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# De novo genes with an lncRNA origin encode unique human brain developmental functionality

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ENSG00000204091.

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Human ATGAAGAGGA GGGAGCAGT CTGCGGCGAC CCACATTT T-CTAGGAAGCTG GGAAGC-----CCCC CACCCTTAG GAAGATCCAT CCGTGTGGAA CTTTGCCAG GCTTACCAGC CTTTGTCTGAG GTTAGTCTAT T-----GT
Rhesus ATGAAGAGGA GGGAGCAGT CTGCGGCGAC CCACATTT T-CTAGGAAGCTG GGAAGC-----CCCC CACCCTTAG GAAGATCCAT CCGTGTGGAA CTTTGCCAG GCTTACCAGC CTTTGTCTGAG GTTAGTCTAT TTAGACTAGT
Clustal *****
Human -----TCTACACTTG AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC
Rhesus ATCAGTCACT AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC -----TCTACACTTG AGGACTTGG AGGTGGTTTC
Clustal *****
Human ATTCGCTGG TCCCTAGTA CAGAGGGCTA GCTGTGAGT GGAATCCOC TATGAGCTTT AG
Rhesus ATTCGCTGG TCCCTAGTA TAGAGGGCTA GCTGTGAGT GGAATCCOC TATGAGCTTT AG
Clustal *****

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ENSG00000204292:

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Human ATGAOCTTTT TCTCAACAT GCGCAAGTGG TATTCTGGG TGCTTCAAAT ATCACAGGCC GGATTGTAG GAAACAAGG AGGGGOCITT TGAAGAGAA TGAATGCTAG C-ATCCGGGT CCGTGGACAG CCAGCAGGCC TGAGGCAGAC
Rhesus ATGAOCTTTT TCTCAACAT GCGCAAGTGG TATTCTGGG TGCTTCAAAT ATCACAGGCC GGATTGTAG GAAACAAGG AGGGGOCITT TGAAGAGAA TGAATGCTAG C-ATCCGGGT CCGTGGACAG CCAGCAGGCC TGAGGCAGAC
Clustal *****
Human AGAAGTTTGG ACAACTCAGG ACAGGGAGCT TGGAGGGCAG CCGCTACATG TGGAGTGGT CCTACTGTGT GTTGCTCAA CTCTTCTCT AAGGCAAGAG CCGTAAAGGA CAG-TCAGG ACATCTACT GCCAAGGCT GTTAGCTGG
Rhesus AGAAGTTTGG ACAACTCAGG ACAGGGAGCT TGGAGGGCAG CCGCTACATG TGGAGTGGT CCTACTGTGT GTTGCTCAA CTCTTCTCT AAGGCAAGAG CCGTAAAGGA CAG-TCAGG ACATCTACT GCCAAGGCT GTTAGCTGG
Clustal *****
Human CCGGCCAAG GCTACAGGA AGGATGGCT GGGAGGCTC AGGAACTTA CAGTCACAG-----CGA AGCAAGAG GAAGCAGCA CCGCTTCTGT GGCAGAGCA GGAGGAGGC GTGGGGAGG TCGTACATC
Rhesus GCA-CCGG CTGTACAGGA AGGATGGCT GGGAGGCTC AGGAACTTA CAGTCACAG-----CGA AGCAAGAG GAAGCAGCA CCGCTTCTGT GGCAGAGCA GGAGGAGGC GTGGGGAGG TCGTACATC
Clustal *** * *
Human TTTTAAACA CTGATCTTG TGA
Rhesus TTTTAAACA CTGATCTTG TGA
Clustal *****

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ENSG00000204380:

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Human ATGGGGCTC TCACTGGCC TGCCCTCCG CAGCAGCTTC CTTTCTCCA C-AG-ITCTG GGAACCCAC TGGCTTCTCT CTACACTGG TACTTCTAG ACTCATCTGC CCATGGGAC CTCGAGGAT GCCCAGGTC CTGTCTGTC
Rhesus ATGGGGCTC TCACTGGCC TGCCCTCCG CAGCAGCTTC CTTTCTCCA C-AG-ITCTG GGAACCCAC TGGCTTCTCT CTACACTGG TACTTCTAG ACTCATCTGC CCATGGGAC CTCGAGGAT GCCCAGGTC CTGTCTGTC
Clustal *****
Human TTTCACTTGG CACTCTCCA GGTGCTTCT ---GCTCTT GTCTTAATA CAACCTATGG ACACAGGGCC ATAGGTTGG ACACATCTGC CTTTAGCCT GACTGCTCT TAGAATTGG GATTTCTTC TCCAAT-GT TCTGTACAC
Rhesus TTTCACTTGG CACTCTCCA GGTGCTTCT TGTGCTTCT GGTCTTAATA CAACCTATGG ACACAGGGCC ATAGGTTGG ACACATCTGC CTTTAGCCT GACTGCTCT TAGAATTGG GATTTCTTC TCCAATGTCT TCTGTACAC
Clustal *****
Human TGGCAGATG ACAGCTAAT AGACTTCCA AACTGGACAT TGTCAAATCT CTGAGCTGT CACC-----CTTCCAG CATCTCTGT CCTTCCGCC ATCAACAGCA CTTCTGTCT TGCAGTAT CCAGCAAG ATCTAGTGT
Rhesus TGGCAGATG ACAGCTAAT AGACTTCCA AACTGGACAT TGTCAAATCT CTGAGCTGT CACC-----CTTCCAG CATCTCTGT CCTTCCGCC ATCAACAGCA CTTCTGTCT TGCAGTAT CCAGCAAG ATCTAGTGT
Clustal ** * * *
Human ATCCTAATT CCCCCCTTC CTGCTCTTA A
Rhesus ATCCTAATT CCCCCCTTC CTACCTCTTA A
Clustal *****

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ENSG00000204626:

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Human ATGAGAGCC TGGCGGAG TGGCTCTA C AGGCGCAC ACAGGACAC ACAGGOCAT GGTGGGCTC CTCCGAGG GATTGGGAC AGCCAGGCC CTCTCGAGC ATTTCTGTC TGCCAGCTT CCGTCTGTC AGGAGCAGC
Rhesus ATGAGAGCC TGGCGGAG TGGCTCTA C AGGCGCAC ACAGGACAC ACAGGOCAT GGTGGGCTC CTCCGAGG GATTGGGAC AGCCAGGCC CTCTCGAGC ATTTCTGTC TGCCAGCTT CCGTCTGTC AGGAGCAGC
Clustal *****
Human CAGCAGGAG ACCTCTGGG CTGCGCCAT GGGCCAGAA AATGGTGTG GGGCGGTGG CTCTCCGCA GGAATCTCA TTCTGGGGG ATCAAGGCC ACGACTTAG ACCACTTGG GCGCCAGCC TAGAAGATG CATGTCGCA
Rhesus CAGCAGGAG ACCTCTGGG CTGCGCCAT GGGCCAGAA AATGGTGTG GGGCGGTGG CTCTCCGCA GGAATCTCA TTCTGGGGG ATCAAGGCC ACGACTTAG ACCACTTGG GCGCCAGCC TAGAAGATG CATGTCGCA
Clustal *****
Human GAGTCAGAT GGGCAGCAT GCAACCCAG CTACCTGTC AGCCGAGTG GCTGGGAGC AGGAAGTGA AGCCTCACAG AGAAAGTGT CTCGGGGAG GAGGACCCAG CAGATGTGA AAGAG-----AGGAACA CACTCTGTC
Rhesus GAGTCAGAT GGGCAGCAT GCAACCCAG CTACCTGTC AGCCGAGTG GCTGGGAGC AGGAAGTGA AGCCTCACAG AGAAAGTGT CTCGGGGAG GAGGACCCAG CAGATGTGA AAGAG-----AGGAACA CACTCTGTC
Clustal *****
Human GCGCCAGAG CAGTGGTGG CCGGACACT GCCACTTCC CTGGCACTGA
Rhesus GCGCCAGAG CAGTGGTGG CCGGACACT GCCACTTCC CTGGCACTGA
Clustal *****

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ENSG00000204666:

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Human ATGTCACTAG ACAGTGGGG CCTCAAGGAC CTGGCAATG GGGGCTTGA CCTGGATGG GCTCCGAGC GAAAGCTTGC TCCCAAGAG CATCCGAGC TTGTGTGGA CCGTCCGCG GCGCCAGGA TACTTCGCG CCGTGTACAG
Rhesus ATGTCACTAG ACAGTGGGG CCTCAAGGAC CTGGCAATG GGGGCTTGA CCTGGATGG GCTCCGAGC GAAAGCTTGC TCCCAAGAG CATCCGAGC TTGTGTGGA CCGTCCGCG GCGCCAGGA TACTTCGCG CCGTGTACAG
Clustal *****
Human TCCCTGATGA ACTACCTTC CCAGATACC GCGGAGCT C GGGCTCTGA GGGGAGGCT CTTCTGATG CAGATGGGG AGAAACTCTG GGTTCAGGG CCGCTCGGT GAGCAGAC AAGTGTGGG TTTTCTGGC TTGATATGT
Rhesus TCCCTGATGA ACTACCTTC CCAGATACC GCGGAGCT C GGGCTCTGA GGGGAGGCT CTTCTGATG CAGATGGGG AGAAACTCTG GGTTCAGGG CCGCTCGGT GAGCAGAC AAGTGTGGG TTTTCTGGC TTGATATGT
Clustal *****
Human GGGGTGGAGA AGCGATCCA CCGAGCTGG TCTATTCTC GTGATCAAT CCGAAAATC GTTCTGTAA
Rhesus GGGGTGGAGA AGCGATCCA CCGAGCTGG TCTATTCTC ATGATCAA CCGAAAATC GTTCTGTAA
Clustal *****

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ENSG00000204674:

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Human ATGCGCTCC CAGGAACCC AGGACTTGT ACCACTTCC CACAGAACCC CACCGCCGCG CCGCTCAACA CCGACTGGG CATCTTGTCC GCGAAGGGT CCGGGGGCT GCGCCGGCT GTCTCAAAG TCGCTCTC CAGCTCAGG
Rhesus ATGCGCTCC CAGTACCCG AGAACTTGT ACCACTTCC CACAGAACCC CACCGCCGCG CCGCTCAACA CCGACTGGG CATCTTGTCC GCGAAGGGT CCGGGGGCT GCGCCGGCT GTCTCAAAG TCGCTCTC CAGCTCAGG
Clustal *****
Human AACAGCTTGC TCGGATCAG AGACTCTGG GTGAGGAAG GTCAGAGGA GCGCGCCCT CTTCCGCG--GCGCCAGTC AGGGGACAT GCACAGACA CAACCCCTA CTGGGAGAG ACAACACAC GACCGGAG ACAC-----
Rhesus AACAGCTTGC TCGGATCAG AGACTCTGG GTGAGGAAG GTCAGAGGA GCGCGCCCT CTTCCGCG--GCGCCAGTC AGGGGACAT GCACAGACA CAACCCCTA CTGGGAGAG ACAACACAC GACCGGAG ACAC-----
Clustal *****
Human -----CAG CAGAGCAGG TGGGTCTCT GCTCTGCCG CTAGGTGT AGGACATGC CACCGGAGG CCACAGAGA CTGA
Rhesus GCGCGGAC AGGCGCTGC GGGAACTCC CAGAGCAGG TGGGTCTCT GCTCTGCCG CTAGGTGT AGGACATGC CACCGGAGG CCACAGAGA CTGA
Clustal *****

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ENSG00000205965:

Human ATGTGTTGGC ATTGTGCAC TCACAGTCT GTGCAACCAC CCACACCGTC TAGTTCAAA AGGCATTTCAT CTCCOCAGAA GAAACTCOCC GTOCTCATTI AGCAGTTACC CTOCTTGGT ATCCOCCAG CCCTCTCT --- ----- AATGAAAGGG

Human ----CTGGGG TCCGAAAGAG GACTTCGCAG TGAGCGAGCC TGTGAATA AGGAATCAGG CACCCA-CTG CTGTTCACAG COTGGGTGG TTTTCAACC AGCAGAGGTG GCAGAGCCAG GAGGGTCTGG GAGCGTACA GGGGAGGCC

Human ATGCTTGCCG CCGAGCCCT GCCCCGCCOC GAGCTTCOC ACAGGGGGC AGCAGAGGC TTTCCAGAAC CCGCGCGGG COTGGAGGA AGCAGTGGCT CAGACTGCT GACAACCTC AT----GTG ACCCCAGAGC GCTGCTCTC

Human TGGTGTGGCC TTGGGAATTG GAGAGGAGGC GCATGATTG GAAACATGAA GAGGGCAGGG COTGGCTGGA GCAGGGGAAA GCGTGTCCAC GGTCACTGA

ENSG00000206096:

Human ATGGAAGGTG ATTGTCTCAA GTTGTCTCT TCTTCAAC TCTCTTCT TCTGTAAAC TGCCOCAGAA TCCTCTTAGG TCGAGGGAGG GGTGGTGTGG GCGCTATTG TTTTAACCTG GATTCCTGTA CCATCOCTCA TG6TCTCTC

Human CTACAACCT TTGCAAGAA TCCTCOCOA CACGAGCAGA ATTTAGTCC ATGCTCTCTG TGTCTCTTA AGTCTCTT AGGGAATAGA CAATTCTGTA GGCATTTCA TTGCAACAG AATOCAGTG AAGAAATGAT AGGTCACTC

Human CAGATACTA ATCAACATGG CAATCTTAC TACAGGATGA GAATGTGTTT CCTTTGCCO CAGGTAGGAC ATAGGCCGCC TTAG

ENSG00000206110:

Human ATGTTTCTCT CCATTCAGCT TCAATGAGAG ACITTTCCAG GTTTCCAGCC AGCTTAGAAA GCTAGACAGG AGATG6CCO CCACCCOCCO TGTTTGGAAC CACGCTGGGG CATTGGGTTG TTGGAACACA TGGGAGATT GGGGAGGGC

Human CAGAAGGCC TCATCCAGAG CCAAGACAA GCGTTGAGCC TGAAGAGCTC ACCAAGGCCA CTACAAGAA GCAAAAGAAA GAGCCTCAGA GACTCCTGTA TAAATAACCA GAACAGAGAG CAAAGGTGGA GAGCAGGAGG GCAAGGCACT

Human GAGACTTTAG AAGTTCCAG GGAGAGAAAG AGTCAGATGC TTGAAGATGC CTCTCAATG CTGCAAGCT CTGAGGGAAA GTGGCTTTGA

ENSG00000206113:

Human ATGGAGAGGT GCTCTG6CA CCGAGAATGT GTGTGAGGC AGGCTCTGTT GAAAGAA-AGC CTG6CCG6G ACCCGG6ATA TGACATOCAC ACTG6GGTTC CACTCTCAGT CAACACAGAT GAGAAG6GT AGCCTGGAG GCGCCOCCATG

Human CCCCACCCC ACTTTGGGG GCATCTTATC TGGGAAATG GGTCTTCCAT CCCCAG6GG CCCCAG6GCT GTGGCAGTGA GGTTGG6CAA GGCACAACCT TGCTCTGAT TTGTTGTAAC CAGACTTGG GAATCACTGA CTGG6TCTC

Human CACAGAG6CA GGGCTG6CC TGG6CAGTGA G6CCTCCGG GAGCAGG6G CTGACAGCTI CTGTACAC CTCTCTCAT TTCTTACCCA CACTTGAAG AGTCACAGG CCCCAGTGA GCTG6CCA GCTG6CCA CTTGCTCTCT

Human CATOCTGGG TTTCTCTAC AGCTCCATCC TGGTCTG6C ACCOCCGTGA ACCTGG6AG CCGT6C66A CTGAGGG6C TCCCTGTCC ACCTGCTCAG CTOCCACC ACAGG6GCTA ICTACATCC ACCACTGTC AGTGG6GAT

Human GCGTGG6GAA CAGGAGCTTG GATTGCAGGG CCGCTG6CTC TAG

ENSG00000212693:

Human ATGATGACC ATGG6TATGA TACCTCAGA AATGTTAACA ACTTATCTCT CTG6CATTAG TACCCTCAT CAGGGTGTGT TTAAGTACA GGTITTTGGT ATGTCTGTA CCATATGAG TGGTATTAT TTAACAACAT TCAAAATTAG

Human GGACTATCT TACAGCATCG AGTGTGTCG TGTACTGTC ATTCATCAT AAATATCTA GGTITTTATGA CAGACATTGA AATTATCAT CAGATGCTGT TACAGCAA AAATTCOCAG CACTCTGTC CAAGGCTTT TATTTCAC

Human GTTGCACTT TCACTCTC CTCCOATGG CCACTGAAAT GCTTTGTCTI CTGTGCATCA AGACAGAGTT CTAAACCAG AAAACATCCA TCTTGA

ENSG00000212736:

Human ATGCTAACT G6T6G6CCA AATCACAAG ATTC6AAGA GTGGCAG6G CTG6CAGCTG TGTG6AGCC CTTCATCTA CAGACAAGA AGT6GTGTA AATGACAGT AAAGTGAAT CAGATACTA GCTATGACT CTTCC6AGCT

Human G6G6CACTCC AG66CCCTCC TCTGCTCAG ACTGTAG-AA ATIAATGCA TGTGTCTCAA TCTGG6AGT CAGCTGTCTC TAGATGGTGG CACTTCCAG AGCTTGGTTC CCGCTGTGTG TACCCAACA GTACAGAGT CATCCOCCG

Human CTTGATCTT CAGCAGATTT CTCCATTCT GTCACAGCCC AGAAGTGA

ENSG00000214112:

Human ATG6AAAAGT GAAACTTGG CAGACAGATC CAGCTCCCT G6CCACTG6C CCATGTCTGT G6CCTCTGGA TG6CCTG6C -AGCTTCTGA G6ACTTGGG ACAGGTGGG ATCAGGACTG GCAGCTG6AA G6ACACACA G6C6CACAGA

Human AACTAAAGAG AATTTCCAAA AGGAGCTAT GGTGAAGTCT CTGAGATG6C AAAGAAGACA ARGGAATGA



ENSG00000214130.

Human ATGCCATCG CCCACGACGG GCTCTGGGG TGGAGAGGGG AAGTCAGCCT AGACTOCAGA GAGAAACCTC GGGCAACCC GAAGGCGCTG AGGAAACTG GAATTGGGGT TAGGCATGAG GGGAGGAGT CTTGGGGAA AAGCGCCGG
Rhesus ATGCCATCG CCCACGACGG GCTCTGGGG TGGAGAGGGG A-ATCAACT AGACTOCAGA GAGAAACCTC GGGCAACCC TAAGGCGCTT CTGAAACTG GAATCGGG-T TAGGCACGAG GGTGAGAGA CTTGGGGAA AAGCGCCGG
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*

ENSG00000214780.

Human ATGAACCTCG TGTTGACAGA GCTGGCTCC AACTTCAGCT TCCCATTTA TCAGCGCTCT GCGCTGTA CCATGGCCT CAGTTTCTC TGTGAAGTA GCGCTCAAT GCTTACCCT CAAGATTATC GTGGGAAGA A-CAGGGCA
Rhesus ATGAACCTCG TGTTGACAGA GCTGGCTCC AACTTCAGCT TTCCCATTA TCAGCGCTCT -----AA CCATGGCCT CAGTTTCTC TGTGAAGTA GCGCGCAAT GCTTACCCT CAAGATTATC GTGGGAAGA ACAGGGCA
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*

ENSG00000215071.

Human ATGCAGATAT GCTTCTTAG CTGTGGGGT GAAAT---- ATGCTGTAG CTACTTCTG TGAAGTCC CTAGAGCAT CATATCATC TTGAAAGC AAATACATA GTGACACAT CTGCTGTAT GTGTATAC -CATACATC
Rhesus ATGCAGATAT GCTTCTTAG CTGTGGGGT GAAATTTACC ATGCTGTAG CTACTTCTG TGAAGTCC CTAGAGCAT --ATGATC TTGAAAGC AAGACATATA GTGATACAT CTGCTGTAT GTGTATAC CATACATC
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*

ENSG00000215458.

Human ATGCCATCGA GACTTCTACA TCAAAGGGA ACAAGTCA GAGGGCCAG GGTCCACGG CACTCCGAC CCACGGGGCC AGCTGGCAC AAGCCCAAC GCTGCACT CTGGGAGAG TCACACGCC CCTCCGGGA CCCACGTGAC
Rhesus ATGCCATCGA GACTTCTAG TCAAAGGGA ACAAGTCA GAGGGCCAG GGTCCACGG CACTCCGAC CCACGGGGCC AGCTGGCAC A-----CCCA GCTGCACT CTGGGAGAG TCACACGCC CCTCCGGGA CCCACGTGAC
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*

ENSG00000215494.

Human ATGCCCTTCC AGCCACACT CAGTGGGTG TCTGTGAAT CTCGGGTGC TGCAGCCAG TTGACACAG GACACTCAG AGTGTDTCT CTTGGAGTG GGCAGACCG TACATTCAT ATGGGTTAC TGCCAGCAG ACAAGAGTG
Rhesus ATGCCCTTCC AGCCACACT CAGTGGGTG TCTGTGAAT CTCGGGTGC TGCAGCCAG TTGACACAG GACACTCAG AGTGTDTCT TATGGAGTG GGCAGACTG TACATTCAT ACGGGTTAC TGCCCAATG ACAAGAGTG
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*

ENSG00000215848.

Human ATGATGGGG GCGCCAGAA GAGATGTAAG GTTGAGCACA GGAGCAGGG TGGTAGAG GCGTCAGC TGGGCTTAG TCCAGACTA CTTAGAGAG TGTGGTAAT AGAAAAGTA CTGAGGAGT CAGATGGG GAATTCAGC
Rhesus ATGATGGGG GCGCCAGAA GAGATGTAAG GTTGAGCACA GGAGCAGGG TGGTAGAG GCGTCAGC TGGGCTTAG TCCAGAGGA CTTAGAGAG TGTGGTAAT AGAAAAGTA CTGAGGAGT CAGATGGG -AATTCAGC
Clustal \*\*\*\*\* \*\* \*\* \*\* \*\*



ENSG00000224013:

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Human ATGATTGGGA AGGTGAAGG TGGAGACGG GTCTT --- -CTGGTGG AGCGCATTTT CTTCTCTCA -GAGTCCAG AAGGAGCGG ATGGAGAAT GGGGCGACG GGGGGTTTC GGTCCGCCCT GTCCTTCCG ACTCCTCGA
Rhesus CAGATTGAGA AGGTGAAGG TGGAGACGG GGCTTAACT TAGTGGTGG AGCGCAATTT CTTCTCTCA AGAGTCCAG AAGGAGCGG ATGGAGAAT GGGGCTCAC GGGGGTTTC GGTCCGCCCT TGCCTCTCG ATTCCGGGA
Clustal *****
Human CCACGCTCTG CTTTGGCTGA AAGCAAAAT GGCCTCCGTG GCGGTTCTTG CACAAAAGC TGGGCGGGC GGGTTTCCT AGGATGGGG ACCGCTCCG CGGGGAGTGG TGGGGTTAG CCACCGGGC CTCGAGAGA ATGCTGGTG
Rhesus CCACGCTCTG CTTTGGCTGA AAGCAAAAT GGCCTCCGAT GCGATTTCTA CACAAAAGC TGGGCGGGC GGGTTTCCT AGGATGGGG ACCGCTCCG CTGGGGTCT TGGAGTGG TCCACCGGG CTCGAGAGA ATGCTGGAG
Clustal *****
Human TGCCTTCCG CCCAAGGAC ACATCTCGG TTAGAAGGA GAAAGCACT GATCTAAG CCGAAGCCA TCGTAGGAC TTTTCAAAAT GGCCTTAT GGGCCACT CACAGAGCT TCAGGCTTG GTGGCCTTG AGGACAACC
Rhesus TGCCTTCCG CCCAAGGAC ACATCTCGG TTAGAAGGA GAAAGCACT GATCTAAG CCGAAGCCA TCGTAGGAC TTTTCAAAAT GGCCTTAT CAGCCACT CACAGAGCT TCAGGCTTG GCGGCTTG AGGACAACC
Clustal *****
Human TGGGTGTCA TTGGAGAAA GCTGACGGG TTAATGGCG GTACAGGTG A
Rhesus GGGGTGTCA TTGGAGAAA GCTGACGGG TTAATGGCG GTACAGGTG A
Clustal *****
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ENSG00000224376:

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Human ATGCTGCCA TCCCAAAA TGGCTCAA ACCCTTTC CAGGACGGC TGTGTCCAC CTCAAGCAG AGAAGAGAC CCGCAGCAC CGGTGAGAG GATTAAGTGA CCGACTATG CATGGCCGA GAACCAAGT TGCATATG
Rhesus ATGCTGCCA TCCCAAAA TGGCTCAA ACCCTTTC CAGGACGGC TGTGTCCAC CTCAAGCAG AGAAGAGAC CCGCAGCAC CAGTGTGAG GATTAAGTGA ACCAGTCTT CATGGCCGA GAACCAAGT TGCATATG
Clustal *****
Human TAG
Rhesus TAG
Clustal ***
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ENSG00000225021:

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Human ATGAACGCT TGACCTCAT GAGGCTCTG GACCATCTT CATCTGTGA CTTGAAACA ACTTCCACT GGCAGTTC GCGAGCAGG ATCTCTGGA TATCTCAA ACTAGCAGA AGACACAT TGGCTCTG ACTGTAATA
Rhesus ATGAACGCT TGACCTCAT GAGGCTCTG GACCATCTT CATCTGTGA CTTGAAACA ACTTCCACT GGCAGTTC GCGAGCAGG ATCTCTGGA TATCTCAA ACTAGCAGA AGACACAT TGGCTCTG ACTGTAATA
Clustal *****
Human TCTGTGGC ATAGTACTA GTGTGCTTG CATGTGGTC CTTTCTATC TCGAAAATC TCAAGTTCG AGACAAGAC TGTCTATCC AGCTTCACT ATGAGAAC GG-CATGAG AGTGGGGT CCTCTCAA GCTGTGTG
Rhesus TTTTGTGGC ATAGTACTA GTGTGCTTG CATGTGGTC CTTTCTATC TCGAAAATC TCAAGTTCG AGACAAGAC TGTCTATCC AGCTTCACT ATGAGAAC GGGCAAGAG AGGCGGGG -CTCTCAA GCTGTGTG
Clustal *****
Human CTCATACCA GTGCTGTGA GCTTTGAGA CAGCGCGT AAGTCTGGT GGTGGGCTG CTGTATTC CTTGTTGCA ACAGCTCTT CACTTCTT TTGCTCAT TTGTACTA GTGAGAAC CTTTGA
Rhesus CTCATACCA GTGCTGTGA GCTTTGAGA CAGCGCGT AAGTCTGGT GGTGGGCTG CTGTATTC CTTGTTGCA ACAGCTCTT CACTTCTT TTGCTCAT TTGTACTA GTGAGAAC CTTTGA
Clustal *****
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ENSG00000225860:

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Human ATGCTCATG GGTGTGGC GTCCATCTT CTTGGGTGT TCTGTGAG TTTTCCAGA GGAGACTAC ATGTAGCCA GGGGCTGAG AAGGAGACC GTTCTCAT TGAATGTGA CTGTCAAT AGCTAAGC CAGGCTGGG
Rhesus ATGCTCATG GGTGTGGC GTCCATCTT CTTGGGTGT TCTGTGAG TTTTCCAGA GGAGACTAC ATGTAGTGA GGGGCTGAG AAGGAGACC GTTCTCAT -GATGGGA CCATCAAT -CTCTAAGC CAGGCTGGG
Clustal *****
Human ACAACAGCG AGAAGAAGA GATCTCTC TCCACCTTT CTGGAGCAG ATGCTTTTC TCTTGGACA TCAAGTACA GGGCTTTGG CTTTGGATT CTAGACTTG TAACAATGG CTCGCGGG CCTCAGGCT TCAGCTTCA
Rhesus ACAACAGCG AGAAGAAGA GATCTCTC TCCACCTTT CTGGAGCAG ATGCTTTTC TCTTGGACA TCAAGTACA GGGCTTTGG CTTTGGATT CTAGACTTG TAACAATGG CTCGCGGG CCTCAGGCT TCAGCTTCA
Clustal *****
Human ACGAAGTCT GTCTGTGG CC-TCCCTGA TTCTGAGCT TCTGACTTG GACTGAGCA TGTACGGG TTTCTGAT CTGAGCTTG TGAATGGCT ATCATGGAC TTCTCCCT CTGTATCAC AAGGCCAAT GCGCTAAT
Rhesus GCGGGTCT GTCTGTGG CC-TCCCTGA TTCTGAGCT TCTGACTTG GACTGAGCA TGTACGGG TTTCTGAT CTGAGCTTG TGAATGGCT ATCATGGAC TTCTCCCT CTGTATCAC AAGGCCAAT GCGCTAAT
Clustal *****
Human ACCTTCTT TATATATG TACTGTCT GTCTGCTGG GAACTTGA TATACAGA TATGAGCAT TTGAAATG
Rhesus CATTCTT TATATATG TACTGTCT GTCTGCTGG GAACTTGA TATACAGA TATGAGCAT TTGAAATG
Clustal *****
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ENSG00000225917:

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Human ATGACCGCG CTGCGCGGT CCGCAGAGC GGGCGCTCC GGGGCTGG TGGGGACC GGCAGGCG GCGCGGGAT GCGCGCGGG GCGCGGGGT GCGCGTGA GCGCGGGA GCGCGCGC ACCACCGCT CCGCAGTCT
Rhesus ATGACCGCG CTGCGCGGT CCGCAGAGC GGGCGCTCC GGGGCTGG TCTGGACC GGCAGGCG GCGCGGGAT GCGCGCGGG GCGCGGGGT GCGCGTGA GCGCGGGA GCGCGCGC ACCACCGCT TCCAGTCT
Clustal Co *****
Human GCGAGTGT CCGCGCTGG CTAGAGCCT CTTTGGAGA CTGGGTGCC GAGTGGCC GCGCGCGCC GCGAGTCTT GGCAGTCTG GCGCGGGG - - - - - GCGCGGGG GCGCGGGT CAGATACC GAOCCOAGD
Rhesus GCGAGTGT CCGCGCTGG CTAGAGCCT CTTTGGAGA CTGGGTGCC GAGTGGCC GCGCGCGCC GCGAGTCTT GGCAGTCTG GCGCGGGG - - - - - GCGCGGGG GCGCGGGT CAGATACC GAOCCOAGD
Clustal Co *****
Human AGCGCGCG CTGCTGCC GCTATTGG TTCACTCT TCTGATAT TATGCTGG TGTACATC CTTGGCTCT GAGTGTCTT TGGCAGTTC CAAGCATTT GGGCAGAAG GAGCTTGGC AGCTTCAA CAGTGGGA
Rhesus AGCTCGCG CTGCTGCC GCTATTGG TTCACTCT TCTGATAT TATGCTGG TGTACATC CTTGGCTCT GAGTGTCTT TGGCAGTTC CAAGCATTT GGGCAGAAG GAGCTTGGC AGCTTCAA CAGTGGGA
Clustal Co *****
Human CCGCAGGCG AGGGCGCG CCGCAGCAG CAGAGT-TT CAAGGCTGG CCGCGCGGG GACTTCCAC ACTGCTTTC GGAAGTGG ITAGAGACA GCGCTTGGC ACCACTGTG CTTACTTGT TCGCTTACT TGGGCTGGA
Rhesus CCGCAGGCG AGGGCGCG CCGCAGCAG CAGAGT-TT CAAGGCTGG CCGCGCGGG GACTTCCAC ACTGCTTTC GGAAGTGG ITAGAGACA GCGCTTGGC ACCACTGTG CTTACTTGT TCGCTTACT TGGGCTGGA
Clustal Co *****
Human CCTCCCTT CAGCTCTG GTGTGACC CGCAAGAG GTGGTGTGA GACCACACC AGTGGGGG GTGGAGACA AGGTGCCCA GGTGGGGA AGTGGAAAC CTTTCCCG CTCGCCAAT GATTGTGG CCGTGGTG
Rhesus CCTCCCTT CAGCTCTG GTGTGACC CGCAAGAG GTGGTGTGA GACCACACC AGTGGGGG GTGGAGACA AGGTGCCCA GGTGGGGA AGTGGAAAC CTTTCCCG CTCGCCAAT GATTGTGG CCGTGGTG
Clustal Co *****
Human AGGGAGAG GTACTCTGA TTCCCTGT CCGACTTC GACTAGCT GTGCTTGT GTCTTTGA TTAG
Rhesus AGGGAGAG GTACTCTGA TTCCCTGT CCGACTTC GACTAGCT GTGCTTGT GTCTTTGA TTAG
Clustal Co *****
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ENSG00000230294:

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Human ATGACATCA ACTTGGCTC TCTGCCCC CAGAGAAGG CTGCGAGT CATGTGCTG CTGACCGTG AGTCCCTA TGAAGAGG CCACAGGAG TGGTGGCT GGGGATGCC CTTGCCCTA GCTGAGTCT CCGCAGTGG
Rhesus ATGACATCA -CTTGGCTC TCTGCCCC CAGAGAAGG CAGTCCAGG CATGTGCTG CTGACCGTG AGTCCCTA TGAAGAGG CCACAGGAG TGGTGGCT GGCACAGCC CTCGCCCTA GCTGAGTCT CCGCAGTGG
Clustal *****
Human CTGCTTCTT CCAACCCGA GGTTCACG CCGCCCAAG CTCGAAGGA ATGAGCAGC TGCTGACC AAGTTCCTT CCTCTGAGA AAGCAGCTT TCTTCTCT CAGTGTCC CTGATGAC CAGGCTCTT TGACATGTT
Rhesus CTGCTTCTT CCAACCCGA GGTTCACG CCGCCCAAG CTCGAAGGA ATGAGCAGC TGCTGACC AAGTTCCTT CCTCTGAGA AAGCAGCTT TCTTCTCT CAGTGTCC CTGATGACA CCACTCTCT TGACATGTT
Clustal *****
Human CCGAGGACA GCTCTTCCA GGTTC-CTA CTCAGTAC CCGACTCT ACCATTGTG A
Rhesus CCGAGGACA GCTCTTCCA GGTTC-CTA CTCAGTAC CCGACTCT ACCATTGTG -
Clustal *****
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ENSG00000233290:

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Human ATGAGAAAT CCGAGCACA CATTAGAG AATGAGCTT ATGAGCTAG CAGAGGCGA TGGGCTCTT CAGTCTCTG CATGGCACA AAGAAATGG AGAAAATGAT TGGCTGGGA GCTCTTCC ATGTGAGA AGCTGGAAA
Rhesus ATGAGAAAT CCGAGCACA CATTAGAG AATGAGCTT ATGAGCTAG CAGAGGCGA TGGGCTCTT CAGTCTCTG CATGGCACA AAGAAATGG AGAAAATGAT TGGCTGGGA GCTCTTCC ATGTGAGA AGCTGGAAA
Clustal *****
Human AA-CTGAA AGAAGTGA
Rhesus AAAGCTCA AGAAGTGA
Clustal *****
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ENSG00000260456:

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Human ATGGTTGCGA GCGGTTCCD ACCGTCDDG CGGGTTTTC ACCATCATCA TGAGGCCACT GGAGGACCT CAGGCGCTG TGCGGGGGG CCGGGGGGG GGTGGTGGG GCTCTGCAG TTGGACTCA CACCCGGCG GCAGGATGG
Rhesus ATGGTTGCGA GCGGTTCCD ACTGCCCCG CGGGTTTTC ACCATCATCA TGAGGCCACT GGAGGACCT CAGGCGCTG TGCAGGGGAT CCGGGGGGG GGTGGTGGG GCTCTGCAG TTGGACTCA CACCCGGCG GCAGGATGG
Clustal * * * * *
Human AGGAATAGCA CATTCAAACT CTACAAGAAA GAAGTGTGCC TCCCCCTCA TTGATGCAC CTTGGCCCTT GGGCACTCT CTGTGAATGC CAGACCAGAT TGGGGGGCG CTTGCTGTG TCACAGGTGG AAGCAGCACT GCCTTACTGG
Rhesus AGGAATAGCC CATTCAAACT CTACAAGAAA GAAGTGTGCC TCCAGGTCA TTGATGCAC CTTGGCCCTT GGGCGTCTG CTGTGAGTGC CAGACCAGAT TGGGGGGCG CTTACCTGTG CCAAGGTGG AAGCAGCACT GCCTTACTGG
Clustal * * * * *
Human GTCCCTCTGT CCTGAGACC CCGAAGCAG CACCCCTGCT GGATGCATGC TCGTGGCACA ACTGTGGCG GATCTGGCT GATGAGTGC TTTTGTCAA GTTCCAGCAG CTCAGGCC CTAACAGGA CAGTACCG GCCTCTGAG
Rhesus GTCCCTCTGT CCTGAGACC CCGAAGCAG CACCCCTGCT GGATGCATGC TCGTGGCACA ACTGTGGCG GATCTGGCT GATGAGTGC TGTGTCCAA GTTCCAGCAG CTCAGGCC CCGACCAGGA CAGTACCG GCCTCTGAG
Clustal * * * * *
Human CGCGTCTGT GCGCTGGCC CTCTGA
Rhesus TGTGCTGCT GCGCTGGCC CTCTGA
Clustal * * * * *

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ENSG00000261644:

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Human ATGCTCTTTA TGACCTTACA GCTCACTGG AACCTCCAC CTAGGCGCG AGGCAGCACA TGTCTGTGT CCGGGGACT TCCAGGCAIT GCCTGAGTA CTGGGCACTT CACACATGG GCTGGACCAC TCACCGAGT GAATAAGGAG
Rhesus ATGCTCTTTA TGACCTTACA GCTCACTGG AACCTCCAC CTAGGCGCG AGGCAGCACA TGTCTGTGT CCGGGGACT TCCAGGCAIT GCCTGAGTA CTGGGCGCTT CACACATGG GCTGGACCAC TCACCGAGT GAATAAGGAG
Clustal * * * * *
Human GCTTGA
Rhesus GCTTGA
Clustal * * * * *

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ENSG00000180838:

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Human ATGGGGAGGG ACAGATGGT GGAGAGTGG AAGATGGAG ATGGGGAGGG ACAGATGAGT GGAGAGTGG CAGATGGAG -----GAGGATGG CTGGAG-----GGAC AGAT-----
Rhesus ATGGGGAGGG ACAGATGGT GGAGAGTGG AAGATGGAG ATGGGGAGGG ACAGATGGT GGAGAGTGG CAGATGGAG GATGGGGAGC AAGCGGTGG ATGAGATGC GGGCGAGAC ACCGTTGGC AGATAGAGGG
Clustal * * * * *
Human ---GCT--- ---GTTGATTGT GGGGGTGCAG GTGGGGAGC GGTGGGGAC AGGTG-AGG GAAAACAGCA CACAGATGG GA-CAGA-T GGCCAGAAAG ATT-AATAGT TCAGTGGCAG AGACCTAGC C--TGGGGC
Rhesus GATGGCTGAG GGCAATTGT GGTGATTGT CCGCG-CCAG GTTGGGGAGC GGTGAGGAT GGTGTGAG GAAAACAGCA CATAGTGTG GGGCCAGAA GGCAGAAAG AATGAATGT TCAGTGGCAG AGACCTAAG CACTGGCATC
Clustal * * * * *
Human TGTGTCCCC CCACTCAGG ATGGCGGGG TCACGACTG CTCGCCAGC TGGTGCAGT TCTCCACTG CAGGCAGTC CTGTTGCTC ACTTGGG--C TTTGAGGAG TAGCACAGCA G---GCACT GCCTGTGGG TGAAGTGGGA
Rhesus TTTGTCTCC CCA-TCAAG ATGGCG-IGG TCCCGTCTC CTCGCC--C TGGTGCAGT TCTCCACTT CAGGCAGTCT CTGTTGCTC ACTTGGGGC TTTGAGGAG TAGCACAGCA GCAAGGCACT GC-IGTGGG TGAAGTGGGA
Clustal * * * * *
Human GGGGCTCAG AGGCTGCC ATG
Rhesus AGGGCTCAG AGGCTGCC -TAG
Clustal * * * * *

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ENSG00000253929:

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Human ATGCAGTGC CAAGTGGAG AAAGTTCAGA GTGGATCCAG AGGAGCCAAG AGAAGAGTC CAGCATGGT ACCTGGCTC AAGTCAAGT CTTAATTTCT CTGCTGAACC ATCAGATTC TTATACAGG TGGCAGCA TGAGTGGT
Rhesus ATGCAGTGC CAAGTGGAG AAAGTTCAGA GTGGATCCAG AGGAGCCAAG AGAAGAGTC CAGCATGGT ACCTGGCTC AAGTCAAGT CTTAATTTCT CT-CTGAACC ATCAGATTC TTGTGCAGG TGAAGCAGCA CTGAGTGGT
Clustal * * * * *
Human TCTACTAGCA AATGCCGAG ATGTGGTTC TGTGGCCCTI TTAAGTGA
Rhesus TCTACTAGCA AATGCTGAG ATGTGGTTC TGTGGCCCTI TTAAGTGA
Clustal * * * * *

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ENSG00000257135:

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Human ATGTCTGGC CAGTGGGCG CCGCGGGCC GACTCGGAT CTTGCTGGC CCAATCTC QGTTG-AG GAACTGGAA GTGATCCGG TCGGCTCTG CTCACCAG CTAGGAGCA GAGCGCGGG AGGAGGGGG GTCCCGGG
Rhesus ATGTCTGGC CAGTGGGCG CCGCGGGCC GACTCGGAT CTTGCTGGC CCAATCTC QGTTG-AG GAACTGGAA GTGATCCGG TCGGCTCTG CTCACCAG CTAGGAGCA GAGCGCGGG AGGAGGGGG GTCCCGGG
Clustal * * * * *
Human GTGGCAGCA CACTGGGCG AGGCTGGCA GCGGCTCCA CCGCCCGCG CTGAGGCT CTTCTTTGA ACATGAGT ATCTGTAAC TAGTGGCT CTGGCTGG GAGTATT CCGCTGAA CCGAGGACT CAGCCAGAG
Rhesus GTGGCAGCA CACTGGGCG AGGCTGGCA GCGGCTCCA CCGCCCGCG CTGAGGCT CTTCTTTGA ACATGAGT ATCTGTAAC TAGTGGCT CTGGCTGG GAGTATT CCGCTGAA CCGAGGACT CAGCCAGAG
Clustal * * * * *
Human CTTGAGGGA CCGGATCT GA
Rhesus CTTGAGGGA CCGGATCT GA
Clustal * * * * *

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