

**Supplementary Table 1. The exon nomenclature of *Ank2* used in this study.**

The exon information was collected from a previous study (Cunha, *et al.*, *J Mol Cell Cardiol* **45**, 724–734, 2008) and the current information in the Ensembl database. The coordinates of each exon in chromosome 3 are shown (GRCm38/mm10). Except for the alternative first exons, all other known alternative exons are highlighted in yellow. Exons 2' and 3' are incorporated when exon 1' is used. In this situation, exon 3' is an alternative exon. When exon 1s is used, the predicted start codon is highlighted in red in exon 24. When exon 51 is included, the alternative stop codon is highlighted in red in exon 52.

| Exon No. |                                    | Start       | End         | Start Phase | End Phase | Length | Sequence  |
|----------|------------------------------------|-------------|-------------|-------------|-----------|--------|---|
| 1"       | <a href="#">ENSMUSE00001205851</a> | 127,499,115 | 127,498,668 | -           | 0         | 448    | GAGCTCCGGCAGGCAGTGGTGCATATAGACATATTTCTGGGAGCTGTC<br>CATGAGCTCATCGCTCTCCCGGCGCGGGCGAAGGAAGAAGCCCTCCT<br>CTTTCTCCCGCGCCACCAGCAGCAGTTCGCTTAGCGCTTGTGCGCGGC<br>CCAGCCCGCAGCCACTCGGCGCACCATGGCCCCACGGCACCTCGCGC<br>AGAGGTAGGTGGGCTCGGGCAGCAGGTCTCCACGGGCGATCGCGGCCA<br>AGGCCGACCTTTCGCGGTGCGCTAGAAGCACGCGGGTCCCGGGGTGAG<br>CCCGAACGCGCAGGCCGGGAGCGGAAGAGACGAGGACACGCGGGACA<br>GCCGGACTTGACCGAGGGAAGGAGTTCGAGAGCGTGGACATGCTTC<br>TCCCACCTCCCTGGCCCCGAGGGAGGGCCTGCACCCCGCAGAACCC<br>CCCGCGGATCCGTCAG   |
| 1'       | <a href="#">ENSMUSE00001252380</a> | 127,409,058 | 127,408,845 | -           | -         | 214    | GTCAGAGCAGATCATGTGGTGTCTGTAGGCAGCTGGGACTGGCCCCG<br>GGGAAGCACATGGATTACAGTCTGAGGCTGTGATGGGAAAGTCGGTTC<br>CTGGGCTGCTGTCTCATACATCAGCAGGCAGGGAAGCTGGGGACTC<br>CGACTCGCCCTTCTCCGGGCCCTCCTGCTGCGTGGTACAGGCAATC<br>GCTGAGAGAAGCTGCTGCTCCA   |
| 2'       | <a href="#">ENSMUSE00001226003</a> | 127,339,192 | 127,339,132 | -           | 0         | 61     | GTAAGTAACTGATCAGGGACATGAAGAACTGCTATTTCAAATGACAAC<br>CATGTTGCAAAAG   |
| 3'       | <a href="#">ENSMUSE00001237108</a> | 127,248,232 | 127,248,134 | 0           | 0         | 99     | AGCCAAAACAAGTGTGAGAGCCAACTACATGCAATGAAGTCACACAA<br>TCAAGCTGCATCCAACGCAAGGACCCCAATGGTGTGCATCCCGATGAC<br>CAG  |
| 1        | <a href="#">ENSMUSE00001216415</a> | 127,225,932 | 127,225,764 | -           | 0         | 169    | GTCTCTTGTAAAGTGCACGCACGCCAGTGGTCTGTTCCCGCGGCCGGT<br>TTGATGGCACAGCTATTTTCTTCCAAACTGTTCAAATGATGAACGA<br>AGATGCAGCTCAGAAAAGCGACAGTGGAGAGAAGTTAATGGCAGTAG<br>TCAAAGAAGAAAAGACCCAAGAAG   |
| '1       | <a href="#">ENSMUSE00001257111</a> | 127,162,342 | 127,161,679 | -           | 0         | 664    | TTTTCTCTCGCCCTGCATAGAGGTGTGGTTGCAAGCGGCAGAGAACTC<br>CCCACCCCTTAGGACTTTACCGAGGTGGCCTCTTCTGGCTCCGG<br>TCTGAAGACAGACTGTCTGGAGGAGTCCCCAAGACCGTTCCAATGG<br>TGATGAGCGCCTAAGGAAGGCTTCTGCAACTATTAGGATGCTTGTCTG<br>CACTCGGGGCCACCAACTGCTGAGGAGCTCCGGTCCAGAGCTCCGC<br>CCTCCCCGGGACCATTGCTGAGCGTGGGCGCTCACCTGTGCATGCCT<br>GTGTGCAGGTGTGGGCTGCTCAGGGGCTCGGCTCGCAACCTAGGGGGA<br>CGCTCGAGTGAATTATGGGTGCTGCAGAGGCTGGAGCAAGATTATGAC<br>CTAGCTCGGGGCGGAGTGGATTATTTTGTGAGTGTCTGTCTGCCAG<br>CCATTGCTCTGCTGGGGGAAAAATCACATCTCCACATAGCAGTCAA<br>TCACCTGTATTGCTGGGGAGTGGAAAGTTATCCTCTGCCGATTTCTGC<br>TGCCAAAATGCTCACGCTGCTTCTATCAAAAAGTTAGAGAGGC<br>TGAAGTGGATGAAAAGGAAAAAATCTGGACAGAGAGAAAAAACA<br>ACGGAAAATCCCCAGGGATCGGATGGAGCGGAAAAGAAAAG |
| 2        | <a href="#">ENSMUSE00001276722</a> | 127,104,862 | 127,104,761 | 0           | 0         | 102    | TCTGACAGCAATGCCAGTTCCTCCGCGCTGCCAGAGCAGGCAACCTG<br>GACAAAGTGGTGAATATCTGAAAGGGGGCATTGACATCAATACCTGC<br>AATCAG  |
| 3        | <a href="#">ENSMUSE00001294343</a> | 127,096,897 | 127,096,802 | 0           | 0         | 96     | CAATGGAAGAGTAACCGATCCATGTGGACCAAGGAAACGAAGAGTCAG<br>CTGGACGTGATAGTGCACGCCTTTAATCTCAGCATTGGGAGACAGAG<br>AATGGACTCAATGCTCTCCACCTGGCAGCCAAGGAAGGCCATGTGGGC<br>CTTGTGCAGGAGCTGCTGGGAAGAGGGTCTCCGTGGATTCTGCCACC<br>AAG   |
| 4        | <a href="#">ENSMUSE00001224175</a> | 127,079,996 | 127,079,898 | 0           | 0         | 99     | AAGGGAAATACCGCCCTTACATTGCATCACTGGCTGGACAAGCAGAA<br>GTTGTCAAAGTCTAGTTAAGGAAGGAGCCAATATCAATGCCAGTCG<br>CAG  |
| 6        | <a href="#">ENSMUSE00001288369</a> | 127,057,091 | 127,056,993 | 0           | 0         | 99     | AATGGCTTCACTCCTTTGTACATGGCTGCCAGGAGAATCACATTGAT<br>GTTGTAATAATTTGCTAGAAAATGGAGCTAACCCAGAGTACTGCTACA<br>GAG  |
| 7        | <a href="#">ENSMUSE00001297331</a> | 127,052,873 | 127,052,688 | 0           | 0         | 186    | GACGGCTTTACTCCTCTGGCTGTGGCACTCCAACAGGGACACAACCAG<br>GCGGTGGCCATCCTCTTGGAGAATGACACCAAAGGAAAGGTGAGGCTA<br>CCAGCCCTGCACATTGCTGCTCGGAAAGATGACACCAAGTCCGCCGCC<br>CTCCTGCTTCAGAATGATCACAACGCTGATGTACAATCCAAG  |
| 8        | <a href="#">ENSMUSE00001306055</a> | 127,052,249 | 127,052,226 | 0           | 0         | 24     | ATGATGGTGAACAGGACAACAGAG  |
| 9        | <a href="#">ENSMUSE00001295005</a> | 127,048,280 | 127,048,182 | 0           | 0         | 99     | AGTGGCTTCACTCCTTTGCACATAGCTGCACACTATGGGAATGTAAAT<br>GTGGCAACTCTTCTTAAACCGGGGAGCTGCTGTGGACTTACCAGCC<br>AGG   |
| 10       | <a href="#">ENSMUSE00001220180</a> | 127,046,823 | 127,046,725 | 0           | 0         | 99     | AATGGAATCACTCCTCTGCACGTGGCTTCCAAACGAGGAAATACCAAC<br>ATGGTGAAGCTTCTACTGGATCGAGGTGGTTCAGATTGATGCCAAACT<br>AGG   |
| 11       | <a href="#">ENSMUSE00001234638</a> | 127,038,845 | 127,038,747 | 0           | 0         | 99     | GACGGCTGACACCACTTCACTGTGCTGCGCGGAGTGGGCATGATCAA<br>GTGGTGGAGCTGCTGTTGGAACGGAAGGCTCCCTGCTGGCGAGGACC<br>AAG   |
| 12       | <a href="#">ENSMUSE00001252274</a> | 127,032,313 | 127,032,116 | 0           | 0         | 198    | AATGGGCTGTCCCGCTTACATGGCTGCGCAGGGGGACCACGTGGAA<br>TGTGTGAAGCACCTGCTCCAATACAAGGCGCTGTCGATGACGTCACC<br>CTGGATTACCTGACGGCTTTCATGTTGCTGCACACTGTGGGCACTAC<br>CGTGTAAACCAACTCCTGCTGGACAAGAGAGCCAACCCGAACGCAAGA<br>GCCCTG  |
| 13       | <a href="#">ENSMUSE00001235227</a> | 127,029,573 | 127,029,475 | 0           | 0         | 99     | AATGGTTTTACTCCACTGCACATTGCCTGCAAGAAAAACCGCATCAA<br>GTCATGGAAGTGTGGTGAATATGGGGCTTCAATCCAAGCTATAACA<br>GAG  |
| 14       | <a href="#">ENSMUSE00001267026</a> | 127,029,317 | 127,029,219 | 0           | 0         | 99     | TCTGGCTCACACCAATACATGTGGCTGCCTTTCATGGGCACTTGAAC<br>ATTGTCCCTCTTCTGCTGCAGAACGGAGCTTCCAGATGCTACTAAC<br>ATT  |
| 15       | <a href="#">ENSMUSE00001300397</a> | 127,023,390 | 127,023,292 | 0           | 0         | 99     | CGTGGTGAGACAGCTTTCACATGGCGGCCCGGGCTGGGCAGGTGGAA<br>GTGGTCCGATGCTTCTGAGGAATGGTGTCTTGTGGATGCCAGAGCC<br>AGG  |
| 16       | <a href="#">ENSMUSE00001255725</a> | 127,017,013 | 127,016,816 | 0           | 0         | 198    | GAGGAGCAGACACCTTTACACATTGCCTCCAGGCTGGGGAAGACGGAA<br>ATTGTCCAGCTGCTTCTACAGCATATGGCTCACCCCGATGCAGCCACT<br>ACAAATGGGTACACACCACTACACATCTCTGCTCGGGAAGGACAGGTA<br>GACGTGGCTCTGTCTGCTGGAAGCGGGAGCAGCCATTCTTAGCG<br>ACCAAG  |

|     |                                    |             |             |   |   |      |  |
|-----|------------------------------------|-------------|-------------|---|---|------|--|
| 17  | <a href="#">ENSMUSE00001261152</a> | 127,013,337 | 127,013,239 | 0 | 0 | 99   | AAGGGCTTCACTCCCCTGCATGTAGCAGCCAAGTATGGAAGCCTGGATGTGGCAAACCTTCTCTTGCAACGTCGTGCAGCCGAGATTCAGCAGGG AAG  |
| 18  | <a href="#">ENSMUSE00001233123</a> | 127,012,771 | 127,012,673 | 0 | 0 | 99   | AATGGCCTTACCCCGCTCCATGTTGCTGCTCATTATGACAACCAGAAGGTGGCGCTGTTGCTGCTGGAGAAGGGTGCTTCCCCTCATGCCACGGCC AAG   |
| 19  | <a href="#">ENSMUSE00001263191</a> | 127,011,051 | 127,010,854 | 0 | 0 | 198  | AATGGCTATACTCCCTTACACATTGCTGCCAAGAAGAATCAGATGCAG ATAGCTTCCACACTACTGAACTATGGGGCCGAGACTAACACTGTGACA AAGCAAGGGGTCACTCCACTGCATCTGGCCTCACAAGAGGGGCACACA GACATGGTCACCTTGTCTTGACAAAGGAGCCAATATCCACATGTCA ACCAAG   |
| 20  | <a href="#">ENSMUSE00001253269</a> | 127,004,043 | 127,003,945 | 0 | 0 | 99   | AGTGGACTCACATCCTTACACCTTGCAGCCCAAGAAGATAAGGTGAAC GTTGCAGGACATTTCTACCAAACACGGGGCCGATCGGGATGCCTACACA AAG   |
| 21  | <a href="#">ENSMUSE00001233506</a> | 127,002,776 | 127,002,678 | 0 | 0 | 99   | CTTGGTTACACACCTTTGATCGTGGCCTGTCACTATGGAAATGTGAAA ATGGTCAACTTTCTTCTGAAACAGGGAGCAAATGTCAATGCGAAAACC AAG  |
| 22  | <a href="#">ENSMUSE00001232182</a> | 126,998,975 | 126,998,877 | 0 | 0 | 99   | AATGGCTACACACCTTTGCACCAAGCTGCCAGCAGGGCCACACACAC ATCATTAATGTCTGCTCCAGCACGGGGCCAAGCCTAATGCTACTACT GCG  |
| 1s  | <a href="#">ENSMUSE00000669796</a> | 126,998,461 | 126,998,324 | - | - | 138  | AGTGTCTGGGCTGGATGCAGCCAGAATTGCTAGCTTGTATAGTTTGT GCAGCACTGGAGATCCTGCAGCGCAGAAGCTAAATCTGTCACTGGGTC CCTATGGTAACATCTTACCTGCAGCAGATGGCCTGACTCTTG  |
| 23  | <a href="#">ENSMUSE00001307115</a> | 126,997,951 | 126,997,853 | 0 | 0 | 99   | AATGGTAACACGGCCCTGGCGATTGCTAAGCGCTGGGCTACATCTCC GTGGTTGACACCCTGAAGGTTGTGACTGAAGAGGTCACCACCCTACC ACG  |
| 24  | <a href="#">ENSMUSE00001285026</a> | 126,988,216 | 126,988,144 | 0 | 1 | 73   | ACTATCACGAAAAACATAAGCTAAATGTTCTGAGACAATGACGGAG GTCTTGTATGTTTCTGATGAAGAGG   |
| 25  | n/a                                | 126,986,638 | 126,986,585 | 1 | 1 | 54   | CCCTTAAGCAGTTTGGTGACCCTTTATTGATGGGAAGCATTTAGTG ACTCAG  |
| 26  | <a href="#">ENSMUSE00001275399</a> | 126,981,944 | 126,981,800 | 1 | 2 | 145  | GTGATGACACTGTGACAGGTGATGGGGGAGAATACCTCAGGCCAGAAG ATCTCAAGGAGCTCGGAGATGACTCACTGCCAGCAGTCAGTTCTGG ATGGCATGAACTACCTTCGGTACAGTCTGGAGGGAGGAAGATCCGACA G   |
| 27a | <a href="#">ENSMUSE00001274268</a> | 126,976,947 | 126,976,845 | 2 | 0 | 103  | CCTCCGTCCTTCAGTTCGACAGGTCTCACACTCTGAGCCATGCATC GTACCTGAGGGACAGTGCCATGATTGACGACACGGTTGTGATCCCCAG CCACCAG  |
| 27b | n/a                                | 126,976,932 |             |   |   | 88   |  |
| 28  | <a href="#">ENSMUSE00001304535</a> | 126,976,154 | 126,976,051 | 0 | 2 | 104  | GTGCTGCGCTAGCCAAGGAGGCAGAAAGGAATTCCTTATCGTCTGAGC TGGGGCACTGAGAACCTTAGACAACGTGGCTCTTCTTCCAGTCTTATT CATTGAGG   |
| 29  | <a href="#">ENSMUSE00001285906</a> | 126,971,038 | 126,971,003 | 2 | 2 | 36   | CCGCTCCTCTCCATGTCTCGATCGTGACAACAGCAG   |
| 30  | <a href="#">ENSMUSE00001288521</a> | 126,965,162 | 126,964,938 | 2 | 2 | 225  | TTTCTAGTCAGTTTTATGGTGGATGCCCGTGGTGGTGCATGCGAGG ATGCAGACACAATGGACTCAGAATCATTATCCACCTCGGAAATGCAC AGCCCCAACTCGCGTCACCTGCCGCTTGTGAAACGCCATCGACTGGC AACAAATGCCGCCCATGGTGGAAAGGAGAAGGCCTGGCCAGCCGCTGAT TGAAGTCGGACCTTCGGGAGCTCAGTTTCTTGG   |
| 31  | <a href="#">ENSMUSE00001222661</a> | 126,963,481 | 126,963,383 | 2 | 2 | 99   | TAAACTTCACCTGCCAACGGCTCCTCCCCACTTAATGAGGGAGAAAG TTTGGTCAAGCCGATCCTTCAGCTGGGGCCTCTGGAACCAAATTCCT TGG  |
| 32  | <a href="#">ENSMUSE00001233359</a> | 126,962,405 | 126,962,251 | 2 | 1 | 155  | GCCCGTGATCGTGGAGATCCCTCACTTCGCGCTCTTCGAGGAAAGGA GAGGGAGCTGGTGGTCTGCGCAGTGAATAAGGGACAGCTGGAAGA GCATTTCTGCGACTACACTGAGGATGAATTGAACGAAATCCTTAATGG CATGGATGAAG   |
| 33  | <a href="#">ENSMUSE00001268007</a> | 126,959,864 | 126,959,653 | 1 | 0 | 212  | TGCTGGACAGTCCAGAAGACCTGGAAAAGAAACGAATCTGCCGCATCA TCACTCGTGACTTCCCACAGTACTTTGCGGTGGTGTCTCGCATCAAAC AGGACAGCAACCTGATTGGCCCCGAGGGTGGAGTACTGAGCAGCACAG TGGTGTACAGGTGCAAGCCGTCTTCCAGAGGGCGCACTACCAAGC GCATTCGAGTAGGCCTACAG  |
| 34  | <a href="#">ENSMUSE00001227835</a> | 126,959,087 | 126,958,883 | 0 | 1 | 205  | GCTCAACCTATGCATAGTGAATTGGTAAAGAAGATCTTAGGCAACAAA GCCACCTTCAGCCCAATAGTCACTTTGGAACCCAGGAGAAGAAATTC CACAAGCCAATTACTATGACTATTCCTGTCCCCAAAGCTTCAAGTGAT GTCATGCTGAATGGTTTTGGGGGAGACGCACCAACCTTAAGATTACTG TGCAGCATAACAG   |
| 35  | <a href="#">ENSMUSE00001297707</a> | 126,957,352 | 126,957,256 | 1 | 2 | 97   | GTGGAACCTACGCCTGCCAGTGGGAAGACATCACAGGAACAACGCCAC TAACATTTGTCAATGAGTGTGTTTCTTTACAACCAACGTGTCTGCCA G   |
| 36  | <a href="#">ENSMUSE00001287914</a> | 126,956,098 | 126,955,870 | 2 | 0 | 229  | GTTCTGGCTGATAGACTGTGACAGATTCAGGAGTCTGTTGCCTTTGC ATCACAAGTGTATAGAGAAATATCTGTGTGCCATATATGGCCAAATT TGATGTTTGGCAAGTACATGACCCCATGAAAGCCAGGTTGCGGTG TTTCTGTATGACAGATGACAAAGTAGATAAGACCCTTGAACAACAAGA AAACCTTCTGAGGTGGCCAGGAGCAGGGATGTGGAG  |
| 37  | <a href="#">ENSMUSE00001233894</a> | 126,955,109 | 126,954,984 | 0 | 0 | 126  | GTATTGGAAGGAAAACCTATTTATGTTGATTGTTTGGCAACCTGGTT CCACTAACCAAGAGTGGCCAAACATCATATATTCAGCTTTTTTGCCTTC AAAGAAAATAGACTTCTCTCTTTGTCAAG  |
| 38  | <a href="#">ENSMUSE00001249776</a> | 126,953,299 | 126,953,177 | 0 | 0 | 123  | GTTCTGTGACACAACCCAGGAACCTTGCAGGGGACTCTCATTATGAAG GAACCCAAATCCACAAGAGGACTGGTGCATCAAGCTATTTGCAACTTA AACATCACCTTGCCAATTTATGCCAAG  |
| 39  | <a href="#">ENSMUSE00001281374</a> | 126,952,521 | 126,952,489 | 0 | 0 | 33   | GAATCGGAGTCAGATCAAGAGCCGGAGGAAGAG  |
| 40  | <a href="#">ENSMUSE00000669794</a> | 126,950,756 | 126,950,735 | 0 | 1 | 22   | ATCGGTATGACATCCGAAAAA  |
| 41  | <a href="#">ENSMUSE00001250226</a> | 126,947,807 | 126,941,610 | 1 | 1 | 6198 | ATGATGAGACAGAGTCGACAGAAACATCTGTCTGAAAAGCCACCTGG TTAATGAAGTTCTGTCTTAGCAAGTCCGGACTTGCTCTCTGAAGTTT CTGAGATGAAACAAGATTTGATCAAAATGACGGCCATCTTGACCACAG ATGTGTCTGATAAGGCAGGTTTCGCTCAAAGTGAAGGAGCTGGCAAAGG CCGGTGAAGAAGAGCCAGGCGAGCCCTTTGAAATTTGATAGAGAGTGA AGGAGGACTTAGAGAAGGTGAATGCGATCTGAGGAGTGAACATGCA TGAGAGATGAAGGCAGAGCGGAGTTCTCAGTCTGAGCGGGAGCTAG AGGAGGAATGGGTTATTGTGACGATGAGGAAATCCAAGAGGCCAAGC AACACGCCCCAGTAGAAATCGATGAACACCCATGTATAGAGGTCAGAG |

TAGACAGAGAGACCAAGGCCAAAGTAGAAAAGGACTCTACTGGGTTAG  
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CGGTGCCATCATCTGGAAGAACAGAGAAAACATCCCCAGTGTACCCTG  
GCAAAAACGAAAACACTTGGCCCGGTTCCCCTTCTATAAGAACCCAG  
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CTGTGTCTCCTGGGAAGACAGAAAAGCAGCCACCCATATCTCCACCT  
CCAAAACCGAACGAATTGAGGAGACAATGTCTGTCCGGGAGCTCATGA  
AAGCATTCAGTCAGGTCAGGACCCATCTAAAACAAAACAGGACTCT  
TTGAGCACAAGTCAGCCAAAACAAAACAGCCGCAAGACAAAAGTAAAA  
GTCGGGTAGAAAAGAAAAGGGCACACTGTGACCCAGAGAGAAAACAC  
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GGCTCAGGATGGAAGATCCAGTTAGAGAAAAGGTTTGGAGAAACCCCA  
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ATCGTGGGAGTGAGAAGATTGTGGATGAGCAGGGAGACATGGACTTCC  
AGATCAGTCCAGACAGGAAAACCTCCACTGACTTTTCTGACTCATCA  
AGCAAGAGTTAGAAGACAATGACAAAATACCAACAATTCGCTCACCG  
AGGACACAGAAAAGGCTCAGGTTTATTTAGACAAAGTAAATTACGAGTC  
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CAGAAACTCCTGAGACAAGTCCAGAGAGTCTTTCTTTCTCACCAAAGA  
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CACCCACAGACATTCATTCAGAAAAGAGCTTCTATAACTAATGACA  
TTACTGATAGTTCTCAAAAACAAGGTGCTGGGGTCACTCGGGGTTTCCAG  
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CTGATGCTTCCGTCAAGACAGCTGAGGGAACCTGAACCAAAGCCCCAGG  
GAGCTATTAGAAGTCCCCAAGGGCTAGAACTTCTCTCCCTAACCGGG  
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ACAAAACCCCTGATTCTCTGGAACCAAGTCTCTGAAAGAGTCCCCTT  
GCAGGGACTCCCTTGAAGCAGCCCCGGTTGAGCCTAAAATGAAGGCAG  
GAATACTCCCAAGTCACTTTCCCCTCCCCGAGCTATTGCCAAAACAG  
ATCTTGTGCGGAAGTGGCCTCCATGCGTTCCCGGTGCTCCGAGACC  
CCGATGGCAGTGCTGAGGATGACAGTCTAGAGCAGACATCCCTCATGG  
AGAGCTCAGGGAAAAGCCCCCTGTCCCCTGACACCCCCAGCTCCGAGG  
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AACC GGCTGTGATTACGAATGTGCAGAAGAGGATGACTCTGAGAACG  
GGGAGAAGAAGAGGTTACGCCAGAAGAGGAAAATGTTCAAAATGGTAA  
CCAAAATTAACAGTTTGGATGAACTTGAGCAAGAAGCAAAGCAGAAAA  
GGGACTACAAAAAGAACCAGGCAAGATGGGTCTCCTCAGCCTCGG  
ACCCCGATGCTGACTATTACAGCAGAAGTGAATGACGAGAAAACAGATGG  
CGGGCACAGAGGGGGAGGGGGAGGTCCCTGTCTTGGTGACTTCAGAGA  
ACAGAAAAGGTTTCTTCTTCTCCTCGGAGAGCGAACCTGAGCTGACAC  
AGCTGAGTAAAGGTGCTGACTCGGGACTTCTGACGGAGCCAGTTATCC  
GAGTGCAACCCCATCTCCCCTCCCATCCAGCATAGACTCTAATTCTA  
GCCCCGAAGAAGCAACGCAGTTCAGCCCATAGTTCCTCAAGCAATACA  
CTTTCAAGATGAATGAGGAGATTCAAGAAGAGCCAGTACTTTCAGAAG  
ATAAAGACTGCAAATCACATTTAGCGGAAGACAGTCAGACTCATTCTG  
CTGATGCTGCTGATGGGTCTGATGGTGACCTGAACAGAGAGACTACTC  
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ATGTCGATAAGCCCCGTCATTGATAAAGACTCACTAGCTACCAAG  
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CTCCATCTTCCCCTGTAAGAGTAGAGGTACAGATAACTGACCAGGCTT  
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TGCAAAACAGAGAGGTTTGCCATGGACGTTCCAGTGTCTGAGTTAGCTG  
AGACTGATGAAAATCTGACCCTCAAATCATCAGCCCTTATGAAAATG  
TTCTTCTCATCGTTCTTCTCTGCTGAGCCCAGCAAAAATCCAAACAG  
ATACCTGTATAGCACAGTTGTTTCACTTCACTGAAGTGTATTCTGTCA  
TCATCAGATCCTCTCCTGAGGATGTGGTAGTGACAAAACCTCTAACA  
GAACTGTCTCAGGTGAAGAGTCTCATTGTGAGAGCCACGATCTAGAAA  
CTGAATCCGAGCAAAAAGTGTCTTGTGGGCCGCGCAGTCTGATGCAC  
CTCCCTTGGCCGTAGCACCCACCGCATCAGATGCAGCATCAGTCACTG  
GGGAACAAGCAAGCAAAGTCATCATCACCAAAAACGGATGCTGATGCTG  
ACTCCTGGAGCGAGATCCGTGAAGACGACGACGCTTTCGAAGCTCGGG  
TGAAGGAGGAAGAACAGAAGATATTCGGTTTGGATGGTAGACAGGCAGT

|    |                                    |             |             |        |   |      |  |
|----|------------------------------------|-------------|-------------|--------|---|------|--|
|    |                                    |             |             |        |   |      | CACAGGGCACCCTCCTGATACCACTCCTGCTAGGACCCCAACTGAAG<br>AGGGGACTCCGACAAGTGAACAAAATCCATTCTCTTTTCAGGAAGGAA<br>AACTGTTTGAGATGACCCGAAGTGGTGTATCGATATGACCAAAGGC<br>CCTATGCAGATGAAAGTTTGCACCTTTTCCAAATCGGCCAAGAGTCCA<br>ATGAAGAGGCTATCTCCGAAGACTTGAAGGAAGGGGCCACTGGGGCTG<br>AGCCTCCACAGACGGAGACTACTAGTGAGTGTGCTGGAACCTTTCAGAAC<br>CCAAAGAAGCAATGGATGACGAAGGAGAATTACTTCTGATGATGTAA<br>GTGAGGAGATAGAGGATTTACCTGCCTCGGATGCTAACATTGACTCCC<br>AAGTGATAATTTTCAGCTTCCACAGAAACACCCACCAAAGAGGCTGTAT<br>CCACAGCGGTGAGGAGCCCCCACCACACAGCGGAGTGATTCTCTGA<br>GCACTGTGAAGCAGACACCACGCCCTGCCGTCTTGGACCTGTTGGTC<br>AGTTGGACTTTTCCCCCGTCACTAGGTCTGTTTATTCGGGACAGGATG<br>ATGAGTCCCAGAGTCTTCTCCAGAGGAACAGAAGTCTGTGATTGAGA<br>TCCCTACTGCACCCGTGGACAACGTGCCTTCTGCCGAAAGCAAACCCC<br>AAATTCCTATCAGGACTCTCCCCACTTTAGTCCCAGCCCCCTCCATCTG<br>CAGAGGATGAGAGTGCATTTTCTGATGATTTCCCATCTAGCCTGGATG<br>AGGATAGTAAGGAAGGTGGAGCAAACCAAAGTCCAAAATTCCCGTCA<br>AAGCACCCACCCAAAGAAGTGGAGTGGCAGCCCTCCCCTACCGACATAC<br>CTCTCCAGAAGACAGCTGTCCCCCAGGGACAGGAAACACTAAGCAGAG<br>CACCAGATGGTAGAAGCAAGTCAGAGTCAGACGCTAGTTCCCTTAGATG<br>CTAAGACCAAATGCCAGTGAAAGCCAGAAGTTACATTGAGACAGAGA<br>CGGAGAGCAGGGAGAGGGCCGAGGGGTTTGGAGTCAGAATCAGAAGACG<br>GGGCCACAAAACCAAAGCTCTTTGCATCCCCGACTGCCGGTGAAGAGCA<br>GGAGCACTTCATCTTCCGGCAGGCCAGGCACGAGCCCCACCAGAGAGA<br>GCAGGGAGCACTTCTTTGACCTTTACCGAAACTCCATAGAATTTCTTG<br>AGGAGATTAGTGATGAAGCTTCCAAATTAGTGGACAGGCTTACACAGT<br>CAGAGAGGGAGCAGGAGCCACCTTCAGACGACGAAAGTAGCAGTGCCT<br>TGGAAGTGTGAGTCAATTGAGAGTCTGCCACCTGTTGACATTGAGCACT<br>CAGCTCCCGAGGACATCTTTGACACAAGGCCATTTGGGATGAGTCTA<br>TTGAGACTATGATTGAACGCATCCCTGATGAAAATGGCCATGACCGAG<br>CTGAAG |
| 42 | <a href="#">ENSMUSE00000563439</a> | 126,940,146 | 126,940,072 | 1      | 1 | 75   | ATCCCCAAGATGAGCAGGAGCGGATGGAAGAAAGGCTGGCTTACATCG<br>CTGATCACCTTGGCTTCAGCTGGACAG  |
| 43 | <a href="#">ENSMUSE00000563435</a> | 126,937,869 | 126,937,738 | 1      | 1 | 132  | AATTAGCAAGAGAAGTGGATTTTCACTGAGGAGCAAATTCACCAAATTC<br>GAATCGAGAACCCCAACTCCCTTCAAGATCAGAGCCACGCACTGCTCA<br>AGTACTGGCTGGAGAGGGATGGGAAGCATGCCACAG  |
| 44 | <a href="#">ENSMUSE00000563434</a> | 126,936,763 | 126,936,620 | 1      | 1 | 144  | ATACCATCCTCATCGAATGCCTCACCAAGATCAACAGGATGGACATTG<br>TACATCTCCTGGAGACCAACACAGAGCCCTCCAGGAGCGCATGGGCC<br>GCAGCTATGCAGAAATAGAGCAGACCATTACGCTGGACCACAGTGAAG<br>GATTTTCAGTCCCTTCCAGACGAGCTCTGTGCTGCCAAGGAGAAGAAGG<br>AGCAGGAAGCTTCCAAAGAAAGCGAGTCTAGCACCACCCGCCCATGG<br>TCTCCGAAGAAGACATATCTGTGCGTTATTCCACATTTTCAGGATTGCC<br>TCCCCAAAAGTGAAGGGGACAGCCAGCAGCAGCACTGTCTCTCAA<br>TGCACCAGGAGCCAGTTCAACAAGATTTCTCAGGGAAAACGCAAGACC<br>AGCAGGAATATTA   |
| 45 | <a href="#">ENSMUSE00000563431</a> | 126,934,778 | 126,934,526 | 1      | 2 | 253  | TGTAACAACACCAGGGGCAGAAGTGAAGACCCTCAGAAGGCCACAGC<br>CGTTCCCTGACTCTCTCTGTAAGACTCCTGAGGACATCAGTACCCCTCC<br>TGAGGGAAACAAAGCCTTGTCTCCAGACCCCGGTGACTAGCGAACGTGG<br>TTCTCCGATTGTGCAAGAACCTGAGGAGGCTTCCGAGCCAAAGAGGA<br>GAGTTCTCCAAGGAAAAGTGCCTGGTCAATTGTTGAGTCAACAGACGA<br>CCAGTCTCAGGTCTTTGAAAGACTGGATGGTGATGCCGCTTTTCAAAA<br>G  |
| 46 | <a href="#">ENSMUSE00000563429</a> | 126,933,226 | 126,932,938 | 2      | 0 | 289  | GAGCTAACAGAGGAATTAGGAGAGCTGGAGGCTAGCTCTGATGAGGAG<br>GCCATGGTAACCTACCAGGGTTGTCCGCCGAGAGTGATTATCCAG<br>GGAGACGATATGCCTGACATAACCCCAAGAGACGGTCCAGAGGAAGAA<br>TATGTTGATGAGAATGGACACACCGTGGTGAAGAAG  |
| 47 | <a href="#">ENSMUSE00001260738</a> | 126,930,653 | 126,930,561 | 0      | 0 | 93   | GTTACCCGGAAAATCATTAGGCGGTACGTTTCTCTGATGGCACAGAG<br>AAGGAGGAGGTTACCATGCAGGGAATGCCTCAGGAGCCAGTCAACATT<br>GAGGATGGGGACAATTATTCCAAAGTGATAAAGCGCGTGGTATTGAAG<br>AGTGACACCCAGCAGTCAGAG   |
| 48 | <a href="#">ENSMUSE00000563426</a> | 126,930,081 | 126,929,998 | 0      | 0 | 84   | GTGACTTTGTCTGAACCCAGCGTTTTGTCCAGTACCTCACAGTTTCAG<br>GCCGAGCCAGTAGAAGGCCGTAGAGTCAGCAAAGTTGTTAAAACAACC<br>ATGGTACACGGAGAACGGATGGAGAAGAGTCTTGGGGACTCTAGCTTA<br>GCCACTGACCTTCTTCCAGCCAAAGATGACTTTGAAGAG  |
| 49 | <a href="#">ENSMUSE00001081872</a> | 126,929,886 | 126,929,722 | 0      | 0 | 165  | GCTTTGGGGTACACAGGTAGCCATATGAACGTCCACTTGCCAGTTTA<br>GTAGAGAATGAAATCCTGAAGGAGGATGGATCAATAATTAAGAG  |
| 50 | <a href="#">ENSMUSE00001077693</a> | 126,928,847 | 126,928,665 | 0      | 0 | 183  | GACAACAATGAGTAAAGCCAGGACACAGAGGAGGGCTGTGGTGAAGGA<br>CCAGCAGGGGAAACACATCACCTTGGAGCACCTGGAGGATGTTCCCGG<br>AGCACTGGACCAAGACGACCTCCAGCGAGATCTCCAGCAACTCCTTCG<br>GCACTTCTGCAAGGAGAACACAAAGCAAGAGGCCAAAATGAGGAGCTGC<br>CCAGTTCTCACCAGAAACCACAAACCCACTCAATATGCAACTTCCCAT<br>TTCTGCGCAGGAGTGAAGTGGCCTAATTACTGGGACCCAGTGAC<br>ACTTCCACTCTCAGCAAACACACAGCATCTACTTTTCTTCTTTCTCC<br>CTGCCCTCTCTAACTATAAGCTAATTTGTGACCAAAGATAGCATCCT<br>TCCTTCCGGATGCTGTATCCACTATTTTGGAGATCCGTGCTAACCTGG<br>GAACTGGCATCTCTATTGTTTGGCTTCTGCTCAAGCTCCATGAAACTCC<br>ATGAATCAGAAGAAGTTCACCTGCAGACTTCTTCAAATGACAGGGGAA<br>TCCTTCCAAGGTATCTATGTATAATGTATATAGCCGAAATTCAGAG<br>CGAACAACAGAGTAAAATTCAAACCACTGCCTGTCAATAATTACTGG<br>GCATCATGGAATAAAAGCCTCTAGATATTGCTGAACAATGGTTAATTA<br>TGATATTGCTAACACAATCAAATGGTAATACAGTTCTATGGAAGAAAC<br>ACTTCAGACTTAGACACGTCCTTAGAACTTCCAGAGTAGCCATTTGCT<br>CTTAAAGCCGTCAGGATCATAATCTTGAAGAAGAATCCCTAGGAGTGG<br>TCTTAGGACTGGTCAGCCATAGCCGTTGGCTCTTGGACTGTGGCCCT<br>GAGGGAGAGGGAGAAGGACTCACAGGCCAGCAGATGGAACAGCGAGG<br>TATTCTGGTGTAGAAAGCTTCCAGGGGTGGTGTCTAGCACCTTCAGGT<br>GTTTTGACTTTGGACACGTTGGCAGGGTATTTAAAAGCTATAACTA<br>CTGTAGTTTTCCGGTGTTCATTGCTGCTTTAGCAAACCACGCTGTCTT<br>ACTGGTGGTACTTTCTTCTGGCCACTGCACTGTAGATAATTCATTGGA<br>AACAAAGATTTATGCACCACACAAAAGGTTAAATGCTGTACCATGTTG  |
| 51 | <a href="#">ENSMUSE00001303914</a> | 126,926,894 | 126,926,803 | 0      | 2 | 92   |  |
| 52 | <a href="#">ENSMUSE00001243556</a> | 126,923,971 | 126,921,606 | 0<br>2 | - | 2366 |  |



**Supplementary Table 2. The exon nomenclature of *Ank3* used in this study.**

The exon information was collected from a previous study (Rueckert, *et al.*, *Mol Psychiatry* **18**, 922–929, 2013) and the current information in the Ensembl database. The coordinates of each exon in chromosome 10 are shown (GRCm38/mm10). Except for the alternative first exons, all other known alternative exons are highlighted in yellow. Exon 2a is incorporated when exon 1a is used. Exon 45 can exist in the form of exon 45l, exon 45s, or exon 45a + exon 45s. Transcription may stop at either exon 51t or exon 52.

| Exon No. |                                    | Start      | End        | Start Phase | End Phase | Length | Sequence  |
|----------|------------------------------------|------------|------------|-------------|-----------|--------|---|
| 1a       | n/a                                | 69,398,773 | 69,399,129 | -           | 0         | 357    | GTTGTCTGGGGGACCCTGCGGCGGACAGCACTGGGCATGCTCGGGCGGCAG<br>TGGGCCGGGCGGTGCGCGCCTCCACCTGGCTGTCCCGCCCCCGCAAG<br>CCAACCGAGCAGCACCTGGCGGCGCCGGCAGGGGAGGAGAAGGCGCGGG<br>GCGGCGCTGCGCGTTCCCGAGCCGTGGCCCAACTTTCACCCCCACTTTCC<br>TCTGGGGGTGCAGTCCCTGGATCGGGGTTGAGGAGACGCCACTCGAGC<br>GCAGAGCCGAGTTCCTGGAAGGCGGAGCGCGGAGTACCCACCGTATGGCC<br>TGCTCGGGCACCTCGTCCCCAGTGGGCGGGGAGCCCCGATCTTGAGCAG  |
| 2a       | n/a                                | 69,484,229 | 69,484,267 | 0           | 0         | 39     | GGTGACTTTGGATCCTGTTATTACGAAGCTCTCAAAG   |
| 1e       | <a href="#">ENSMUSE00001241754</a> | 69,533,772 | 69,534,284 | -           | 0         | 513    | GTGTGTGTGTGTGCAGCGCACATGCACGTATGCCCTCCCCCTTTCTCTCT<br>CACCATTCCAAGCTAGAATCACCGTGGAGAAGCAAGCCCTGAAATGTTGT<br>CAAGATCTTTCTCGGGGTAACGACTGGCTAAAAAACAATAAAAAAGAGA<br>GAGAAAGGAAGAAAAGAAAAGAAAAGAAAAGAAAAGAAAAGAAAAGAAA<br>TTGGAATATTGATTTTCTTTGGAGGAATAACCAAGGGCTTTGCTGGAGAGA<br>ACCCAGTTCCTCCCTGAGGCGAGCTGAGTTGCCCGTGACAGCAGCCAGG<br>GCTGGCTTGAAGCAGCCGCTCTGCCCTGGGAGTTCCCTAAATGGACTTTGG<br>TCTCAATGCTGTGACTCTTTGCCGTGGTGGATGTGGGAACACGGAAGG<br>TGATCTCCTGCCTCGTCTCAACTCCCCGATCTCAAGGAAAGATGAGTGAA<br>GAGCCAAAGGAGAAGCCCGCAAGCCTGCTCATAGGAAGAGGAAAGGAAAA<br>AAG  |
| 1b       | <a href="#">ENSMUSE00001240581</a> | 69,706,370 | 69,706,925 | -           | 0         | 556    | AGGATTAGTGCTGGCTTCTCGGCTGCCGCATGTGGGGTGAATCCGGATCTT<br>TCTCCTTTACAAGAGCCACCCTTTGCAGCATTTCCCCCTTTGGAGGAACCAC<br>TTAGACACTTCCAGCTAGTGGCAGGGGATGCGGCCATAACACAGCTCCTCC<br>GGTCCCAGCTGCCTCCACTACAGCCTCTGCACCAGGATGGCTGTGCTCTCC<br>TCCAGAGGGGAAGGCTCAGCAAGGTGTAGGATGAGATCTGGCCCCCTGCTGT<br>GGTGGGTTTTGAAAGCTGCAGTTTCCCCAGCATCTCTGCCTCTCTGCCTCT<br>TGGATGCCTTTCTGCTCAGGCTTCTCTCCTGCGAGGGCTATGCTGCTCTAT<br>GCCTGATTAGAGGTACCCAAGGAGATCACCTTTCTCAGAGAAAGCTCTGCG<br>CGCTGCTTGAAGCAGGGTCTTTTTCAAATGCATTATGCTCATGCCGCTC<br>CCAGTTAAAGAAAAACAGGGATTTAGAAATCAATGCGGAAGAAGAGACTGA<br>GAAAAAAGGAAACACCGCAAACGGTCCCGGGATCGCAAGAAAAAG |
| 1f       | <a href="#">ENSMUSE00001263979</a> | 69,785,525 | 69,785,672 | -           | 0         | 148    | AGGAGGTCGGGGAGACGTCTTTACGTTTCCAAGGCGGATATTTTGTAGACA<br>GGATGTTCTGCCCAAGTGTAACTAATTGAGTTATCAGGTTTCGTATTTG<br>GCCTCAGAGAATGGCGTGGAAAGAGCCAGAGGGCTTCCAGAAAGAA  |
| 2        | <a href="#">ENSMUSE00001282033</a> | 69,808,416 | 69,808,517 | 0           | 0         | 102    | TCTGATGCCAACGCAAGTTACTTAAGAGCAGCTCGGGCAGGGCACCTGGAA<br>AAGGCCCTTGACTACATCAAAAATGGAGTGGACGTCAACATCTGTAACCAG  |
| 3        | <a href="#">ENSMUSE00001280093</a> | 69,808,873 | 69,808,971 | 0           | 0         | 99     | AATGGATTGAATGCACCTCCATCTTGGCTTCCAAAGAAGGCCATGTGGAAGTG<br>GTCTCTGAGCTGCTGCAGAGGGAAAGCCAAATGTTGATGCCGCCACAAAG   |
| 4        | <a href="#">ENSMUSE00001274976</a> | 69,809,171 | 69,809,269 | 0           | 0         | 99     | AAAGGAAACACGGCCTTACACATCGCATCTTTGGCTGGGCAAGCGGAAGTG<br>GTCAAGGTCTTGGTTACGAACGGAGCGAATGTCAACGCACAATCTCAG   |
| 5        | <a href="#">ENSMUSE00001241373</a> | 69,815,695 | 69,815,793 | 0           | 0         | 99     | AATGGCTTACACCATTGTATATGGCAGCCAGGAGAACCACCTGGAAGTC<br>GTCAGGTTTCTTCTGGACAATGGCGCCAGCCAAAGCCTGGCCACAGAG   |
| 6        | <a href="#">ENSMUSE00001288955</a> | 69,822,208 | 69,822,393 | 0           | 0         | 186    | GACGGCTTACGCCATTGGCCGTGGCTCTGCAACAAGGTCATGACCAAGTC<br>GTGTCCCTCCTGCTCGAGAACGACACGAAGGAAAAGTGCCTCCAGCC<br>CTCCACATCGCAGCCCGAAAGACGACACCAAGGCAGCAGCTCTGCTCCTG<br>CAGAATGACACAAACCGGACGTTGGAGTCAAAG  |
| 7        | <a href="#">ENSMUSE00001258555</a> | 69,823,078 | 69,823,101 | 0           | 0         | 24     | ATGGTGGTGAATAGAGCAACTGAG  |
| 8        | <a href="#">ENSMUSE00001214460</a> | 69,824,318 | 69,824,416 | 0           | 0         | 99     | AGTGGCTTACCCCGCTCCACATAGCTGCCACTATGGGAACATCAATGTG<br>GCCACGTTGCTGTTAAACCGAGCGGCTGCTGTGGACTTACCAGCACGG   |
| 9        | <a href="#">ENSMUSE00001258730</a> | 69,850,106 | 69,850,204 | 0           | 0         | 99     | AATGACATCACTCCCTTACACGTTGCTTCCAAAGAAGGCCATGTGGAAGTG<br>GTGAAGCTATTGCTGGACCGGGTGCAGAGATCGATGCCAAGACCAGG  |
| 10       | <a href="#">ENSMUSE00001250647</a> | 69,867,385 | 69,867,483 | 0           | 0         | 99     | GACGGTCTGACTCCGTTGCACTGTGGGGCAGAGAAGTGGCCATGAGCAGGTG<br>GTAGAGATGTTGCTTGCAGAGATCCGCCCCATCCTTTCAAACCAAG  |
| 11       | <a href="#">ENSMUSE00001297249</a> | 69,871,002 | 69,871,199 | 0           | 0         | 198    | AATGGATTGTCGCCACTGCACATGGCCACACAAGGAGACCATTTAAACTGC<br>GTCCAACCTCCTCCAGCACAACGTCGCCGTGGACGACGTCACCAACGAC<br>TACCTGACTGCCCTCCATGTGGCTGCCACTGCGGCCATTACAAAGTTGCC<br>AAGTTCTTTTGGATAAGAAAGCTAGCCCCAATGCCAAAGCCCTG  |
| 12       | <a href="#">ENSMUSE00001307807</a> | 69,874,790 | 69,874,888 | 0           | 0         | 99     | AATGGCTTACCCCTCTCCATATCGCTGCAAAAAGAACCAGCATCCGAGTA<br>ATGGAACCTCTTTTGAAGCACGGTGCATCTATTCAAGCCGTAACCGAG  |
| 13       | <a href="#">ENSMUSE00001272604</a> | 69,877,830 | 69,877,928 | 0           | 0         | 99     | TGGGCTTACCCCAATCCATGTTGCTGCCCTTTCATGGGACATGTAAATATC<br>GTGTACAGCTAATGCATCATGGAGCCTCCCAACACCACCAATGTG  |
| 14       | <a href="#">ENSMUSE00001220057</a> | 69,879,893 | 69,879,991 | 0           | 0         | 99     | AGAGGAGAGACGGCATTGCATATGGCGGCTCGGTCCGGAACAAGCAGAAGTG<br>GTGCGGTATCTGGTCCAAGATGGGGCTCAGGTAGAAGCAAAAGCTAAG  |
| 15       | <a href="#">ENSMUSE00001290652</a> | 69,882,361 | 69,882,558 | 0           | 0         | 198    | GATGACCAGACTCCACTCCACATCTCAGCCGACTTGGGAAAGCTGACATA<br>GTGCAACAACCTGTTACAGCAAGGAGCATCCCCCAATGCAGCAACAACCTTCT<br>GGGTACACCCCCCTTACCTTGGCGCCAGAGAGGGGCATGAGGATGTAGCT<br>GCGTTCCTCCTGGATCATGGAGCATCTTTATCCATAACAACAAAG  |
| 16       | <a href="#">ENSMUSE00001248451</a> | 69,884,747 | 69,884,845 | 0           | 0         | 99     | AAGGGATTACCCCTCTGCACGTGGCAGCCAAATACGGAAGCTTGAAGTC<br>GCAAGTCTCCTGCTGCAGAAGAGTGCCTCTCCGATGCCGAGGGGAAG  |
| 17       | <a href="#">ENSMUSE00001279345</a> | 69,885,139 | 69,885,237 | 0           | 0         | 99     | AGCGGGCTAACTCCACTGCATGTAGCAGCGCATTACGATAATCAGAAAGTG<br>GCCCTTCTGCTCTTGGACCAGGGAGCCTCACCCACGCAGCCGCAAG   |
| 18       | <a href="#">ENSMUSE00001278922</a> | 69,892,322 | 69,892,519 | 0           | 0         | 198    | AATGGCTATACACCCTGCACATCGCGGCCAAGAAGAACCAGATGGACATA<br>GCCACGTCCCTGCTGGAGTACGGTGTGATGCAAACGCGGTTACCCGGCAA<br>GGGATTGCGTCCGTCATCTTGGCGCACAGGAAGGGCAGTGGACATGGTG<br>TCGCTGCTCCTGAGTAGAAACCGGAATGTCAACCTGAGCAATAAG  |
| 19       | <a href="#">ENSMUSE00001280782</a> | 69,893,445 | 69,893,543 | 0           | 0         | 99     | AGCGGTCTACCCCACTCCACTGGCTGCTCAAGAAGACCGAGTGAATGTG<br>GCCGAGGTCCTTGTCAACCAGGGGGCCATGTGGATGCTCAGACAAAG  |
| 20       | <a href="#">ENSMUSE00001220119</a> | 69,898,041 | 69,898,139 | 0           | 0         | 99     | ATGGGCTACACCCCGCTCCATGTGGGCTGTCACTATGGAAATATCAAATA<br>GTCAATTTTCTGCTGCAGCATTCTGCAAAAGTTAATGCCAAGACGAAG  |
| 21       | <a href="#">ENSMUSE00001221633</a> | 69,898,228 | 69,898,326 | 0           | 0         | 99     | AATGGATACACAGCACTGCACCAGGCTGCTCAGCAGGGCCACACGCATATC<br>ATCAATGTCTTGTTCAGAAACAACGCTCCCCCAATGAACCTACTGTG  |
| 22       | <a href="#">ENSMUSE00001248586</a> | 69,898,994 | 69,899,089 | 0           | 0         | 96     | AATGGGAACACAGCTCTGGCCATCGCCGGCGCCTTGGTTACATCTCGGTG<br>GTTGACACACTGAAGGTCGTGACGGAGGAAATTATGACCACCACT   |
| 23       | <a href="#">ENSMUSE00001261484</a> | 69,904,198 | 69,904,270 | 0           | 1         | 73     | ACCATCACGGAGAAGCACAAAATGAATGTCCAGAAACGATGAATGAAGTC<br>CTCGATATGTGACAGCATGAAG  |



|     |                                    |            |            |   |   |      |   |
|-----|------------------------------------|------------|------------|---|---|------|---|
| 24  | <a href="#">ENSMUSE00001217354</a> | 69,904,448 | 69,904,510 | 1 | 1 | 63   | TAAGGAAAGCCAGCGCCCCGAAAAGCTCAGTGATGGGGAATATATCTCAG<br>ACGGTGAAGAAG  |
| 25  | <a href="#">ENSMUSE00001255465</a> | 69,920,438 | 69,920,491 | 1 | 1 | 54   | GTGATAAATGCACATGGTTCAAAAATTCCCAAAGTACAGGAGGTTTTGGTGA<br>AAA   |
| 1s  | <a href="#">ENSMUSE00001275881</a> | 69,925,495 | 69,926,191 | - | 1 | 697  | GAGAACAAAGTTGAAAGTTTGCTGCAGCTCCCGGCCACTCCTGCTCCCGG<br>GCCCTTCTTTGTTTTCTCCCTGGGTTTGTTTTTCTTCTACCTGGCTTGGCT<br>GTTTCTTCATTCACCTTTGAGAAGAGCCCGTCTCCAAATCGCCCAGTTACA<br>CAAGTGCCCGGGGCTCTCTGGACTTGTGAGGGTCCCTGCTACTCTGACTGC<br>CCTGGTATCAAGTTACTGAAAGTCTACACCCAGGCAGTCTCATATTTACA<br>TACAAATAACTCCTGGGTTTGTCTTTATGTCACATTTGGGTCCTGCAAGAG<br>GCTTGCCAGAGCGTCTTAATCCAATCAGGAGGCACTTTGAAAGGATGTCT<br>GTTGAGCGGTGAGAAGGATGTTCTGTCGCTATTAAGTGTGCCACACAAAAT<br>TTTTTCGCATGTTTCGGTCTGAGTTTTTTTTTTTTTTTTTAAATCTTCGGAGTT<br>AAAAAGTGAGGAATGATGTACAGCTGCTCAGTTGCCTTCGACAGCTTGGA<br>GATGCTGAGGGAAACGCTGCAGCCCTGGTGAAGAAGATCTGACTAGGGACG<br>GGTTTGGATCCATAACCAGGCTGGTGTGGATTGGGGCTGGTGTGGACGGCTT<br>ACTCTAAACCCCTGCTTAAGGAATTCCTGGAAGCCTCGGGAAAGTACTCCC<br>CAACCAGTCGTGGTGGAAATGCTTTGCCACACA  |
| 26  | <a href="#">ENSMUSE00001309139</a> | 69,927,695 | 69,927,818 | 1 | 2 | 124  | GTGAAGATGCCATCACAGGGGACACTGACAAGTATCTCGGGCCACAGGACC<br>TTAAGGAGCTAGGTGATGACTCCCTGCCAGCAGAAGTTACGTAGGCTTCA<br>GTCTTGAGGCCGTTCTGCCAG  |
| 27  | <a href="#">ENSMUSE00001230155</a> | 69,929,447 | 69,929,458 | 2 | 2 | 12   | TCCCAAGATAAG  |
| 28  | <a href="#">ENSMUSE00001286314</a> | 69,932,394 | 69,932,496 | 2 | 0 | 103  | CCTCCGCTCCTTCAGTTCGGATAGGTCCTACACCTTGAACAGAAGCTCCTA<br>CGCAAGGGACAGCATGATGATAGAGGAACCTTCTGGTACCATCCAAAGAGCA<br>G  |
| 29  | <a href="#">ENSMUSE00001255995</a> | 69,950,952 | 69,951,058 | 0 | 2 | 107  | CACCTGACGTTACAGAGGGAGTTGATTCTGACTCCCTCAGACACTACAGT<br>TGGGCAGCGACACGTTAGATAATGTGAACCTGGTCTCAAGCCCGGTGCAT<br>TCTGG   |
| 30  | <a href="#">ENSMUSE00001220072</a> | 69,953,440 | 69,953,472 | 2 | 2 | 33   | CTGCTCGTCTCCGCTGCCTCAGTATGACTCAAG   |
| 31  | <a href="#">ENSMUSE00001208972</a> | 69,955,926 | 69,956,150 | 2 | 2 | 225  | GTTTCTGGTTAGCTTTATGGTGGACGCGAGAGGGGGCTCCATGCGAGGAAG<br>CCGCCACCACGGGATGCGGATCATCATCCCTCCGCGAAAGTGTACGGCCCC<br>CACCCGCATCACGTGCCGCTGGTAAAGAGACATAAACTGGCCAACCCACC<br>CCCCATGGTGGAAAGGAGAGGGATTAGCCAGTAGGCTGGTAGAAATGGGTCC<br>TGCGGGGGCACAATTTTAGG  |
| 32  | <a href="#">ENSMUSE00001230547</a> | 69,958,918 | 69,959,072 | 2 | 1 | 155  | CCCCGTCATTGTGGAAATCCCTCATTTTGGGTCCATGAGGGGGAAGGAGAG<br>AGAACTTATCGTCTTCCGAGCGAGAACGGAGAGACCTGGAAGGAACATCA<br>GTTTGACAGTAAAAACGAAGACCTCGCGGAGCTTCTCAATGGCATGGATGA<br>AG  |
| 33  | <a href="#">ENSMUSE00001292195</a> | 69,973,722 | 69,973,933 | 1 | 0 | 212  | AACTCGACAGCCCAGGAAAGAGTTGGGTACAAAGCGCATCTGCAGAATTATCA<br>CAAAGGATTTCCCCAGTATTTTGGCGTGGTTTCCCGGATTAAGCAGGAAA<br>GCAACCAGATCGGTCTGAGGGTGGGATTCCTGAGCAGCACCACCGTGCCCC<br>TCGTCCAGGCCTCCTTCCAGAGGGCGCTTAACCAAGAGGATCCGTGTGG<br>GTCTCCAG   |
| 34  | <a href="#">ENSMUSE00001268073</a> | 69,976,048 | 69,976,255 | 0 | 1 | 208  | GCTCAGCCCGTGCCAGAGGAAACGGTAAAAAAATCCTTGGGAACAAAGCA<br>ACATTTAGCCCAATTGTACAGGTAGAGCCGAGGAGAAGGAAGTTCCATAAG<br>CCGATCACCATGACCATTCGGTGCCTCCCGCTCGGGAGAAGGCGTGTCC<br>AATGGGTACAAGGGGGATGCCACGCCAACCTGCGGCTCCTCTGCAGCATC<br>ACAG  |
| 35  | <a href="#">ENSMUSE00001205997</a> | 69,977,713 | 69,977,809 | 1 | 2 | 97   | GAGGCACCTCACAGCTCAATGGGAAGACATCACAGGAACAACCCCTCTGA<br>CGTTCATAAAGGATTGTGTGTCTTTACAACCAACGTTTCAGCCAG   |
| 36  | <a href="#">ENSMUSE00001252247</a> | 69,978,471 | 69,978,699 | 2 | 0 | 229  | ATTCTGGCTGGCGGACTGCCATCAGGTGTTAGAGACCGTAGGGCTAGCCTC<br>CCAGCTGTACAGAGAGCTGATATGCGTTCCTTACATGGCCAAGTTCTGTTGT<br>GTTTGCCAAAACAAACGACCCGGTGGAGTCTCGCTGAGGTGCTTCTGTAT<br>GACAGACGACAGGGTGGACAAAACCTGGAGCAGCAGGAGAAGTTTCAGGGA<br>GGTTGCCAGAAGCAAAGACATTGAG   |
| 37  | <a href="#">ENSMUSE00001292473</a> | 69,979,318 | 69,979,443 | 0 | 0 | 126  | GTTCTGGAAGGAAAGCCCATCTACGTTGATTGCTATGGAAACCTGGCCCT<br>CTGACCAAAGGAGGACAGCAGCTTGTFTTTAACTTTTATTCTTTCAAAGAA<br>AACAGACTGCCATTTTCCATCAAG   |
| 38  | <a href="#">ENSMUSE00001279827</a> | 69,980,272 | 69,980,394 | 0 | 0 | 123  | ATCAGAGACACCAGTCAAGAGCCCTGTGGCCGCTGTCTTTCTGAAGGAG<br>CCAAAGACAACAAAGGGATTACCCCAAACAGCTGTTTGCAACTTAAATATT<br>ACTCTGCCGGCACATAAAAAG   |
| 39  | <a href="#">ENSMUSE00001209441</a> | 69,980,824 | 69,980,850 | 0 | 0 | 27   | GAGACAGAGTCAGATCAAGATGATGAG   |
| 40  | <a href="#">ENSMUSE00001278273</a> | 69,982,116 | 69,982,197 | 0 | 1 | 82   | GCTGAGAAGGCAGACAGACGCCAGAGCTTTGCCTCCCTAGCTTTACGTAAG<br>CGCTACAGCTACTTGACTGAACCCAGCATGA  |
| 40s | <a href="#">ENSMUSE00001236257</a> | 69,982,116 | 69,982,161 | 0 | 1 | 46   | AAACAGTTGAACGGAGTTCAGGAACAGCAAGATCCCTCCCCACCACTTATT<br>CACACAAGCCATTCTTTCTACAAGACCATAACCAGTCCCTGGACCACGGCTC<br>CAATCACAGTGCCCGGGCCGCAAGTCAGGCTCCTTATCCAGCTCTCCCT<br>CTAACACGCGTCAGCTTCTCGTTAAAATCCATATGGTCTGTCTCGAGCGC<br>CTTCTCCGATCAAATCCACGTTAGGCGCCTCAACTACATCTTCAGTCAAAT<br>CCATTAGCGACGTGGCGTCTCCTATTAGATCTTCCGGACAGTTTCTTCGC<br>CAATAAAAACGGTGGTGTGCGCGTCTCCGTACAATCCCCAGGTTGCCTCTG<br>GTACCCCTGGGAGGGTTCCACCATCACAGAGGCCACACCATAAAGGGGC<br>TGGCTCCCAACTCAACTTTCTCCTCTCGAATTTCTCCTGTGACGACCGCAG<br>GGTCTCTGTTGGAGAGGTCCATCACCATGACACCCCTGCCTCCCCCA<br>AATCAAACATCACTATGTATTCTCAAGCTTGCCATTTAAGTCCATTATCA<br>CATCAGCGACACCACTGATCTTCCCTTTAAAGTCAGTGGTGTCTCCGA<br>CCAAGTCTGCAGCTGATGTCTCAACAGCTAAAGCTACGATGGCATCGT<br>CTCTCTCCTCCCCCTTAAAGCAGATGTCCGGACATGCAGAGGTAGCGCTAG<br>TCAATGGGTCTGTTTCTCCTCTGAAGTACCCTTCGTCTTCAGTTTAAATTA<br>ACGGATGCAAAGCCACTGCCACATTACAGGACAAAATTTCTACAGCCACAA<br>ACGCTGTGAGCTCGGTGGTGGAGCGCAGCCTCTGACACGGTGGAGAAAGCGC<br>TCTCTACCACGACAGCCATGCCCTTTTCCCACTCAGGTGCTATGTTTCTG<br>CAGCCCCCTCGGCTTTCCAGTCCCTTAGAATCCCTCTGCAAGTGCAGTGT<br>ACACCTCCCTCGGTCCTCGATAGCTGCTACTACCTCATCTGTAACCTCAT<br>CAATAATCACAGTGCCAGTATACTCGGTAGTCAATGTTTTGCCAGAACCAG<br>CACTGAAGAACTCCAGACTCTAACTCGTTACCAAGTCGGCAGCGGCTT<br>TGCTGTGCGCCATTAACAACTTACTACGGAGACAGCCCTCAGCCCCATT<br>TCAATCGAATTCATCTCCAGTCAAGTCGTCTCTGTTTCTGGCGTCTCCG |
| 41L | n/a                                | 69,986,083 | 69,993,762 | 1 | 1 | 7680 |   |
| 41S | <a href="#">ENSMUSE00001253692</a> | 69,986,083 | 69,988,632 | 1 | 1 | 2550 |   |

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|     |                                    |            |            |   |   |      |   |
|-----|------------------------------------|------------|------------|---|---|------|---|
|     |                                    |            |            |   |   |      | AGGATGTTTGGACGGAGGGCATTCTGAAGCCGGCTGACCGCTCTTTTCAGTC<br>AGAGCAAACCTGGAAGTTATTGAGGAGGAGGAGGGGAAAGTGGGGCTGGACG<br>AAGAGAAACCATCACCTTCTAAAAAGCCATCATCCGACAGAACCCAGAGA<br>AGGCCGATCCCAAGTCAGGGGCCAGTTTTTACCCTGGAAGGCAGACACC<br>CGGACAGATCAGTGCTCCCTGATACTTACTTACAGTTACAAAGTTGACGAAG<br>AATTCGCCACTCCTTTTAAAAACAGTGGCGACCAAAGGTCTCGACTTTGACC<br>CTTGGCCCAATAACCGAGGGGACAATGAAGTTTTTGGACGGTAAATCTCGGG<br>AAGATGACACTAAGCCATTTGGTCTGGCGGTGGACGACCGCTCGCCGGCAA<br>CCACCCCTGACACAACGCCAGCCAGAACCAACTGACGAAAGTACCCCAA<br>CTAGTGAGCCTAACCCCTTCCCATTTTCATGAAGGAAAAATGTTTGGAGATGA<br>CTCGCAGTGGTCAATTGACATGAGCAAGAGAGATTTTGTGGAAGAGAGGC<br>TCCAATTTTTCCAGATTGGTGAGCATACTCTGAAGGGAAGTCAGGGGCC<br>AGGGGGAAGGGATATGGTCACTGATACCCACAGCCACAGTCAGGGGACA<br>CCTCGGTAGACACCAATCTAGAGAGAGATGTAGTGGCACCTTCAGTCGACC<br>CCAACCCAGCATCCCGAGCAACGGAGAGTGTGAGGAAGGCACAGCCTGTA<br>GTGGCTCTCTGGAGAAGTCGGCAGCTGCCACTAACACCTCAAAGTTGACC<br>CCAAGTCACGCACGCCTATAAAAAATGGGAATTTCTGCATCTACCATGACCA<br>TGAAGAAAGAAGGCTCTGGAGAAGTGACAGATAAGACAGAGGCTGTGGTGA<br>CCAGTTGTCAGGGGTTAGAAAACGAAATCGTGAAGAGATCTCGAGTGCAC<br>CCAGTAGCCAGGTGGGCATTAGGCCCAAGAGAAACACGATTTTTCAAAAAG<br>ATAACTTTAATAACAACAATAATCTGGATGCTTCCACTATGCAGACAGATA<br>ACAGCACAAGCCACATAGTTCTGACAGGACGCGCTGCATCCACTTGCACCA<br>CAGAGGAAGCTAATCCAGTAAAAGGCTCAGGAAAGAGTCCAGGGACTCAAG<br>GACACTCCAGCAGAGAGTCTCGGAAGGAGCCGATAGGGCTTAGGCGGAAAT<br>CCAAGCTTCTATAAAGGCCACCCGACCAAAGATGTCTTCCCGCAAACC<br>ATAAGGCAGACAGTAAAACAGGTAAACCGAGGCAGGTTGGTCAATATGAGA<br>AACACAAAGCCCTTCTACTTCTTCATGTTTAGATGCCAAGTCCCGAATTC<br>CCGTCAAAAACACACACAGGGAGAACCTAGTTTTCAGTCAGAAAAGCATGCG<br>CCACACAAAAGCGAGGGCAGCCAGAGAGAGGCAAGGCCAAACAGCCTCCAT<br>CCAAGTTGCCAGTAAAGGTAAGATCCACCCGTGTCCACCGTACCACCACCA<br>ACACCTCCACCACCCTACCACCACCACCACCACCCTACCACCCTACCCTACC<br>TTAAAGTTACAGAAAGTCAGCTTAAGGAGGTATGTAAACATCCCATTGAAT<br>ATTTTAAGGGAATTAGTGGCGAGACCCTAAAACCTTGTGGACCGCCTCACTG<br>AAGAAGACAAAAGATGCAATCGGAGTTGTCTGATGAGGAAGAAAGTACCT<br>CAAGGAACACGTCGTTGTCCGAGACTTCCCGGGCGGCCAGCCTTCAGTTA<br>CCACGAAGTCTGCTAGAAATAAGAAAACAGAGGCACCGCCCTTAAAATCAA<br>AGAGAGGAAAGGCCGGCAGTAGGAGACTG |
| 42  | <a href="#">ENSMUSE00001231047</a> | 69,994,372 | 69,994,446 | 1 | 1 | 75   | GTCCGCAGAGTCCTTGTGAGCGGACGGATATCAGGATGGCGATAGTAGCCG<br>ATCACCTGGGACTTAGTTGGACAG   |
| 43  | <a href="#">ENSMUSE00001259541</a> | 69,998,095 | 69,998,226 | 1 | 1 | 132  | AGCTGGCAAGGGAAGTGAATTTTTTTCAGTGGATGAAATCAACCAAATACGTG<br>TGGAATAATCCCAATTCTTTAATTTCTCAGAGCTTCATGTTATTAATAAAGT<br>GGGTGACCAGAGACGGAAAGAATGCCACAA   |
| 44  | <a href="#">ENSMUSE00001257460</a> | 69,999,355 | 69,999,498 | 1 | 1 | 144  | CTGATGCCTTAACTTTCGGTCTTAAACGAAGATTAACCGGATAGACATTGTAA<br>CTCTGCTGGAAGGACCAATATTTGATTATGGGAATATTTTCAGGCACCAGAA<br>GCTTTGTCAGATGAAAACAATGTTTTCCATGACCCAGTTGATG<br><a href="#">GTCACCCCTTCCCTTTCAAGTGGAGCTGGAGACCCCATGGGGTTGTACTGCA</a><br><a href="#">CACCACCCCAACCCTTTCCAGCAAGATGACCATTTTAGTGATATCTCTAGCA</a><br><a href="#">TAGAGTCTCCCTTTAGGACCCCCAGTAGACTGAGTGACGGGCTGGTGCCTT</a><br><a href="#">CCCAGGGAAACATAGAGCATCCAACAGGTGGACCTCCAGTGGTAACCGCAG</a><br><a href="#">AGGACACTTCTTTAGAAGACAGCAAAAATGGACGATTTCTGTAAGTGAACAG</a><br><a href="#">ACCCGGCCGACCCACTGGACGTAGATGAGAGCCAGTTGAAGGACCTGTGTC</a><br><a href="#">AGA</a> GCGAGTGTGCTCAGTGCTGGGCGAGTGTGCCCGGGATCCCAAACGACG<br>GTCGGCAGGCAGAGCCACTGAGACCCGAGACTAGAAAAGTAGGCATGAGCT<br>CTGAACAGCAGGAAAAAGGAAAATCTGGTCTGATGAGGAAGTACAGAAAG<br>ACAAGGTCAAATCTCTGTTTGGAGACATTCACCTTGAAGAAGTAGAGGCTG<br>AGGAGATGACAGAAGACCAGGGGCAGGCTATGCTTAAACCGTGTTCAGCGAG<br>CAGAACTGGCAATGTCTTCACTTGCAGTTGGCAGAACGAGACGCAAGTGTG<br>GAAGCCTAGAGTCCCCAGCGCAAGCTCGAAGACTAAGTGGTGGGTTACTGG<br>ACCGTCTGGATGACAG   |
| 451 | <a href="#">ENSMUSE00000642788</a> | 70,001,923 | 70,002,601 | 1 | 2 | 679  |   |
| 45a | <a href="#">ENSMUSE00001239902</a> | 70,001,923 | 70,002,231 | 1 | 1 | 309  |   |
| 45s | <a href="#">ENSMUSE00001282241</a> | 70,002,511 | 70,002,601 | 1 | 2 | 91   |   |
| 46  | <a href="#">ENSMUSE00001280544</a> | 70,004,610 | 70,004,991 | 2 | 0 | 382  | CTCTGACCAGGCTCGGGATTCTATTACCTCATACTCAGGGGAGAACCTGG<br>GAAGATCGAAGCAAATGGAAACCACACAGCGGAAGTCATTCCAGAAGCAAAA<br>GGCAAACCCCTACTTCCCGGAATCCCAAACGATATAGGGAAACAGAGCAT<br>CAAGGAGAACCTGAAACCAAAAACACACGGATGTGGTGCCTGAGGAACC<br>AGTGTGCCCCCTCACAGCCTACCAGAAATCTCTGGAAGAAACAGCAAGCT<br>TGTCATAGAAGACGCACCTAAACCCCTGTGTGCCTGTCCGCATGAAAAAGAT<br>GACCAGGACTACGGCTGACGGCAAAAGCCAGGCTCAACCTCCAGGAAGAAGA<br>GGGTCCACCAGGTGAGAGCCTAAG   |
| 47  | <a href="#">ENSMUSE00001243294</a> | 70,006,803 | 70,006,853 | 0 | 0 | 51   | GTCAAAGCCCGGGCGAAGCGTTTACGCGGATGACCGCCTGCTGTTACAAG<br>GACTTGAGAAACAGTGAGAGTGATTCAAGCTCAGAGGAGGAGCAGAGGATC<br>ACTACCCGGGTCTATACGAAGGCGTGTGATTATAAAG  |
| 48  | <a href="#">ENSMUSE00001310630</a> | 70,008,778 | 70,008,864 | 0 | 0 | 87   | GGGAGGAAGCCAAAAACATCCCTGGTGAATCTGTACAGAAGAGCAATTT<br>ACTGATGAAGAAGGCAACCTCATCACGAGAAAA  |
| 49  | <a href="#">ENSMUSE00001226504</a> | 70,013,972 | 70,014,055 | 0 | 0 | 84   | ATCACTCGGAAAGTAATAAGACGGATTGGTCCACAAGAGAGGAAGCAGGAT<br>GACGTG   |
| 50  | <a href="#">ENSMUSE00001227898</a> | 70,014,190 | 70,014,246 | 0 | 0 | 57   | <a href="#">CAGGGAGAAGGCTATAAGGTGAAGACGAAGAAGGAAATCCGGAACGTGGAG</a><br><a href="#">AAGAAAACCCACTAG</a> TGACAGTGACGTGAGTCCAGTGGGAAGTACTACTTA<br><a href="#">CGTCAGCAGCTAGACTTAAAAATCTTGAGAAATTTCTGGGTTCTCGGAATA</a><br><a href="#">AGTATATTCCTATATTCCTTTCTCCTTCTTCTGAAATCTCACTGGAAG</a><br><a href="#">ATGAAATGAAATAAATCTTGTTTTTTATTTCTTTA</a>   |
| 51  | <a href="#">ENSMUSE00001313132</a> | 70,015,568 | 70,015,653 | 0 | - | 86   |   |
| 51t | <a href="#">ENSMUSE00001259731</a> | 70,015,571 | 70,015,805 | 0 | - | 235  |   |
| 52  | <a href="#">ENSMUSE00000612179</a> | 70,023,832 | 70,027,438 | - | - | 3607 | GACCACTGGTTCATACTGCCAGTATTGAGAAACTCACCAGAGATCAGCAGG<br>AAGAAAAATAGTCACCAAGAGTGGAGTGTGGGTGAGTGTCTCCACCACAC<br>GTCAGTGACACGATTTTTTTTTTTGTAACGCAGAAGGAAAACGAAAATCAC<br>ATTTTTTCTTTTCAATTTAGCATGAGCCGATCTACAAAGCATGGAAACTCACA<br>TTCATTTCCCGGCACTGAAATGCACACTGAGCAAGTGCAGTGTACGACACAG<br>GAAGCCATGTTCTTACAGCCCGGTCTCAAGTAATTTAGTGTCAATTTTCAA<br>GAAGACAGACAAAACAACACCTGTGCCACCCAGGAGGAGGGGCAGCAGAGG<br>ACGGAATGATCAAATCAAGAAGACACACTAAATTTACTAAATTCACAACAG<br>CTCGCCTTATTTTTCTCGGACCCAACTAACGTGTCAGGGTATAAACACTGT<br>TCCTTTCTTTCTTTCTTTCTTTCTTTCTTTTCTTTTCTTTTAAAGAAAAATAAT<br>ATAATAATAATGAAAAAATCAATAGTTTGTCTGTAATAATAACTACTGT  |

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CTGCAAATTTAAATAATTCCCCAACGAGGAATCTGTAGTTCTGTGAAAA  
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CTTTGACATTTTTGTAAAGAGAGAGAGAGAGAGAGAAAGAAAGAAAGAACT  
GTGACTGATAAAATCCTGAGATTTGCCACTTCTCCTTTATACATTTTACC  
CATTTGTTAACATGAAAGGGTTGTTTCTAGAAGGGACTCTCTTCACTGGCC  
ACTCAAGCAACAGAGCTGGCTCTCTCACACTGGTATCCAGCATCCACCA  
TGTTCTTCTTAGCCGTACCTTGGGGCTCCATACAATGGAAGTTTCTCTCC  
ATGGTTAATAAACGTCGATGGAAAAGTGGTTTGTGACTTTCTTCAAAGC  
CTCCCGCTCACATTTGACCGTGAGGAGCCAGAAAGAAGCCACAGGAACAG  
CAACTATAGAATTCGTGCCTCATCCAGGGGCATCTGGGTATTTGTTGGCC  
AGGCAACTGGCATATTTAAAGGTGTATCATTTCTCTAA

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