

Alignments of the retropositions in the six investigated TRGJ blocks

R19:LINE L2

```
R19TRGJ5      catatggaatttgtgagttcagtgagccatctcagct-ccaaagttgatgaaaagtgtct 59
R19TRGJ6      gtaatggaatttgtgagctca---agccatctcagct-ccaaagtccatgaaaaagtct 56
R19TRGJ3      agacttttactgcctcactta-ttagccatgtcttttaccaaagtccatgaaaactgttt 59
R19TRGJ1      atggaccagtttgtgagctcaatgagccatttcagct-tccaaagttcac-gaaagtgtct 58
R19TRGJ2      atggaccagtttgtgagctcaatgagccatttcagcctccaaagttcaccgaaagtgtct 60
R19TRGJ4      atgaacaagtttgtcagctcg---agtgatttcagct-ccaaagtctttgaaaatggtgt 56
                *      *      ** ** *      *      *      *
R19TRGJ5      gcatggttgagc|atccttatttgcctt---ATTCTCTCAGCAAACATTATTGAGGACAG 115
R19TRGJ6      gcatggttgaac|atcctcacttgcctc---ATTCTCTCAGCAAACATTTTGGAGGACAG 112
R19TRGJ3      acatggttgaac|atcctcatctgccc---ATTCTCTCAGCAATTATTATTGAGGACAG 115
R19TRGJ1      tcatggctgggc|attctcctttgctctTTCATTCTCTCAGCAAATATTATTGAGGACAG 118
R19TRGJ2      tcatggctgggc|attctcctttgctctTTCATTCTCTCAGCAAATATTATTGAGGACCG 120
R19TRGJ4      gcctggttacat|atcctcatttgccttTTCATTCTCTCAGCAAATATTATTGA--ATTG 114
                *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
R19TRGJ5      TTTCTATGTTGGATGCTGGTGATAAAAG-GTGAAGAAGACACAAGACAGAACAAGTTTCA 174
R19TRGJ6      TTTCTATGT-GGATGCTGGAGACAGAAGTGTGAACAAGACACA-GACAGAACAATCCCA 170
R19TRGJ3      TTTCTATGTTGGATGCTGGAGATAAAAGAGTAAGCTAGACAAA-GATAGAGTGAGTCCCA 174
R19TRGJ1      TTTCTGTGCTGGGAGCTGCAGACAGATG-ACGGGTGAACGAGA-CATGGAGCAAGTCTCA 176
R19TRGJ2      TTTCTGTGCTGGGAGCTGCAGACAGATG-ACGGGTGAGCAAGA-CTCAGAACAGGTCTCA 178
R19TRGJ4      TTTCTGTGCTGGAGGCTTGAGATAAAACTGTACACATGGCAGA---TAGAACAAGGAT-A 170
                ***** *  *  *  *  *  *  *  *  *  *  *  *  *
R19TRGJ5      ACACTCAAAGAG----TTTCTTGACTAGCAGAAAATCA|---ag-attccaacatgat|tg 226
R19TRGJ6      ACACTCAAACAG----CTTATAGTCTAGTGGAAGGCA|ttctag-atgctggcttgat|tg 225
R19TRGJ3      ACAGTCAAACAG----TTTCTATTCTACCCAATGAGCT|ttacag-attccggcttgat|tg 229
R19TRGJ1      ACAC-CAAACAG----CTTTGTGTTCTAGTGGAAGGCA|ttctag-attctggcttaatt|g 231
R19TRGJ2      ACAC-CAAGCAG----CTTCTGTTCTAGTGGAAGGCA|ttctaattccggcttaatt|g 234
R19TRGJ4      ACACTCAAACAAACCATTCTATTCTAGTGGGATAGT|G|ttgaa-attctggcttaatt|gg 229
                ***  ***  *      *  *  *  *  *  *  *  *  *  *  *  *
R19TRGJ5      agcccaatgttttgtggcctgtttctgccagagaggcaagaagtccttgaactgatgagct 286
R19TRGJ6      ggctca-tattcaatggcctgttggtaccagagaaacaacagatccttgattgatgaact 284
R19TRGJ3      ggacccatgttctatgagctgtggctgctagacagacagcagatccttgattgatgggct 289
R19TRGJ1      agacctgtcttctatggtccatggctgc---agaactagggcgtcttgaattgttgacct 288
R19TRGJ2      agacctgtcttctatggttcatggctgc---agaatgagggcatccttgattgctgagct 291
R19TRGJ4      ggacccatgttctatgatctgtggctgc-agagaggcaggacaccttgatgaacttgttt 288
                *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *
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R20:Sine MIRb

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R20TRGJ5      taagcaatataaaatccatgtactttgttga-agatttt---aatgaaatggccgc--- 53
R20TRGJ4      tattgtttataaaatctacaccttttgtttgatggaagac---agataaacggccttg-- 55
R20TRGJ1      tattgcttataaaaaacataaccttttgtttgatggaagattttgatgaaatagcctc--- 57
R20TRGJ2      tattgctgataaaaaatcatatcttttgtttgatggaagattttgatgaaatggcctc--- 57
R20TRGJ3      tatagcttataaaactcatatattttatctggtggaagaatttaaatgaaatgtccttacc 60
R20TRGJ6      aaatggcaacccactccagtgttcttgcctggagaatcccagggatggcagagccttg-- 58
                *      *      *      *      **      *      *
                *      *      *      *      **      *      *

R20TRGJ5      --AGACCATCTTTTcaaagagaataataatatcagCTACTATT-----TACTGAAG 102
R20TRGJ4      --AAACCATCCCATcaaagagaatttttagtattagTCAATATTAGTTATATTACTGAGG 113
R20TRGJ1      --AAACCAAGCCATcaaagagaattttaatatattagTCAATATT-----TACTGAAG 106
R20TRGJ2      --AAACCATGCCATcaaagagaattttaatgttagTTAATATT-----TACTGAAG 106
R20TRGJ3      TTAAGTCATCCCACTaaagagaatttttagtatcagCTTCCATT-----TACTGAGA 111
R20TRGJ6      --TGGGCTGCCATCtatggggtcgcacagagtcagACACGACTGA---AGCGACTTAG- 111
                *      *      *      *      *      *      *      *      *      *
                *      *      *      *      *      *      *      *      *      *

R20TRGJ5      GCCAGACATCATGATAAGTAGTCTTAGGGCCTTATCTCTTTCCCTCAACAGAAATTCCTTAT 162
R20TRGJ4      GCCAGGCACCATGATAAGTA-TTTCAAATGCCTTATCT-TTGCCCTCAACAGGAATCCTTTC 171
R20TRGJ1      GATAGATACCATGATACGTAGTTTCAATGCCTTATAC-TTTCCTCACCAGTAATCCTTTC 165
R20TRGJ2      GATAGATACCATGACACATAGTTTCAATGTCTTATAC-TTTCCTCACCAGTAATCCTTTC 165
R20TRGJ3      ATCAGACAGCAAAGGAAG--TTTCAGTGCCTTATCTCATTCCTCAGCAGGAATCATCTT 168
R20TRGJ6      --CAGACATCATGATACGTAGTTTTCAGTGCCTTATCT-TTTCCTCAAAGGAATCCTTGT 168
                **      *      **      *      *      *      *      *      *      *      *
                *      *      *      *      *      *      *      *      *      *

R20TRGJ5      ACTCCCATTTCATAGATAGGGAACACTGAGGTTGAGAGAAGTTCAGGCCTTGCCATAATA 222
R20TRGJ4      ATTCTCATTTTATAGATAAAGAAACTGAGGTTTAGAGAAGTTCACCTAAATGCT---GTA 228
R20TRGJ1      ATTCCCATTTTAGAGATAAAGAAACTGAGGTTTAGGAAAGTTTAGTTACTTGCC---TAA 222
R20TRGJ2      ATTCCCATTTTAGAGATAAAGAAACTGAGGTTTAGAGAAGTTTAATTACTTGCC---TAA 222
R20TRGJ3      ATTCCCAGTTTATATATAAGGACACTGAGGTTTAAAGAAGCTCAGTTACTAGCC---TAA 225
R20TRGJ6      CTTCCCATTCCACAGATAAAGATAAAGTGAAGTTTAGAGAAGTTCAGGTGCTTGCC---TAA 225
                **      **      *      *      *      *      *      *      *      *      *
                *      *      *      *      *      *      *      *      *      *

R20TRGJ5      AAGTACATGACTAGTTACTG-TGGTGAAAGTTTGAATCTGATAGTCTATTCCTAAG--TG 279
R20TRGJ4      AGTCACATGACTAGTTACTGCTGGCAAAGTTTGGGATCCAATAGGA-ATTCCTTG--TG 285
R20TRGJ1      AGTCACATGACTAGC-ACTG-TGGCAAAGTTTGGGATCCAGTAGAGACTCGTCAAAC-TT 279
R20TRGJ2      AGTCACATGACTAGCTACTG-TGGCAAAGTTTGGGATCCAGTAGAGACTTGTCAAAC-TT 279
R20TRGJ3      AGTCACCTGACAAGATACATTGCAAAAAGTTTAGGATTCAATAAGGATTGTCTATTCCA 285
R20TRGJ6      AGTCACATAACAAGTTACTG-TGGCAAATATTGTAATTCAGTAGAGACTGTTTATT-CC 283
                *      **      *      **      *      *      *      *      *      *
                *      **      *      **      *      *      *      *      *      *

R20TRGJ5      CATGGTCTGG-----ATcattaagtgatgtgagaagcatcctctttttatattctgaat 330
R20TRGJ4      GCTCAGCTGGTAAAGAATctgttttgtaatgtgagagac---ctgggggtgaa-tccctggg 341
R20TRGJ1      AGAGGACTGG-----ATcattacgtgatatttgaaaca--ttaagtcat-gtctttaca 330
R20TRGJ2      AGAGGACTGG-----ATcattacgtgatatttgaaaca--ttaagtcat-gtctttaca 330
R20TRGJ3      AAGTGAATGGTCT--GGActgttattgatgttagaaacat--ttaagttat-gtctttata 341
R20TRGJ6      AAAGGACAGAGTCTGGACcattacataagggtgagaaaaa--tgaagtcataagttttata 341
                *      *      *      *      *      *      *      *      *      *
                *      *      *      *      *      *      *      *      *      *
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R31:Sine MIRb

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R31TRGJ3    tatgttcatgaaagctggaagccttgatatggggc-----agttaaaagtca 47
R31TRGJ6    tgtgttcatgaattttgggaagg-----agataaaactca 34
R31TRGJ4    tatattcatgaattttgggaagccttgatatggagtattcacatggcgtattttaaagtca 60
R31TRGJ5    tttgtttatgaatgtcacaaagcattgatatggggc-----atttttaagtat 47
R31TRGJ1    --gagtcagacacgactgaagc---gacttggcat-----gcacacaagatg 42
R31TRGJ2    --gagtcggacacgactgaagc---aacttggcat-----gcacgcaagatg 42
              *      *      ***                      **

R31TRGJ3    taccccatcataacatgtggagaaagaacaaatgtcaaGGT-TAATCCAGCTTCTGTTAC 106
R31TRGJ6    tacctcatcttaccataatggaaaaagaacaaaggccaaCGTGTGATCCAGGTTCTACTAC 94
R31TRGJ4    tacgccatcttttagaaatggagaaa-aatgaaggtcaaGGCATAATCTAGCTT-TACTAC 118
R31TRGJ5    cagtccaacttagcacttggaaaggaaaccaaagccaaACGTGGGCGAGCCTCTGCTTC 107
R31TRGJ1    caccctcatctctgtatatggagagaaaacggaaggtcaaCTTATAATCCAGCTC-TGCTAC 101
R31TRGJ2    caccctcatctctgcataatggagagaaaacggaaggtcaaCTTATAATCCAGCTC-TGCTAC 101
              *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

R31TRGJ3    ATATTAGCTGGGACTTT---AAGTTTATGATGTCTTGAACCTCTCTTCCCATTGAAAA 160
R31TRGJ6    GC--TAGCTGTGACTTTGGTCAAGTTACATAACCTCTTGAACGTCTCTTCTATTGAAAA 152
R31TRGJ4    TTAAGAGCTCTGACTTTGGGCAAGTTACATGAAGTCTTGAACTTTCCCTTCCATCAAAGA 178
R31TRGJ5    TGAAAACTGTGACTTTGGGCAAGTGATATAACTTTTGAACATCTCTTCCCATTGAA-A 166
R31TRGJ1    TTAACAGCGGTGACTTTGGGCAAGTTCCATGAAGTCTTGAACTTCTCTTGCCATTAAACA 161
R31TRGJ2    TTAACAGCGGTGACTTTGGGCAAGTTCCATGAAGTCTTGAACTTCTCTTGCCATTAAAAA 161
              *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

R31TRGJ3    TAAGAACAATAAAACACCCCTTACCaccttctgtggatgaaca-ac---caagctataa 215
R31TRGJ6    TAAGGATAGTAAG---TCCTCACAatctactgtgaatggaaa-ccatggcgagcactag 208
R31TRGJ4    TAAGAACAATAATCAGCATCTGACAatctattgtggatgaaaggccacggtagagcactgg 238
R31TRGJ5    TAA-AACAATAATAGGTACCTCATCaccttctgtggatgaaaagccatgatgagagttag 225
R31TRGJ1    TAA-AATAGTACTAAGCACCTAACCacgtactgcggatgaaaggccatagtgagcagtag 220
R31TRGJ2    TAA-AACAGTACTAAGCACCTAACCatatactgcggatgaaaggccatagtgagcagtag 220
              ***  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *  *

R31TRGJ3    ttcaatgacaaattttctcctcttaccacttgctaggttggtccaaatcacactaacat 275
R31TRGJ6    ttcagtgcacatgttttctcctcttattacacgctagtttattccatggttctccgtgtt 268
R31TRGJ4    ttcaatgatg-----cctttcttttaccactcgcgtgtgctgtcctcagtcattc-actcg 292
R31TRGJ5    ttcactggtagcttttctccttttctactctaagctaagttgttccaaacttcatgacatg 285
R31TRGJ1    ccttttg-----tttttctactactcactaagtttttccaagccacaacatggtt 269
R31TRGJ2    ccttttg-----tttttctactactcactaggtttttccaagccacaacatggtt 269
              **      *  *  *  *  *  *  *  *  *  *  *  *  *

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R23: Sine BovA2

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R23TRGJ5      gtgcaaacaggtggccagagcatcgaagtgtttggttcag-aacacaacttatt--gtt 57
R23TRGJ6      ccatttgttttggacaacaaaagtgaagtaattccatatactgactatacatattagct 60
                * * * * *
R23TRGJ5      acaggcgaagtttctttaa--AATCTGTAGTGAGGTAGGGATAGGAG----GTAGGCAA 110
R23TRGJ6      ttagacaatgttcccttaTTGCTTCCCGGTGACTCAGAGGTTAAAGCGTCTGCCCCGCAA 120
                * * * * *
R23TRGJ5      TACAGGCACTGCAGGCTTGAGTGTGGTGTGCTGGC---TCAGATGGAGAAGGCAATGGCAA 167
R23TRGJ6      TGCAGGAGACCTGGTTTCAATCCCTGGGTGAGGAAGATCCCCCTGGAGAAGGAAATGGCAA 180
                * * * * *
R23TRGJ5      CCCACTCCAGTACTCTTGCCTGGAAAAATCCCATGGATGGAGAAGACTGGTAGGCTGCAGT 227
R23TRGJ6      CCCACTCTAGTATTCTTGCCTGGAGAAATGCCATGGACGGAGGAGCCTGGTGGGCTATAGT 240
                *****
R23TRGJ5      ACATGGGGTCATGAACAGTCGGACACGACTGAGTGACTTTACTT--TCACCTTTCACTTT 285
R23TRGJ6      CCACGGGTGGCAAAAGAGTCAGATACGACTGAGTGACTTCACCTGTTCAATGTTCCCTTT 300
                * * * * *
R23TRGJ5      C---CTGCATTGGAGAAAggaaatggcaacccactccagtgttcttgctggagaatccc 341
R23TRGJ6      CAGGTTGCTTCACCCGTggaaa-gacagt--ggctaagagctacagaccaagtgcctt 357
                * * * * *
R23TRGJ5      agggatgacggagcctggttaggc-tgccatctgtggggtcgcacagagtcagacacaact 400
R23TRGJ6      taagggtg--tgtgtatgaaaagcacgtgccctatgaca---atggcgtaagaattcct 414
                * * * * *

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R24: AT rich

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R24TRGJ5      tggctaaatgtaatgagtgtaatttca-aatgttagaatataaggt-----gctctctc 53
R24TRGJ6      tcagtaagggcaa--gcctgtgccatgatattagaatattatgttgagcacacaatc 58
                *** * * *
R24TRGJ5      atctttagta-gaaatGTTTGGAAATAAAAATATGTATTT-TTAAATAAgagtttt 111
R24TRGJ6      agctagttaatagaaatCACTAATAATAATGATAATAATAATATTATAGGTCtttctttt 118
                * * * * *
R24TRGJ5      t---gcaacttgaaatatacaagcttataggatatacaaaaagtcaaat--attcaag 165
R24TRGJ6      ccatagcatttttaatacaatcactttttcaaatcttgtttcatgttggtctcacttcag 178
                *** * * * *

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R15: Sine Mirb

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R15TRGJ5      aattat--tgattttgtatgcagc-gctaagatttttctgttcttttgcgagaaagtga 57
R15TRGJ3      cattaccctgtgcttcctctgtggctgctgggaacacttggcaacggctgagcaccacta 60
                **** * * * *
R15TRGJ5      ttctttgttcctgaattttgcctcatatctTCTAGACACATTATCTCATGTGAACCTTAC 117
R15TRGJ3      atttccagacctgaacttgacctcatttttCTGACTTAGGTACTATCAT----ATCCTCC 116
                * * * * *
R15TRGJ5      AAAAGTACTGAGGAATAGATAACAACACCTCCCTTTTAAAGATGAGGAACTGACACTCT 177
R15TRGJ3      CTTACCCCTAATGCATGGTGAA-----CTGGGATTGAGAGA--AACTCTGTAGCA-TCC 168
                * * * * *
R15TRGJ5      GAGATGTACCCAAGAACATGTCAACAGGAGTGGCGGGTTAAAAATTGGAGCTCTATCCTT 237
R15TRGJ3      AAGAT-CACAAAGGTAT-TGATATCAGAAGAGACACAGTTTGAAGCCAAG---TATAAAT 223
                **** * * * *
R15TRGJ5      CTGATTTTAAACATCTTTTCCTTcactttcaacctcctgagcggttaatttgatttctcc 297
R15TRGJ3      GTCATTTAAACATATGCTTTTCCCTacactctacct---agaaccaacaagaagt---- 275
                * * * * *
R15TRGJ5      catttgattttcttagaaacctgatgaacgtgttaatatattactgcacca- 350
R15TRGJ3      -aatgagaggataaagaagagaagtgggggagtcagggtgatctgtatatt 325
                * * * * *

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R25: Sine MIRb

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R25TRGJ5      tggcccaaggccaaagtttattactacaggttaagttttgtgagttgacacatttcctttt 60
R25TRGJ3      tggctcaaggtttacatttggtattacaagtaagttttgtgagttgacacgtttcctttc 60
R25TRGJ4      --gcccaagggtgaagtttgtcattacagctaagttttgtgagttgacaggtttcctttt 58
R25TRGJ1      --gcccaagggtgaagtttgtcattacaggttaagctttatgagttaacatgtctcccttc 58
R25TRGJ2      -ggcccagggtgaagtttgtcattacag-taagttttatgagttaacatgtctcccttt 58
                *   * * * * *   * * * * *   * * * * *   * * * * *   *
                *   * * * * *   * * * * *   * * * * *   * * * * *   *

R25TRGJ5      ctgatgatgaaaggatgtttttAAGGAATGTAAGCTTTGGG-----TAAGGTGGAGCT 117
R25TRGJ3      ctgatg-tggaagggtgtttc-AAAGAACCTGGGCTTTGGAATCAGGTTGACTTGGAAC 118
R25TRGJ4      ctgatgctgaagatgtattttcAAA-AACATGGGCTTTGAGTCAGGCTGACCTGGAGCT 117
R25TRGJ1      ctgatgctgaagggtatttccAAAGAAAGTGGGCTTTGGAGTCAGGCTGACCGAGA 118
R25TRGJ2      ctgatgctgaagggtatttccAAAGAAAGTGGGCTTTGGAGTCAGGCTGACCGAGA 118
                *****   *   *   *   *   *   *   *   *   *   *   *   *
                *   *   *   *   *   *   *   *   *   *   *   *   *

R25TRGJ5      CTAGATCCATCACTTACTGCTTATATGAACCTTGA-GATGATACTCTGGCTTCAGTTTCC 176
R25TRGJ3      TCAGGTGTACCCTTACTGCTTATGTGAATTTGGGTAATTATTTCTGGCTTCAGTCTCC 178
R25TRGJ4      TCCGACCACCCTAACTACTTATGTGAACATGGG-GGTGATCTCTGGCTTCAGTCTCC 176
R25TRGJ1      TC-GATCCACCCTAACTACACATGTGAACATGGA-AGTTCCTCTCTGGACTCAGTCCCC 176
R25TRGJ2      TC-GATCCACCCTAACTACACATGTGAACATGGA-AGTTCCTCTCTGGACTCAGTCTCT 176
                *   *   *   *   *   *   *   *   *   *   *   *   *

R25TRGJ5      TAATCCGTAAA-CAAGATAACAATATGTACCCAGCAGGGGTTTTTTGGAA-TTGAATGAG 234
R25TRGJ3      TAATCCATAAAGTGGGATAAATAATGTATACCCAGTAGGGGTTGTATGAAAAATTGAATGAG 238
R25TRGJ4      TAATCCATAAGATAGGATAACAGTGTATATTCAGCAGGGGTAGTAGGAGAATTGAATGAG 236
R25TRGJ1      TAATCTGTAAAAATAGCATAACAGTAT-TATCCAGCAGGGGTTGTACGAGAACTAAATGAG 235
R25TRGJ2      TAATCTGTAAAAATAGCATAACAGTAT-TATCCAGCAGGGGTTGTACGAGAAATTAAATGAG 235
                *****   *   *   *   *   *   *   *   *   *   *   *

R25TRGJ5      ATAGTGTGAA--TATAGAACTTGCACATTGACTTA--CTTATCATGGGTGTTGGATA-A 289
R25TRGJ3      ATAATGTGTAGCTATCATATTTGGTACATTGTCTTGGGCAGATAAATAGGGAATGTATATA 298
R25TRGJ4      ATAATGTGAA--TAAAGTACTTAGTACACTGGCTAA--CACCTCATAGGTGCTGGATAGG 292
R25TRGJ1      ACAGTGTGA---TGAAGTATTTAGCACATTGTCTAA--TGCATCAGTATTCCCTGTCTGGA 290
R25TRGJ2      ACAGTGTGA---TGAAGTATCTAGCACATTGTCTAA--TGCATCAGTATTCCCGTCTGGA 290
                *   *   *   *   *   *   *   *   *   *   *   *   *

R25TRGJ5      TGTaactacaacatttcaaa-----gagaattatatccaggatggagctattttgca 341
R25TRGJ3      TGTacctacactcaattcaaatgttaaggaggagaattgtatgcagtagggagttgtttgca 358
R25TRGJ4      TGT-----ttattcaaatgtaaagtgaataatggcatccagaaggagagttttttg 343
R25TRGJ1      TAagcc-----cgtggacagaggagccaggcgggctacagtc--catggggttgcaaaga 343
R25TRGJ2      TAagcc-----cgtgcacagaggagccaggcaggccacagtc--catggggttgcaaaga 343
                *   *   *   *   *   *   *   *   *   *   *   *

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R17: LINE L1M5

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R17TRGJ1      ----tatatcaattttaaaacaaatataactagctcagccccaatctttataacagggaac 56
R17TRGJ2      -ttttatatcaattttaaaacaaatataactagctcagcctcaatctttacaacagggaac 59
R17TRGJ3      attcttaatcatatttaatgtttatttaacttgct-aaccctgaaccttataccatagaac 59
R17TRGJ4      -----tttcaaaattcttacaacataattagctcaaccccaatctttacaatataaac 54
                ***      *      *      *** * *** * ***      * * * * * *      ***

R17TRGJ1      aaaaaaataaaatgttaccttaAGTCTCATTGGAATTAGTCTA--TTTATACACATGATT 114
R17TRGJ2      aaaaaaataaaatgttaccttaAGTCTCATTGGAATTAGTCTA--TTTATACACATGATT 107
R17TRGJ3      aaaaaa-tgaaatattttcttaATTCTCATAAGAATTATAGTAACCTCATAAATGTGAAT 118
R17TRGJ4      aacaacaaataaagtttacttaACTCTGATTGGAATTAGAGTC----AATTTATGTGATT 110
                ** **      ** ** ***** ** ** ***** *      ** * *** *

R17TRGJ1      TTAAGAAGAGTTTGCATGTTTATGACATTGAGCTTTTCCTTCATGAATATGATATGCCTC 174
R17TRGJ2      TTAAGAAGAGTTTGCATGTTTATGACATTGAGCTTTTCCTTCATGAATATGATATGTCTC 167
R17TRGJ3      TTAGGAAAGATCAGTATCTTTATGATATTTAGTTTTTCTTACACAAATGTGATATGTCTC 178
R17TRGJ4      TTAGGAAGGACTAGCATGTTTATGATACGGAGTTTTCTTTCATGAATATGATATGTCCC 170
                *** ***      * * * ***** *      * * ***** * *      *** ***** * *

R17TRGJ1      TCCATTTTATGCAGGTTTAATTTTATGCCCTTTAGTAAAATCTTTACTCTTTCTTCTTAC 234
R17TRGJ2      TCCATTTTATGCAGGTTTAATTTTATGCCCTTTAGTAAAACCTTTACTCTTTCTTCTTAC 227
R17TRGJ3      TTTATTTTATCAAGTTTAATTTTATGCCCTTTA-TAAAAACTTGTATTCTTTCTTCTTAG 237
R17TRGJ4      TCTAAGTGTGCAGGTTTATTTTCA-ACCCTTTAGTAAAATCCTGTACTGTTTCTTCTCATA 229
                * * * * * * * * * * * * * ***** * * * * * * * * * *

R17TRGJ1      TGGTCTTATAtt-aataaagcattaaacacata-ctcttta-ttctttgcattctatgct 291
R17TRGJ2      TGTCTTTATAtttaataaagcattaaacacataactctttcgtaaatctttcgcatTTA 287
R17TRGJ3      AGCTCTGGAAAttttcttataaaatttgacaaatgattttataactctttacttactctttt 297
R17TRGJ4      TGGTCTTGTAttattttgtaaatataatcaaaagattttgtaactgtttacctattct-tt 288
                * ***      *** *      **      *      * * * * * *      *

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R21: Sine BovtA2

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R21TRGJ3      caa--aaagttaggattcaataaggatttgtctattccaaagtgaatggctggactgt 58
R21TRGJ4      ctggcaaagttaggatccaataggaattcccttggtgctcagctggttaaag-aatctgt 59
                *      ***** * * * * * * * * * * * *      * * * * * *      ****

R21TRGJ3      tattgatgttagaacatttaagttatgttttatatcctgagtaTTACAGTTCATAGC 118
R21TRGJ4      ttgtaatgtgagagac--ctgggggtgaatcccgggttgggaagaTCCCTGGAGAAGGGA 117
                * * * * * * * * * * * * * * * *      * * * * * *      * * * *

R21TRGJ3      CTG---ACCTTTTCCAGTATCCTCACCTGAAAAATCCATGGTCAGAGGAGCCTGGCAGGC 175
R21TRGJ4      AAGGCTACCCACTTGAGTATTCCTTGCCCTAGAGAATTC-----CATGGATTGC 164
                *      ***      *      ***** *      *** * * * * *      * * * *

R21TRGJ3      TACAGTCCAAAGGGTCTCAAAGAGTCAGACACAACCTGAGTGACTAA-GCActcagcctca 234
R21TRGJ4      -ATACTCCATAGGGTCACAAAGAGTCGGACATGACTGAATGACTTTCACACTcacacaga 223
                * * * * * * * * * * * * * * * *      * * * * * *      * *

R21TRGJ3      ccatt-taaatgagtactttgattgactacttagtagcttataaattagctttactctcac 293
R21TRGJ4      gacttgtttattctgaagtaagtggaactgggccattacatgatattagaaacattaagtc 283
                *** *      **      * * * * * * * * * * * *      * * * *

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R27: CHR-L

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R27TRGJ1    ---aggcagaagttcccaagagttttcttttcttctcagatgagaagtccaattttctccc 57
R27TRGJ2    ---aggcagaagttcccaagagttttcttttcttctcagatgagaagtccaattttctccc 57
R27TRGJ4    cataggccaaaattctgaataat--tcttttcttctcatgtgagaagtccaatttttctt 58
              ****  **  ***  *  *  *  *****  *****  *****  **

R27TRGJ1    ttcttaagagatttccccgtgaAGGACTTTCAGTGGTCCAGCGGTTAAGACTCCACCT 117
R27TRGJ2    ttcttaagagatttccccgtgaAGGACTTTCAGTGGTCCAGCGGTTAAGACTCCACCT 117
R27TRGJ4    ttcttaagatatattcccagtgaggGGCTTCCCTGGTGGTCAATGGTTAAGATTCTCTCT 118
              *****  *****  **  *  *  *  *****  *  *****  ***  **

R27TRGJ1    TCCAATGCAGGTG-CACAGGTTCGAACCCCTTGTGAGGATACATGCTTATGCAGCTGGTG 176
R27TRGJ2    TCCAATGCAGGTG-CACAGGTTCGAACCCCTTGTGAGGATACATGCTTATGCAGCTGGTG 176
R27TRGJ4    TCTAGTGCAGGGGGCACAGGTTCAATTCTGGTTGGGATATACACTCTATTCAGTAGGTG 178
              *  *  *****  *  *****  *  *  *  *  *****  *  *  *  *  *  *  *

R27TRGJ1    GAAAAAAGAAAAtagtggcagt--aaagcagttcagcagccttagggggcaaaattcaa 234
R27TRGJ2    AAAAAAAGAAAAtagtggcagt--aaagcagttcagcagccttagggggcaaa-ttcaa 233
R27TRGJ4    GAAAGA-GCAAAtagtggtgctccaaagcattcagcagccttatagggtagg-ttcaa 236
              *****  *  *****  *  *****  *  *****  *  *  *  *  *  *

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R16: AT rich

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R16TRGJ1    -----atgtcacagtattcttactccattattgtgttatgtcagtaactttgcaata 52
R16TRGJ2    ttttattcatgtcacagtattcttacaccattattgtgttatgtcagtaactttgcgata 60
              *****  *****  *****  *****  *****  *****  *****

R16TRGJ1    agggttaagagctgctatgccaattagTTATTAAATCATTATTTTAATAAAAAAATT 112
R16TRGJ2    agggttaagagctgctatgctaaattagTTATTAAATCATTATTTTAATAAAAAAATT 120
              *****  *****  *****  *****  *****  *****  *****

R16TRGJ1    T-AAGTTATTTTCATATTTTCATTTTATATCAATTAAACAAATATAAactagctcagccc 171
R16TRGJ2    TTAAGTTATTTTCATATTTTCATTTTATATCAATTAAACAAATATAAactagctcagcct 180
              *  *****  *****  *****  *****  *****  *****

R16TRGJ1    caatctttataacagggaacaaaaaataaaatgttaccttaagtctcattggaattagt 231
R16TRGJ2    caatctttacaacagggaacaaaaaataaaatgttaccttaagtctcattggaattagt 240
              *****  *****  *****  *****  *****  *****  *****

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R18: Sine BovtA3

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R18TRGJ1    atcaatgttttcagtgattactacttcttggaagcagatatttgggtccatttatctga 60
R18TRGJ2    atcaatgttttcagtgattactacttcttggaagcacatatttgggtccatttatctga 60
              *****  *****  *****  *****  *****  *****  *****

R18TRGJ1    ggaaagtggcttccccagtgGATCTGTGAGTCAGGAAGATTCCTTGGAGA-GGAAATGGC 119
R18TRGJ2    ggaaagtggcttccccagtgGACCCCTGAGTCAGGAAGATTCCTTGGAGAAGGAAATGGC 120
              *****  *****  *****  *****  *****  *****  *****

R18TRGJ1    AACCGACTCCAGTATTCTTCCCTGGGAAATCCCATGGAAGGCTACAGTCCAAGCGGTTGC 179
R18TRGJ2    AACCCACTCCAGTATTCTTCCC-GGGAAATCCCATGGCAGGCTACATTCCAAGGAGTTGC 179
              ****  *****  *****  *****  *****  *****  *****

R18TRGJ1    AAAGGAGTTGGACACATCCAAGTGACTgaataataacaataaattctgagggaaatcttat 239
R18TRGJ2    AAAGGAGTTGGGACACATCCAAGTGACTgaataataacaataaattctgagggaaatcttat 239
              *****  *****  *****  *****  *****  *****  *****

R18TRGJ1    aaaaattggctgctgtgaaacctatatccaaggacttccaaaagaa 286
R18TRGJ2    aaaaattggctgctgtgaaacctatatccaagaacttccaaaagaa 286
              *****  *****  *****  *****  *****  *****

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R26: Sine BovtA2

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R26TRGJ1      taacagtattatccagcaggggtgtacgagaaactaaatgagacagtgtgatgaagtatt 60
R26TRGJ2      taacagtattatccagcaggggtgtacgagaaatgagacagtgtgatgaagtatt 60
                *****

R26TRGJ1      tagcacattgtctaataatgcacAGTATTCCCTGTCTGGATAAGCCCGTGGACAGAGGAGCCA 120
R26TRGJ2      tagcacattgtctaataatgcacAGTATTCCCGTCTGGATAAGCCCGTGCACAGAGGAGCCA 120
                *****

R26TRGJ1      GCGGGCTACAGTCCATGGGGTTGCAAAGAGTTGGACACGACTGAGCactgtatggtttg 180
R26TRGJ2      GGCAGGCCACAGTCCATGGGGTTGCAAAGAGTTGGACACGACTGAGCaccgtacgtttg 180
                *** **

R26TRGJ1      ttggctaacacatcatatgtgttggataggtgtttactctattcaaatgtaaagggaaaa 240
R26TRGJ2      ttggctaacacatcatatgtgttggataggtgtttactctattcaaatgtaaagggaaaa 240
                *****

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R29: CHR-L

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R29TRGJ1      -tattcccaccacctgcccattccacttcaaaacaggctccagtattatagaacaaaagag 59
R29TRGJ2      ctattcccaccacctgcccattccacttcaaaacaggctcca-tattatagaacaaaagag 59
                *****

R29TRGJ1      atttttaaaaagattaattggGACTTCCTGGCAGTCCAGCGATTGGGACTCCACATTC 119
R29TRGJ2      atttttaaaaagattaattggGACTTCCTGGCAGTCCAGCGATTGGGACTCCACATTC 119
                *****

R29TRGJ1      CCACTCTAGGAAGCATGGATTCAATCAATCAATAAACATGCTCATGAATtctggaagtcttgat 163
R29TRGJ2      CCACTGTAGGAAGCATGGATTCAATCAATAAACATGCTCATGAATtctggaagtcttgat 179
                *****

R29TRGJ1      acgggtattttatatgggatattttaaagtcataatcccaatggacagaggagactggca 223
R29TRGJ2      gtagggtattttatatgggatattttaaagtcataatcccaatggac----- 225
                *****

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R28: Line L1

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R28TRGJ1      -----tttttgtgtgtgtgtattttttcagattcctttccatta----aAGGTT 47
R28TRGJ2      gtgattcagttttttgtgtgtgtattttttcagattcctttccatta----aAGGTT 56
R28TRGJ4      -----tatctgtgtgtgtatagtccttttcaggttctttccattattacaAGGTT 51
                * * *****

R28TRGJ1      ATTACAAGATATTTAATATACTTCTCTGTTCTACATAGTAGGTTCTTATTG-TTTATCTA 106
R28TRGJ2      ATTACAAGATATTTAATATACTTCTCTGTTCTACATAGTAGGTTATTATTG-TTTATCTA 115
R28TRGJ4      ATTACAAGATATTGGATATAGTCCCTGCGCTATATAGTAGGTCCTTATTGGTTTATCTA 111
                *****

R28TRGJ1      TTTTATATGCAGTAGGTG-TATCTGCTAATCCCAaattaggagtttgggattaataata 165
R27TRGJ2      TTTTATATACAGTAGGGTG-TATCTGCTAATCCCAaattaggagtttgggattaataata 174
R28TRGJ4      TTTTATATATAGTATTGTGCTATCTGTTAATCCCAaattaggagtttgggattaataata 171
                *****

R28TRGJ1      cattttcaatagaagttttggagatactgttat-----acaatcaaggcactataa 216
R28TRGJ2      cattttcaatagaagttttggaatactgttat-----acaatcaaggcactataa 225
R28TRGJ4      cattttaaatagacatttttagaataatagctatcttgctccacattcaaggcactgtaa 231
                *****

R28TRGJ1      ataacatgctgctctactccaaaatctggagtggttcagggtataaaattgagaggtcata 276
R28TRGJ2      ataacatgctgctctactccaaaatctggagaggttcagggtataaaattgagaggtcata 285
R28TRGJ4      ataatgtactgctctactccaaaatctggagtggttcagatgtaaaattgagaggtcata 291
                *** * *****

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