

Additional file 5: Table S1. List of 230 single nucleotide variants in the mutant A2-13 compared with the start strain OXPoxGA15A

| Gene ID  | Location | A2-13     |            |           |             | A2-13         |          |           |           | Gene dista | Location          | Protein function                  |
|----------|----------|-----------|------------|-----------|-------------|---------------|----------|-----------|-----------|------------|-------------------|-----------------------------------|
|          |          | Reference | Codon muta | AA mutate | Mutate type | Location in s | Position | Reference | Sample ba |            |                   |                                   |
| POX00419 |          | NA        | NA         | NA        | NA          | scaffold 1    | 1308266  | C         | T         | 1915       | Intergenic region | Hypothetical protein              |
| POX01041 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3168919  | A         | G         | 4025       | Intergenic region | Hypothetical protein              |
| POX01041 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3184639  | G         | A         | 19745      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3194726  | C         | T         | 28908      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3198496  | T         | C         | 25138      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3205591  | T         | C         | 18043      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3205773  | T         | A         | 17861      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3205803  | T         | C         | 17831      | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3220008  | C         | T         | 3626       | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3220269  | C         | T         | 3365       | Intergenic region | Hypothetical protein              |
| POX01042 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3221831  | G         | A         | 1803       | Intergenic region | Hypothetical protein              |
| POX01044 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3231928  | A         | G         | 3194       | Intergenic region | Hypothetical protein              |
| POX01048 |          | NA        | NA         | NA        | NA          | scaffold 1    | 3259082  | G         | A         | 12376      | Intergenic region | Putative surface membrane protein |
| POX01316 |          | NA        | NA         | NA        | NA          | scaffold 1    | 4052600  | C         | T         | 1440       | Intergenic region | Hypothetical protein              |
| POX01587 |          | NA        | NA         | NA        | NA          | scaffold 1    | 4846050  | G         | A         | 440        | Intergenic region | Hypothetical protein              |
| POX02020 |          | NA        | NA         | NA        | NA          | scaffold 2    | 278039   | A         | G         | 386        | Intergenic region | Hypothetical protein              |
| POX02133 |          | NA        | NA         | NA        | NA          | scaffold 2    | 647264   | T         | C         | 5647       | Intergenic region | Hypothetical protein              |
| POX02134 |          | NA        | NA         | NA        | NA          | scaffold 2    | 712930   | T         | A         | 6347       | Intergenic region | Hypothetical protein              |
| POX02479 |          | NA        | NA         | NA        | NA          | scaffold 2    | 1705922  | C         | T         | 1150       | Intergenic region | Hypothetical protein              |
| POX02596 |          | NA        | NA         | NA        | NA          | scaffold 2    | 2056183  | A         | G         | 637        | Intergenic region | Hypothetical protein              |
| POX02676 |          | NA        | NA         | NA        | NA          | scaffold 2    | 2294921  | G         | A         | 832        | Intergenic region | Hypothetical protein              |
| POX02938 |          | NA        | NA         | NA        | NA          | scaffold 2    | 3082590  | A         | G         | 574        | Intergenic region | Hypothetical protein              |
| POX02949 |          | NA        | NA         | NA        | NA          | scaffold 2    | 3134389  | C         | T         | 1304       | Intergenic region | Hypothetical protein              |
| POX03236 |          | NA        | NA         | NA        | NA          | scaffold 2    | 4016405  | G         | A         | 4978       | Intergenic region | Zn2Cys6                           |
| POX03417 |          | NA        | NA         | NA        | NA          | scaffold 2    | 4531372  | G         | A         | 314        | Intergenic region | Hypothetical protein              |
| POX03810 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1082168  | C         | T         | 2754       | Intergenic region | Hypothetical protein              |
| POX03821 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1110547  | G         | A         | 966        | Intergenic region | Hypothetical protein              |
| POX03875 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1279965  | A         | T         | 10685      | Intergenic region | Hypothetical protein              |
| POX03875 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1282287  | A         | G         | 13007      | Intergenic region | Hypothetical protein              |
| POX03875 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1287904  | A         | C         | 18624      | Intergenic region | Hypothetical protein              |
| POX03875 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1295492  | A         | G         | 26212      | Intergenic region | Hypothetical protein              |
| POX03875 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1315727  | T         | C         | 46447      | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1317965  | A         | G         | 45311      | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1318363  | A         | G         | 44913      | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1341087  | C         | T         | 22189      | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1358384  | A         | G         | 4892       | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1358400  | G         | A         | 4876       | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1358427  | T         | C         | 4849       | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1362485  | T         | C         | 791        | Intergenic region | Hypothetical protein              |
| POX03876 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1362906  | T         | C         | 370        | Intergenic region | Hypothetical protein              |
| POX04008 |          | NA        | NA         | NA        | NA          | scaffold 3    | 1783360  | G         | A         | 1632       | Intergenic region | Hypothetical protein              |
| POX04538 |          | NA        | NA         | NA        | NA          | scaffold 4    | 581      | A         | G         | 11899      | Intergenic region | Hypothetical protein              |
| POX04806 |          | NA        | NA         | NA        | NA          | scaffold 4    | 819744   | C         | T         | 475        | Intergenic region | Hypothetical protein              |
| POX05062 |          | NA        | NA         | NA        | NA          | scaffold 4    | 1530788  | A         | T         | 3200       | Intergenic region | Hypothetical protein              |
| POX05667 |          | NA        | NA         | NA        | NA          | scaffold 5    | 19949    | C         | G         | 536        | Intergenic region | Hypothetical protein              |
| POX05904 |          | NA        | NA         | NA        | NA          | scaffold 5    | 766324   | A         | T         | 1584       | Intergenic region | Hypothetical protein              |
| POX06196 |          | NA        | NA         | NA        | NA          | scaffold 5    | 1702039  | C         | T         | 526        | Intergenic region | Hypothetical protein              |
| POX06663 |          | NA        | NA         | NA        | NA          | scaffold 6    | 185528   | T         | G         | 1132       | Intergenic region | Hypothetical protein              |
| POX06667 |          | NA        | NA         | NA        | NA          | scaffold 6    | 198239   | A         | G         | 2048       | Intergenic region | Hypothetical protein              |
| POX06667 |          | NA        | NA         | NA        | NA          | scaffold 6    | 198278   | T         | C         | 2087       | Intergenic region | Hypothetical protein              |
| POX06667 |          | NA        | NA         | NA        | NA          | scaffold 6    | 198881   | T         | C         | 2690       | Intergenic region | Hypothetical protein              |
| POX06667 |          | NA        | NA         | NA        | NA          | scaffold 6    | 200285   | G         | A         | 4094       | Intergenic region | Hypothetical protein              |
| POX06667 |          | NA        | NA         | NA        | NA          | scaffold 6    | 200353   | A         | G         | 4162       | Intergenic region | Hypothetical protein              |
| POX06668 |          | NA        | NA         | NA        | NA          | scaffold 6    | 229405   | A         | G         | 6811       | Intergenic region | Hypothetical protein              |

|          |  |    |    |    |    |             |         |   |   |       |                   |                                          |
|----------|--|----|----|----|----|-------------|---------|---|---|-------|-------------------|------------------------------------------|
| POX06668 |  | NA | NA | NA | NA | scaffold 6  | 229420  | C | T | 6826  | Intergenic region | Hypothetical protein                     |
| POX06668 |  | NA | NA | NA | NA | scaffold 6  | 232334  | A | G | 9740  | Intergenic region | Hypothetical protein                     |
| POX06669 |  | NA | NA | NA | NA | scaffold 6  | 243337  | C | T | 3880  | Intergenic region | Hypothetical protein                     |
| POX06671 |  | NA | NA | NA | NA | scaffold 6  | 274123  | T | C | 17279 | Intergenic region | Hypothetical protein                     |
| POX06671 |  | NA | NA | NA | NA | scaffold 6  | 275350  | C | G | 18506 | Intergenic region | Hypothetical protein                     |
| POX06671 |  | NA | NA | NA | NA | scaffold 6  | 275395  | A | G | 18551 | Intergenic region | Hypothetical protein                     |
| POX06671 |  | NA | NA | NA | NA | scaffold 6  | 275514  | T | C | 18670 | Intergenic region | Hypothetical protein                     |
| POX06671 |  | NA | NA | NA | NA | scaffold 6  | 275773  | G | A | 18929 | Intergenic region | Hypothetical protein                     |
| POX06672 |  | NA | NA | NA | NA | scaffold 6  | 293950  | T | C | 4020  | Intergenic region | Hypothetical protein                     |
| POX06672 |  | NA | NA | NA | NA | scaffold 6  | 295148  | C | T | 2822  | Intergenic region | Hypothetical protein                     |
| POX06672 |  | NA | NA | NA | NA | scaffold 6  | 299104  | G | A | 733   | Intergenic region | Hypothetical protein                     |
| POX06674 |  | NA | NA | NA | NA | scaffold 6  | 302763  | A | G | 657   | Intergenic region | Hypothetical protein                     |
| POX06675 |  | NA | NA | NA | NA | scaffold 6  | 313512  | C | T | 6290  | Intergenic region | Hypothetical protein                     |
| POX06675 |  | NA | NA | NA | NA | scaffold 6  | 313619  | T | C | 6183  | Intergenic region | Hypothetical protein                     |
| POX06675 |  | NA | NA | NA | NA | scaffold 6  | 313725  | T | C | 6077  | Intergenic region | Hypothetical protein                     |
| POX06675 |  | NA | NA | NA | NA | scaffold 6  | 313872  | C | T | 5930  | Intergenic region | Hypothetical protein                     |
| POX07714 |  | NA | NA | NA | NA | scaffold 7  | 1021897 | G | A | 3163  | Intergenic region | Hypothetical protein                     |
| POX07714 |  | NA | NA | NA | NA | scaffold 7  | 1022751 | T | C | 2309  | Intergenic region | Hypothetical protein                     |
| POX07714 |  | NA | NA | NA | NA | scaffold 7  | 1022863 | T | C | 2197  | Intergenic region | Hypothetical protein                     |
| POX07717 |  | NA | NA | NA | NA | scaffold 7  | 1066243 | A | G | 509   | Intergenic region | Hypothetical protein                     |
| POX07717 |  | NA | NA | NA | NA | scaffold 7  | 1066674 | C | T | 940   | Intergenic region | Hypothetical protein                     |
| POX07717 |  | NA | NA | NA | NA | scaffold 7  | 1070896 | A | G | 1721  | Intergenic region | Hypothetical protein                     |
| POX07717 |  | NA | NA | NA | NA | scaffold 7  | 1073555 | C | G | 5162  | Intergenic region | Hypothetical protein                     |
| POX07793 |  | NA | NA | NA | NA | scaffold 7  | 1321733 | A | C | 1104  | Intergenic region | Hypothetical protein                     |
| POX07874 |  | NA | NA | NA | NA | scaffold 7  | 1629840 | C | T | 4158  | Intergenic region | Hypothetical protein                     |
| POX07920 |  | NA | NA | NA | NA | scaffold 7  | 1763852 | G | A | 1464  | Intergenic region | Hypothetical protein                     |
| POX08273 |  | NA | NA | NA | NA | scaffold 8  | 994427  | C | T | 2928  | Intergenic region | Hypothetical protein                     |
| POX08273 |  | NA | NA | NA | NA | scaffold 8  | 998272  | G | A | 6773  | Intergenic region | Hypothetical protein                     |
| POX08273 |  | NA | NA | NA | NA | scaffold 8  | 998336  | A | G | 6837  | Intergenic region | Hypothetical protein                     |
| POX08273 |  | NA | NA | NA | NA | scaffold 8  | 998398  | G | A | 6899  | Intergenic region | Hypothetical protein                     |
| POX08274 |  | NA | NA | NA | NA | scaffold 8  | 1012819 | G | A | 2016  | Intergenic region | Hypothetical protein                     |
| POX08344 |  | NA | NA | NA | NA | scaffold 8  | 1207151 | G | A | 1895  | Intergenic region | Hypothetical protein                     |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 18256   | T | C | 9062  | Intergenic region | Centromere protein B, DNA-binding region |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 23086   | T | C | 13892 | Intergenic region | Centromere protein B, DNA-binding region |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 23881   | T | C | 14687 | Intergenic region | Centromere protein B, DNA-binding region |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 24213   | T | C | 15019 | Intergenic region | Centromere protein B, DNA-binding region |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 24238   | C | T | 15044 | Intergenic region | Centromere protein B, DNA-binding region |
| POX08500 |  | NA | NA | NA | NA | scaffold 9  | 24273   | T | C | 15079 | Intergenic region | Centromere protein B, DNA-binding region |
| POX08501 |  | NA | NA | NA | NA | scaffold 9  | 35401   | A | G | 12504 | Intergenic region | Hypothetical protein                     |
| POX08532 |  | NA | NA | NA | NA | scaffold 9  | 134484  | C | T | 324   | Intergenic region | Hypothetical protein                     |
| POX08694 |  | NA | NA | NA | NA | scaffold 9  | 652657  | T | G | 5501  | Intergenic region | Hypothetical protein                     |
| POX08703 |  | NA | NA | NA | NA | scaffold 9  | 692824  | A | G | 5031  | Intergenic region | Hypothetical protein                     |
| POX09308 |  | NA | NA | NA | NA | scaffold 13 | 30124   | T | C | 5940  | Intergenic region | Putative trehalose phosphorylase         |
| POX09308 |  | NA | NA | NA | NA | scaffold 13 | 30141   | T | C | 5957  | Intergenic region | Putative trehalose phosphorylase         |
| POX09308 |  | NA | NA | NA | NA | scaffold 13 | 30165   | G | A | 5981  | Intergenic region | Putative trehalose phosphorylase         |
| POX09309 |  | NA | NA | NA | NA | scaffold 13 | 43557   | A | G | 1118  | Intergenic region | Hypothetical protein                     |
| POX09309 |  | NA | NA | NA | NA | scaffold 13 | 43574   | C | T | 1101  | Intergenic region | Hypothetical protein                     |
| POX09309 |  | NA | NA | NA | NA | scaffold 13 | 43607   | T | C | 1068  | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 283354  | T | C | 3551  | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 299327  | A | G | 19524 | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 315108  | T | C | 35305 | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 315271  | A | G | 35468 | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 315297  | T | C | 35494 | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 316919  | C | A | 37116 | Intergenic region | Hypothetical protein                     |
| POX09545 |  | NA | NA | NA | NA | scaffold 14 | 316970  | C | T | 37167 | Intergenic region | Hypothetical protein                     |
| POX09552 |  | NA | NA | NA | NA | scaffold 15 | 24028   | C | T | 1341  | Intergenic region | Hypothetical protein                     |
| POX09559 |  | NA | NA | NA | NA | scaffold 15 | 48491   | A | C | 1992  | Intergenic region | Hypothetical protein                     |

|          |  |    |    |    |    |             |         |   |   |       |                         |                                          |
|----------|--|----|----|----|----|-------------|---------|---|---|-------|-------------------------|------------------------------------------|
| POX09628 |  | NA | NA | NA | NA | scaffold 16 | 1262    | A | G | 747   | Intergenic region       | Hypothetical protein                     |
| POX09630 |  | NA | NA | NA | NA | scaffold 16 | 7913    | T | C | 2798  | Intergenic region       | Hypothetical protein                     |
| POX09631 |  | NA | NA | NA | NA | scaffold 16 | 12955   | C | T | 5645  | Intergenic region       | Hypothetical protein                     |
| POX09678 |  | NA | NA | NA | NA | scaffold 16 | 156245  | C | T | 5120  | Intergenic region       | Hypothetical protein                     |
| POX09678 |  | NA | NA | NA | NA | scaffold 16 | 157493  | C | T | 6368  | Intergenic region       | Hypothetical protein                     |
| POX09678 |  | NA | NA | NA | NA | scaffold 16 | 157505  | G | A | 6380  | Intergenic region       | Hypothetical protein                     |
| POX09678 |  | NA | NA | NA | NA | scaffold 16 | 157547  | G | A | 6422  | Intergenic region       | Hypothetical protein                     |
| POX09679 |  | NA | NA | NA | NA | scaffold 16 | 182948  | G | A | 4378  | Intergenic region       | Hypothetical protein                     |
| POX09679 |  | NA | NA | NA | NA | scaffold 16 | 182968  | A | G | 4358  | Intergenic region       | Hypothetical protein                     |
| POX09679 |  | NA | NA | NA | NA | scaffold 16 | 185777  | C | T | 1549  | Intergenic region       | Hypothetical protein                     |
| POX09683 |  | NA | NA | NA | NA | scaffold 16 | 205554  | A | G | 8153  | Intergenic region       | Hypothetical protein                     |
| POX09683 |  | NA | NA | NA | NA | scaffold 16 | 208907  | G | A | 4800  | Intergenic region       | Hypothetical protein                     |
| POX09740 |  | NA | NA | NA | NA | scaffold 17 | 216677  | A | G | 2367  | Intergenic region       | Hypothetical protein                     |
| POX09745 |  | NA | NA | NA | NA | scaffold 18 | 20986   | G | A | 9204  | Intergenic region       | Hypothetical protein                     |
| POX09745 |  | NA | NA | NA | NA | scaffold 18 | 21114   | C | T | 9076  | Intergenic region       | Hypothetical protein                     |
| POX09745 |  | NA | NA | NA | NA | scaffold 18 | 21155   | G | A | 9035  | Intergenic region       | Hypothetical protein                     |
| POX09745 |  | NA | NA | NA | NA | scaffold 18 | 21255   | C | T | 8935  | Intergenic region       | Hypothetical protein                     |
| POX09746 |  | NA | NA | NA | NA | scaffold 18 | 57351   | C | T | 25361 | Intergenic region       | Hypothetical protein                     |
| POX09746 |  | NA | NA | NA | NA | scaffold 18 | 57915   | G | T | 24797 | Intergenic region       | Hypothetical protein                     |
| POX09746 |  | NA | NA | NA | NA | scaffold 18 | 57942   | G | A | 24770 | Intergenic region       | Hypothetical protein                     |
| POX09746 |  | NA | NA | NA | NA | scaffold 18 | 62205   | A | G | 20507 | Intergenic region       | Hypothetical protein                     |
| POX09782 |  | NA | NA | NA | NA | scaffold 19 | 31053   | C | T | 1562  | Intergenic region       | Hypothetical protein                     |
| POX09799 |  | NA | NA | NA | NA | scaffold 20 | 343     | C | T | 8266  | Intergenic region       | Hypothetical protein                     |
| POX09800 |  | NA | NA | NA | NA | scaffold 20 | 18904   | G | A | 4466  | Intergenic region       | Centromere protein B, DNA-binding region |
| POX09800 |  | NA | NA | NA | NA | scaffold 20 | 18929   | T | C | 4491  | Intergenic region       | Centromere protein B, DNA-binding region |
| POX09803 |  | NA | NA | NA | NA | scaffold 21 | 5079    | A | G | 14270 | Intergenic region       | Hypothetical protein                     |
| POX09803 |  | NA | NA | NA | NA | scaffold 21 | 8515    | A | G | 10834 | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 31625   | G | A | 1903  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 31638   | G | A | 1916  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 31777   | T | C | 2055  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 31824   | G | A | 2101  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 31835   | A | G | 2113  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 35508   | T | C | 5786  | Intergenic region       | Hypothetical protein                     |
| POX09804 |  | NA | NA | NA | NA | scaffold 21 | 35648   | G | A | 5926  | Intergenic region       | Hypothetical protein                     |
| POX00489 |  | NA | NA | NA | NA | scaffold 1  | 1511639 | T | C | 205   | 1500 bp unstream region | Hypothetical protein                     |
| POX00835 |  | NA | NA | NA | NA | scaffold 1  | 2505008 | T | C | 152   | 1500 bp unstream region | Hypothetical protein                     |
| POX00916 |  | NA | NA | NA | NA | scaffold 1  | 2767275 | G | A | 612   | 1500 bp unstream region | Hypothetical protein                     |
| POX01043 |  | NA | NA | NA | NA | scaffold 1  | 3227729 | C | T | 496   | 1500 bp unstream region | Hypothetical protein                     |
| POX01152 |  | NA | NA | NA | NA | scaffold 1  | 3592567 | A | G | 1440  | 1500 bp unstream region | Hypothetical protein                     |
| POX01285 |  | NA | NA | NA | NA | scaffold 1  | 3946990 | G | A | 472   | 1500 bp unstream region | Hypothetical protein                     |
| POX01487 |  | NA | NA | NA | NA | scaffold 1  | 4556201 | T | A | 102   | 1500 bp unstream region | Hypothetical protein                     |
| POX01513 |  | NA | NA | NA | NA | scaffold 1  | 4622888 | C | T | 1446  | 1500 bp unstream region | Hypothetical protein                     |
| POX02086 |  | NA | NA | NA | NA | scaffold 2  | 475426  | G | A | 565   | 1500 bp unstream region | Zinc finger, CCHC-type                   |
| POX02086 |  | NA | NA | NA | NA | scaffold 2  | 475437  | T | C | 554   | 1500 bp unstream region | Zinc finger, CCHC-type                   |
| POX03280 |  | NA | NA | NA | NA | scaffold 2  | 4144696 | G | A | 320   | 1500 bp unstream region | Hypothetical protein                     |
| POX03761 |  | NA | NA | NA | NA | scaffold 3  | 850869  | C | G | 337   | 1500 bp unstream region | Hypothetical protein                     |
| POX03761 |  | NA | NA | NA | NA | scaffold 3  | 850914  | A | C | 382   | 1500 bp unstream region | Hypothetical protein                     |
| POX04280 |  | NA | NA | NA | NA | scaffold 3  | 2616147 | C | T | 1490  | 1500 bp unstream region | Hypothetical protein                     |
| POX05515 |  | NA | NA | NA | NA | scaffold 4  | 2861314 | A | G | 9     | 1500 bp unstream region | Hypothetical protein                     |
| POX05833 |  | NA | NA | NA | NA | scaffold 5  | 523619  | A | C | 567   | 1500 bp unstream region | Hypothetical protein                     |
| POX05962 |  | NA | NA | NA | NA | scaffold 5  | 935733  | G | C | 1208  | 1500 bp unstream region | Hypothetical protein                     |
| POX06075 |  | NA | NA | NA | NA | scaffold 5  | 1319822 | G | A | 510   | 1500 bp unstream region | Hypothetical protein                     |
| POX06167 |  | NA | NA | NA | NA | scaffold 5  | 1608695 | C | T | 25    | 1500 bp unstream region | Hypothetical protein                     |
| POX06624 |  | NA | NA | NA | NA | scaffold 6  | 50988   | A | G | 359   | 1500 bp unstream region | Hypothetical protein                     |
| POX06672 |  | NA | NA | NA | NA | scaffold 6  | 297934  | G | A | 36    | 1500 bp unstream region | Hypothetical protein                     |
| POX06673 |  | NA | NA | NA | NA | scaffold 6  | 299128  | G | A | 725   | 1500 bp unstream region | Hypothetical protein                     |
| POX06952 |  | NA | NA | NA | NA | scaffold 6  | 1154831 | T | C | 133   | 1500 bp unstream region | Hypothetical protein                     |

|          |         |       |           |       |               |             |         |    |    |      |                          |                                               |
|----------|---------|-------|-----------|-------|---------------|-------------|---------|----|----|------|--------------------------|-----------------------------------------------|
| POX06983 |         | NA    | NA        | NA    | NA            | scaffold 6  | 1240576 | G  | A  | 72   | 1500 bp unstream region  | Endo-1,4-β-glucanase                          |
| POX07319 |         | NA    | NA        | NA    | NA            | scaffold 6  | 2275900 | C  | T  | 945  | 1500 bp unstream region  | Hypothetical protein                          |
| POX07574 |         | NA    | NA        | NA    | NA            | scaffold 7  | 558780  | G  | A  | 188  | 1500 bp unstream region  | Hypothetical protein                          |
| POX07746 |         | NA    | NA        | NA    | NA            | scaffold 7  | 1171285 | G  | A  | 333  | 1500 bp unstream region  | Hypothetical protein                          |
| POX07920 |         | NA    | NA        | NA    | NA            | scaffold 7  | 1761971 | A  | G  | 172  | 1500 bp unstream region  | Hypothetical protein                          |
| POX07962 |         | NA    | NA        | NA    | NA            | scaffold 8  | 128706  | G  | A  | 956  | 1500 bp unstream region  | Hypothetical protein                          |
| POX08241 |         | NA    | NA        | NA    | NA            | scaffold 8  | 912157  | T  | C  | 656  | 1500 bp unstream region  | Hypothetical protein                          |
| POX09581 |         | NA    | NA        | NA    | NA            | scaffold 15 | 129370  | C  | T  | 184  | 1500 bp unstream region  | Aminoglycoside phosphotransferase             |
| POX09581 |         | NA    | NA        | NA    | NA            | scaffold 15 | 129610  | G  | A  | 424  | 1500 bp unstream region  | Aminoglycoside phosphotransferase             |
| POX09581 | 129178  | C<->T | GAC<->GAT | D<->D | Synonymous    | scaffold 15 | 129370  | C  | T  | 184  | 1500 bp unstream region  | Aminoglycoside phosphotransferase             |
| POX09581 | NA      | NA    | NA        | NA    | Synonymous    | scaffold 15 | 129610  | G  | A  | 424  | 1500 bp unstream region  | Aminoglycoside phosphotransferase             |
| POX09581 | NA      | NA    | NA        | NA    | Synonymous    | scaffold 15 | 129633  | A  | G  | 447  | 1500 bp unstream region  | Aminoglycoside phosphotransferase             |
| POX09616 |         | NA    | NA        | NA    | NA            | scaffold 15 | 236294  | C  | G  | 61   | 1500 bp unstream region  | Hypothetical protein                          |
| POX09626 |         | NA    | NA        | NA    | NA            | scaffold 15 | 263643  | A  | G  | 1058 | 1500 bp unstream region  | DNA breaking-rejoining enzyme, catalytic core |
| POX09797 |         | NA    | NA        | NA    | NA            | scaffold 19 | 65416   | C  | T  | 142  | 1500 bp unstream region  | Hypothetical protein                          |
| POX09813 |         | NA    | NA        | NA    | NA            | scaffold 25 | 3072    | T  | C  | 296  | 1500 bp unstream region  | Hypothetical protein                          |
| POX09820 |         | NA    | NA        | NA    | NA            | scaffold 28 | 6907    | A  | G  | 536  | 1500 bp unstream region  | Hypothetical protein                          |
| POX00799 |         | NA    | NA        | NA    | NA            | scaffold 1  | 2405438 | T  | G  | 53   | 300 bp downstream region | Hypothetical protein                          |
| POX02617 |         | NA    | NA        | NA    | NA            | scaffold 2  | 2119426 | C  | T  | 28   | 300 bp downstream region | Hypothetical protein                          |
| POX03348 |         | NA    | NA        | NA    | NA            | scaffold 2  | 4341229 | G  | A  | 256  | 300 bp downstream region | Hypothetical protein                          |
| POX05545 |         | NA    | NA        | NA    | NA            | scaffold 4  | 2964519 | T  | C  | 98   | 300 bp downstream region | Hypothetical protein                          |
| POX05546 |         | NA    | NA        | NA    | NA            | scaffold 4  | 2964774 | G  | A  | 186  | 300 bp downstream region | Hypothetical protein                          |
| POX06888 |         | NA    | NA        | NA    | NA            | scaffold 6  | 961348  | T  | C  | 89   | 300 bp downstream region | Hypothetical protein                          |
| POX06955 |         | NA    | NA        | NA    | NA            | scaffold 6  | 1161505 | C  | T  | 31   | 300 bp downstream region | Hypothetical protein                          |
| POX06991 |         | NA    | NA        | NA    | NA            | scaffold 6  | 1262510 | G  | A  | 93   | 300 bp downstream region | Hypothetical protein                          |
| POX08720 |         | NA    | NA        | NA    | NA            | scaffold 10 | 60890   | G  | A  | 105  | 300 bp downstream region | Hypothetical protein                          |
| POX09799 |         | NA    | NA        | NA    | NA            | scaffold 20 | 8813    | A  | G  | 13   | 300 bp downstream region | Hypothetical protein                          |
| POX00082 | 257332  | A<->C | ATC<->CTC | K<->L | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX00715 | 2174681 | G<->A | GTG<->ATG | V<->M | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX01113 | 3467516 | A<->C | ACC<->CCC | T<->P | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Ribosomal protein S15                         |
| POX01133 | 3535181 | G<->C | AAG<->AAC | K<->N | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Ribosomal protein S13                         |
| POX01395 | 4313388 | G<->A | CCG<->CCA | P<->P | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX01661 | 5072141 | G<->A | GAT<->AAT | D<->N | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX01868 | 5682577 | C<->T | ACT<->ATT | T<->I | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX02118 | 598859  | G<->A | GAA<->AAA | E<->K | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX02669 | 2276059 | A<->C | TCA<->TCC | S<->S | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX02883 | 2932538 | G<->A | GAA<->AAA | E<->K | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Zn2Cys6 transcription factor                  |
| POX02958 | 3163067 | G<->A | GTA<->ATA | V<->I | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Calcium/calmodulin-dependent protein kinase   |
| POX03359 | 4368973 | T<->C | TAG<->CAG | *<->Q | Stop nonsyn   | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX03494 | 106520  | G<->A | CGA<->CAA | R<->Q | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX03641 | 537799  | C<->T | CTC<->TTC | L<->F | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Beta-glucosidase                              |
| POX04052 | 1920278 | G<->A | TGC<->TAC | C<->Y | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX04165 | 2273645 | C<->T | GAC<->GAT | D<->D | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX04725 | 575782  | G<->A | GAG<->AAG | E<->K | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | HLH transcription factor                      |
| POX04922 | 1161213 | C<->T | AAC<->AAT | N<->N | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05027 | 1435067 | C<->T | CCC<->TCC | P<->S | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05164 | 1846551 | C<->T | TCA<->TTA | S<->L | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05375 | 2463508 | G<->A | CTG<->CTA | L<->L | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05609 | 3138853 | G<->C | GTC<->CTC | V<->L | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05751 | 269546  | G<->A | GTT<->ATT | V<->I | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX05990 | 1020432 | C<->T | TCG<->TTG | S<->L | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Permease                                      |
| POX06859 | 864182  | C<->T | CCC<->CCT | P<->P | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Putative glycogenin                           |
| POX07343 | 2350315 | G<->A | ATG<->ATA | M<->I | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX07776 | 1269957 | C<->T | GGC<->GGT | G<->G | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX08425 | 1464880 | G<->A | GAG<->GAA | E<->E | Synonymous    | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX08600 | 338121  | G<->A | GAG<->AAG | E<->K | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |
| POX09009 | 354387  | G<->A | GAG<->AAG | E<->K | Nonsynonymous | NA          | NA      | NA | NA | NA   |                          | Hypothetical protein                          |

|          |        |       |           |       |               |    |    |    |    |    |  |                      |
|----------|--------|-------|-----------|-------|---------------|----|----|----|----|----|--|----------------------|
| POX09060 | 487543 | C<->T | ACA<->ATA | T<->I | Nonsynonymous | NA | NA | NA | NA | NA |  | Hypothetical protein |
| POX09438 | 485864 | C<->T | CGC<->TGC | R<->C | Nonsynonymous | NA | NA | NA | NA | NA |  | Hypothetical protein |
| POX09549 | 12109  | C<->A | GCA<->GAA | A<->E | Nonsynonymous | NA | NA | NA | NA | NA |  | Hypothetical protein |
| POX09802 | 45404  | T<->G | GGT<->GGG | G<->G | Synonymous    | NA | NA | NA | NA | NA |  | Pectin lyase         |