAGTAA  | Chr.5 | 11484139 | 11484119 | - | No  |
| 1891043_adh | TATATTTTCAACATTCAAGAT  | Chr.5 | 11485582 | 11485602 | + | No  |
| 2613664_adh | TTCGTTTTTGTGGAGAGAGGG  | Chr.5 | 11504850 | 11504830 | - | No  |
| 2709389_adh | TTTCGTTTTTGTGGAGAGAGG  | Chr.5 | 11504851 | 11504831 | - | No  |
| 2734977_adh | TTTTAGTTACGCTATGTCCCC  | Chr.5 | 11513412 | 11513392 | - | No  |
| 2037480_adh | TCTCAGCGATCGAAGGTCAGA  | Chr.5 | 11517896 | 11517916 | + | No  |
| 1976727_adh | TCCAATCAGAACGGTAGTTCG  | Chr.5 | 11523604 | 11523584 | - | No  |
| 2441052_adh | TGGGATGGGATGGTAGATGTA  | Chr.5 | 11540640 | 11540620 | - | No  |
| 2628672_adh | TTGAAGCGTAGTGTAGTGAAA  | Chr.5 | 11554356 | 11554336 | - | No  |
| 2288713_adh | TGCAGTAGACGAATTGAATGT  | Chr.5 | 11573099 | 11573119 | + | No  |
| 2648471_adh | TTGCAAGATAGAGGTTCCCTAA | Chr.5 | 11585491 | 11585511 | + | No  |
| 1766389_adh | TAACATTGCGAGTGGTAGAAA  | Chr.5 | 11595495 | 11595475 | - | No  |
| 2047685_adh | TCTGATTTTATGAAGGTTTGA  | Chr.5 | 11595640 | 11595660 | + | No  |
| 2017032_adh | TCGGGGACGAAAGAAGATTGT  | Chr.5 | 11610575 | 11610555 | - | No  |
| 2744700_adh | TTTTTAAAGCGATCGTTCGAT  | Chr.5 | 11625356 | 11625336 | - | No  |
| 2296554_adh | TGCGACGCGAGCTACATTTAT  | Chr.5 | 11644369 | 11644389 | + | No  |
| 2002491_adh | TCGATAAATGTTTTCTGAGAT  | Chr.5 | 11644409 | 11644429 | + | No  |
| 2618523_adh | TTCTGATTTCAATGTAGAAGA  | Chr.5 | 11672564 | 11672544 | - | No  |
| 1897227_adh | TATCGATTAGGTCGGCAAATA  | Chr.5 | 11673358 | 11673338 | - | No  |
| 2003257_adh | TCGATATCGATTAGGTCGGCA  | Chr.5 | 11673362 | 11673342 | - | No  |
| 1986390_adh | TCCGGCGGCGTGTGTTTCATT  | Chr.5 | 11673461 | 11673481 | + | No  |
| 1992133_adh | TCCTGTACTCACATCGTTGAC  | Chr.5 | 11674208 | 11674228 | + | No  |
| 1972152_adh | TCATGATCTTCGAACAATTGC  | Chr.5 | 11732169 | 11732149 | - | No  |
| 2623710_adh | TTCTTTGTCAGGTTGTCGTC   | Chr.5 | 11733756 | 11733776 | + | No  |
| 2697340_adh | TTAGTGGAAGTGTGCGACAA   | Chr.5 | 11764751 | 11764771 | + | No  |
| 2378772_adh | TGGACTGTTGCGACAATGCAG  | Chr.5 | 11764756 | 11764776 | + | No  |
| 2734461_adh | TTTTAGAAGTTTAATGAAAAA  | Chr.5 | 11765371 | 11765351 | - | No  |
| 2590193_adh | TTCAGAAAACGAACAAACCAA  | Chr.5 | 11770583 | 11770563 | - | No  |
| 2701087_adh | TTTCAAAGCAAACATAATCAC  | Chr.5 | 11770914 | 11770934 | + | No  |
| 2088709_adh | TGAAATATAAAAATGTATCTA  | Chr.5 | 11785585 | 11785565 | - | No  |
| 2148232_adh | TGAATTTTATATAATAATTCTG | Chr.5 | 11787813 | 11787793 | - | No  |
| 2513214_adh | TGTGCAAGAGCTCAACGAAGT  | Chr.5 | 11788517 | 11788537 | + | No  |
| 1931749_adh | TCAAAAAATGAGGGCATGTAA  | Chr.5 | 11790233 | 11790213 | - | No  |
| 1827799_adh | TACGTAGAAATCTAATGATGG  | Chr.5 | 11813675 | 11813655 | - | No  |
| 1827799_adh | TACGTAGAAATCTAATGATGG  | Chr.5 | 11817723 | 11817703 | - | No  |
| 1933227_adh | TCAAAGAGGACCAACTGAGTT  | Chr.5 | 11820418 | 11820398 | - | No  |
| 2024618_adh | TCGTATCGCCGAAGGAAAATC  | Chr.5 | 11821158 | 11821138 | - | No  |
| 1932057_adh | TCAAAACGGATATGTTGAAAA  | Chr.5 | 11826157 | 11826137 | - | No  |
| 2547042_adh | TTAAGAGATCACGCGTGAAGG  | Chr.5 | 11836900 | 11836920 | + | No  |
| 1766888_adh | TAACCGAACTCGAACTAAAGC  | Chr.5 | 11847179 | 11847199 | + | No  |
| 1925832_adh | TATTGAGCAATTGTCGGAAGA  | Chr.5 | 11866808 | 11866788 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1866704_adh | TAGGATTTGACAGAAGAACAA  | Chr.5 | 11871260 | 11871280 | + | No  |
| 1943051_adh | TCAATTGAAGAATACATGAAG  | Chr.5 | 11874496 | 11874516 | + | No  |
| 2659713_adh | TTGGAGCATATTTTGGACAAT  | Chr.5 | 11886657 | 11886637 | - | No  |
| 2391592_adh | TGGATGGCAACTTGGAGACAA  | Chr.5 | 11888521 | 11888541 | + | No  |
| 2057800_adh | TCTTGACGTAGATGAAGCTAT  | Chr.5 | 11889264 | 11889284 | + | No  |
| 2131794_adh | TGAAGCTATGGAATTCGTTAC  | Chr.5 | 11889276 | 11889296 | + | No  |
| 1867253_adh | TAGGCGAAGATTGAAACAGCT  | Chr.5 | 11916153 | 11916173 | + | No  |
| 2487395_adh | TGTAGAAAATTTACGTTTACA  | Chr.5 | 11917172 | 11917192 | + | No  |
| 2487903_adh | TGTAGATAATTTTCATGCAGA  | Chr.5 | 11917337 | 11917317 | - | No  |
| 2565625_adh | TTAGATGTTAATTTTGAAATA  | Chr.5 | 11921737 | 11921757 | + | No  |
| 2544702_adh | TTAAATTTCTTAACGTAGACG  | Chr.5 | 11924305 | 11924285 | - | No  |
| 2449832_adh | TGGGCACAATTGAAACGATGA  | Chr.5 | 11924582 | 11924562 | - | No  |
| 1754780_adh | TAAACCTTGCATGAATATTTT  | Chr.5 | 11963565 | 11963545 | - | No  |
| 2617474_adh | TTCTCTGTTTACGAAGACTTC  | Chr.5 | 11976432 | 11976452 | + | No  |
| 1767506_adh | TAACCTGAACTTTGAAGACGA  | Chr.5 | 11978324 | 11978344 | + | No  |
| 2373449_adh | TGGACAAGGAGGTGACAATGA  | Chr.5 | 11981367 | 11981347 | - | No  |
| 1991013_adh | TCCTGAAGAAAACAAGTTGAG  | Chr.5 | 11993802 | 11993782 | - | No  |
| 1790960_adh | TAATACAGAATAAGCAAACCA  | Chr.5 | 11993902 | 11993922 | + | No  |
| 1973928_adh | TCATTCTTTACTCGTCTTTTA  | Chr.5 | 11993956 | 11993976 | + | No  |
| 2413159_adh | TGGCGTAAAAAGAAACATGAA  | Chr.5 | 11993993 | 11994013 | + | No  |
| 1845609_adh | TAGACTAGAAGAGGTTCTGTA  | Chr.5 | 11995164 | 11995144 | - | No  |
| 2657848_adh | TTGGAATTTGAAAGATCATTC  | Chr.5 | 12001628 | 12001648 | + | No  |
| 1940721_adh | TCAAGTTGGTATTTAAAAATT  | Chr.5 | 12001647 | 12001667 | + | No  |
| 2031536_adh | TCTACGAAGATTTTGAGCATT  | Chr.5 | 12004123 | 12004143 | + | No  |
| 2647044_adh | TTGATTTTCTTGTGTAGGATA  | Chr.5 | 12014251 | 12014231 | - | No  |
| 2240414_adh | TGAGGGTGGGAATAGGAGGACG | Chr.5 | 12038961 | 12038981 | + | No  |
| 1868458_adh | TAGGGAGAGAATTAAGGCGAT  | Chr.5 | 12041447 | 12041427 | - | No  |
| 1970973_adh | TCATCGCAAGCACAAAGTGAG  | Chr.5 | 12056067 | 12056047 | - | No  |
| 2410466_adh | TGGCCAAATGTAGAAGACAGT  | Chr.5 | 12072113 | 12072093 | - | No  |
| 2526888_adh | TGTTCTGAACTACTTTTTTAAA | Chr.5 | 12127902 | 12127922 | + | No  |
| 1811747_adh | TACAGAAGTCGACGAAACAAA  | Chr.5 | 12133460 | 12133480 | + | No  |
| 1810690_adh | TACACAGCGACGATTTTGTAT  | Chr.5 | 12137130 | 12137150 | + | No  |
| 2081337_adh | TGAAAGCCGAACAGCAGATTA  | Chr.5 | 12171757 | 12171777 | + | No  |
| 2678337_adh | TTGTCGGCCGATATCGGTATT  | Chr.5 | 12191182 | 12191202 | + | No  |
| 1895491_adh | TATCCAGGAAGAGATGGTCAG  | Chr.5 | 12197963 | 12197943 | - | No  |
| 2119631_adh | TGAACAAGAATTGGATGGAGA  | Chr.5 | 12227426 | 12227406 | - | No  |
| 2590278_adh | TTCAGAACAAGAAGGACGCCA  | Chr.5 | 12255245 | 12255265 | + | No  |
| 2276191_adh | TGATTGAAACATTCATAGGCA  | Chr.5 | 12263367 | 12263387 | + | No  |
| 1866130_adh | TAGGATTAACATTAATAATA   | Chr.5 | 12291444 | 12291424 | - | No  |
| 2103625_adh | TGAAATGGAAAAAGAGAAAA   | Chr.5 | 12333977 | 12333957 | - | No  |
| 2008068_adh | TCGCGGTAGACGATGTTCAAC  | Chr.5 | 12354076 | 12354096 | + | No  |
| 2523704_adh | TGTTAGTGCTGATTTTCGGAA  | Chr.5 | 12355043 | 12355063 | + | No  |
| 2305320_adh | TGCTAACATTGAGACTTCTTT  | Chr.5 | 12386275 | 12386295 | + | No  |
| 1999910_adh | TCGACCTATCAGAAGACCTAT  | Chr.5 | 12386656 | 12386676 | + | No  |
| 1999910_adh | TCGACCTATCAGAAGACCTAT  | Chr.5 | 12401235 | 12401215 | - | No  |
| 1983185_adh | TCCCTGAGTAGAATGGTAGAC  | Chr.5 | 12411460 | 12411440 | - | No  |
| 2711748_adh | TTTCTTGATCTCTTCGGTTAT  | Chr.5 | 12412170 | 12412150 | - | Yes |
| 2686846_adh | TTGTTTAGAACAGAATCATCG  | Chr.5 | 12497968 | 12497988 | + | No  |
| 2561005_adh | TTAGAACAGAATCATCGCATT  | Chr.5 | 12497972 | 12497992 | + | No  |
| 2313974_adh | TGGAAAATTAGATTGTAGTGC  | Chr.5 | 12525176 | 12525196 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2050077_adh | TCTGGCATTTAGAACGGATTA  | Chr.5 | 12545537 | 12545557 | + | No |
| 2545343_adh | TTAACGAAAACTTTGATGGC   | Chr.5 | 12560246 | 12560226 | - | No |
| 2688965_adh | TTTAAAATTATTGAACGCGGT  | Chr.5 | 12560602 | 12560622 | + | No |
| 2296307_adh | TGCGACACGGTCTCTCAAATT  | Chr.5 | 12605663 | 12605643 | - | No |
| 2622441_adh | TTCTTGAAACATGGGCAAGAA  | Chr.5 | 12612205 | 12612185 | - | No |
| 2729895_adh | TTTGTGGATATGACGTGACGG  | Chr.5 | 12637007 | 12636987 | - | No |
| 2466884_adh | TGGTATGTAAAGTAGTATGTA  | Chr.5 | 12644885 | 12644905 | + | No |
| 1829145_adh | TACGTTTGAAGCCGGAATG    | Chr.5 | 12651829 | 12651809 | - | No |
| 2721528_adh | TTTGCCAATAACGAAAACGAC  | Chr.5 | 12651858 | 12651838 | - | No |
| 2732944_adh | TTTTAAAAAGCAAAATTGACA  | Chr.5 | 12651957 | 12651977 | + | No |
| 2624759_adh | TTGAAACCCAAAAACAGGACA  | Chr.5 | 12651989 | 12652009 | + | No |
| 2094902_adh | TGAAATCGCGCAAGACTTCAA  | Chr.5 | 12660087 | 12660067 | - | No |
| 2624243_adh | TTGAAAAAATACCTTATGTGA  | Chr.5 | 12660671 | 12660691 | + | No |
| 2593730_adh | TTCATAGTTTCGTTTTATTCTG | Chr.5 | 12660912 | 12660932 | + | No |
| 2707009_adh | TTTCGAGACGGTGCTTGACAT  | Chr.5 | 12661203 | 12661223 | + | No |
| 1943338_adh | TCAATTTCTTTTGTGCGAGGTA | Chr.5 | 12661740 | 12661760 | + | No |
| 2590907_adh | TTCAGATTGTTTGGCATTATG  | Chr.5 | 12662089 | 12662109 | + | No |
| 2002373_adh | TCGAGTGGAAGGTGAAAGATC  | Chr.5 | 12692310 | 12692290 | - | No |
| 2603984_adh | TTCGAGTAGATTAACGGGATG  | Chr.5 | 12702461 | 12702441 | - | No |
| 2526087_adh | TGTTCAAGCAGATCTGTAAACA | Chr.5 | 12715690 | 12715670 | - | No |
| 2589870_adh | TTCACTCATCGTTCGGTAACA  | Chr.5 | 12717217 | 12717237 | + | No |
| 2695269_adh | TTTAGACTTCTTGACGGTATT  | Chr.5 | 12725382 | 12725402 | + | No |
| 2729057_adh | TTTGTCGTATATCTTGCCAAC  | Chr.5 | 12743048 | 12743068 | + | No |
| 1992346_adh | TCCTGTTGAAGAAATTAATTA  | Chr.5 | 12749262 | 12749282 | + | No |
| 2604219_adh | TTCGATAAAGCGAGTCTGACA  | Chr.5 | 12763002 | 12762982 | - | No |
| 2737932_adh | TTTTCCCGGCGTTTAATTTAC  | Chr.5 | 12763690 | 12763710 | + | No |
| 2703553_adh | TTTCAGTCGGTTTATTTTGAT  | Chr.5 | 12763740 | 12763760 | + | No |
| 2279693_adh | TGCAAAAACTCTACAGGGACG  | Chr.5 | 12768538 | 12768518 | - | No |
| 2696106_adh | TTTAGCGGAAGGAATCCATGG  | Chr.5 | 12818721 | 12818701 | - | No |
| 1839805_adh | TAGAAGTCGTAAAAAACAAAC  | Chr.5 | 12865643 | 12865623 | - | No |
| 1983849_adh | TCCGAACCTAACGTAGCGCGCA | Chr.5 | 12865698 | 12865718 | + | No |
| 2607253_adh | TTCGGAATGTCGTTGCCATCT  | Chr.5 | 12865703 | 12865683 | - | No |
| 2694796_adh | TTTAGAAAATGGAACAAGACG  | Chr.5 | 12870019 | 12869999 | - | No |
| 2726634_adh | TTTGGTTATTGGTCAACTTTT  | Chr.5 | 12909212 | 12909192 | - | No |
| 2035434_adh | TCTCAACCAACTTTGGCCACT  | Chr.5 | 12919210 | 12919230 | + | No |
| 2620430_adh | TTCTGTTTGGTCAAGATGGAG  | Chr.5 | 12949903 | 12949923 | + | No |
| 2082136_adh | TGAAAGGACAAATGCAGAAAG  | Chr.5 | 12961582 | 12961602 | + | No |
| 2590518_adh | TTCAGACGGTAAGCATTGCAG  | Chr.5 | 12965126 | 12965146 | + | No |
| 2748505_adh | TTTTTTCACAACGAAAACGCG  | Chr.5 | 12970780 | 12970800 | + | No |
| 2591903_adh | TTCAGCTGTATTTTTTATCTA  | Chr.5 | 13000304 | 13000324 | + | No |
| 2744561_adh | TTTTGTTTTTCATCAATCGGAT | Chr.5 | 13000335 | 13000355 | + | No |
| 2623156_adh | TTCTTGTGATCTGTTTCAGCGT | Chr.5 | 13000535 | 13000555 | + | No |
| 1894064_adh | TATCATCGAGACGGCTTGACG  | Chr.5 | 13003010 | 13002990 | - | No |
| 2048087_adh | TCTGCCAGTTGAAGAACTCAA  | Chr.5 | 13006264 | 13006284 | + | No |
| 2722017_adh | TTTGCGGAAGAATCAGAGAAT  | Chr.5 | 13043018 | 13042998 | - | No |
| 1757144_adh | TAAAGCAAGTGGATGGGCTCG  | Chr.5 | 13045366 | 13045386 | + | No |
| 2100792_adh | TGAAATGAAAATAAAATTA    | Chr.5 | 13047958 | 13047938 | - | No |
| 1762993_adh | TAACAAAAAGCGACGAAAAAG  | Chr.5 | 13057636 | 13057656 | + | No |
| 1953599_adh | TCACGTGTTTAATGGATTGAC  | Chr.5 | 13061631 | 13061611 | - | No |
| 1994609_adh | TCGAAAATGTTTGTGAGAAGA  | Chr.5 | 13062137 | 13062157 | + | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2671070_adh | TTGGTGGAGCAAAAGTCATGA  | Chr.5 | 13063476 | 13063456 | - | No |
| 2370208_adh | TGGAATTGAATGAGAAATGTA  | Chr.5 | 13069073 | 13069053 | - | No |
| 2547281_adh | TTAAGATGAAATTATTGAAAG  | Chr.5 | 13085727 | 13085707 | - | No |
| 2692385_adh | TTTAATTGAAGTCTCATCGGA  | Chr.5 | 13085859 | 13085879 | + | No |
| 2629207_adh | TTGAAGTCTCATCGGAATTCT  | Chr.5 | 13085864 | 13085884 | + | No |
| 1942815_adh | TCAATTACTGGTAGAACGGTG  | Chr.5 | 13091253 | 13091233 | - | No |
| 2025310_adh | TCGTCACCGGTCGTCTCCACC  | Chr.5 | 13094995 | 13095015 | + | No |
| 2471153_adh | TGGTGA CTGCAGAGCCGTCGG | Chr.5 | 13115972 | 13115992 | + | No |
| 1847621_adh | TAGAGATCCCATGGCATGAAT  | Chr.5 | 13127156 | 13127176 | + | No |
| 1996574_adh | TCGAAGGATTCCAGAAGCAAG  | Chr.5 | 13127702 | 13127682 | - | No |
| 2683493_adh | TTGTTCCACCGTGATGGCCAAA | Chr.5 | 13129335 | 13129315 | - | No |
| 2010560_adh | TCGGAACCAATCTCGAAACGG  | Chr.5 | 13129870 | 13129850 | - | No |
| 1900731_adh | TATCTTTTTCGTTTCGTACGG  | Chr.5 | 13152622 | 13152642 | + | No |
| 2710233_adh | TTTCTCTTCTTCTGTTGGACA  | Chr.5 | 13159383 | 13159403 | + | No |
| 2706776_adh | TTTCGAATTCTTGTGGACGG   | Chr.5 | 13162847 | 13162867 | + | No |
| 1762862_adh | TAAATTTTAACAAAAAATAAA  | Chr.5 | 13164478 | 13164458 | - | No |
| 2608180_adh | TTCGGATATTTTTTGTTTAA   | Chr.5 | 13193719 | 13193699 | - | No |
| 2514215_adh | TGTGCTTCAGGAAAAAGTAGA  | Chr.5 | 13217365 | 13217385 | + | No |
| 2662756_adh | TTGGATGCTGCAGATTTGGAT  | Chr.5 | 13277125 | 13277105 | - | No |
| 1896869_adh | TATCGACTTAGAAACGCGCTT  | Chr.5 | 13315873 | 13315893 | + | No |
| 2075786_adh | TGAAAGACAAAGAAAAATGGA  | Chr.5 | 13316388 | 13316408 | + | No |
| 1978642_adh | TCCAGGACAAGATGGACAACC  | Chr.5 | 13317174 | 13317154 | - | No |
| 2734549_adh | TTTTAGAGGATGGTAGTGTAG  | Chr.5 | 13371448 | 13371428 | - | No |
| 2290018_adh | TGCATATCATTAGCATCGGAT  | Chr.5 | 13373449 | 13373469 | + | No |
| 1747067_adh | TAAAAATCAAAGGACATTTCT  | Chr.5 | 13379684 | 13379704 | + | No |
| 2121587_adh | TGAACATTGGAATCTGGCAAG  | Chr.5 | 13416102 | 13416122 | + | No |
| 2379600_adh | TGGAGAAGATTAAGAAGAACA  | Chr.5 | 13432989 | 13432969 | - | No |
| 2733115_adh | TTTTAAAGGAAAACAGCGGAA  | Chr.5 | 13437699 | 13437719 | + | No |
| 1978642_adh | TCCAGGACAAGATGGACAACC  | Chr.5 | 13443235 | 13443255 | + | No |
| 2075786_adh | TGAAAGACAAAGAAAAATGGA  | Chr.5 | 13444021 | 13444001 | - | No |
| 2272012_adh | TGATGCTCTTCTGAAGACAAT  | Chr.5 | 13466634 | 13466654 | + | No |
| 2011824_adh | TCGGACTCACGTGCATTTTTTA | Chr.5 | 13468379 | 13468399 | + | No |
| 2058259_adh | TCTTGCACTACTGGAGCTGAA  | Chr.5 | 13480043 | 13480063 | + | No |
| 2613702_adh | TTCTAAAATTCAAATTCGAAC  | Chr.5 | 13506072 | 13506092 | + | No |
| 2134154_adh | TGAAGTAGTAGAAAAAGAAAAA | Chr.5 | 13527355 | 13527335 | - | No |
| 2054997_adh | TCTTATATTGAAGTAGTAGAA  | Chr.5 | 13527363 | 13527343 | - | No |
| 2003962_adh | TCGATGAAGAACTGGCGAAAA  | Chr.5 | 13528750 | 13528730 | - | No |
| 2719588_adh | TTTGATGTTTGGATTTTCGGAG | Chr.5 | 13538873 | 13538853 | - | No |
| 2344587_adh | TGGAATGCAAACGATAAGACG  | Chr.5 | 13556989 | 13557009 | + | No |
| 2487570_adh | TGTAGAATTGGCTGACTGAAA  | Chr.5 | 13560543 | 13560523 | - | No |
| 2590716_adh | TTCAGAGTGGGTGTACTTGAG  | Chr.5 | 13565380 | 13565360 | - | No |
| 2713491_adh | TTTGA ACTTAAATTGACACAT | Chr.5 | 13568637 | 13568617 | - | No |
| 1990771_adh | TCCTCTCGGCCAAGTCAGATG  | Chr.5 | 13591695 | 13591715 | + | No |
| 2648770_adh | TTGCAATAAGTAGTCTTCAGC  | Chr.5 | 13591829 | 13591849 | + | No |
| 2588124_adh | TTCAATGCAGAAAACATGACA  | Chr.5 | 13596173 | 13596193 | + | No |
| 2624324_adh | TTGAAAAATTTCAATCGTCTC  | Chr.5 | 13618253 | 13618273 | + | No |
| 2281379_adh | TGCAACATATCTGACGCGCAA  | Chr.5 | 13620543 | 13620523 | - | No |
| 2546602_adh | TTAACTTTGAAAATGATGGAA  | Chr.5 | 13622238 | 13622258 | + | No |
| 1874886_adh | TAGTAGTAGAGCGCATATTAA  | Chr.5 | 13625975 | 13625995 | + | No |
| 1841099_adh | TAGAATATGAAGCTCAGAGAA  | Chr.5 | 13650849 | 13650829 | - | No |

|             |                         |       |          |          |   |     |
|-------------|-------------------------|-------|----------|----------|---|-----|
| 2713197_adh | TTTGAACGAGAACATACAAAC   | Chr.5 | 13656936 | 13656956 | + | No  |
| 1891083_adh | TATATTTTTGATGGCACAGCT   | Chr.5 | 13660372 | 13660392 | + | No  |
| 1929043_adh | TATTTAAGAATGAGCAAAGGG   | Chr.5 | 13664713 | 13664693 | - | No  |
| 1828801_adh | TACGTGGATTGTTTTCGTGTT   | Chr.5 | 13672086 | 13672066 | - | No  |
| 2729757_adh | TTTGTGCGTGGAACGGTGTGC   | Chr.5 | 13672111 | 13672091 | - | No  |
| 2703637_adh | TTTCAGTTTTATCGGCGCTTC   | Chr.5 | 13715380 | 13715360 | - | No  |
| 1747697_adh | TAAAACAGCGACCTGAAAACA   | Chr.5 | 13715694 | 13715714 | + | No  |
| 2309944_adh | TGCTGTTTTGTGTTAAAAGAT   | Chr.5 | 13725517 | 13725537 | + | No  |
| 2578823_adh | TTATGATGCTACAAATAAATA   | Chr.5 | 13756694 | 13756714 | + | No  |
| 2313352_adh | TGGA AAAACACAATGTAGGGCA | Chr.5 | 13782315 | 13782295 | - | No  |
| 2273549_adh | TGATGTGAGTCTGGAACCTGA   | Chr.5 | 13923735 | 13923755 | + | No  |
| 2005414_adh | TCGCAAAATAGAACAATGGTT   | Chr.5 | 13944541 | 13944561 | + | No  |
| 1821564_adh | TACGAACAATTTGATATGGAT   | Chr.5 | 13966272 | 13966292 | + | No  |
| 2648777_adh | TTGCAATAGAATAGACTGAAT   | Chr.5 | 14008531 | 14008551 | + | No  |
| 1745436_adh | TAAAAAAGACAATGGGAGACA   | Chr.5 | 14011805 | 14011785 | - | No  |
| 1978562_adh | TCCAGCTGTACGCAGTGACGT   | Chr.5 | 14012280 | 14012300 | + | No  |
| 1944403_adh | TCACAATTTTAACGGAACAAA   | Chr.5 | 14014107 | 14014087 | - | No  |
| 1824004_adh | TACGATCTGTGGCTACTATCT   | Chr.5 | 14028380 | 14028360 | - | No  |
| 2273549_adh | TGATGTGAGTCTGGAACCTGA   | Chr.5 | 14031476 | 14031496 | + | No  |
| 2719708_adh | TTTGATTATTCGGCATTATTT   | Chr.5 | 14038434 | 14038414 | - | No  |
| 2743684_adh | TTTTGTATGGAAAATTGATCG   | Chr.5 | 14038968 | 14038988 | + | No  |
| 2743684_adh | TTTTGTATGGAAAATTGATCG   | Chr.5 | 14055022 | 14055002 | - | No  |
| 1829906_adh | TACTAGAAACGGAAAAGTGGGT  | Chr.5 | 14066910 | 14066890 | - | No  |
| 1973758_adh | TCATTC CCGATTGAACGGAC   | Chr.5 | 14067832 | 14067852 | + | No  |
| 2177606_adh | TGAGAAATGAAGAATGAAAAT   | Chr.5 | 14118307 | 14118287 | - | No  |
| 2343030_adh | TGGAATGATAAGGAACAGGAA   | Chr.5 | 14135226 | 14135206 | - | No  |
| 2594853_adh | TTCATGTGCAAAGGACAAAAA   | Chr.5 | 14135265 | 14135245 | - | No  |
| 2020772_adh | TCGGTTTTTTGTTCGGCTTCA   | Chr.5 | 14135344 | 14135324 | - | No  |
| 2402775_adh | TGGCAATGTGGAATACTGGGT   | Chr.5 | 14137336 | 14137356 | + | No  |
| 2732098_adh | TTTGTTGGATGAAAAATGGTT   | Chr.5 | 14168097 | 14168077 | - | No  |
| 1998960_adh | TCGAATGTAGGGATGTTTGGT   | Chr.5 | 14170656 | 14170636 | - | No  |
| 2692876_adh | TTTAATTTAATCAAGGACAAA   | Chr.5 | 14185593 | 14185573 | - | No  |
| 2009971_adh | TCGCTTTAATTTAATCAAGGA   | Chr.5 | 14185597 | 14185577 | - | No  |
| 2611812_adh | TTCGTATTCGCTTTAATTTAA   | Chr.5 | 14185604 | 14185584 | - | No  |
| 2641403_adh | TTGAGGCGGAATACACAAATT   | Chr.5 | 14185734 | 14185754 | + | No  |
| 2044992_adh | TCTGACACGGATAGAATGATT   | Chr.5 | 14202535 | 14202515 | - | No  |
| 1935841_adh | TCAACAAATAGAAAGAAACGA   | Chr.5 | 14226761 | 14226781 | + | No  |
| 1964001_adh | TCAGGATGCATCAATGACGAG   | Chr.5 | 14275476 | 14275456 | - | No  |
| 2628550_adh | TTGAAGCAAGCTGGCGACTGT   | Chr.5 | 14283541 | 14283521 | - | No  |
| 1975668_adh | TCATTTTTTATGAAACGTCGG   | Chr.5 | 14293758 | 14293738 | - | No  |
| 1755255_adh | TAAACTAATGTGGAAGCGAAG   | Chr.5 | 14350964 | 14350944 | - | No  |
| 2271998_adh | TGATGCTATTATTTACGTCGG   | Chr.5 | 14352468 | 14352488 | + | No  |
| 2681212_adh | TTGTGCAACTCGTCGGA AAAAG | Chr.5 | 14353517 | 14353537 | + | No  |
| 1768631_adh | TAACGCTTT CAGAAACCTCGA  | Chr.5 | 14353869 | 14353889 | + | No  |
| 2291625_adh | TGCATTTTGTAGGAAATCGGA   | Chr.5 | 14360732 | 14360712 | - | No  |
| 2273183_adh | TGATGTAGTGGAGAGTTTCGAA  | Chr.5 | 14393456 | 14393436 | - | Yes |
| 2045921_adh | TCTGACTCTGATACGAAGGTT   | Chr.5 | 14393795 | 14393815 | + | No  |
| 2020798_adh | TCGTAAAAAGAAAACTGCATG   | Chr.5 | 14394895 | 14394875 | - | No  |
| 2610948_adh | TTCGTAAAAAGAAAACTGCAT   | Chr.5 | 14394896 | 14394876 | - | No  |
| 2689321_adh | TTTAAAGGCACACACGGTTTT   | Chr.5 | 14406329 | 14406309 | - | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2715105_adh | TTTGACGACATAAACAAGAAT  | Chr.5 | 14415385 | 14415405 | + | No |
| 2089044_adh | TGAAATATAAATAATTATTAA  | Chr.5 | 14416682 | 14416702 | + | No |
| 2561404_adh | TTAGAAGAAATGCTGCAGGAA  | Chr.5 | 14429209 | 14429229 | + | No |
| 2725987_adh | TTTGGTAGTTTCATTGATCTG  | Chr.5 | 14439551 | 14439571 | + | No |
| 1754955_adh | TAAACGATTAACCTGGGAAACA | Chr.5 | 14445368 | 14445388 | + | No |
| 2323235_adh | TGGAAGATTTGGAAGAGGACG  | Chr.5 | 14452735 | 14452755 | + | No |
| 1770052_adh | TAACTAGCAGATCTAAAGAGG  | Chr.5 | 14459923 | 14459903 | - | No |
| 2686709_adh | TTGTTTACAAGATGAGGTTGC  | Chr.5 | 14463944 | 14463964 | + | No |
| 2696718_adh | TTTAGGGAATTCAGTTCGGC   | Chr.5 | 14468859 | 14468879 | + | No |
| 2474691_adh | TGGTTCAGACAAGTGGACAGG  | Chr.5 | 14470351 | 14470371 | + | No |
| 2744632_adh | TTTTTAAATCAAAGGCGAAT   | Chr.5 | 14471910 | 14471930 | + | No |
| 2129941_adh | TGAAGATATGAAGAACGGTGA  | Chr.5 | 14505982 | 14506002 | + | No |
| 2729485_adh | TTTGTGACTGATTACCAAAAA  | Chr.5 | 14543308 | 14543288 | - | No |
| 2129056_adh | TGAAGAGAAGATTGAGAAGCT  | Chr.5 | 14544099 | 14544079 | - | No |
| 1762701_adh | TAAATTCAGACACCGAACTC   | Chr.5 | 14545717 | 14545697 | - | No |
| 2043567_adh | TCTCTTTGTCGACGGATAAAC  | Chr.5 | 14546318 | 14546298 | - | No |
| 2191677_adh | TGAGATACTCTACAGTAAGAC  | Chr.5 | 14595748 | 14595768 | + | No |
| 2585368_adh | TTCAAAGGAGAAGGATGAGAG  | Chr.5 | 14597919 | 14597899 | - | No |
| 2525978_adh | TGTTCACACAGCACTTAGCAG  | Chr.5 | 14597987 | 14598007 | + | No |
| 2701690_adh | TTTCAATCAATTCGTTCTGTT  | Chr.5 | 14612434 | 14612454 | + | No |
| 2559092_adh | TACTGACGACGTGATGACGG   | Chr.5 | 14613829 | 14613849 | + | No |
| 1762355_adh | TAAATTCGACAGAACTAGT    | Chr.5 | 14640543 | 14640523 | - | No |
| 2597317_adh | TTCCATGATTGGTCAGTTCGG  | Chr.5 | 14686536 | 14686556 | + | No |
| 2708934_adh | TTTCGTGCTTCGTCCATTCAA  | Chr.5 | 14686659 | 14686679 | + | No |
| 2319987_adh | TGGAACGAAGATTGTCATGCA  | Chr.5 | 14686698 | 14686718 | + | No |
| 1939603_adh | TCAAGGAGATCGTTAAGAAGC  | Chr.5 | 14686760 | 14686780 | + | No |
| 1972570_adh | TCATGGAGAACTGCGAAGAGC  | Chr.5 | 14687258 | 14687278 | + | No |
| 1970395_adh | TCATCAAGGGAGTCGTCGATT  | Chr.5 | 14687300 | 14687320 | + | No |
| 2654824_adh | TTGCTGCTTCAGCTTTCGTCTG | Chr.5 | 14687651 | 14687671 | + | No |
| 1970391_adh | TCATCAAGGACATTTTGGAGA  | Chr.5 | 14687867 | 14687887 | + | No |
| 2723482_adh | TTTGGAGAAGAAGGTTGAGAA  | Chr.5 | 14687880 | 14687900 | + | No |
| 2374062_adh | TGGACAGCAGAAGTATCATAT  | Chr.5 | 14693562 | 14693542 | - | No |
| 2044649_adh | TCTGAATACTTTGCACAACGA  | Chr.5 | 14750097 | 14750117 | + | No |
| 2025887_adh | TCGTGACGAAGAAGGTGCATT  | Chr.5 | 14779718 | 14779698 | - | No |
| 1931153_adh | TATTTTGGATCGTCATTAAAT  | Chr.5 | 14785114 | 14785134 | + | No |
| 2010095_adh | TCGGAAAAATTGAAGGAAAAT  | Chr.5 | 14821066 | 14821046 | - | No |
| 2714537_adh | TTTGAATTTGAATTTTGCGCG  | Chr.5 | 14832560 | 14832540 | - | No |
| 2701213_adh | TTTCAAATTTAGAGACGCATT  | Chr.5 | 14878158 | 14878138 | - | No |
| 2619734_adh | TTCTGTAAATTTGGCACTTTG  | Chr.5 | 14882124 | 14882104 | - | No |
| 2619734_adh | TTCTGTAAATTTGGCACTTTG  | Chr.5 | 14888492 | 14888472 | - | No |
| 2733939_adh | TTTTACAATAAAGATCGTCGT  | Chr.5 | 14939964 | 14939984 | + | No |
| 2693145_adh | TTTACAATAAAGATCGTCGTA  | Chr.5 | 14939965 | 14939985 | + | No |
| 2585068_adh | TTCAAATTTGATCGCTGTAC   | Chr.5 | 14944035 | 14944015 | - | No |
| 2228069_adh | TGAGATGTGGAAGAATAACCA  | Chr.5 | 14947886 | 14947866 | - | No |
| 2641006_adh | TTGAGCTTGAACGTAAGGCGC  | Chr.5 | 14992257 | 14992277 | + | No |
| 2618356_adh | TTCTGAGTGTTTTCGGCGCAT  | Chr.5 | 14992833 | 14992813 | - | No |
| 1814871_adh | TACCAATCTTCATCGATATTC  | Chr.5 | 14996514 | 14996534 | + | No |
| 2561858_adh | TTAGAATTGTCGTCCGAATCA  | Chr.5 | 14996538 | 14996558 | + | No |
| 1766126_adh | TAACATGCAGATGAACCTGGC  | Chr.5 | 14996563 | 14996583 | + | No |
| 2379439_adh | TGGAGAACACTCACATCAAGC  | Chr.5 | 15001302 | 15001282 | - | No |

|             |                         |       |          |          |   |    |
|-------------|-------------------------|-------|----------|----------|---|----|
| 2463084_adh | TGGTAGCAGAGGTGGATTTGG   | Chr.5 | 15001825 | 15001805 | - | No |
| 2381239_adh | TGGAGCGAGTCGAGCATTGAA   | Chr.5 | 15002585 | 15002605 | + | No |
| 1986050_adh | TCCGGAGTTGTTTCAGATATCG  | Chr.5 | 15002612 | 15002632 | + | No |
| 2724821_adh | TTTGGGATTGATTCGTTTACA   | Chr.5 | 15016877 | 15016857 | - | No |
| 1935979_adh | TCAACAATTTAGTAGATGCGC   | Chr.5 | 15029209 | 15029229 | + | No |
| 2696997_adh | TTTAGTAGATGCGCCTTTGAA   | Chr.5 | 15029216 | 15029236 | + | No |
| 2737100_adh | TTTTCAAAAACACTACAACCTCG | Chr.5 | 15036819 | 15036799 | - | No |
| 2639684_adh | TTGAGACGTAGAGATGGAAAG   | Chr.5 | 15048327 | 15048347 | + | No |
| 2616507_adh | TTCTCGATGGCAATGTTTTAC   | Chr.5 | 15051837 | 15051817 | - | No |
| 1885156_adh | TATAAGGAGCTTCGGAAGTAC   | Chr.5 | 15057189 | 15057169 | - | No |
| 2702813_adh | TTTCAGAAAAAATGGACGGAC   | Chr.5 | 15059581 | 15059561 | - | No |
| 2737925_adh | TTTTCCCCGCTCTTCTCCGTG   | Chr.5 | 15059663 | 15059643 | - | No |
| 1794932_adh | TAATAGCGAAATAATTTTATT   | Chr.5 | 15059804 | 15059824 | + | No |
| 2742061_adh | TTTTGATTTATCGACTTTGGC   | Chr.5 | 15066171 | 15066191 | + | No |
| 2720692_adh | TTTGATTTATCGACTTTGGCA   | Chr.5 | 15066172 | 15066192 | + | No |
| 2698564_adh | TTTATCGACTTTGGCATTCTC   | Chr.5 | 15066177 | 15066197 | + | No |
| 1990119_adh | TCCTCCTAGACAATTGCAGAG   | Chr.5 | 15082460 | 15082440 | - | No |
| 2623210_adh | TTCTTGTTTTGATTTCAACGT   | Chr.5 | 15085495 | 15085475 | - | No |
| 2511744_adh | TGTGATGTTTAATGATTTCAA   | Chr.5 | 15101165 | 15101145 | - | No |
| 2501924_adh | TGTGAAGACAGATGAGAACGG   | Chr.5 | 15103713 | 15103733 | + | No |
| 2737100_adh | TTTTCAAAAACACTACAACCTCG | Chr.5 | 15105908 | 15105888 | - | No |
| 2003962_adh | TCGATGAAGAACTGGCGAAAA   | Chr.5 | 15108825 | 15108805 | - | No |
| 2473245_adh | TGGTGTGAATTTTTAGTAGAA   | Chr.5 | 15136963 | 15136983 | + | No |
| 2503040_adh | TGTGAATTTTTAGTAGAAAGG   | Chr.5 | 15136966 | 15136986 | + | No |
| 2649500_adh | TTGCAGATGGAACGGAATTTT   | Chr.5 | 15145566 | 15145586 | + | No |
| 2687522_adh | TTGTTTGGATGACATACCCAC   | Chr.5 | 15159361 | 15159381 | + | No |
| 2047800_adh | TCTGCACCGTCAAGACTGCCT   | Chr.5 | 15186813 | 15186793 | - | No |
| 2269394_adh | TGATCCAGGGAGGAGACTTCA   | Chr.5 | 15187086 | 15187066 | - | No |
| 2269394_adh | TGATCCAGGGAGGAGACTTCA   | Chr.5 | 15190180 | 15190200 | + | No |
| 2373353_adh | TGGACAACTCAAGGCATAAAT   | Chr.5 | 15190791 | 15190811 | + | No |
| 2245414_adh | TGAGGTAGGTTTAGAAGACGA   | Chr.5 | 15212811 | 15212831 | + | No |
| 1860038_adh | TAGGAAAACGTCTGGAAAAAA   | Chr.5 | 15244326 | 15244346 | + | No |
| 2736498_adh | TTTTATTATGTGTACATTGAT   | Chr.5 | 15297027 | 15297007 | - | No |
| 2522467_adh | TGTTAAGATAGAATTGAATGG   | Chr.5 | 15350986 | 15350966 | - | No |
| 2339050_adh | TGGAATGAAAACTTGAATGCA   | Chr.5 | 15387141 | 15387161 | + | No |
| 2538926_adh | TTAAAAGTTCAGAAAAAAGTG   | Chr.5 | 15395425 | 15395405 | - | No |
| 2712813_adh | TTTGAAATTAATTTGAACAGT   | Chr.5 | 15425437 | 15425417 | - | No |
| 1762993_adh | TAACAAAAAGCGACGAAAAAG   | Chr.5 | 15429811 | 15429791 | - | No |
| 2304367_adh | TGCGTGTTTATGTAGCAAATA   | Chr.5 | 15433169 | 15433149 | - | No |
| 1896506_adh | TATCCTTAGGTCGCTGGTTTCG  | Chr.5 | 15480716 | 15480736 | + | No |
| 1757898_adh | TAAAGGAGCAACCAGAGTTGG   | Chr.5 | 15503737 | 15503757 | + | No |
| 1938931_adh | TCAAGATAAAGAAGAACTCCA   | Chr.5 | 15512237 | 15512257 | + | No |
| 2617413_adh | TTCTCTGCTCGTTGTTGGTTT   | Chr.5 | 15512665 | 15512685 | + | No |
| 2418799_adh | TGGGAAGACGAATTCCTGAAG   | Chr.5 | 15516971 | 15516951 | - | No |
| 1774765_adh | TAAGAATTTCCGGTATGTTTTG  | Chr.5 | 15577394 | 15577414 | + | No |
| 2734710_adh | TTTTAGCGGTTAATTCGAATA   | Chr.5 | 15578546 | 15578566 | + | No |
| 2595748_adh | TTCCAAATCCCTGTACTTTGA   | Chr.5 | 15578837 | 15578817 | - | No |
| 2412446_adh | TGGCGGAAATTCAAGTGAGAA   | Chr.5 | 15585432 | 15585452 | + | No |
| 2592603_adh | TTCAGTACGAACAAACTTGCC   | Chr.5 | 15611800 | 15611820 | + | No |
| 2737300_adh | TTTTCACAAATTTGGACGAGT   | Chr.5 | 15640868 | 15640848 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1940162_adh | TCAAGTAGTTTGAGAAATTC   | Chr.5 | 15661021 | 15661001 | - | No |
| 2497903_adh | TGTCGCGAATTGTGGATGGCA  | Chr.5 | 15668410 | 15668390 | - | No |
| 1993027_adh | TCCTTCGTTCCGGTCACGGTCG | Chr.5 | 15668436 | 15668416 | - | No |
| 2497903_adh | TGTCGCGAATTGTGGATGGCA  | Chr.5 | 15670474 | 15670494 | + | No |
| 1876569_adh | TAGTCGATAGAGGAAGTGTG   | Chr.5 | 15760754 | 15760734 | - | No |
| 2544884_adh | TTAACAATTATGAAGCTGGCA  | Chr.5 | 15766540 | 15766560 | + | No |
| 2702852_adh | TTTCAGAACATTAAGCTTCAA  | Chr.5 | 15769001 | 15768981 | - | No |
| 2623787_adh | TTCTTTTAATATGCATTTTCA  | Chr.5 | 15769017 | 15768997 | - | No |
| 2643040_adh | TTGAGTTCACGTCGGTAATGT  | Chr.5 | 15844939 | 15844919 | - | No |
| 2411152_adh | TGGCCTAGTGGATAAGAGGGA  | Chr.5 | 15878514 | 15878494 | - | No |
| 2457123_adh | TGGGTAACGAGAGTAGAAGAA  | Chr.5 | 15880982 | 15881002 | + | No |
| 2010998_adh | TCGGAATCTCGACGGTAACCTT | Chr.5 | 15928331 | 15928311 | - | No |
| 2579340_adh | TTATGGACTATGTTAATCGGA  | Chr.5 | 15928347 | 15928327 | - | No |
| 1831247_adh | TACTCGATTGTGATATTTCAA  | Chr.5 | 15970107 | 15970087 | - | No |
| 1828983_adh | TACGTTCTCTTCAAACGATCG  | Chr.5 | 15983281 | 15983301 | + | No |
| 1829214_adh | TACGTTTTTCATCAACAATCA  | Chr.5 | 15988694 | 15988714 | + | No |
| 2733137_adh | TTTTAAAGTTTCTCGTCGTTT  | Chr.5 | 16022851 | 16022871 | + | No |
| 2616800_adh | TTCTCGTCGTTTTCTATCATT  | Chr.5 | 16022860 | 16022880 | + | No |
| 2678739_adh | TTGTCTCCTTAATTCGTTTTT  | Chr.5 | 16024597 | 16024617 | + | No |
| 2032395_adh | TCTAGACTTGCGAGGACTTTT  | Chr.5 | 16031809 | 16031829 | + | No |
| 2032395_adh | TCTAGACTTGCGAGGACTTTT  | Chr.5 | 16036264 | 16036244 | - | No |
| 2590429_adh | TTCAGAATAGCGGTCCAAGAA  | Chr.5 | 16145077 | 16145057 | - | No |
| 2477406_adh | TGGTTTACATATGAAGACTGT  | Chr.5 | 16232452 | 16232472 | + | No |
| 1923400_adh | TATTCAATACTTGTCTCCATA  | Chr.5 | 16237511 | 16237531 | + | No |
| 2145019_adh | TGAATGTTGTGACGTCAGAGA  | Chr.5 | 16245214 | 16245234 | + | No |
| 1972742_adh | TCATGGTAGACAGGCGCGGTT  | Chr.5 | 16270512 | 16270532 | + | No |
| 1833335_adh | TACTGGATTTGTACAGCAAGA  | Chr.5 | 16271548 | 16271568 | + | No |
| 2396187_adh | TGGATTTGTACAGCAAGATTC  | Chr.5 | 16271551 | 16271571 | + | No |
| 2740883_adh | TTTTGAATAAGCAGATCGGCA  | Chr.5 | 16285712 | 16285692 | - | No |
| 2708856_adh | TTTCGTCGAAATTTAGTTGAA  | Chr.5 | 16356902 | 16356882 | - | No |
| 2623195_adh | TTCTTGTTGGAGCATTTGACA  | Chr.5 | 16368791 | 16368771 | - | No |
| 2376820_adh | TGGACTAGAAAGTGGCGAATCG | Chr.5 | 16369840 | 16369860 | + | No |
| 2052286_adh | TCTGTCAATCAGAACTCGCTT  | Chr.5 | 16390447 | 16390427 | - | No |
| 1934888_adh | TCAAATCTTTCAATACATTA   | Chr.5 | 16424832 | 16424852 | + | No |
| 1883930_adh | TATAAAAGGCGATTGTACGGT  | Chr.5 | 16435789 | 16435809 | + | No |
| 2481541_adh | TGTAACGGTAGACAAATTGTA  | Chr.5 | 16454753 | 16454773 | + | No |
| 2137748_adh | TGAATACTGAACGGATTTGAC  | Chr.5 | 16456373 | 16456393 | + | No |
| 2293986_adh | TGCCGATGTGGACAACCTCCC  | Chr.5 | 16461462 | 16461482 | + | No |
| 2005148_adh | TCGATTGTACAGACGCTAGTA  | Chr.5 | 16473353 | 16473333 | - | No |
| 2293986_adh | TGCCGATGTGGACAACCTCCC  | Chr.5 | 16515163 | 16515143 | - | No |
| 2559484_adh | TTACTGTAGTTTTCGAAAAAT  | Chr.5 | 16546920 | 16546940 | + | No |
| 2748121_adh | TTTTTTAAGAGCTTTGCGAAT  | Chr.5 | 16553200 | 16553220 | + | No |
| 2711763_adh | TTTCTTGATTTTCGGCAATTT  | Chr.5 | 16557804 | 16557784 | - | No |
| 1974009_adh | TCATTGAGAACTAAAAACGTC  | Chr.5 | 16650894 | 16650914 | + | No |
| 1974009_adh | TCATTGAGAACTAAAAACGTC  | Chr.5 | 16664508 | 16664488 | - | No |
| 1965993_adh | TCAGTAGCTGACTCATCTTCT  | Chr.5 | 16666897 | 16666877 | - | No |
| 1912026_adh | TATGATTGATAGAAGAGATAA  | Chr.5 | 16679226 | 16679246 | + | No |
| 1879457_adh | TAGTGTCAAAATCGGACGACC  | Chr.5 | 16684196 | 16684176 | - | No |
| 2045094_adh | TCTGACAGCAAGTTTGATGCT  | Chr.5 | 16693776 | 16693756 | - | No |
| 2013612_adh | TCGGATATAAGTGATCGATAT  | Chr.5 | 16733644 | 16733624 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 1774204_adh | TAAGAAGCAGTACGTGTTTCC  | Chr.5 | 16783054 | 16783034 | - | No |
| 2619467_adh | TTCTGGCGTCGGAAAAGGCAT  | Chr.5 | 16795354 | 16795374 | + | No |
| 1929436_adh | TATTTATTTTCGTCCGGTTTG  | Chr.5 | 16896242 | 16896262 | + | No |
| 2630518_adh | TTGAATCGTAGTTTTATTTTC  | Chr.5 | 16898281 | 16898261 | - | No |
| 2646893_adh | TTGATTTCTGAAGACGTGCAA  | Chr.5 | 16922290 | 16922310 | + | No |
| 1835090_adh | TACTTGAACCGAACAATGATG  | Chr.5 | 16924163 | 16924183 | + | No |
| 2701556_adh | TTTCAAGATTTTATAGCCAAT  | Chr.5 | 16927860 | 16927880 | + | No |
| 2566461_adh | TTAGCATCGTCTCATCACTAA  | Chr.5 | 16942972 | 16942992 | + | No |
| 1747171_adh | TAAAAATGAAAGAAGTACGTG  | Chr.5 | 16965896 | 16965916 | + | No |
| 2629605_adh | TTGAATACAAGTAGACGAAAT  | Chr.5 | 17035290 | 17035310 | + | No |
| 2461108_adh | TGGTAAATTTTCGGACATTCAC | Chr.5 | 17055112 | 17055092 | - | No |
| 2601617_adh | TTCGAAAAGAAAAATCATCGG  | Chr.5 | 17063116 | 17063096 | - | No |
| 2126664_adh | TGAAC TTGTAGAAATGGGGAA | Chr.5 | 17073611 | 17073631 | + | No |
| 2490060_adh | TGTAGTTGCAGGCCAGTAGAT  | Chr.5 | 17134250 | 17134270 | + | No |
| 1759282_adh | TAAAGTTTGTAGATGACGGGC  | Chr.5 | 17135797 | 17135817 | + | No |
| 1962474_adh | TCAGCCATTCCAGTCGTTGGA  | Chr.5 | 17136458 | 17136478 | + | No |
| 2621033_adh | TTCTTCAATGGGGATTCTGCA  | Chr.5 | 17139533 | 17139553 | + | No |
| 2497427_adh | TGTCCTCGGGCAATCGTTTCT  | Chr.5 | 17142002 | 17142022 | + | No |
| 2729974_adh | TTTGTGGTAACAGGACGTTTT  | Chr.5 | 17180025 | 17180045 | + | No |
| 1833640_adh | TACTGTAGAAATTTCTTCGGC  | Chr.5 | 17210376 | 17210396 | + | No |
| 1836665_adh | TAGAAAACAGTTGCCGCACTT  | Chr.5 | 17224470 | 17224490 | + | No |
| 2055491_adh | TCTTCAAATTGATCGTTTTAA  | Chr.5 | 17228689 | 17228709 | + | No |
| 2681506_adh | TTGTGGAAGAACTAATCAACT  | Chr.5 | 17250635 | 17250655 | + | No |
| 2500731_adh | TGTGAAACTGTTGGAAAAAAT  | Chr.5 | 17334331 | 17334351 | + | No |
| 2748497_adh | TTTTTTCAATCAACAATAAC   | Chr.5 | 17347868 | 17347888 | + | No |
| 2616014_adh | TTCTCAATTCATCTTCTGGAC  | Chr.5 | 17361420 | 17361440 | + | No |
| 2490060_adh | TGTAGTTGCAGGCCAGTAGAT  | Chr.5 | 17423876 | 17423896 | + | No |
| 1962474_adh | TCAGCCATTCCAGTCGTTGGA  | Chr.5 | 17426084 | 17426104 | + | No |
| 2152884_adh | TGACACCAAGCCCTTGATTC   | Chr.5 | 17429487 | 17429507 | + | No |
| 2539370_adh | TTAAACACAGCGGCGCGCGGA  | Chr.5 | 17502185 | 17502205 | + | No |
| 1822387_adh | TACGACGCAAACTGAGATTAT  | Chr.5 | 17538116 | 17538136 | + | No |
| 2500731_adh | TGTGAAACTGTTGGAAAAAAT  | Chr.5 | 17560421 | 17560441 | + | No |
| 2733735_adh | TTTTAATGGGAATTTTGCATG  | Chr.5 | 17569156 | 17569136 | - | No |
| 2044992_adh | TCTGACACGGATAGAATGATT  | Chr.5 | 17632666 | 17632646 | - | No |
| 2155378_adh | TGACATCACGGAATCGTCGGG  | Chr.5 | 17649732 | 17649752 | + | No |
| 2693802_adh | TTTACGATGAGCAAGATTTT   | Chr.5 | 17656700 | 17656680 | - | No |
| 2700734_adh | TTTATTTGACGCGCATCGCAG  | Chr.5 | 17656777 | 17656797 | + | No |
| 1918456_adh | TATGTCAGATGAAATGTGCAA  | Chr.5 | 17701178 | 17701158 | - | No |
| 2722618_adh | TTTGCTTAAACTGGAGATGA   | Chr.5 | 17701205 | 17701185 | - | No |
| 2510633_adh | TGTGATGGATAGAGGTGGCAA  | Chr.5 | 17709760 | 17709780 | + | No |
| 2001567_adh | TCGAGCTGAATACACGTGTTG  | Chr.5 | 17834115 | 17834135 | + | No |
| 2742771_adh | TTTTGGAGTGAATTTTGACGT  | Chr.5 | 17859469 | 17859449 | - | No |
| 2703112_adh | TTTCAGCTCAAAATTTCCAAT  | Chr.5 | 17970090 | 17970110 | + | No |
| 2737833_adh | TTTTCCAAGCTGAAAACTGTA  | Chr.5 | 17970371 | 17970351 | - | No |
| 2653122_adh | TTGCGTACCCGACCGATGATC  | Chr.5 | 17981850 | 17981830 | - | No |
| 2576606_adh | TTATATTGGAATTCACGGGA   | Chr.5 | 17985923 | 17985903 | - | No |
| 2589723_adh | TTACGGCGTAAATGGTTCAC   | Chr.5 | 18018917 | 18018937 | + | No |
| 1953287_adh | TCACGGCGTAAATGGTTCACG  | Chr.5 | 18018918 | 18018938 | + | No |
| 2704197_adh | TTTCATGATTTTCAATATATT  | Chr.5 | 18037259 | 18037239 | - | No |
| 2016520_adh | TCGGGAGACGTGATAATTGAT  | Chr.5 | 18046224 | 18046204 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2585536_adh | TTCAAATGAGCAAGAACAGCG  | Chr.5 | 18077197 | 18077177 | - | No  |
| 2737306_adh | TTTTCACACAGAATTACGCAT  | Chr.5 | 18079779 | 18079799 | + | No  |
| 2538913_adh | TTAAAAGTAGAGATTAACGTT  | Chr.5 | 18085499 | 18085479 | - | No  |
| 2738218_adh | TTTTCGAATTCGGCGGCGCAT  | Chr.5 | 18086408 | 18086388 | - | No  |
| 2377096_adh | TGGACTCGAAACGGTGAAATG  | Chr.5 | 18086944 | 18086924 | - | No  |
| 2048530_adh | TCTGCTGTAGGGGAAGAAGCA  | Chr.5 | 18097879 | 18097859 | - | No  |
| 2617764_adh | TTCTGAAGAAGCACAGCCTGT  | Chr.5 | 18123705 | 18123685 | - | No  |
| 2712850_adh | TTTGAAATTTCTGAAGAAGCA  | Chr.5 | 18123713 | 18123693 | - | No  |
| 2595498_adh | TCATTTGACGAGCACGTAAT   | Chr.5 | 18123779 | 18123799 | + | No  |
| 2734948_adh | TTTTAGTGGAAATTTATGGGT  | Chr.5 | 18125427 | 18125407 | - | No  |
| 2607167_adh | TTCGGAAGAAAAATGTTTGTC  | Chr.5 | 18134556 | 18134536 | - | No  |
| 1999798_adh | TCGACATTCAACTTGACGCGC  | Chr.5 | 18134595 | 18134615 | + | No  |
| 2449850_adh | TGGGCACCAAAGCAGCCTGAC  | Chr.5 | 18156621 | 18156641 | + | No  |
| 2587262_adh | TTCAAGGATTTTGTGGATTTT  | Chr.5 | 18298304 | 18298324 | + | No  |
| 1776767_adh | TAAGAGCAAGTTTTCCGATAA  | Chr.5 | 18310745 | 18310765 | + | No  |
| 2739577_adh | TTTTCTGGAGAATTGCAGTGA  | Chr.5 | 18370586 | 18370606 | + | No  |
| 2597519_adh | TTCCATTGGGTCGTCTTTATC  | Chr.5 | 18401969 | 18401989 | + | No  |
| 2723890_adh | TTTGGATAGAATTCAGCATGT  | Chr.5 | 18438096 | 18438076 | - | No  |
| 1834393_adh | TACTTAAAAATATCTTCGGCT  | Chr.5 | 18444250 | 18444270 | + | No  |
| 2537989_adh | TTAAAAATATCTTCGGCTCTT  | Chr.5 | 18444253 | 18444273 | + | No  |
| 2513825_adh | TGTGCGGCTACCTTTTGCCAT  | Chr.5 | 18451899 | 18451919 | + | No  |
| 2098830_adh | TGAAATCTGAACTTCAAGAA   | Chr.5 | 18664938 | 18664958 | + | No  |
| 2254026_adh | TGAGTGGACGAGAACAAGGCG  | Chr.5 | 18755054 | 18755074 | + | No  |
| 1762993_adh | TAACAAAAAGCGACGAAAAAG  | Chr.5 | 18951039 | 18951019 | - | No  |
| 2734805_adh | TTTTAGGCGATTTACTTAATT  | Chr.5 | 18969949 | 18969969 | + | No  |
| 2392500_adh | TGGATGTTTTTCGAGCTGACAA | Chr.5 | 18981103 | 18981083 | - | No  |
| 2746026_adh | TTTTTCGCGATTTTCTTTCAG  | Chr.5 | 18981228 | 18981248 | + | No  |
| 2705203_adh | TTTCCATGACAGAAAACGACA  | Chr.5 | 18990337 | 18990317 | - | No  |
| 2691167_adh | TTTAATCAATTTTCGTCGGTT  | Chr.5 | 19001215 | 19001235 | + | No  |
| 1943427_adh | TCAATTTTCGTCGGTTTTTCAG | Chr.5 | 19001220 | 19001240 | + | No  |
| 1924184_adh | TATTCGAAAATCACATCGATC  | Chr.5 | 19008496 | 19008516 | + | No  |
| 2737514_adh | TTTTCAGGATCTTCAGAGGGT  | Chr.5 | 19014398 | 19014378 | - | No  |
| 2005099_adh | TCGATTGGATAGTCTGAAAAA  | Chr.5 | 19016600 | 19016620 | + | No  |
| 2429182_adh | TGGGATCCGGAGGATTCGGAC  | Chr.5 | 19049650 | 19049630 | - | No  |
| 1946972_adh | TCACCATCGGAGGAGCCCAAT  | Chr.5 | 19049746 | 19049726 | - | No  |
| 2011838_adh | TCGGACTCGGATGGCCAGCAC  | Chr.5 | 19050175 | 19050155 | - | No  |
| 2005099_adh | TCGATTGGATAGTCTGAAAAA  | Chr.5 | 19071786 | 19071766 | - | No  |
| 1883988_adh | TATAAAATTTGAAAAATCAA   | Chr.5 | 19074430 | 19074450 | + | No  |
| 2590706_adh | TTCAGAGGTTTTGGCGTGTCA  | Chr.5 | 19089749 | 19089769 | + | No  |
| 2375797_adh | TGGACCTGACAACCGAAGAAA  | Chr.5 | 19091699 | 19091719 | + | No  |
| 2054994_adh | TCTTATATTGAAGCCGTAGAA  | Chr.5 | 19094674 | 19094654 | - | No  |
| 2003962_adh | TCGATGAAGAACTGGCGAAAA  | Chr.5 | 19097007 | 19096987 | - | No  |
| 2011005_adh | TCGGAATCTGAAGACGAGAAG  | Chr.5 | 19202417 | 19202397 | - | No  |
| 2742170_adh | TTTTGCACGCGGAATTCTCAT  | Chr.5 | 19205717 | 19205697 | - | No  |
| 1835078_adh | TACTTGAAAATTCGAATGGCA  | Chr.5 | 19262411 | 19262391 | - | No  |
| 1753799_adh | TAAACAACAGTTGCCGCACTT  | Chr.5 | 19356098 | 19356078 | - | Yes |
| 1985223_adh | TCCGCACTGTGGCAAATTTTT  | Chr.5 | 19360045 | 19360065 | + | No  |
| 2119425_adh | TGAAATTTTTATGATTTTTTA  | Chr.5 | 19411364 | 19411384 | + | No  |
| 2387835_adh | TGGATAATTGGCTCAGTGGCT  | Chr.5 | 19619815 | 19619835 | + | No  |
| 2300902_adh | TGCGGACCAGGCATTTAATTA  | Chr.5 | 19644098 | 19644118 | + | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2119525_adh | TGAACAAAAATGTAGAAATCG  | Chr.5 | 19645886 | 19645866 | - | No  |
| 1941784_adh | TCAATGAACAAAAATGTAGAA  | Chr.5 | 19645890 | 19645870 | - | No  |
| 2740548_adh | TTTTGAAAATTTACGTCGGA   | Chr.5 | 19645955 | 19645935 | - | No  |
| 2604195_adh | TTTCGAGTTTTCTAACTTCAA  | Chr.5 | 19646057 | 19646077 | + | No  |
| 2029537_adh | TCTAAATTGGGTCTGAAAATA  | Chr.5 | 19673389 | 19673369 | - | No  |
| 2606151_adh | TTTCGATTTTTGACGGTTGCTT | Chr.5 | 19739025 | 19739045 | + | No  |
| 2303625_adh | TGCGTAGATTTTAGTTTGTTT  | Chr.5 | 19742023 | 19742043 | + | No  |
| 2449850_adh | TGGGCACCAAAGCAGCCTGAC  | Chr.5 | 19747995 | 19747975 | - | No  |
| 2738647_adh | TTTTCGGGCAGAAATTGTGAA  | Chr.5 | 19766314 | 19766294 | - | No  |
| 2605863_adh | TTTCGATTTATGAGCGAAGCCA | Chr.5 | 19768049 | 19768029 | - | No  |
| 2654849_adh | TTGCTGGAGAAAAAAGTGTGA  | Chr.5 | 19768261 | 19768281 | + | No  |
| 1993935_adh | TCCTTGTTCTGGAGAGCAAAA  | Chr.5 | 19775330 | 19775310 | - | No  |
| 2612248_adh | TTTCGTGATTCTTGACGGCCGT | Chr.5 | 19778900 | 19778880 | - | Yes |
| 2708995_adh | TTTCGTGATTCTTGACGGCCG  | Chr.5 | 19778901 | 19778881 | - | Yes |
| 2721537_adh | TTTGCCACGGGGAACCTCGAAT | Chr.5 | 19811180 | 19811160 | - | No  |
| 2534353_adh | TGTTTTCGGTGTATTTTTGTT  | Chr.5 | 19812311 | 19812331 | + | No  |
| 2534346_adh | TGTTTTCGGTGTATTTTCGCT  | Chr.5 | 19812542 | 19812522 | - | No  |
| 2232571_adh | TGAGATTTTTGGAATTTTTGAA | Chr.5 | 19813577 | 19813557 | - | No  |
| 1855457_adh | TAGCATTATGACAGATGCATA  | Chr.5 | 19817639 | 19817659 | + | No  |
| 2617937_adh | TTCTGAATGTGGGCAAAGGAA  | Chr.5 | 19841765 | 19841785 | + | No  |
| 1830529_adh | TACTATCTCGTTTTCTGTCTGT | Chr.5 | 19843587 | 19843567 | - | No  |
| 2585061_adh | TTCAAATTGTAGGGTGCATA   | Chr.5 | 19850278 | 19850298 | + | No  |
| 2705240_adh | TTTCCCAAATCCTAATTCGAC  | Chr.5 | 19852774 | 19852794 | + | No  |
| 2689573_adh | TTTAAATTAAGAAATCGACAA  | Chr.5 | 19870042 | 19870022 | - | No  |
| 2748877_adh | TTTTTTCGCAATTTTCTCCAT  | Chr.5 | 19911398 | 19911378 | - | No  |
| 2748877_adh | TTTTTTCGCAATTTTCTCCAT  | Chr.5 | 19911418 | 19911398 | - | No  |
| 2568396_adh | TTAGGATTTAGTTGTTTTTAA  | Chr.5 | 19911465 | 19911445 | - | No  |
| 2653661_adh | TTGCGTTGAAAATTCTCGGTT  | Chr.5 | 19915553 | 19915533 | - | No  |
| 1812624_adh | TACAGTAACCAAAAATCGCCA  | Chr.5 | 19938364 | 19938344 | - | No  |
| 2739627_adh | TTTTCTGGTTTGTTGGGTTTT  | Chr.5 | 19944953 | 19944973 | + | No  |
| 2404340_adh | TGGCAGTTGATAATAGTTTTT  | Chr.5 | 19982311 | 19982291 | - | No  |
| 2516953_adh | TGTGGTACTGTAGGTTTGCAA  | Chr.5 | 20033945 | 20033965 | + | No  |
| 2595737_adh | TTCCAAAGTTCTCTCTCGTCA  | Chr.5 | 20042809 | 20042789 | - | No  |
| 1985225_adh | TCCGCACTGTGGCATTAAATTT | Chr.5 | 20043578 | 20043598 | + | No  |
| 1953192_adh | TCACGGAGAAAAAGCAAAAAT  | Chr.5 | 20083949 | 20083969 | + | No  |
| 2711072_adh | TTTCTGTTGGAATTTTGCAGA  | Chr.5 | 20086319 | 20086339 | + | No  |
| 2373061_adh | TGGAATTTTGCAGATTTTCAC  | Chr.5 | 20086326 | 20086346 | + | No  |
| 1913619_adh | TATGGAACATTTGAAGAAGCT  | Chr.5 | 20100911 | 20100931 | + | No  |
| 2050661_adh | TCTGGTAGAAAAAGCTTTCAA  | Chr.5 | 20104260 | 20104280 | + | No  |
| 2188834_adh | TGAGAGGGTTTTGTATGGCGA  | Chr.5 | 20147982 | 20148002 | + | No  |
| 2617937_adh | TTCTGAATGTGGGCAAAGGAA  | Chr.5 | 20153473 | 20153453 | - | No  |
| 2386665_adh | TGGATAAACATGTTGAACGAG  | Chr.5 | 20158792 | 20158772 | - | No  |
| 2290110_adh | TGCATATTTGGAACAGAAGCA  | Chr.5 | 20158883 | 20158863 | - | No  |
| 2290110_adh | TGCATATTTGGAACAGAAGCA  | Chr.5 | 20158898 | 20158918 | + | No  |
| 2055546_adh | TCTTCAATGGTCGTTTTGGAG  | Chr.5 | 20171438 | 20171418 | - | No  |
| 2013160_adh | TCGGAGTTCTTCAATGGTCGT  | Chr.5 | 20171445 | 20171425 | - | No  |
| 2130058_adh | TGAAGATGACGACTTTTAACA  | Chr.5 | 20171563 | 20171583 | + | No  |
| 2055546_adh | TCTTCAATGGTCGTTTTGGAG  | Chr.5 | 20177100 | 20177080 | - | No  |
| 2013160_adh | TCGGAGTTCTTCAATGGTCGT  | Chr.5 | 20177107 | 20177087 | - | No  |
| 2130058_adh | TGAAGATGACGACTTTTAACA  | Chr.5 | 20177225 | 20177245 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2682108_adh | TTGTGTATTGCGTACCTTCTA  | Chr.5 | 20192108 | 20192088 | - | No |
| 2682108_adh | TTGTGTATTGCGTACCTTCTA  | Chr.5 | 20194313 | 20194293 | - | No |
| 1929797_adh | TATTCGATATTGGACCAATT   | Chr.5 | 20245178 | 20245158 | - | No |
| 2519840_adh | TGTGTGATCTCAACGAGCAGA  | Chr.5 | 20263029 | 20263009 | - | No |
| 2414740_adh | TGGCTGACGTGTATTTTCCA   | Chr.5 | 20265400 | 20265420 | + | No |
| 2128213_adh | TGAAGACTGAAGGCAAGAAAA  | Chr.5 | 20292524 | 20292544 | + | No |
| 2496536_adh | TGTCATTAGATCGCATTTGGT  | Chr.5 | 20312645 | 20312665 | + | No |
| 2615980_adh | TTCTCAATCGAGCGATCGTCA  | Chr.5 | 20313148 | 20313168 | + | No |
| 2036593_adh | TCTCAATCGAGCGATCGTCAA  | Chr.5 | 20313149 | 20313169 | + | No |
| 2001510_adh | TCGAGCGATCGTCAAATCATC  | Chr.5 | 20313155 | 20313175 | + | No |
| 2744596_adh | TTTTGTTTTTGGAGATCGAC   | Chr.5 | 20364304 | 20364284 | - | No |
| 2579041_adh | TTATGCAACGGAACACGACTA  | Chr.5 | 20376810 | 20376830 | + | No |
| 2047717_adh | TCTGCAACGTCGAGAACAAGT  | Chr.5 | 20464239 | 20464219 | - | No |
| 1774743_adh | TAAGAATTGAGACTCAAGCTC  | Chr.5 | 20468005 | 20467985 | - | No |
| 2556558_adh | TTACGAATTTTGAAGGAAGAA  | Chr.5 | 20474613 | 20474593 | - | No |
| 1919961_adh | TATTAAATCTGAAAAATGAGA  | Chr.5 | 20474639 | 20474619 | - | No |
| 2047717_adh | TCTGCAACGTCGAGAACAAGT  | Chr.5 | 20475646 | 20475666 | + | No |
| 2127831_adh | TGAAGACCTTGAACCAGTAGA  | Chr.5 | 20505357 | 20505337 | - | No |
| 1834881_adh | TACTTCGATTTCTGTAGCCG   | Chr.5 | 20531689 | 20531669 | - | No |
| 2708553_adh | TTTCGGTTGTAGGCCGCGGTT  | Chr.5 | 20642792 | 20642812 | + | No |
| 1851460_adh | TAGATGGCATAATAAACATCA  | Chr.5 | 20656677 | 20656697 | + | No |
| 1939507_adh | TCAAGGAAGAGGACGATTTGA  | Chr.5 | 20667292 | 20667312 | + | No |
| 1814392_adh | TACATTCTACAATGGCGATTA  | Chr.5 | 20668159 | 20668179 | + | No |
| 1851979_adh | TAGATTCAAGCTCTGAAGAAG  | Chr.5 | 20669258 | 20669278 | + | No |
| 2745530_adh | TTTTTATTTTATTACTCGGCA  | Chr.5 | 20691170 | 20691190 | + | No |
| 2728306_adh | TTTGTAGCTAGAGGATTCAAA  | Chr.5 | 20713025 | 20713005 | - | No |
| 2583818_adh | TTATTCGAAATGACGGAGCA   | Chr.5 | 20723254 | 20723234 | - | No |
| 2176721_adh | TGAGAAAATCGACCTGGAGAA  | Chr.5 | 20730323 | 20730303 | - | No |
| 2747193_adh | TTTTTGGAATTTTACTGAAA   | Chr.5 | 20810593 | 20810613 | + | No |
| 2121392_adh | TGAACATAAGATCGATGCATG  | Chr.5 | 20814433 | 20814453 | + | No |
| 1810786_adh | TACACATAGAAACGGAGACAA  | Chr.5 | 20827390 | 20827370 | - | No |
| 1745442_adh | TAAAAAAGACTTGGCAACTGT  | Chr.5 | 20827972 | 20827952 | - | No |
| 2649892_adh | TTGCAGTTTTCGGAGAGCTCA  | Chr.5 | 20828020 | 20828000 | - | No |
| 2279225_adh | TGATTTTCGATGGTAATCTGC  | Chr.5 | 20828331 | 20828351 | + | No |
| 2460674_adh | TGGGTTTGGAGACGAGTTCCA  | Chr.5 | 20832528 | 20832508 | - | No |
| 1824758_adh | TACGCATTAAGAGAACTAATA  | Chr.5 | 20832603 | 20832623 | + | No |
| 2613719_adh | TTCTAAAGAAAAACATTTTAA  | Chr.5 | 20834160 | 20834140 | - | No |
| 2137681_adh | TGAATACGAGTAGACGTAATT  | Chr.5 | 20851694 | 20851714 | + | No |
| 2253236_adh | TGAGTGAAAAGATAGTTAGGAC | Chr.5 | 20856703 | 20856723 | + | No |
| 1762986_adh | TAACAAAAAATATTAAGACTG  | Chr.5 | 20894183 | 20894163 | - | No |
| 2713931_adh | TTTGAAGCTGGAGACGTGAAA  | Chr.X | 11852    | 11832    | - | No |
| 2068502_adh | TGAAAAGAGTAGAAAATGATG  | Chr.X | 25218    | 25238    | + | No |
| 2744839_adh | TTTTTAATGTTTTCGTTGTAT  | Chr.X | 45637    | 45617    | - | No |
| 2020763_adh | TCGGTTTTTGGAGAAGATTGA  | Chr.X | 47520    | 47500    | - | No |
| 1761089_adh | TAAATCTGATTTTTTACAAGC  | Chr.X | 47686    | 47666    | - | No |
| 2556964_adh | TTACGCGCTGTCGAAAGGGTA  | Chr.X | 47779    | 47799    | + | No |
| 2694768_adh | TTTACTTTTGGGCCCGTCGTC  | Chr.X | 59337    | 59357    | + | No |
| 1757423_adh | TAAAGCGGAGAAGCAAGAATC  | Chr.X | 68794    | 68774    | - | No |
| 2412446_adh | TGGCGGAAATTCAAGTGAGAA  | Chr.X | 124424   | 124404   | - | No |
| 2595748_adh | TTCCAAATCCCTGTACTTTGA  | Chr.X | 132995   | 133015   | + | No |

|             |                         |       |         |         |   |    |
|-------------|-------------------------|-------|---------|---------|---|----|
| 2739627_adh | TTTTCTGGTTTGTGTTGGGTTTT | Chr.X | 163639  | 163659  | + | No |
| 1877373_adh | TAGTGAAGAATTGGGTAAAAAG  | Chr.X | 163670  | 163690  | + | No |
| 2127514_adh | TGAAGAATTGGGTAAAAGCAG   | Chr.X | 163673  | 163693  | + | No |
| 2748877_adh | TTTTTTCGCAATTTTCTCCAT   | Chr.X | 166286  | 166266  | - | No |
| 2700817_adh | TTTATTTTAGGCCTTTGACTG   | Chr.X | 172956  | 172976  | + | No |
| 2734802_adh | TTTTAGGCCTTTGACTGAAAC   | Chr.X | 172960  | 172980  | + | No |
| 2748877_adh | TTTTTTCGCAATTTTCTCCAT   | Chr.X | 182654  | 182674  | + | No |
| 2746153_adh | TTTTTCGTGAAAACCTGTAGA   | Chr.X | 216035  | 216055  | + | No |
| 2703861_adh | TTTCATCAAGCAGTAGATCTA   | Chr.X | 256150  | 256130  | - | No |
| 1978814_adh | TCCAGGTGTGTAATTCGGTAA   | Chr.X | 258630  | 258610  | - | No |
| 2597020_adh | TTCCAGGTGTGTAATTCGGTA   | Chr.X | 258631  | 258611  | - | No |
| 2598382_adh | TTCCCTCATTTTTCGTCGTAA   | Chr.X | 265371  | 265391  | + | No |
| 1982115_adh | TCCCTCATTTTTCGTCGTAAA   | Chr.X | 265372  | 265392  | + | No |
| 1751448_adh | TAAAATCGATAAAACGTTTAA   | Chr.X | 270286  | 270306  | + | No |
| 1953192_adh | TCACGGAGAAAAAGCAAAAT    | Chr.X | 303544  | 303524  | - | No |
| 1887942_adh | TATAGAATACAGGGTAAATT    | Chr.X | 316711  | 316731  | + | No |
| 1952952_adh | TCACGAAAAGGGAATGTATGT   | Chr.X | 325791  | 325771  | - | No |
| 1966136_adh | TCAGTCAACATATTCTTGAAC   | Chr.X | 470936  | 470916  | - | No |
| 1981607_adh | TCCCGGCCGGGGAGAACTTTT   | Chr.X | 489883  | 489863  | - | No |
| 2694693_adh | TTTACTTGTAAGTTTGACGTTT  | Chr.X | 538576  | 538596  | + | No |
| 2378716_adh | TGGACTGTGCAGAAGTTTGTC   | Chr.X | 608847  | 608827  | - | No |
| 2573345_adh | TTAGTTTAATTTATTTCTATT   | Chr.X | 626186  | 626166  | - | No |
| 2718784_adh | TTTGATGACTCTGAATAAAGA   | Chr.X | 632829  | 632849  | + | No |
| 2007979_adh | TCGCGGATTACATTGAGAAGG   | Chr.X | 645488  | 645468  | - | No |
| 2089313_adh | TGAAATATATAAAATCATGTA   | Chr.X | 684581  | 684601  | + | No |
| 2688730_adh | TTTAAAAATTAATCAAATTTT   | Chr.X | 685813  | 685833  | + | No |
| 1917366_adh | TATGTAAATATGTGTGTCGGC   | Chr.X | 693645  | 693625  | - | No |
| 2605965_adh | TTCGATTTTGAGAAAACGCAC   | Chr.X | 745093  | 745073  | - | No |
| 1831303_adh | TACTCGGCAATTTCGCAGCATC  | Chr.X | 754284  | 754304  | + | No |
| 2031124_adh | TCTACAAATATAAACGCTGCA   | Chr.X | 772013  | 771993  | - | No |
| 2056884_adh | TCTTCTACTGGCCTAAGAGAC   | Chr.X | 805613  | 805633  | + | No |
| 1938329_adh | TCAAGAAGTCGAACATTGTTT   | Chr.X | 829952  | 829972  | + | No |
| 2478725_adh | TGGTTTGTTATGTTATAGCCA   | Chr.X | 849274  | 849294  | + | No |
| 1867080_adh | TAGGCATGTAGGTAGGCATTT   | Chr.X | 879460  | 879480  | + | No |
| 2589052_adh | TTCAATTTTAAAGCTTAGACA   | Chr.X | 906200  | 906220  | + | No |
| 2628550_adh | TTGAAGCAAGCTGGCGACTGT   | Chr.X | 913792  | 913772  | - | No |
| 2262415_adh | TGATATCGATTTTCTCTCCAC   | Chr.X | 924870  | 924890  | + | No |
| 1810379_adh | TACAATTTAAGAGGATACGGT   | Chr.X | 932284  | 932304  | + | No |
| 2263759_adh | TGATATGAAACGGCTTCTGCA   | Chr.X | 937630  | 937650  | + | No |
| 2472158_adh | TGGTGGATAATTTATGAACA    | Chr.X | 1143534 | 1143514 | - | No |
| 2139242_adh | TGAATATCGATCGTTCACTAT   | Chr.X | 1150504 | 1150484 | - | No |
| 1784316_adh | TAAGGAGAAGAGTCAATAGTA   | Chr.X | 1222683 | 1222703 | + | No |
| 2695020_adh | TTTAGACCAGGGCTGTGCGGC   | Chr.X | 1235811 | 1235791 | - | No |
| 2703814_adh | TTTCATATCAGAATGCGGAAC   | Chr.X | 1257911 | 1257931 | + | No |
| 2381287_adh | TGGAGCGCGGAACACGGGAGG   | Chr.X | 1310789 | 1310769 | - | No |
| 2281104_adh | TGCAAATCTGAAACTTAAAGA   | Chr.X | 1347920 | 1347940 | + | No |
| 2015176_adh | TCGGCAAGAATGAAAAGAACA   | Chr.X | 1399891 | 1399871 | - | No |
| 2015176_adh | TCGGCAAGAATGAAAAGAACA   | Chr.X | 1404258 | 1404278 | + | No |
| 2539370_adh | TTAAACACAGCGGCGCGCGGA   | Chr.X | 1471472 | 1471452 | - | No |
| 2613199_adh | TTCGTTGACGAATTGAAACTA   | Chr.X | 1488308 | 1488328 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2640010_adh | TTGAGAGGGTTTTACACCAA   | Chr.X | 1659268 | 1659248 | - | No  |
| 2086561_adh | TGAAATACGATGCTGATGATA  | Chr.X | 1659483 | 1659463 | - | No  |
| 1831845_adh | TACTGAACGGATTTGAATGGA  | Chr.X | 1659647 | 1659667 | + | No  |
| 2640010_adh | TTGAGAGGGTTTTACACCAA   | Chr.X | 1669860 | 1669840 | - | No  |
| 2086561_adh | TGAAATACGATGCTGATGATA  | Chr.X | 1670075 | 1670055 | - | No  |
| 1831845_adh | TACTGAACGGATTTGAATGGA  | Chr.X | 1670239 | 1670259 | + | No  |
| 2561611_adh | TTAGAATAATAGGAAAGGGTA  | Chr.X | 1675268 | 1675248 | - | No  |
| 2737498_adh | TTTTCAGCTGAAAATCGTCGA  | Chr.X | 1722329 | 1722349 | + | No  |
| 2005267_adh | TCGATTTGGCGAAGGAAAAAG  | Chr.X | 1722435 | 1722455 | + | No  |
| 2737300_adh | TTTTCACAAATTTGGACGAGT  | Chr.X | 1732514 | 1732494 | - | No  |
| 2007681_adh | TCGCGAATTGTACATGAGTGT  | Chr.X | 1755330 | 1755310 | - | No  |
| 2056830_adh | TCTTCGTGCATTATCTCCAGT  | Chr.X | 1773087 | 1773107 | + | No  |
| 2654390_adh | TTGCTCTCGAATAGCACGGCT  | Chr.X | 1781602 | 1781582 | - | No  |
| 2354144_adh | TGGAATGGTGTAGGAAGATAG  | Chr.X | 1796985 | 1796965 | - | No  |
| 2531100_adh | TGTTGTGTTTAAGATTGTCGT  | Chr.X | 1822744 | 1822724 | - | No  |
| 2640269_adh | TTGAGATGACGTCACAATATT  | Chr.X | 1863460 | 1863440 | - | No  |
| 1943234_adh | TCAATTGTTTGTGGACTTACA  | Chr.X | 1873858 | 1873878 | + | No  |
| 2710856_adh | TTTCTGTAGTAAAAAATGGTT  | Chr.X | 1896073 | 1896093 | + | No  |
| 2307282_adh | TGCTCATCTTCAGTCGGACAC  | Chr.X | 1914393 | 1914373 | - | No  |
| 2648917_adh | TTGCACAAGGACTCGTCTCCA  | Chr.X | 1933617 | 1933597 | - | No  |
| 2031224_adh | TCTACACTTGCACAAGGACTC  | Chr.X | 1933624 | 1933604 | - | No  |
| 2534420_adh | TGTTTTCTTAAAGTTTATTCT  | Chr.X | 1942497 | 1942517 | + | No  |
| 1874732_adh | TAGTAGGAGGAGTTTGGGTTT  | Chr.X | 1945196 | 1945216 | + | No  |
| 2534420_adh | TGTTTTCTTAAAGTTTATTCT  | Chr.X | 1951026 | 1951046 | + | No  |
| 1874732_adh | TAGTAGGAGGAGTTTGGGTTT  | Chr.X | 1953725 | 1953745 | + | No  |
| 2561212_adh | TTAGAACGGCAATATCAAAAT  | Chr.X | 1965137 | 1965157 | + | No  |
| 2676836_adh | TTGTATGTAGAGAGAGGAGGT  | Chr.X | 1975551 | 1975531 | - | No  |
| 1772688_adh | TAACCTGACTCACCAGAATGC  | Chr.X | 1975739 | 1975719 | - | Yes |
| 2691472_adh | TTTAATGAAAATGAGTAGGTT  | Chr.X | 2066074 | 2066054 | - | No  |
| 2641316_adh | TTGAGGATTCAGGATAAGGAA  | Chr.X | 2071702 | 2071722 | + | No  |
| 1923484_adh | TATTCACTTTCATGCCCAAAC  | Chr.X | 2075840 | 2075860 | + | No  |
| 2274171_adh | TGATTAAC TTCAGATCAGTCA | Chr.X | 2076348 | 2076368 | + | No  |
| 2139102_adh | TGAATAGTTTGAATTCGACGC  | Chr.X | 2089714 | 2089734 | + | No  |
| 1806157_adh | TAATTTTTGAAATATTTCGAA  | Chr.X | 2143445 | 2143425 | - | No  |
| 1934040_adh | TCAAATACAAGTAGACGTAAT  | Chr.X | 2170881 | 2170861 | - | No  |
| 1931519_adh | TATTTTTTGTGAACTGGGGTT  | Chr.X | 2172370 | 2172350 | - | No  |
| 2560164_adh | TTACTTGAAAATCACGTTAAA  | Chr.X | 2206212 | 2206232 | + | No  |
| 2370709_adh | TGGAATTGGAAATTGAAAAAA  | Chr.X | 2210783 | 2210763 | - | No  |
| 2592118_adh | TTCAGGACAATACGAAAAGAA  | Chr.X | 2240319 | 2240339 | + | No  |
| 1956514_adh | TCAC TTTGTGTCGGATGCTTT | Chr.X | 2309284 | 2309304 | + | No  |
| 2521691_adh | TGTGTTTTTTGTTGAGGTATC  | Chr.X | 2328983 | 2329003 | + | No  |
| 2481452_adh | TGTAACCTTGTAAGAGTCGGC  | Chr.X | 2354147 | 2354127 | - | No  |
| 2178377_adh | TGAGAACCGGTAGAAAAAGAA  | Chr.X | 2368303 | 2368283 | - | No  |
| 2738649_adh | TTTTCGGGCGACGTGAAAAAC  | Chr.X | 2373821 | 2373801 | - | No  |
| 2305815_adh | TGCTACTGTAAGAGATTGGCG  | Chr.X | 2432663 | 2432643 | - | No  |
| 2647307_adh | TTGCAAAGAACGCTCGATCGC  | Chr.X | 2473690 | 2473670 | - | No  |
| 1790874_adh | TAATAATTTTATTCGTGAAGG  | Chr.X | 2481598 | 2481618 | + | No  |
| 2113211_adh | TGAAATGTTTAAATGTATGAA  | Chr.X | 2485831 | 2485851 | + | No  |
| 2559271_adh | TTACTGGAAGCACGGAATTCA  | Chr.X | 2487898 | 2487918 | + | No  |
| 2601715_adh | TTCGAAAGTTGAGAGATGAAT  | Chr.X | 2489444 | 2489464 | + | No  |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2058829_adh | TCTTGGACTTTACACGGTAAG  | Chr.X | 2504149 | 2504129 | - | No  |
| 2238140_adh | TGAGGATTGATACGGTGATCG  | Chr.X | 2547092 | 2547112 | + | No  |
| 2739245_adh | TTTTCTCATTCAATTTATGTG  | Chr.X | 2575932 | 2575912 | - | No  |
| 2728768_adh | TTTGTCATCACTTCGCTCGGA  | Chr.X | 2634162 | 2634142 | - | No  |
| 2677717_adh | TTGTCATCACTTCGCTCGGAG  | Chr.X | 2639300 | 2639280 | - | No  |
| 2728768_adh | TTTGTCATCACTTCGCTCGGA  | Chr.X | 2639301 | 2639281 | - | No  |
| 2102330_adh | TGAAATGATTTTAATTTTTTA  | Chr.X | 2670837 | 2670857 | + | No  |
| 2307587_adh | TGCTCGTGACTGGATCGTCGA  | Chr.X | 2683227 | 2683207 | - | No  |
| 2376314_adh | TGGACGGCAAGATTTGGTAAA  | Chr.X | 2692583 | 2692563 | - | No  |
| 2447134_adh | TGGGATGTTGTAGAAGAGCAG  | Chr.X | 2753517 | 2753537 | + | No  |
| 2273044_adh | TGATGTAGGAACATTTATAGG  | Chr.X | 2883904 | 2883924 | + | No  |
| 2014760_adh | TCGGATTATTCTCGGTATCTT  | Chr.X | 2936995 | 2937015 | + | No  |
| 2053290_adh | TCTGTTGATTGTGATACGCAC  | Chr.X | 2937168 | 2937188 | + | No  |
| 1889702_adh | TATATACTGTGGATGTAAAGT  | Chr.X | 2941234 | 2941254 | + | No  |
| 2663579_adh | TTGGATGTAGAATGGGAGCAG  | Chr.X | 2942162 | 2942182 | + | No  |
| 1814679_adh | TACCAAATTTTCGTAACGAGAC | Chr.X | 2949524 | 2949504 | - | No  |
| 2121457_adh | TGAACATCGGACGAAGACAAA  | Chr.X | 2970277 | 2970257 | - | No  |
| 2407493_adh | TGGCATGGAACAAAGTCTGAA  | Chr.X | 3032530 | 3032510 | - | No  |
| 1981038_adh | TCCCCGCAACGGAATAATTTT  | Chr.X | 3035981 | 3035961 | - | No  |
| 2003291_adh | TCGATATTGACGGACCATCGA  | Chr.X | 3089719 | 3089699 | - | No  |
| 2531270_adh | TGTTGTTGGATAGAAAGCATT  | Chr.X | 3112071 | 3112051 | - | No  |
| 2456516_adh | TGGGGTTATTATTCAAAAACA  | Chr.X | 3157099 | 3157079 | - | No  |
| 1772967_adh | TAACTTTTAAAAATCTGGCAT  | Chr.X | 3189260 | 3189280 | + | No  |
| 1794772_adh | TAATAGAAGTGTTTGTAGATT  | Chr.X | 3189546 | 3189526 | - | No  |
| 2664088_adh | TTGGATTAGTCGTCGTCGCAG  | Chr.X | 3228127 | 3228107 | - | No  |
| 2470691_adh | TGGTGAACCAAGTGACGATCC  | Chr.X | 3239303 | 3239283 | - | No  |
| 2276978_adh | TGATTGTAGACACGACGATGG  | Chr.X | 3239774 | 3239754 | - | No  |
| 2161162_adh | TGACGATTAGCAGAGATGGAC  | Chr.X | 3259003 | 3258983 | - | No  |
| 1942082_adh | TCAATGCTCAACTCGAACAAT  | Chr.X | 3407091 | 3407111 | + | No  |
| 2530796_adh | TGTTGTCTCTGAGTACAAGCT  | Chr.X | 3407212 | 3407232 | + | No  |
| 2629160_adh | TTGAAGTAGTAATGAAATATA  | Chr.X | 3461938 | 3461958 | + | No  |
| 2058301_adh | TCTTGCATGCAGATCTGACAC  | Chr.X | 3496228 | 3496248 | + | No  |
| 2119136_adh | TGAAATTTGCGTCTGGACATC  | Chr.X | 3500200 | 3500220 | + | No  |
| 1929560_adh | TATTCAGAAGAATGACGTAA   | Chr.X | 3508742 | 3508762 | + | No  |
| 2590387_adh | TTCAGAAGAATGACGTAATGA  | Chr.X | 3508745 | 3508765 | + | No  |
| 1842131_adh | TAGAATGCATGAGACGGACTC  | Chr.X | 3519194 | 3519174 | - | No  |
| 2712299_adh | TTTGAAAAAACTCGAAATCGG  | Chr.X | 3534996 | 3534976 | - | No  |
| 2530796_adh | TGTTGTCTCTGAGTACAAGCT  | Chr.X | 3560216 | 3560196 | - | No  |
| 1942082_adh | TCAATGCTCAACTCGAACAAT  | Chr.X | 3560337 | 3560317 | - | No  |
| 1942082_adh | TCAATGCTCAACTCGAACAAT  | Chr.X | 3568901 | 3568881 | - | No  |
| 1979755_adh | TCCATGCCGTTTTTCGTGCGAT | Chr.X | 3605837 | 3605817 | - | No  |
| 1891450_adh | TATCAACGATGAAATGTTGGA  | Chr.X | 3619964 | 3619944 | - | No  |
| 2449494_adh | TGGGATTTTACAATTATTTAA  | Chr.X | 3658600 | 3658620 | + | No  |
| 2391889_adh | TGGATGGTAGCGATGAATGTA  | Chr.X | 3659700 | 3659720 | + | No  |
| 2606322_adh | TTCGCATCCAGAACTCCGGC   | Chr.X | 3670160 | 3670180 | + | No  |
| 2470387_adh | TGGTCTTAATGCTTTTGTGGG  | Chr.X | 3676306 | 3676286 | - | No  |
| 2702861_adh | TTTCAGAAGAAAAATGTTTCAT | Chr.X | 3699121 | 3699141 | + | Yes |
| 2691080_adh | TTTAATATAAATTATTATGTA  | Chr.X | 3731275 | 3731255 | - | No  |
| 2368160_adh | TGGAATGTTTCGGTGCATGAA  | Chr.X | 3754101 | 3754081 | - | No  |
| 2616129_adh | TTCTCAGTCAGAAATCGTCGG  | Chr.X | 3770662 | 3770642 | - | No  |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 2714561_adh | TTTGAATTTTAGAGAGGATGG | Chr.X | 3770887 | 3770907 | + | No |
| 2474770_adh | TGGTTCAGTGGAACGACGGT  | Chr.X | 3770905 | 3770925 | + | No |
| 2593087_adh | TTCAGTGGAACGACGGTTTT  | Chr.X | 3770908 | 3770928 | + | No |
| 1966944_adh | TCAGTGGAACGACGGTTTTT  | Chr.X | 3770909 | 3770929 | + | No |
| 2314372_adh | TGGAACGACGGTTTTTTCGG  | Chr.X | 3770913 | 3770933 | + | No |
| 2044762_adh | TCTGAATGATGACTCTTCGGC | Chr.X | 3914454 | 3914434 | - | No |
| 1749569_adh | TAAAAGCCTGAAGGAAAAAAG | Chr.X | 3928833 | 3928853 | + | No |
| 2680639_adh | TTGTGATAAGAACGAGCAGTG | Chr.X | 3964625 | 3964605 | - | No |
| 2596001_adh | TTCCAATTTTTCGGACATTC  | Chr.X | 3971492 | 3971512 | + | No |
| 2705943_adh | TTTCCTAATAATCTTCGGAGC | Chr.X | 4137720 | 4137740 | + | No |
| 1919088_adh | TATGTGGGAATGGTCTGGAAC | Chr.X | 4176029 | 4176009 | - | No |
| 2710867_adh | TTTCTGTATAATGATTGGCCT | Chr.X | 4190853 | 4190873 | + | No |
| 1954728_adh | TCAGTGAGATATTTTTCGTA  | Chr.X | 4191407 | 4191427 | + | No |
| 1831021_adh | TACTCCCATCCCTTTCCCGAC | Chr.X | 4192292 | 4192312 | + | No |
| 2656369_adh | TTGGAAGAGACTTGCGTCAG  | Chr.X | 4195077 | 4195057 | - | No |
| 1953599_adh | TCACGTGTTTAATGGATTGAC | Chr.X | 4200285 | 4200305 | + | No |
| 2626952_adh | TTGAACTTAAATTTTGGCATG | Chr.X | 4210162 | 4210142 | - | No |
| 2559569_adh | TTACTGTCATATTTACACGA  | Chr.X | 4211086 | 4211066 | - | No |
| 2534368_adh | TGTTTTCGTGATTGGGGCAGC | Chr.X | 4225860 | 4225880 | + | No |
| 1839805_adh | TAGAAGTCGTAAAAAACAAAC | Chr.X | 4240458 | 4240478 | + | No |
| 2036693_adh | TCTCAATGTGCTCTGACCAGT | Chr.X | 4257006 | 4257026 | + | No |
| 1782192_adh | TAAGCCACACACGTTTCGTCA | Chr.X | 4260531 | 4260551 | + | No |
| 1867926_adh | TAGGGAAATTGCTAGGAAGAC | Chr.X | 4284948 | 4284968 | + | No |
| 2561226_adh | TTAGAACGTCAACAGTGCATG | Chr.X | 4336581 | 4336601 | + | No |
| 2561226_adh | TTAGAACGTCAACAGTGCATG | Chr.X | 4339049 | 4339029 | - | No |
| 2157324_adh | TGACATGACCAGTGAGAACGA | Chr.X | 4370546 | 4370526 | - | No |
| 1959352_adh | TCAGAGGGTTGGAATTTTTTA | Chr.X | 4396947 | 4396967 | + | No |
| 2583249_adh | TTATTGTAGAAATATGGGCAT | Chr.X | 4471751 | 4471771 | + | No |
| 1761889_adh | TAAATGTCAAACATCGTTAAC | Chr.X | 4526227 | 4526247 | + | No |
| 2566146_adh | TTAGATTTTTAAAAAATTGAA | Chr.X | 4564009 | 4564029 | + | No |
| 1943880_adh | TCACAAATGTTGATGTACCGC | Chr.X | 4621555 | 4621535 | - | No |
| 2688730_adh | TTTAAAAATTAATCAAATTC  | Chr.X | 4650042 | 4650022 | - | No |
| 2441165_adh | TGGGATGGGTAAGGGAGGGGA | Chr.X | 4742385 | 4742365 | - | No |
| 2274156_adh | TGATTAACAAGTAGTTGAACA | Chr.X | 4802823 | 4802803 | - | No |
| 2667337_adh | TTGGGATGGAAGTCAATTACT | Chr.X | 4849771 | 4849751 | - | No |
| 2067907_adh | TGAAAAGAAAAACATAATGTA | Chr.X | 4887332 | 4887312 | - | No |
| 1914002_adh | TATGGAGAAGATCTGGCATCA | Chr.X | 4962957 | 4962977 | + | No |
| 2379589_adh | TGGAGAAGATCTGGCATCACA | Chr.X | 4962959 | 4962979 | + | No |
| 2000395_adh | TCGACTCTGGAGATGGTGTCA | Chr.X | 4963172 | 4963192 | + | No |
| 2000776_adh | TCGACTTCGAGCAAGAAATGG | Chr.X | 4963376 | 4963396 | + | No |
| 1874744_adh | TAGTAGGATCTGGACATGAAG | Chr.X | 4970879 | 4970859 | - | No |
| 1798502_adh | TAATCGCATCAAGCAGCTTGA | Chr.X | 4991558 | 4991578 | + | No |
| 2701967_adh | TTTCAATTCAATTATTTGAAT | Chr.X | 4992958 | 4992978 | + | No |
| 2734507_adh | TTTTAGACTGTACCAAAGACG | Chr.X | 4999340 | 4999360 | + | No |
| 1787502_adh | TAAGTAGAAAAACAAATAAG  | Chr.X | 5096067 | 5096047 | - | No |
| 2626618_adh | TTGAACTCGAGGGAACGGAAC | Chr.X | 5103688 | 5103708 | + | No |
| 2237486_adh | TGAGGAGACCTACGATTACGA | Chr.X | 5105669 | 5105689 | + | No |
| 2636339_adh | TTGACGTGAAGGCTCCAACAA | Chr.X | 5113809 | 5113789 | - | No |
| 2068665_adh | TGAAAAGCAAACAAATATAAA | Chr.X | 5137292 | 5137272 | - | No |
| 2746757_adh | TTTTTGAGAACACAAGGTTAA | Chr.X | 5142080 | 5142100 | + | No |

|             |                        |       |         |         |   |     |
|-------------|------------------------|-------|---------|---------|---|-----|
| 2590306_adh | TTCAGAACGTGCAGATTCATT  | Chr.X | 5204858 | 5204838 | - | No  |
| 1790932_adh | TAATACACCCATACGAATTAC  | Chr.X | 5216526 | 5216546 | + | No  |
| 2717343_adh | TTTGATAATTGAATTTGATAA  | Chr.X | 5321052 | 5321032 | - | No  |
| 2698390_adh | TTTATCAAGCAATCAATCACT  | Chr.X | 5335435 | 5335415 | - | No  |
| 2121650_adh | TGAACCACAGAGAATTCGAGT  | Chr.X | 5392802 | 5392782 | - | No  |
| 2032711_adh | TCTAGCTGTATTACTGGCAAA  | Chr.X | 5424161 | 5424181 | + | No  |
| 1981250_adh | TCCCCTAGGTGGCTTGACTTT  | Chr.X | 5451184 | 5451164 | - | No  |
| 2014783_adh | TCGGATTCCCTGACAGGAGAA  | Chr.X | 5527738 | 5527718 | - | No  |
| 2123931_adh | TGAACTAACGGCTTAGAAACC  | Chr.X | 5539354 | 5539374 | + | No  |
| 2096595_adh | TGAAATCGTTCACTCCTCCAC  | Chr.X | 5553866 | 5553846 | - | No  |
| 2067880_adh | TGAAAAGAAAAACAATAAGCT  | Chr.X | 5561338 | 5561358 | + | No  |
| 2259882_adh | TGATACTCGGAACAGGCAGGA  | Chr.X | 5591876 | 5591856 | - | No  |
| 2267915_adh | TGATATTAAGAAACCATGAGA  | Chr.X | 5602406 | 5602426 | + | Yes |
| 1886424_adh | TATAATTGATCGGTTACAAAT  | Chr.X | 5609057 | 5609077 | + | No  |
| 2688730_adh | TTTAAAAATTAATCAAATTTT  | Chr.X | 5642315 | 5642335 | + | No  |
| 2745816_adh | TTTTTCCAACGGTTGATCGTC  | Chr.X | 5680352 | 5680332 | - | No  |
| 1981250_adh | TCCCCTAGGTGGCTTGACTTT  | Chr.X | 5713671 | 5713691 | + | No  |
| 2048679_adh | TCTGGAAAGGACGCAACACTA  | Chr.X | 5772024 | 5772004 | - | No  |
| 2439290_adh | TGGGATGGAGACAAGTACAGA  | Chr.X | 5890507 | 5890527 | + | No  |
| 2282533_adh | TGCAAGTACTGAAAGAGCATA  | Chr.X | 5947675 | 5947655 | - | No  |
| 2622206_adh | TTCTTCTTCTCTTCTTCTTT   | Chr.X | 5976794 | 5976814 | + | No  |
| 2543432_adh | TTAAATCTGAAAATACAGCAA  | Chr.X | 6003232 | 6003212 | - | No  |
| 2437783_adh | TGGGATGGAAAGGAATGTGAT  | Chr.X | 6010110 | 6010130 | + | No  |
| 2079546_adh | TGAAAGACTAAAGAATGGTTT  | Chr.X | 6025473 | 6025493 | + | No  |
| 1842481_adh | TAGAATGGAAAGTGAGAAGAA  | Chr.X | 6027255 | 6027235 | - | No  |
| 2690220_adh | TTTAAGAATGAGGAAGTCGGC  | Chr.X | 6042997 | 6042977 | - | No  |
| 2700991_adh | TTTCAAAATGAGGGCATGTAA  | Chr.X | 6046798 | 6046778 | - | No  |
| 1961410_adh | TCAGATGGATGGTGGTTACAA  | Chr.X | 6057867 | 6057847 | - | No  |
| 2048496_adh | TCTGCTGAGGAGCTTAAGGAG  | Chr.X | 6089488 | 6089468 | - | No  |
| 2184794_adh | TGAGACTGTCTGGAGGAGTTAT | Chr.X | 6090147 | 6090127 | - | No  |
| 2047090_adh | TCTGATCTTAAGAAGGATGAT  | Chr.X | 6090380 | 6090360 | - | No  |
| 2661361_adh | TTGGATCCGACAACAAGCAAT  | Chr.X | 6091265 | 6091245 | - | No  |
| 2748992_adh | TTTTTTCTAGGACTTGCAATTT | Chr.X | 6127466 | 6127446 | - | No  |
| 1938272_adh | TCAAGAAGACTGGAAACCATG  | Chr.X | 6127785 | 6127765 | - | No  |
| 2379892_adh | TGGAGACAAGAGAGAAAAGCA  | Chr.X | 6220180 | 6220200 | + | No  |
| 1977326_adh | TCCACGAACTGGCAAGGAAGA  | Chr.X | 6240494 | 6240474 | - | No  |
| 2388315_adh | TGGATAGATCAGAAGAAATATA | Chr.X | 6254844 | 6254864 | + | No  |
| 1893290_adh | TATCAGAGAACGGTCCTGAAT  | Chr.X | 6263195 | 6263175 | - | No  |
| 2133024_adh | TGAAGGATCTTCAGTTGGACA  | Chr.X | 6280259 | 6280279 | + | No  |
| 2700991_adh | TTTCAAAATGAGGGCATGTAA  | Chr.X | 6283068 | 6283088 | + | No  |
| 2133025_adh | TGAAGGATCTTCCGTTGGACA  | Chr.X | 6323730 | 6323750 | + | No  |
| 2133025_adh | TGAAGGATCTTCCGTTGGACA  | Chr.X | 6326630 | 6326650 | + | No  |
| 1932192_adh | TCAAAAGAACAGAGGGAGGGT  | Chr.X | 6341503 | 6341483 | - | No  |
| 2589069_adh | TTCAAAACAACATAACAAAAC  | Chr.X | 6361548 | 6361528 | - | No  |
| 1967998_adh | TCATAAAAAACGGAATGAAAA  | Chr.X | 6363200 | 6363180 | - | No  |
| 2618789_adh | TTCTGCTGCAACGTCGTCTTC  | Chr.X | 6378439 | 6378419 | - | No  |
| 1929415_adh | TATTTATTCTGTAAGACTGCA  | Chr.X | 6397600 | 6397580 | - | No  |
| 2371062_adh | TGGAATTGTTTGAGCACGGCG  | Chr.X | 6431840 | 6431860 | + | No  |
| 2586242_adh | TTCAACTCTACCACACGGTCA  | Chr.X | 6603876 | 6603856 | - | No  |
| 1836229_adh | TACTTTCTGAGAACGGTCCAC  | Chr.X | 6604993 | 6604973 | - | No  |

|             |                       |       |         |         |   |    |
|-------------|-----------------------|-------|---------|---------|---|----|
| 1924747_adh | TATTCTATCATACTGCACTCT | Chr.X | 6629431 | 6629451 | + | No |
| 1922459_adh | TATTATGATATTTGGACATTT | Chr.X | 6726907 | 6726887 | - | No |
| 2612220_adh | TTCGTGACTCTTAATGAGAAA | Chr.X | 6758266 | 6758246 | - | No |
| 1813212_adh | TACATATACACAAATTTTATC | Chr.X | 6772630 | 6772610 | - | No |
| 1926382_adh | TATTGCCTGCAGAATGCACAA | Chr.X | 6791537 | 6791557 | + | No |
| 2001347_adh | TCGAGATCCAATACGGAAGT  | Chr.X | 6791659 | 6791679 | + | No |
| 2295396_adh | TGCGAAACAGAATGAAGATAC | Chr.X | 6836317 | 6836337 | + | No |
| 2127959_adh | TGAAGACGGAATTGTTTACA  | Chr.X | 6840921 | 6840901 | - | No |
| 2518991_adh | TGTGTATGACGACAACATGTT | Chr.X | 6867891 | 6867911 | + | No |
| 2648767_adh | TTGCAAGTTTTTCGTGACAC  | Chr.X | 6936627 | 6936647 | + | No |
| 1753487_adh | TAAATTGTATTGTCTGTCAT  | Chr.X | 6983971 | 6983951 | - | No |
| 2129004_adh | TGAAGACTTGCGAACTGAAC  | Chr.X | 7004965 | 7004985 | + | No |
| 1937375_adh | TCAACTCTGATGATATTTGGA | Chr.X | 7068169 | 7068149 | - | No |
| 2229185_adh | TGAGATTAGTGGATCGTCATG | Chr.X | 7068408 | 7068388 | - | No |
| 1884021_adh | TATAAACGTTCAATTTTAAAA | Chr.X | 7143820 | 7143800 | - | No |
| 2633994_adh | TTGAATTTAAAAAAGTATGTT | Chr.X | 7154360 | 7154340 | - | No |
| 1941209_adh | TCAATATCTTGTGCAACAAAT | Chr.X | 7179398 | 7179378 | - | No |
| 2492598_adh | TGTATGTGACAGGTGACAGGC | Chr.X | 7183175 | 7183155 | - | No |
| 2372855_adh | TGGAATTTGTTGAAATATGTA | Chr.X | 7189800 | 7189780 | - | No |
| 2402748_adh | TGGCAATGGGTCGTGGAAGG  | Chr.X | 7194838 | 7194858 | + | No |
| 1963796_adh | TCAGGAGTCGGAGTCTACGCC | Chr.X | 7232119 | 7232099 | - | No |
| 2616475_adh | TTCTCGACGTCATTCAATCCG | Chr.X | 7232157 | 7232137 | - | No |
| 2176975_adh | TGAGAAAGAAAGGCGGAAGAC | Chr.X | 7235097 | 7235117 | + | No |
| 1840691_adh | TAGAATACGGCGGAATGATAA | Chr.X | 7245034 | 7245014 | - | No |
| 1836959_adh | TAGAAACGGCAATTCTAATGT | Chr.X | 7260430 | 7260410 | - | No |
| 2417333_adh | TGGGAAAATACGGGAATTCAA | Chr.X | 7295899 | 7295879 | - | No |
| 2737300_adh | TTTTACAAATTTGGACGAGT  | Chr.X | 7308862 | 7308882 | + | No |
| 2723087_adh | TTTGGAACTTTTAGCAGTGA  | Chr.X | 7311941 | 7311921 | - | No |
| 2501515_adh | TGTGAACATTATGTGAACGAG | Chr.X | 7316481 | 7316461 | - | No |
| 2027013_adh | TCGTGGACTTCTCACCGGTCT | Chr.X | 7351187 | 7351167 | - | No |
| 2474515_adh | TGGTTATTGTCGTGGAATCA  | Chr.X | 7363019 | 7362999 | - | No |
| 2565753_adh | TTAGATTCAACAAAACAGTAG | Chr.X | 7418724 | 7418704 | - | No |
| 1825986_adh | TACGGAGATTTCGGTGACAAT | Chr.X | 7474385 | 7474365 | - | No |
| 1789920_adh | TAATAAAATAATAAAATTCCA | Chr.X | 7491542 | 7491522 | - | No |
| 2041497_adh | TCTCGTGATTCTGTGACAAAA | Chr.X | 7508449 | 7508429 | - | No |
| 2067735_adh | TGAAAACGTATCGCAAAATA  | Chr.X | 7535134 | 7535114 | - | No |
| 1913938_adh | TATGGACCATGAAGAAGATAT | Chr.X | 7568242 | 7568262 | + | No |
| 2290965_adh | TGCATTAAGAGCAAAAGTCAA | Chr.X | 7575961 | 7575941 | - | No |
| 2181104_adh | TGAGAAGTACGGAACTCCAA  | Chr.X | 7726186 | 7726206 | + | No |
| 2500361_adh | TGTCTTTCTAAGGGTGTGCGC | Chr.X | 7736941 | 7736961 | + | No |
| 2615217_adh | TTCTATACTCTATAATAAGGC | Chr.X | 7770121 | 7770141 | + | No |
| 2048813_adh | TCTGGAAGTTCGAGACTGCCA | Chr.X | 7823848 | 7823868 | + | No |
| 1978684_adh | TCCAGGATGTGTACAAGATCG | Chr.X | 7824517 | 7824537 | + | No |
| 2011696_adh | TCGGACGTGTTGAGACCGGAA | Chr.X | 7824559 | 7824579 | + | No |
| 2007400_adh | TCGCCCCACAGAACGTGACCA | Chr.X | 7824607 | 7824627 | + | No |
| 2308814_adh | TGCTGGAATCGTCGAGCTCAT | Chr.X | 7825011 | 7825031 | + | No |
| 2053211_adh | TCTGTTGAGAAGTCCGATGGA | Chr.X | 7825135 | 7825155 | + | No |
| 2126890_adh | TGAAGAACTGCTGCGAACTG  | Chr.X | 7826759 | 7826739 | - | No |
| 2158848_adh | TGACATTGAAGAACTGCTGC  | Chr.X | 7826765 | 7826745 | - | No |
| 1974311_adh | TCATTGGGCAAGCAGCGTATT | Chr.X | 7852745 | 7852725 | - | No |

|             |                        |       |         |         |   |    |
|-------------|------------------------|-------|---------|---------|---|----|
| 1971572_adh | TCATCTGGTAGAAAAAAGCAT  | Chr.X | 7895856 | 7895876 | + | No |
| 2643103_adh | TTGAGTTGCTTGAAGCTAGTT  | Chr.X | 7906074 | 7906054 | - | No |
| 1925384_adh | TATTGAAGCGACATAAGACTT  | Chr.X | 7920054 | 7920074 | + | No |
| 2131321_adh | TGAAGCGACATAAGACTTACC  | Chr.X | 7920057 | 7920077 | + | No |
| 2417264_adh | TGGGAAAAGATAGAATTGGTC  | Chr.X | 7929177 | 7929157 | - | No |
| 2380890_adh | TGGAGATTGGGCATTTTTACC  | Chr.X | 7955712 | 7955732 | + | No |
| 1751868_adh | TAAAATCTTCCATCTCTTAAC  | Chr.X | 7981433 | 7981413 | - | No |
| 2402508_adh | TGGCAATACTGTACGTTGAAA  | Chr.X | 8010155 | 8010135 | - | No |
| 2746906_adh | TTTTTGATCGTTTGTAGTCGG  | Chr.X | 8027759 | 8027779 | + | No |
| 2539042_adh | TTAAAATGACGGGGGTATAAT  | Chr.X | 8035275 | 8035295 | + | No |
| 2677717_adh | TTGTCATCACTTCGCTCGGAG  | Chr.X | 8037157 | 8037177 | + | No |
| 1912459_adh | TATGCAGACGACAAAAGTGT   | Chr.X | 8054450 | 8054470 | + | No |
| 2553538_adh | TTACAAGTGATAGACCTCCTT  | Chr.X | 8074223 | 8074243 | + | No |
| 1942283_adh | TCAATGGGTAGCACGTGGCAA  | Chr.X | 8077542 | 8077522 | - | No |
| 2333587_adh | TGGAATCCCACGTGTAGATGA  | Chr.X | 8082514 | 8082494 | - | No |
| 2742879_adh | TTTTGGCAGCGACTGGCATAA  | Chr.X | 8110006 | 8109986 | - | No |
| 2404182_adh | TGGCAGTATTAATGACAATGA  | Chr.X | 8125101 | 8125121 | + | No |
| 1981607_adh | TCCCGGCCGGGGGAGAACTTTT | Chr.X | 8149157 | 8149177 | + | No |
| 1981607_adh | TCCCGGCCGGGGGAGAACTTTT | Chr.X | 8152502 | 8152482 | - | No |
| 2598113_adh | TTCCCGGCCGGGAGAACTTTT  | Chr.X | 8155752 | 8155772 | + | No |
| 1981601_adh | TCCCGGCCGGGAGAACTTTT   | Chr.X | 8155753 | 8155773 | + | No |
| 2703281_adh | TTTCAGGGGCTTTACTGAAAC  | Chr.X | 8158994 | 8158974 | - | No |
| 2229005_adh | TGAGATTAATAAATAAATGAA  | Chr.X | 8161221 | 8161201 | - | No |
| 2736503_adh | TTTTATTATTAGTGTCAGACA  | Chr.X | 8210086 | 8210106 | + | No |
| 1931505_adh | TATTTTTTGAAAAACCTGTTG  | Chr.X | 8236104 | 8236084 | - | No |
| 2586977_adh | TTCAAGATTGTGGAGATGGTT  | Chr.X | 8247697 | 8247717 | + | No |
| 1838834_adh | TAGAACTGGCATTGGCTTCAT  | Chr.X | 8333965 | 8333985 | + | No |
| 2309830_adh | TGCTGTTCAAGAGAATTCGAG  | Chr.X | 8346806 | 8346786 | - | No |
| 2058830_adh | TCTTGGACTTTTGATAGCATC  | Chr.X | 8392498 | 8392478 | - | No |
| 1890163_adh | TATATCTTGCAGACACTTTCC  | Chr.X | 8423683 | 8423663 | - | No |
| 2504698_adh | TGTGACTGCAACTGAAGCGTC  | Chr.X | 8451730 | 8451710 | - | No |
| 1857587_adh | TAGCGTCTAGTTTCGAGCGAT  | Chr.X | 8520284 | 8520264 | - | No |
| 2742709_adh | TTTTGGACGTGGAGGACAGGC  | Chr.X | 8545268 | 8545248 | - | No |
| 2044297_adh | TCTGAAGGCTAGCTGACTGCG  | Chr.X | 8566113 | 8566093 | - | No |
| 1929723_adh | TATTTCCATGTTCTTTGATTT  | Chr.X | 8586555 | 8586535 | - | No |
| 2169488_adh | TGACTGACTGAGACTGGTTGC  | Chr.X | 8601063 | 8601043 | - | No |
| 1968913_adh | TCATAGAATGAGGCATATTA   | Chr.X | 8640311 | 8640331 | + | No |
| 2554189_adh | TTACAGAGGATTTGAAATTTT  | Chr.X | 8680574 | 8680594 | + | No |
| 2382658_adh | TGGAGTAAACGGAGTCAAAGT  | Chr.X | 8702650 | 8702670 | + | No |
| 2513276_adh | TGTGCACCAGAACGGATATAT  | Chr.X | 8703754 | 8703734 | - | No |
| 2273573_adh | TGATGTGCACCAGAACGGATA  | Chr.X | 8703757 | 8703737 | - | No |
| 1936357_adh | TCAACCCAATTCCACTTCAAG  | Chr.X | 8721881 | 8721861 | - | No |
| 1824596_adh | TACGATTTGAAAAAGAGACGT  | Chr.X | 8722384 | 8722364 | - | No |
| 2522937_adh | TGTTACGGATGGATAGAGAGA  | Chr.X | 8738912 | 8738892 | - | No |
| 2723697_adh | TTTGGAGATGAGTATGTTTAC  | Chr.X | 8745367 | 8745347 | - | No |
| 2534618_adh | TGTTTTGGAAAGTTGTATGTA  | Chr.X | 8781248 | 8781228 | - | No |
| 1785921_adh | TAAGGGACAACTCGAGAAGAT  | Chr.X | 8789719 | 8789739 | + | No |
| 2514961_adh | TGTGGACGACAGAGAAATGGA  | Chr.X | 8791875 | 8791855 | - | No |
| 2273601_adh | TGATGTGGACGACAGAGAAAT  | Chr.X | 8791878 | 8791858 | - | No |
| 2688730_adh | TTTAAAAATTAATCAAATTTT  | Chr.X | 8813360 | 8813340 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2002334_adh | TCGAGTGAAGCTCGCTAGGCTG | Chr.X | 8823085  | 8823105  | + | No |
| 1749706_adh | TAAAAGCTTTTCTGGACAAAA  | Chr.X | 8835781  | 8835761  | - | No |
| 2538873_adh | TTAAAAGCTTTTCTGGACAAA  | Chr.X | 8835782  | 8835762  | - | No |
| 1992190_adh | TCCTGTCATTATCGTCTTCAA  | Chr.X | 8911302  | 8911322  | + | No |
| 1944402_adh | TCACAATTTTCGGCTGCTTCCC | Chr.X | 8945169  | 8945189  | + | No |
| 2308410_adh | TGCTGACTGCGGTAATTTTTT  | Chr.X | 8971610  | 8971630  | + | No |
| 1872401_adh | TAGGTTGAAGCTTGGAGTTAG  | Chr.X | 9043732  | 9043752  | + | No |
| 2711671_adh | TTTCTTGAAGCTGTATGTGCAT | Chr.X | 9075570  | 9075590  | + | No |
| 1994690_adh | TCGAAACGGGAAGCTAGCGGCT | Chr.X | 9108864  | 9108884  | + | No |
| 2520012_adh | TGTGTGGAAAAAGGAAACGCA  | Chr.X | 9150399  | 9150379  | - | No |
| 2229397_adh | TGAGATTATTGAATAACAAAA  | Chr.X | 9162596  | 9162576  | - | No |
| 2580300_adh | TTATGTTCTCACTTGATGCCT  | Chr.X | 9176559  | 9176539  | - | No |
| 2295920_adh | TGCGAAGCTGTTTCTGGTCAA  | Chr.X | 9191872  | 9191892  | + | No |
| 2737894_adh | TTTTCCATCAAGTCGGCGTGC  | Chr.X | 9201756  | 9201776  | + | No |
| 2174412_adh | TGACTTTATTTTGTTCCTT    | Chr.X | 9249451  | 9249471  | + | No |
| 2560222_adh | TTACTTGATTTTTCGGCAAAT  | Chr.X | 9271979  | 9271959  | - | No |
| 2587416_adh | TTCAAGTTTTAGAATGAACGT  | Chr.X | 9272788  | 9272808  | + | No |
| 1885210_adh | TATAAGTAGTTGTTTCGCATG  | Chr.X | 9350669  | 9350649  | - | No |
| 1863398_adh | TAGGAGAAAAAGACAAAGAGT  | Chr.X | 9431089  | 9431069  | - | No |
| 2053350_adh | TCTGTTGGTGAAGGTTGGATA  | Chr.X | 9444759  | 9444739  | - | No |
| 2029935_adh | TCTAAGAACAAACGAAGAACA  | Chr.X | 9482407  | 9482427  | + | No |
| 2722395_adh | TTTGCTGAACGAATGCGGTGA  | Chr.X | 9622923  | 9622903  | - | No |
| 2460008_adh | TGGGTTGGGAGCAGAAACAGA  | Chr.X | 9627268  | 9627288  | + | No |
| 2367121_adh | TGGAATGTTATTGTTGACGAC  | Chr.X | 9665888  | 9665868  | - | No |
| 1847181_adh | TAGAGAAGAACTGGATGCAAT  | Chr.X | 9781440  | 9781420  | - | No |
| 1957841_adh | TCAGAATAGACGGACAACAGA  | Chr.X | 9837156  | 9837176  | + | No |
| 2636402_adh | TTGACTAAAAGAGCGGCAGAG  | Chr.X | 9838307  | 9838327  | + | No |
| 1810464_adh | TACACAAGTACCCAAATTATT  | Chr.X | 9865844  | 9865824  | - | No |
| 2069440_adh | TGAAAAGTAGCTGTTAGAAAA  | Chr.X | 9883859  | 9883839  | - | No |
| 1834770_adh | TACTTCACTGATTTTCTTCAT  | Chr.X | 9908470  | 9908450  | - | No |
| 1844143_adh | TAGAATTGATTGATGTAGCTA  | Chr.X | 9925547  | 9925527  | - | No |
| 2642972_adh | TTGAGTGTATGAAGCCAATGA  | Chr.X | 9958362  | 9958382  | + | No |
| 2554959_adh | TTACATGTGAAATTGACGACG  | Chr.X | 9961909  | 9961929  | + | No |
| 1922749_adh | TATTATGGGCACGACCAATAA  | Chr.X | 10012249 | 10012229 | - | No |
| 2162074_adh | TGACGTAGAATAGAAATGGAG  | Chr.X | 10025184 | 10025164 | - | No |
| 1831810_adh | TACTGAAATTGTTGTAGACGT  | Chr.X | 10046292 | 10046272 | - | No |
| 2592672_adh | TTCAGTAGAAGAAAATGTTAT  | Chr.X | 10081481 | 10081461 | - | No |
| 2706624_adh | TTTCGAACGCTGAATGGTCGG  | Chr.X | 10083530 | 10083550 | + | No |
| 2290888_adh | TGCATGTAGAAGCAAGGATTT  | Chr.X | 10118679 | 10118699 | + | No |
| 2585062_adh | TTCAAAATTGTCATTTTATCA  | Chr.X | 10138067 | 10138047 | - | No |
| 2144891_adh | TGAATGTGGATGAAGAGGGAT  | Chr.X | 10138792 | 10138812 | + | No |
| 2579097_adh | TTATGCCACAACCTTTTCATGC | Chr.X | 10158128 | 10158108 | - | No |
| 2646467_adh | TTGATTGGCTTAGAAAAAGATG | Chr.X | 10197294 | 10197274 | - | No |
| 2737420_adh | TTTTCACTTCATGCAAGCTTC  | Chr.X | 10220563 | 10220543 | - | No |
| 1766679_adh | TAACCAGGAAACGAGCAAAGT  | Chr.X | 10276099 | 10276079 | - | No |
| 2619435_adh | TTCTGGCAATTCGGTTTCCTA  | Chr.X | 10289309 | 10289289 | - | No |
| 1745704_adh | TAAAAAATGGGATGAGCTTAA  | Chr.X | 10292820 | 10292800 | - | No |
| 2388031_adh | TGGATAGAAAAACAGTAAGTT  | Chr.X | 10333010 | 10332990 | - | No |
| 2237017_adh | TGAGGAATTTCGAGAAGACCCT | Chr.X | 10340401 | 10340381 | - | No |
| 1920099_adh | TATTAACCTACCTTATTTTAC  | Chr.X | 10349615 | 10349595 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 2552101_adh | TTAATTGAAAGCTTGGAATAG  | Chr.X | 10392152 | 10392132 | - | No  |
| 2575177_adh | TTATATAAGTAGGAACAGTTT  | Chr.X | 10452519 | 10452499 | - | No  |
| 1836958_adh | TAGAAACGGATCATTCTGCAT  | Chr.X | 10487504 | 10487484 | - | No  |
| 1835744_adh | TACTTGATGAAGTACGGAAC   | Chr.X | 10497774 | 10497794 | + | No  |
| 2299109_adh | TGCGATGGAAAAAGGATGCA   | Chr.X | 10509029 | 10509049 | + | No  |
| 2645883_adh | TTGATTAGACATTTTGAAAAC  | Chr.X | 10533167 | 10533147 | - | No  |
| 2368381_adh | TGGAATGTTTTGTATTTTA    | Chr.X | 10600860 | 10600840 | - | No  |
| 1821823_adh | TACGAAGGGAACCGAACACTT  | Chr.X | 10623296 | 10623316 | + | No  |
| 1809568_adh | TACAATCGGCATTATGAAACA  | Chr.X | 10645023 | 10645043 | + | No  |
| 1973008_adh | TCATGTGCATGAGCTCGCTAT  | Chr.X | 10667917 | 10667897 | - | No  |
| 1824571_adh | TACGATTGTTTGAACAAATAA  | Chr.X | 10674853 | 10674873 | + | No  |
| 1956933_adh | TCAGAAAGGATGCAAAATAGA  | Chr.X | 10679396 | 10679416 | + | No  |
| 2025618_adh | TCGTCTATGGAAATTGTGGCA  | Chr.X | 10708680 | 10708700 | + | No  |
| 2720877_adh | TTTGATTTTTGAGTTAGATAT  | Chr.X | 10737833 | 10737813 | - | No  |
| 1845614_adh | TAGACTAGAGAGAGGTGCGGA  | Chr.X | 10766033 | 10766013 | - | No  |
| 2710369_adh | TTTCTGAACGCCAAGAAGGGG  | Chr.X | 10867580 | 10867560 | - | No  |
| 2710369_adh | TTTCTGAACGCCAAGAAGGGG  | Chr.X | 10873836 | 10873816 | - | No  |
| 1829928_adh | TACTAGAAGAAGTGATGGACC  | Chr.X | 10886221 | 10886241 | + | No  |
| 2281858_adh | TGCAAGAATGAGAGGGTGGCA  | Chr.X | 10900241 | 10900261 | + | No  |
| 2532897_adh | TGTTTGACTGTTTTTCAAATT  | Chr.X | 10938162 | 10938142 | - | No  |
| 2481514_adh | TGTAACGGAATTCATTGACGG  | Chr.X | 10996200 | 10996220 | + | No  |
| 2733603_adh | TTTTAATAATAGGTATGTAAT  | Chr.X | 11013689 | 11013669 | - | Yes |
| 2605752_adh | TTCGATTGCTGAAGATCTCAA  | Chr.X | 11040408 | 11040428 | + | No  |
| 2033741_adh | TCTAGTTGTTTTTCTGGCATA  | Chr.X | 11044391 | 11044371 | - | No  |
| 1880820_adh | TAGTTGAACTCGGAACATAAT  | Chr.X | 11049521 | 11049541 | + | No  |
| 1970551_adh | TCATCAGGGAGAATATGAATA  | Chr.X | 11063838 | 11063858 | + | No  |
| 2576809_adh | TTATATTTTTCTACGTCTTT   | Chr.X | 11064391 | 11064411 | + | No  |
| 2115706_adh | TGAAATTGAGTTATATGTTTA  | Chr.X | 11069023 | 11069003 | - | No  |
| 2397283_adh | TGGCAAATTGTTAGACGACAT  | Chr.X | 11072785 | 11072765 | - | No  |
| 2689536_adh | TTTAAATGTGATGGTAGAAAA  | Chr.X | 11095242 | 11095262 | + | No  |
| 1978638_adh | TCCAGGACAAGAAGGAGCCCC  | Chr.X | 11199751 | 11199771 | + | No  |
| 2374304_adh | TGGACATCCAGGACGTAACGG  | Chr.X | 11200138 | 11200158 | + | No  |
| 1978653_adh | TCCAGGACGTAACGGACCACC  | Chr.X | 11200144 | 11200164 | + | No  |
| 1978638_adh | TCCAGGACAAGAAGGAGCCCC  | Chr.X | 11201817 | 11201837 | + | No  |
| 2374304_adh | TGGACATCCAGGACGTAACGG  | Chr.X | 11202204 | 11202224 | + | No  |
| 1978653_adh | TCCAGGACGTAACGGACCACC  | Chr.X | 11202210 | 11202230 | + | No  |
| 2129964_adh | TGAAGATCCCATTGAAGAACT  | Chr.X | 11285920 | 11285900 | - | No  |
| 1856064_adh | TAGCCTTCTAGAAACACTGGA  | Chr.X | 11339497 | 11339517 | + | No  |
| 1979856_adh | TCCATGTATTGAAGAAGGACG  | Chr.X | 11340134 | 11340154 | + | No  |
| 1895366_adh | TATCCAATGGTTCAGTTTTCC  | Chr.X | 11342978 | 11342998 | + | No  |
| 1912262_adh | TATGATTTGGAAACGGAACAA  | Chr.X | 11424037 | 11424057 | + | No  |
| 2643486_adh | TTGATAGAAACAGTAATAATT  | Chr.X | 11451526 | 11451546 | + | No  |
| 1958830_adh | TCAGAGATGGCATGAACCTTAT | Chr.X | 11476082 | 11476102 | + | No  |
| 2043930_adh | TCTGAACCTTACAAAACTCG   | Chr.X | 11485869 | 11485889 | + | No  |
| 1806691_adh | TACAAAGAACTAACAAGTAAC  | Chr.X | 11497330 | 11497310 | - | No  |
| 2727317_adh | TTTGTACAAGAACTCATCAA   | Chr.X | 11506730 | 11506710 | - | Yes |
| 1996235_adh | TCGAAGATGAAGACAATCTGC  | Chr.X | 11521671 | 11521691 | + | No  |
| 2541155_adh | TTAAAGCACGGATACTCTAAA  | Chr.X | 11594890 | 11594910 | + | No  |
| 2176596_adh | TGAGAAAAGAAAAGTAAACG   | Chr.X | 11603527 | 11603507 | - | No  |
| 2654344_adh | TTGCTCGACAAGTTCCTCATT  | Chr.X | 11604952 | 11604932 | - | No  |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1936212_adh | TCAACATTACTCGCTCGACAA  | Chr.X | 11605581 | 11605561 | - | No  |
| 2414391_adh | TGGCTCAACAGGATGAAGTT   | Chr.X | 11667084 | 11667104 | + | No  |
| 2530370_adh | TGTTGTAGAAATGGCCAAAAT  | Chr.X | 11693126 | 11693106 | - | No  |
| 2517259_adh | TGTGGTATCATAGGCGTGT    | Chr.X | 11838885 | 11838865 | - | No  |
| 2029946_adh | TCTAAGAAGGGGTTTGAACG   | Chr.X | 11854648 | 11854668 | + | No  |
| 2660478_adh | TTGGAGTGTGACGTTTGCCAG  | Chr.X | 12018027 | 12018007 | - | No  |
| 2529700_adh | TGTTGGAAAGAGGCTGCAAAG  | Chr.X | 12021503 | 12021523 | + | No  |
| 2712803_adh | TTTGAAATGTACAGAACGAGG  | Chr.X | 12029100 | 12029120 | + | No  |
| 1891208_adh | TATCAAAGAAAATTACTATGA  | Chr.X | 12053164 | 12053144 | - | Yes |
| 2524254_adh | TGTTATCGGTTTTTGGTAGTG  | Chr.X | 12146030 | 12146010 | - | No  |
| 2309151_adh | TGCTGGTTCATGAAGGTATGCA | Chr.X | 12156085 | 12156065 | - | No  |
| 2038508_adh | TCTCATTGTGCAAGAGGGCAA  | Chr.X | 12158721 | 12158701 | - | No  |
| 1922459_adh | TATTATGATATTTGGACATTT  | Chr.X | 12163108 | 12163088 | - | No  |
| 2380116_adh | TGGAGACGAATTAATGAAAAG  | Chr.X | 12188864 | 12188884 | + | No  |
| 1808773_adh | TACAAGACAGCAGACAGTTTCG | Chr.X | 12191632 | 12191652 | + | No  |
| 1808773_adh | TACAAGACAGCAGACAGTTTCG | Chr.X | 12195411 | 12195391 | - | No  |
| 2729906_adh | TTTGTGGATTTTTGGACAAAT  | Chr.X | 12204312 | 12204292 | - | No  |
| 2071337_adh | TGAAACACTTGACTGCATGAG  | Chr.X | 12221236 | 12221256 | + | No  |
| 1749544_adh | TAAAAGCATTTGTACTAACTA  | Chr.X | 12348309 | 12348289 | - | No  |
| 2737740_adh | TTTTCATGATGATATCTGAAA  | Chr.X | 12352366 | 12352346 | - | No  |
| 1783613_adh | TAAGCTGTGAAAAAGGACGTC  | Chr.X | 12358152 | 12358172 | + | No  |
| 2643329_adh | TTGATAATAGAATAATTAATA  | Chr.X | 12358934 | 12358914 | - | No  |
| 1805490_adh | TAATTTGTCTCGAATTCGGCT  | Chr.X | 12365524 | 12365544 | + | No  |
| 2629096_adh | TTGAAGGTCGCTCCGTGAACG  | Chr.X | 12446158 | 12446178 | + | No  |
| 2052291_adh | TCTGTCAATTTGGAGAGGGAAA | Chr.X | 12452430 | 12452450 | + | No  |
| 1908531_adh | TATGACTCCAAGAAGAACGTC  | Chr.X | 12468260 | 12468280 | + | No  |
| 1976127_adh | TCCAAGAAGAACGTCTGGATC  | Chr.X | 12468266 | 12468286 | + | No  |
| 2389634_adh | TGGATCCCAGATTTCGGAAGAC | Chr.X | 12468281 | 12468301 | + | No  |
| 1913915_adh | TATGGACAAGAATAAGAGAAA  | Chr.X | 12471890 | 12471910 | + | No  |
| 2073706_adh | TGAAACTCGAAGACGAGCAAG  | Chr.X | 12472024 | 12472044 | + | No  |
| 2390889_adh | TGGATGAGGAACAAAAGAGAC  | Chr.X | 12473765 | 12473785 | + | No  |
| 2714191_adh | TTTGAATATTCTGTATTGGGC  | Chr.X | 12568093 | 12568113 | + | No  |
| 2670184_adh | TTGGTCAGAGCAATATCAGGC  | Chr.X | 12600457 | 12600477 | + | No  |
| 2389506_adh | TGGATCAGTGACCATAACAAT  | Chr.X | 12652623 | 12652603 | - | No  |
| 2376272_adh | TGGACGGACAATAGACCAGAA  | Chr.X | 12691758 | 12691738 | - | No  |
| 2671228_adh | TTGGTGGATTGGGTACCACAA  | Chr.X | 12694251 | 12694271 | + | No  |
| 2555371_adh | TTACATTTTGAGCTGTTTCAG  | Chr.X | 12708930 | 12708950 | + | No  |
| 2625878_adh | TTGAACAATGCCTGCAAGATG  | Chr.X | 12765142 | 12765122 | - | No  |
| 1788822_adh | TAAGTTAAAATTGAGAGGACT  | Chr.X | 12781661 | 12781641 | - | No  |
| 2284965_adh | TGCAATGTAGAACATATCGGC  | Chr.X | 12797711 | 12797691 | - | No  |
| 1921501_adh | TATTAGATATGATAATCACTA  | Chr.X | 12859663 | 12859683 | + | No  |
| 2688930_adh | TTTAAAAGTTTGAAAATGTGA  | Chr.X | 12867044 | 12867064 | + | No  |
| 2075462_adh | TGAAAGAAGTGCAGTGTAGAA  | Chr.X | 13060152 | 13060132 | - | No  |
| 2657464_adh | TTGGAATAGGAAGAAGGAAGA  | Chr.X | 13112398 | 13112378 | - | No  |
| 2656561_adh | TTGGAACAAGAAACAAGAGAC  | Chr.X | 13120918 | 13120938 | + | No  |
| 1938794_adh | TCAAGAGAAGTCGTACACAAA  | Chr.X | 13133765 | 13133785 | + | No  |
| 2657310_adh | TTGGAAGTAGCATAAATGAAT  | Chr.X | 13134591 | 13134611 | + | No  |
| 2287082_adh | TGCAGAAGCGATTTAGGATAT  | Chr.X | 13145504 | 13145524 | + | No  |
| 2402789_adh | TGGCAATTCAAGATGGACAAG  | Chr.X | 13219565 | 13219545 | - | No  |
| 2665251_adh | TTGGCAGGAAAGGGAAACTTT  | Chr.X | 13238475 | 13238455 | - | No  |

|             |                       |       |          |          |   |    |
|-------------|-----------------------|-------|----------|----------|---|----|
| 1838771_adh | TAGAACTGAGGAGAAGGCACA | Chr.X | 13277326 | 13277346 | + | No |
| 2738247_adh | TTTTCGACTTAGCAGAGAATT | Chr.X | 13281729 | 13281709 | - | No |
| 1987509_adh | TCCGGTTGGACGGATTTCTTT | Chr.X | 13284701 | 13284681 | - | No |
| 2291662_adh | TGCCAAAAAATGTATGAACGG | Chr.X | 13284934 | 13284954 | + | No |
| 2740659_adh | TTTTGAACAATGAAGACGAAT | Chr.X | 13294054 | 13294034 | - | No |
| 2707020_adh | TTTCGAGATTAGATTTTCGGC | Chr.X | 13312656 | 13312636 | - | No |
| 2706360_adh | TTTCCTGTTGAGCGGATAGCT | Chr.X | 13342510 | 13342490 | - | No |
| 1833195_adh | TACTGGAGAAGACGTGGAATA | Chr.X | 13409357 | 13409337 | - | No |
| 2406532_adh | TGGCATGATAAGTAGTTTGTA | Chr.X | 13420286 | 13420266 | - | No |
| 2523286_adh | TGTTACTTGAATTTGAAGAGG | Chr.X | 13457231 | 13457211 | - | No |
| 1836600_adh | TAGAAAAACCACTGGAACACA | Chr.X | 13480222 | 13480242 | + | No |
| 1939243_adh | TCAAGCGCACAGACGAATTCA | Chr.X | 13506393 | 13506373 | - | No |
| 2263848_adh | TGATATGACTGATATTTTGG  | Chr.X | 13622273 | 13622253 | - | No |
| 2330214_adh | TGGAATAGAAAGAGGAGTGGA | Chr.X | 13644995 | 13645015 | + | No |
| 2681472_adh | TTGTGGAACGCTATGAAATT  | Chr.X | 13692919 | 13692939 | + | No |
| 2273549_adh | TGATGTGAGTCTGGAACCTGA | Chr.X | 13699068 | 13699088 | + | No |
| 2258269_adh | TGATAAGCTCGTGGAAGTCGG | Chr.X | 13711355 | 13711335 | - | No |
| 2046720_adh | TCTGATATGATCGGAACACGT | Chr.X | 13726393 | 13726413 | + | No |
| 2539985_adh | TTAAACGGTAAGGGCCGGCTG | Chr.X | 13759186 | 13759166 | - | No |
| 1919906_adh | TATTAACGGTAAGGGCCGGC  | Chr.X | 13759188 | 13759168 | - | No |
| 2492700_adh | TGTATTAACGGTAAGGGCCG  | Chr.X | 13759190 | 13759170 | - | No |
| 2492700_adh | TGTATTAACGGTAAGGGCCG  | Chr.X | 13759211 | 13759231 | + | No |
| 1919906_adh | TATTAACGGTAAGGGCCGGC  | Chr.X | 13759213 | 13759233 | + | No |
| 2539985_adh | TTAAACGGTAAGGGCCGGCTG | Chr.X | 13759215 | 13759235 | + | No |
| 1872116_adh | TAGGTTAAATATTTTCGGCG  | Chr.X | 13826880 | 13826860 | - | No |
| 1826226_adh | TACGGCATATAGAATTTGGAG | Chr.X | 13848581 | 13848561 | - | No |
| 1925362_adh | TATTGAAGAACTCGGAAGGTT | Chr.X | 13962835 | 13962855 | + | No |
| 1924747_adh | TATTCTATCATACTGCACTCT | Chr.X | 13982125 | 13982105 | - | No |
| 2046054_adh | TCTGAGAACAACGAAATTTGG | Chr.X | 14046652 | 14046632 | - | No |
| 2728768_adh | TTTGTCACTACTTCGCTCGGA | Chr.X | 14110310 | 14110330 | + | No |
| 2677717_adh | TTGTCATCACTTCGCTCGGAG | Chr.X | 14110311 | 14110331 | + | No |
| 2561822_adh | TTAGAATTAAATGACAGGCCT | Chr.X | 14241284 | 14241304 | + | No |
| 2305514_adh | TGCTAATTAGAATTGAGACAG | Chr.X | 14247637 | 14247657 | + | No |
| 2059461_adh | TCTTGATCAGATTCGTCGGG  | Chr.X | 14252342 | 14252322 | - | No |
| 2312087_adh | TGCTTTTCTTCCGTCGGTCTC | Chr.X | 14312443 | 14312423 | - | No |
| 2560138_adh | TTACTTCTGCAAAAGACCTCA | Chr.X | 14318744 | 14318724 | - | No |
| 2507973_adh | TGTGATCATAACTATAAGAAT | Chr.X | 14324436 | 14324416 | - | No |
| 1908853_adh | TATGAGAACTCAGGCATGTAA | Chr.X | 14331738 | 14331718 | - | No |
| 2600656_adh | TTCTCGGTTGGCAAGGATCG  | Chr.X | 14335039 | 14335059 | + | No |
| 2542124_adh | TTAAATACAAGTAGACGTAAT | Chr.X | 14446263 | 14446243 | - | No |
| 2049874_adh | TCTGGATGCGTAAGAAGAAGA | Chr.X | 14486678 | 14486698 | + | No |
| 2281883_adh | TGCAAGACAGCACTTGAATCT | Chr.X | 14523808 | 14523788 | - | No |
| 2281883_adh | TGCAAGACAGCACTTGAATCT | Chr.X | 14524786 | 14524806 | + | No |
| 2281883_adh | TGCAAGACAGCACTTGAATCT | Chr.X | 14528926 | 14528906 | - | No |
| 2281883_adh | TGCAAGACAGCACTTGAATCT | Chr.X | 14529816 | 14529836 | + | No |
| 2069975_adh | TGAAAATCGCTTGACGTGTCA | Chr.X | 14567981 | 14568001 | + | No |
| 2372812_adh | TGGAATTTGATTGGGAATGGG | Chr.X | 14606356 | 14606376 | + | No |
| 1811889_adh | TACAGAGCAACTTATGGCCAC | Chr.X | 14620199 | 14620219 | + | No |
| 2115260_adh | TGAAATTGAAATATACGTCAA | Chr.X | 14629928 | 14629948 | + | No |
| 1858370_adh | TAGCTGAAGAAGAACATAAAG | Chr.X | 14644376 | 14644356 | - | No |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2686852_adh | TTGTTTAGATATCAAGGAATC  | Chr.X | 14753754 | 14753774 | + | No |
| 1957011_adh | TCAGAAATTCCTTGGCGAGCA  | Chr.X | 14846147 | 14846167 | + | No |
| 1967933_adh | TCAGTTTTGGATGTTTCGTCG  | Chr.X | 14873137 | 14873117 | - | No |
| 1836763_adh | TAGAAAAGTAGATGACGATTA  | Chr.X | 14964385 | 14964365 | - | No |
| 1939524_adh | TCAAGGACAAGCTCCTCCATA  | Chr.X | 14978270 | 14978290 | + | No |
| 2489596_adh | TGTAGTATTGATCGGCATGAG  | Chr.X | 15045440 | 15045420 | - | No |
| 2309348_adh | TGCTGTAGTATTGATCGGCAT  | Chr.X | 15045443 | 15045423 | - | No |
| 2717139_adh | TTTGAGTTTGAATGGCATGGA  | Chr.X | 15045557 | 15045577 | + | No |
| 2714315_adh | TTTGAATGGCATGGAATGACA  | Chr.X | 15045563 | 15045583 | + | No |
| 2300416_adh | TGCGCTGGAAGATGTCGTTAT  | Chr.X | 15084003 | 15084023 | + | No |
| 2733835_adh | TTTTAATTGTAAGAATAGGCG  | Chr.X | 15100567 | 15100547 | - | No |
| 2733139_adh | TTTTAAATAAAAATTATTTTT  | Chr.X | 15111944 | 15111924 | - | No |
| 2126869_adh | TGAAGAAAATTTGAATTCGGC  | Chr.X | 15113689 | 15113669 | - | No |
| 1899936_adh | TATCTGCAGAGTATGAAAAAG  | Chr.X | 15167192 | 15167212 | + | No |
| 2712597_adh | TTTGAAACGTTTCGGGAGAAGC | Chr.X | 15178158 | 15178178 | + | No |
| 2046141_adh | TCTGAGAGCGATGGCTATTTA  | Chr.X | 15215387 | 15215367 | - | No |
| 2308606_adh | TGCTGCAATACTTGGAAGCGA  | Chr.X | 15345517 | 15345537 | + | No |
| 2282819_adh | TGCAATACTTGGAAGCGATTT  | Chr.X | 15345520 | 15345540 | + | No |
| 2055485_adh | TCTTCAAAATCTGACGGTATT  | Chr.X | 15351299 | 15351279 | - | No |
| 2621014_adh | TTCTTCAAAATCTGACGGTAT  | Chr.X | 15351300 | 15351280 | - | No |
| 2509450_adh | TGTGATCTACAGAAATATTCA  | Chr.X | 15362072 | 15362052 | - | No |
| 2663473_adh | TTGGATGTAAAATTAGGTGTT  | Chr.X | 15364032 | 15364052 | + | No |
| 2740661_adh | TTTTGAACACAATCTGAGGAC  | Chr.X | 15365277 | 15365257 | - | No |
| 2325070_adh | TGGAAGGGAAAGAAGAAGGAA  | Chr.X | 15380434 | 15380454 | + | No |
| 1879457_adh | TAGTGTCAAAATCGGACGACC  | Chr.X | 15480275 | 15480295 | + | No |
| 1996365_adh | TCGAAGATGTTGACGTTTTAC  | Chr.X | 15511956 | 15511976 | + | No |
| 2025717_adh | TCGTCTTATTTTCGTTCCGTA  | Chr.X | 15590608 | 15590588 | - | No |
| 2017209_adh | TCGGGGTACTGTAGTAGTGCT  | Chr.X | 15636495 | 15636475 | - | No |
| 2413620_adh | TGGCGTGTCTGCAGAAAACC   | Chr.X | 15664049 | 15664029 | - | No |
| 2716804_adh | TTTGAGCTATTTGGAGATGAA  | Chr.X | 15707100 | 15707080 | - | No |
| 2590775_adh | TTCAGATCAGAGCTGTGCGGC  | Chr.X | 15765255 | 15765235 | - | No |
| 1831845_adh | TACTGAACGGATTTGAATGGA  | Chr.X | 15806435 | 15806415 | - | No |
| 2086561_adh | TGAAATACGATGCTGATGATA  | Chr.X | 15806603 | 15806623 | + | No |
| 2624337_adh | TTGAAAACATGGAGACGTAGA  | Chr.X | 15838932 | 15838952 | + | No |
| 1934040_adh | TCAAATACAAGTAGACGTAAT  | Chr.X | 15945162 | 15945182 | + | No |
| 1919925_adh | TATTAAAGAACGAACAAACGG  | Chr.X | 15973272 | 15973252 | - | No |
| 2372809_adh | TGGAATTTGATTGGAAATTGA  | Chr.X | 16051760 | 16051740 | - | No |
| 1922186_adh | TATTATCGATCGATGGTTTAT  | Chr.X | 16059133 | 16059113 | - | No |
| 1922459_adh | TATTATGATATTTGGACATTT  | Chr.X | 16059447 | 16059427 | - | No |
| 2742449_adh | TTTTGCGAGTTGGACAGAATT  | Chr.X | 16062273 | 16062293 | + | No |
| 1782928_adh | TAAGCTACTCATTTACGCTC   | Chr.X | 16091288 | 16091268 | - | No |
| 2560189_adh | TTACTTGAATTTTCGGAGCGGT | Chr.X | 16109831 | 16109811 | - | No |
| 2159415_adh | TGACCAAGCTCATAAGACAAG  | Chr.X | 16150361 | 16150381 | + | No |
| 2697153_adh | TTTAGTCTGAATCATACCTAG  | Chr.X | 16182100 | 16182080 | - | No |
| 1956762_adh | TCAGAAAATGAAGAGCAGCAG  | Chr.X | 16188713 | 16188733 | + | No |
| 2472963_adh | TGGTGTCAAAATTGGACGACC  | Chr.X | 16204383 | 16204403 | + | No |
| 2618988_adh | TTCTGGAGTTGGAGATTAAC   | Chr.X | 16213476 | 16213496 | + | No |
| 2493745_adh | TGTCAAAATCGTACGACCGGA  | Chr.X | 16213834 | 16213854 | + | No |
| 2488890_adh | TGTAGGGCTGTACAAATCGGC  | Chr.X | 16213876 | 16213856 | - | No |
| 1981250_adh | TCCCCTAGGTGGCTTGACTTT  | Chr.X | 16217826 | 16217806 | - | No |

|             |                        |       |          |          |   |     |
|-------------|------------------------|-------|----------|----------|---|-----|
| 1825624_adh | TACGGAAATCTGAAAAAGTGG  | Chr.X | 16232689 | 16232709 | + | No  |
| 2590779_adh | TTCAGATCAGTGCTGTGCGGC  | Chr.X | 16243462 | 16243442 | - | No  |
| 1981038_adh | TCCCCGCAACGGAATAATTTT  | Chr.X | 16271226 | 16271206 | - | No  |
| 1829331_adh | TACTAAATTTTGGATGGCTCA  | Chr.X | 16273254 | 16273274 | + | No  |
| 1829331_adh | TACTAAATTTTGGATGGCTCA  | Chr.X | 16274224 | 16274244 | + | No  |
| 2602083_adh | TTCGAAGAACAGAAGCAAACA  | Chr.X | 16274381 | 16274361 | - | No  |
| 2085008_adh | TGAAATAAAAATCAATATATA  | Chr.X | 16275096 | 16275116 | + | No  |
| 1829331_adh | TACTAAATTTTGGATGGCTCA  | Chr.X | 16284741 | 16284721 | - | No  |
| 1762555_adh | TAAATTGGATCTGAAGTTGGC  | Chr.X | 16311297 | 16311317 | + | No  |
| 2485170_adh | TGTAATGTCTCTAAAAATTCA  | Chr.X | 16336311 | 16336331 | + | No  |
| 2042576_adh | TCTCTCGTCTAGCAAGTATTA  | Chr.X | 16359485 | 16359505 | + | No  |
| 2376491_adh | TGGACGTTTTGAAGGGAGAGC  | Chr.X | 16387183 | 16387163 | - | No  |
| 2119856_adh | TGAACAATGTAGAGCACAGCT  | Chr.X | 16396584 | 16396564 | - | No  |
| 2047360_adh | TCTGATGTTGGCAGAAGCACA  | Chr.X | 16453002 | 16452982 | - | No  |
| 2724314_adh | TTTGGCAGCAGGTGTGAATTC  | Chr.X | 16453882 | 16453862 | - | No  |
| 2090212_adh | TGAAATCAAAAAATGTATGTA  | Chr.X | 16542611 | 16542591 | - | No  |
| 1781315_adh | TAAGCAACTCGTTTCTCGGCA  | Chr.X | 16545714 | 16545694 | - | No  |
| 2512942_adh | TGTGATTTGACTATATCCATT  | Chr.X | 16564648 | 16564668 | + | No  |
| 2137236_adh | TGAATAATGTGCCATCCTAT   | Chr.X | 16564681 | 16564701 | + | No  |
| 2293468_adh | TGCCCTAGGGATTGTTGGCC   | Chr.X | 16624352 | 16624372 | + | No  |
| 1813565_adh | TACATGAAAATTTTGATTA    | Chr.X | 16632968 | 16632988 | + | Yes |
| 2601646_adh | TTCGAAAATGAGAGCATGTGA  | Chr.X | 16688548 | 16688568 | + | No  |
| 1975745_adh | TCCAAAATTCACGTCAGAGCA  | Chr.X | 16708061 | 16708041 | - | No  |
| 2299804_adh | TGCGATTTCAAATTTGCCCA   | Chr.X | 16722028 | 16722008 | - | No  |
| 1925299_adh | TATTGAAAGTGATGCGATGGT  | Chr.X | 16727125 | 16727145 | + | No  |
| 1833684_adh | TACTGTAGATGTTAGTTAGGC  | Chr.X | 16770788 | 16770768 | - | No  |
| 2459930_adh | TGGGTTGCTCACGTAGACGGT  | Chr.X | 16792637 | 16792657 | + | No  |
| 2701506_adh | TTTCAAGACTGAACTAGATGG  | Chr.X | 16793365 | 16793385 | + | No  |
| 1863262_adh | TAGGACTGTGCGATTGGCCGGA | Chr.X | 16814729 | 16814709 | - | No  |
| 2674734_adh | TTGTAGAAGTTTGATACTAAA  | Chr.X | 16883442 | 16883422 | - | No  |
| 1814948_adh | TACCACACTGAGATTGAACGA  | Chr.X | 16893080 | 16893060 | - | No  |
| 1934952_adh | TCAAATGAAATCAAACGAGGA  | Chr.X | 16981197 | 16981177 | - | No  |
| 1994640_adh | TCGAAACAGAATGAAAACGCT  | Chr.X | 16993294 | 16993274 | - | No  |
| 1867075_adh | TAGGCATGTAGACTGCAGTGT  | Chr.X | 17097860 | 17097880 | + | No  |
| 1867075_adh | TAGGCATGTAGACTGCAGTGT  | Chr.X | 17105024 | 17105044 | + | No  |
| 2474515_adh | TGGTTATTGTCGTCGGAATCA  | Chr.X | 17127092 | 17127072 | - | No  |
| 2579813_adh | TTATGGTTTCTTTTGTGGTTC  | Chr.X | 17139059 | 17139079 | + | No  |
| 2547086_adh | TTAAGAGGAGGACGAATAAGA  | Chr.X | 17184294 | 17184274 | - | No  |
| 2315668_adh | TGGAAAGAAGGAGAAGAACAT  | Chr.X | 17213981 | 17213961 | - | No  |
| 2643721_adh | TTGATATGGTCTCGAATTGTA  | Chr.X | 17216759 | 17216739 | - | No  |
| 2725887_adh | TTTGGTACTTTAATTGAGCAG  | Chr.X | 17217594 | 17217614 | + | No  |
| 2585446_adh | TTCAAATATTGTAGGGGTTCA  | Chr.X | 17248187 | 17248207 | + | No  |
| 2503853_adh | TGTGACGACAGAACAAGATGA  | Chr.X | 17255998 | 17256018 | + | No  |
| 1838746_adh | TAGAACTCTAAAAGAGAAAAT  | Chr.X | 17257680 | 17257700 | + | No  |
| 2292614_adh | TGCCAGTAGAAAAGTATTATGG | Chr.X | 17259196 | 17259176 | - | No  |
| 1829331_adh | TACTAAATTTTGGATGGCTCA  | Chr.X | 17342765 | 17342745 | - | No  |
| 2527828_adh | TGTTGAATTTTGAAATATTTT  | Chr.X | 17356568 | 17356548 | - | No  |
| 1799221_adh | TAATGAAATGATGCGAAGAGA  | Chr.X | 17392337 | 17392357 | + | No  |
| 2618988_adh | TTCTGGAGTTGGAGATTA     | Chr.X | 17406243 | 17406263 | + | No  |
| 2310467_adh | TGCTTCGAGTAGGACAGAAAG  | Chr.X | 17443221 | 17443241 | + | No  |

|             |                        |       |          |          |   |    |
|-------------|------------------------|-------|----------|----------|---|----|
| 2247584_adh | TGAGGTCAAGGCTATGTACAA  | Chr.X | 17455983 | 17455963 | - | No |
| 2526328_adh | TGTTTCGACAAGAAGGACTGCG | Chr.X | 17459816 | 17459836 | + | No |
| 2247584_adh | TGAGGTCAAGGCTATGTACAA  | Chr.X | 17459904 | 17459924 | + | No |
| 2544556_adh | TTAAATTGTTAATTATTTTTT  | Chr.X | 17461800 | 17461820 | + | No |
| 1821463_adh | TACGAAAATGCGGAAGAATTT  | Chr.X | 17468994 | 17468974 | - | No |
| 2525920_adh | TGTTCAACGTCGTATAATAAA  | Chr.X | 17476629 | 17476609 | - | No |
| 2553013_adh | TTACAAAATGAGGGCATGTAA  | Chr.X | 17490395 | 17490415 | + | No |
| 1924747_adh | TATTCTATCATACTGCACTCT  | Chr.X | 17579115 | 17579095 | - | No |
| 2690238_adh | TTTAAGACATGTATTTACTAA  | Chr.X | 17611572 | 17611592 | + | No |
| 1853875_adh | TAGCACATGACATAGAGGTAA  | Chr.X | 17622334 | 17622314 | - | No |
| 2270469_adh | TGATCTGGAATTTAAGACGAC  | Chr.X | 17663237 | 17663217 | - | No |
| 1913691_adh | TATGGAAGATCATCGACTGAT  | Chr.X | 17679853 | 17679873 | + | No |
| 2573719_adh | TTATAAAATAAAAACAATTTAA | Chr.X | 17699252 | 17699232 | - | No |
| 1860665_adh | TAGGAAATACGCAAATGGCGC  | Chr.X | 17703670 | 17703690 | + | No |
| 2275155_adh | TGATTCAGTGGATTTTGTGAT  | Chr.X | 17711885 | 17711905 | + | No |
| 2593110_adh | TTCACTGGATTTTGTGATGGA  | Chr.X | 17711888 | 17711908 | + | No |
| 1967000_adh | TCAGTGGATTTTGTGATGGAA  | Chr.X | 17711889 | 17711909 | + | No |
| 2743921_adh | TTTTGTGATGGAATCGTTGGA  | Chr.X | 17711897 | 17711917 | + | No |
| 1860665_adh | TAGGAAATACGCAAATGGCGC  | Chr.X | 17713130 | 17713150 | + | No |
| 2258269_adh | TGATAAAGCTCGTGAAGTCGG  | Chr.X | 17716314 | 17716294 | - | No |