

Title	Identification of evolutionarily conserved non-AUG-initiated N-terminal extensions in human coding sequences
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Supplementary Dataset 1

Nucleotide and amino acid sequences of human genes of candidate or known non-AUG initiated N-terminal extensions. A) The new 42 candidates identified in this study listed in the same order as in table 1A of the main text. B) The 17 known cases that passed our qualitative test for conservation of the extension listed in the same order as in table 1B of the main text. C) The 12 known cases that did not pass our qualitative test for conservation of the extension listed in no particular order. Candidate initiation codons are highlighted in green. Out-of-frame AUG codons between the upstream proposed non-AUG initiators and the next in-frame AUG are highlighted in light brown. Upstream in-frame stop codons are highlighted in magenta. The stop codons of the main open reading are highlighted in red. In each case the nucleotide sequence is shown on top and the predicted translated amino acid sequence on bottom. Below that the predicted molecular masses of the protein initiated by the first in-frame AUG and the upstream non-AUG codon are shown. The non-AUG initiated extension is highlighted in light blue. The main open reading frame initiated by AUG is highlighted in yellow. Nucleotides in positions -3 and +4 relative to the first nucleotide of proposed initiation sites and matching the preferred (Kozak) consensus context are highlighted in gray. Comments on the extent of conservation of the non-AUG initiation and or the conservation of the coding potential of the extension are highlighted in magenta. The GenBank accession number, the name of the gene and common gene synonyms are indicated.

A)

#1

NM_001042589

Initiated by AUG codon(s) in non-mammals. No EST in mammals has upstream AUG.
Likely initiated by a cluster of CUGs/UUG

TMEM8B transmembrane protein 8B

Synonyms: NGX6; NAG-5; C9orf127; MGC120460; RP11-112J3.10; TMEM8B

CGACGTCAAGTCGAGGCCGCCCGCGGGCCTGGTTATCGCCGGTTCAGCGCAGCCCGGAGTCGCCAGG
CCTGAACTCCTACCCAGCCTAGACTCAAGTCTGGGTTTCAGCTGCCGCCAGCCCTATTGCTGCTGTTGCTG
TTCTCTGTCCTTGGCCCAGGGGCTGGAGGCCTTTTCTGACTGATTACTCCACCTGCTCACCCGCAAGCT
GAGTCCTTTCCGCTCCTTTGCCAGCACCAGACTCTTCCACTTCCATGTTTCTGAGGACACATTCTGGCTG
TTTGAACCTCATCATCTTCAAGGAGCAAGGGGGAACCTTTTGGGGACCACTGCCAGACCAAAGTGTGACT
GTGTATTTCCGGTCCGGGGCACCCCTGTCAATCCCCTGCATACACACTTCCCAGGGGACACAGCTGT
GCCTGGGGTTTTCTCACTGACCCTCAGCTGGACACTGCCAACCACCTCAGGCATCTTTAACGTCAGCA
GCCCTTACCTGGGGACTGGTTCTTGGCTGCCACCTTCCCAGGCCACGCCACATCTCTGTCAAGGGT
CTCCAGGATGAGTGTGAGTACCTCCTTCCAGCCGAGCTGATTGTCCGGCGTTTGTGACGTCGCTGTGCT
GGTTCTGGCCGGCCCTCAGAGCAAACCCTCTCCACACAATCGCTCAGCCCTGTACAAGGTCTTTGTGC
CCAGCTTCACTTACAGGGTTTTAGCACAGCTGGTGTGTGGGGGGCCGTGGGGTATCTGCCTGCCCCCTG
TCACTGCGTCTGCGTCCCAAAGCCCCACCCCTGCACAACCTCAAGCTCTGTGGCCTGTGGAGGTGCCTCAGG
ATGCCAGCTGGAGCTGGCACTGCCCCCTGGGGGCACTGGGTCTACGTGCGTGTGGAAACATCATCCCGG

GCCCTGGTAGGACCATCCGCTTCCAGCTGTGTGTGCGGTTGCAAGAGTGCCACAGCCCAGCCCTGCTCCGA
GCCCTGGTCCCTGGAGCTGCCATGAACATGCCCCAGTCCCTGGGCAACCAGCCACTGCCCCAGAACCGCC
ATCCCTTGGAAACCCCTGCGGAGGGGCTGGGACCACGTCCCCACCCGAGCACTGCTGGCCAGTGCGCCCGA
CTCTGCGCAACGAGCTGGACACCTTCTCTGTCCACTTCTACATCTTCTTTGGCCCAAGTGTGGCCCTTCCC
CCTGAGCGCCCAGCCGTGTTGCGCATGAGGCTGTTGCCAGTGTGGACAGTGGAGGCGTCTCAGCCTGGA
GCTCCAGCTCAATGCGAGCTCCGTGCGCCAGGAAAACGTGACGGTGTGGATGCTTGACTCACGAGGTGC
CCTTGAGCCTGGGGGATGCAGCAGTGAACCTGTTCCAAAGAGTCCCTGGCCGGCTTCTCCTCTCTGTCA
GCCACCACCAGGGTTGCCAGGCTGCGAATCCCATTTCCCGCAGACGGGGACCTGGTTTCTGGCCCTCCGCTC
CCTGTGCGGGGTGGGGCCTCGGTTCTGTGCGGTGCCGCAACGCGACGGCCGAGGTGCGGATGCGCACCTTCC
TGTCCCCATGCGTGGACGACTGCGGGCCCTACGGCCAGTGAAGCTGTGCGCACACACAATTATCTGTAC
GCAGCTGCGAGTGCACAGGCCGGGTGGAGAGCTGGGCTGACCCGACAGTGCAGATGCGCTCACCTATGG
ATTTCCAGTGTGTCCACACTCCTGTCTGAGCCTGAGCAACCTCATGTTTCTGCCACCTGTGGTCTGGCCA
TTCGGAGTCGATATGTGCTGGAAGCTGCAGTCTACACCTTACCATGTTCTTCTCCACGTTCTATCATGCC
TGTGACCAGCCAGGCATCGTGGTTTTCTGCATCATGGACTACGATGTGCTGCAGTTCTGTGATTTCTGGG
CTCCTTAATGTCCGTGTGGGTCACTGTATTGCCATGGCTCGTTTTACAGCCCGTGGTCAAGCAGGTGCTGT
ATTTGCTGGGAGCTATGCTGCTGTCCATGGCTCTGCAGCTTGACCGACATGGACTCTGGAACCTGCTTGG
CCCAGTCTCTTCGCCCTGGGGATCTTGGCCACAGCCTGGACAGTACGCAGCGTCCGCCCGCCGCACTGCTA
CCCACCCACGTGGCGCCGCTGGCTTTTTCTACTTGTGCCCTGGCAGCCTTATTGCAGGCAGTGGCGTCTGC
TTTATGCTTTTGTGGAGACCCGGGACAATACTTCTACATTACAGCATTGGCATATGCTCATTGCGGGC
AGTGTGGGCTTCTGTGCTGCCCCCTCGTGCCAAGACTGACCACGGGGTCCCATCTGGAGCCCCGGGCCGGG
CTGTGGTTACCAGCTATGCATCAACGAGCAGGAGGAGCTGGGCCTCGTGGGCCAGGAGGGGCCACTGTCA
GCAGCATCTGTGCCAGCTGAGGGGCTTTGGGCCTGGCCCTGAGGGGATATGAATGCTTCTAGAGTTCT
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ACACAAAACCTTCCAGGGACCTGGAGCCCTTCCCAGGACATGGAGAATCTCTGAGGGCCTGGAGTCCCC
CTGCATCATGGAGTCTTCTTAAGGACTGGAGCCTATGCAGGCACAGAGTCCCTCAGGACCAAGGAGTCCC
TCCTGCAGGTGTGGAGCCTTCTTGGGATGCAGAGCCTTCCCAAGACATGGATTCTTCCCAGGGAGACAA
AGCCCTGTGAGGACACAGCATCTTCCAGAGGAGGTGGAGTCTATCTTGGGAAAACCAAATTTCCAGATT
TTCCCAGAGGCTCAGCAACTCTGGCCTCAGGCTTCTTCCCAGAGGCAGCGTCTGGGCTGTGCTGTGCTGT
GGAGGAGGATTGAGGATGGATGGAGCTGGGACTGGGCTGTCTGGGTGGCTGTGATCTCGTTTGTGATA
AGGTGGAGTCTGTGTCTCCAGTATTGATTGGTTGAGAATGGTTCTGTGATGCCTTTTTTTCCCCCTGGG
GTCAGGGGTGTGGGAAAGTGGGAAAGAGGGCCCTCAGGGAATCAGCAGGGCTGATGGGAGCTACTGCCG
GAGGCTTTTTGTACACCCTGTACACAGTCTGATCCCGCTCATCTGGGCCCTGCATTCAATTTCTAAACAGTT
TCTAATGCCTATTTCCCAATTCCTATTGAGCCCGATTTGCAGTATCTGAGGGGTGTGTGTGTGTGTGTG
TGTTTATGTATGTATACGTATGCTGAGATGATTTAAATCAGTGAGACAGACTTTCCTTATGATGCCACAC
CCAACACAGAAGGAAGCCGAGGTCCCAGGAAATTGGAATAGCAGGTACACGTCTCAGGTGTGCAAGAAATA
TCACAAGAATGTAACCTTCTGTTTTGAGCCCCCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LLLLFSVLGPGAGGLFLTDYSTCSPRKLSPFRSFASTELFHFHVPEDTFLAVWNLIIKFKEQGGTFGDHCPD
QSVTVYFRSGAPPVINPLHTHFPGDTAVPGVFLSLTSLWTLNRTSGIFNVSSPLPGDWFLAAHLPQAHGHI
SVKGLQDECQYLLQPQLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVFVPSFTYRVSAQLVCVGGRGVS
ACPLSLRLRPKAPPLHNSSVACGGASGCQLELALPPWGHVYVVRVETSSRGPGRTRIRFQLCVRLQECQPQ
GLLRALVPGAAMNMPQSLGNQPLPPEPPSLGTPAEGPGTTPPEHCWPVRPTLRNELDTFSVHFYIFFGPS
VALPPERPAVFAMRLLPVLDSSGVLSLELQLNASSVRQENVTVFGCLTHEVPLSLGDAAVTCSKESLAGFL
LSVSATTRVARLRIPFPQTGTWFLALRSLCGVGRFVRCRNATAEVRMRTFLSPCVDDCGPYGQCKLLRTH
NYLYAACECKAGWRGWGCTDSADALTYGFQLLSTLLLCLSNLMFLPPVVLAIRSRYVLEAAVYFTMFFST
FYHACDQPGIIVVFCIMDYDVLQFCDFLGLSLMSVWVTVIAMARLQPVVKQVLYLLGAMLLSMALQLDRHGLW
NLLGPSLFFALGILATAWTVRSVRRRHCPPTWRRWLFYLCPGSLIAGSAVLLYAFVETRDNYFYIHSIWHM
LIAGSVGFLLPPRAKTDHGVPSGARARGCGYQLCINEQEELGLVGPGGATVSSICAS

AUG initiation = 51.9 kDa
CUG initiation = 84.0 kDa

+++++

#2

NM_001037335

The GUG appears conserved in most primates but not in galago where it is AUG as it is in all other mammals

PRIC285 peroxisomal proliferator-activated receptor A interacting complex 285

Synonyms: PRIC285; PDIP-1; FLJ00244; KIAA1769; MGC132634; MGC138228

AGAATCGAAACTGAGAGCTCCTGGGCAGGCTCGGCAGGGCAGGCAGCTCCAGGAGGGCTTCGAACCGTGGC
CAACAGTTCCAGTGGACTGCGTGGACCCGTTGAGCTCAGGAGCCTCAGACGCCTCCCTGGAGAGCCAAGCTG
GTGTTCCGAGTTGGCGCCTCCAGGGTCCACCCTGCTGCCAACAGCCCCGCGGCCACCAGAGGGCCCTCCCT
GGCCCCGCTGTGTGCCCTGGTGGACCTGTGTCTGGGCTGCTCCCGCTGCACCCAGCGGCTCAATGAAAGCA
CCTACGTCTCCGTAGGGTGGAGCATGACTGCTCCCGCGAGATCCTGCTGGCCCCGCTTTAAGCAGGCCACC
AAGAGCAAGGTCTGGCGCGTGGTGGGCTGCCGGCCACCTTCCCAAGGCCCTGTGCTACCAAGTCTGCCA
CTACTACAGCCCTGGGCTCGGCTGCCGGCGCCACCGAAACCGGTGCACCTTTGCCCGCAGTCGCGAGGAGG
CCCTGGTCTGGACCTTCGAGCGTCAGCACAACTCCAGCGCCTATGGCTGAAGGCGGAGGTGCAGGGCAGC
GGGGCCCAGGGAGGGGCAGGCCGGGCGGCCAGCCATCCTTACGGAGTTTGGCGGCCGCTTCGAGCTGCT
TTGCTCCCTCTGCTTCAGGCGCTGTCCCCATGTCATCTGTGCGGTGGACCCCGAGGGCAGTGCCCTGAGC
ACGGAGCCTGCCCTCCCTCCTGGCCACGTGAGCGCCGAGGGCCGCCGCAAGCAACAGTTTGTGGTGGTG
AGGCCGCGGGCCCCGGGCCAGCCTCCTGCCTACTGCAGGTTTGTGGGGCGTGGGCAGCCGTGCTGGCG
TGGGGAGTCCCCTGCCAGTTTGACACAGCGCCGTGGAGATGGCTGTGTGGGAGGCCGAGCAGCTGGGTG
GCCTCCAGCGGGGGGACCTGCTCACACCCCTGCCCTGATGGCGACGGGCGCACGGCCCCCTTGGCCAG
CCCCCTGGGGCCCAGCTGTACTGCCCGCCTGCTTGGTCACTTCCACTCTCAGGAGGCCTTCGAGAACCA
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CCCCGAGCTCCTCAAGTTCGAGCTCTGCCAAAGCTGACCTCTGTGAGTATGGGACGCCTGCACCAAG
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TCGGCAGAGGATGCACCAGTTTCTCTATGAGGAGGAGGCGGCTCAGCAGCAGCTGGTGGCCAAGCTGACCC
TGCGGGGCCAGGTGTTTCTGAAGACGGCATTGCAGACGCCAGCGCTGAACATGCTCTTCGCGCCTCCGGGA
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AGGATGGAGCTGAAGCCCCTCCGTGTGTACAGTGAGCAGGCTGAGGCCAGCGAGTTCCCAGTGCCGCGTGT
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TGCACCACCGGATCCGGCAGGCCCCCAACCTTACTCGTCGAAATCAAGGCCTTTGACACCCGGCTGCAG
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GAGCGAGACCCTGTCTTAAAAAAAAAAAAACAAAACAAAACCAGCATCTGTTACTGGAACAGAGACCTCAGCC
CAAGCTCAGGACAAGGAGCCCTCCCTGGGAGAGGGGGCTTTCTCCACCATCACCCTGTGTCTTCTCAG
GGGCTGTGGAGGGCAGCCCAAAGCCAGGGGCCACCCCGCCACCCACCCACCCACCCCTCTGAAAT
GTGAAAAGCCTGCACTCTTCTGTGGGCTGCGCAGTGGGCTCGGGGTTGGGGGTGCCGGGGCGATGCTT
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GGCTCTGTCCCTGCTGCCGCTCCAGTCTGAGGGAGGGGCTTGGCCACCTTCTACATTCCAATTTTTTAT
ATCTTTGAATTATGTGATTAGATATTAATTTAATGATAAAACCCTCTGAAAGCTCTTCTCA

VAPPGSTLLPNSPAATRGP SLARLCALVDLCLGCSRCTQRLNESTYVLRVVEHDCSREILLARFKQATKSK
VWRVVGCRPTFPRPLCYQVCHYSPGLGRRHRNRCTFARSREEALVWTFERQHNLQRLWLKAEVQSGAQ
GGAGRAADAILTEFGGRFELLCSLCFRRCPPICRVDPQGQCPEHGACPSLLAHVSAEGRRKQQFVVVRPR
PRAGQPPAYCRFVGRGQPCWRGESRCQFAHSAVEMAVWEAEQLGGLQRGDLLTPPAPDGDGRTAPLGQPPG
AQLYCPACLVTCHSQEAFENHCASSEHAQMVAFDQALPWEHRSPPPGLSKFELCPKPDLCYEGDACTKAHS
AQELQEWVRRTQAVELRGQAAWQDGLVPYQERLLAEYQRSSEVLVLAETLDGVRVTCNQPLMYQAQERKT
QYSWTFVAHSEEP LHLVALLKQEPGADFSLVAPGLPPGRLYARGERFRVPSSTADFQVGVVRVQAASFQTFE
QWVVFDFGRRPVLLQKLGLQLGQRRPGPCRNALALGHPEEMERWHTGNRHVVPVGVERTAEQTALMAKYKGP
ALALEFNRSSVASGPI SPTNYRQRMHQFLYEEEAQQQLVAKLTLRGQVFLKTALQTPALNMLFAPPGALY
AEVVPVSSLMPD TDQGFLLGRAVSTALVAPVPAPDNTVFVRLERRASSEQALWLLLPARCCLALGLQPEA
RLVLEVQFQIDPMTFRLWHQAVDTLPEEQLVVLDLPTCALPRPWSVPLRRGNRKQELAVALIAGWPGDG
RRVPLLIIYGFPGTGKTYTLAMASLEVIRRPETKVLICTHTNSAADIYIREYFHSVSGGHPEATPLRVMI
TDRPLSQTDPVTLQYCLTDDRQAFRPPTRAELARHRVVTTTSQARELRVPVGGFFSHILIDEAAQMLECE
ALTPLAYASHGTRVLVLAGDHMQVT PRLFSVARARAAEHTLLHRLFLCYQQETHEVARQSRLVFHENYRCTD
AIVSFI SRHFYVAKGNP IHARGKVP PHPRHYPLMFCHVAGSPDRDMSMASWLNLAIEAQVVEKQVEAYNTW
PSCWGGREQRICV VSHGAQVSALRQELRRRDLGQVSVGSFEILPGRQFRVVVLSTVHTCQSLSPGALAP
EFFTDARVLNTVLTRAQSQLVVVGVDAVALCSFGACGLWESFIRECVERHSVCPEGLSMEQVEQGVARRR
WPPRGTQAGAAGNWEAAPEPVGD LAEEQA AVVTAMVKAEPGDEALSPASRDITATTAQTEAAAAPAGDAVK
EDVVPGACAAGAAAAGVESTEAEADAEADFWPDGELNADDA ILLRELLDESQKVMVTVGEDGLLDTVARPE
SLQQARLYENLPPAALRKL LHAEPERYRHCSFVPETFERASAIPLDDASSGPIQVRGRLCDGMFAFAGDEVL
VQLLSGDKAPEGR LRGRVLGVLKRKRHELAFVCRM DTWDPRIMVPI NGSVTKIFVAELKDPSQVPIYSLRK
GRLQRVGLERLTAEARHSRLFVWQIVLWRQGFYIPLGIVREVLPEASTWEQGLRILGLEYSRVPSPDQAT

ITKVLQKYHTELGRVAGREDRCRAFLTFTVDPQACNLDDALSVRDLGPRCEVAVHITDVASFVPRDGVLD
VEARRQGAIFYAPGREPVMPMLPASLQCQDVLSLLPGRDRLAISLFLTMEKASGQLKSLRFAPSVVQSDRQLS
YEEAEVIRQHPGAGRELPARLDSVDACVVAACYFSRLLRRHRLRSDCFYEQPDEDGTLGFRAAHIMVKEY
MIQFNRLVAEFLVGSSECTRTVTPLRWQPAPRSQQLKALCEKHGDRVPLSLHLGHHLHGSGGSPDTRLHLL
ASLWKQVQFAARTQDYEQMVLDLVTDDMHPFLAPAGRDLRKALERSAFGRFCARGHQQQGGHYSLQVDWYTW
ATSPIRRYLDVVLQRQILLALGHGGSAYSARDIDGLCQAFSLQHALAQSYQRRARSLHLAVQLKAQPLDKL
GFVVDVEAGSRCFRLLFPSNRETLDPDPCVPYPSLQLAEHPHALAGRPGLRLLWRRRVYSAQGSPPPLPLP
GTVPDPHTLAVETALWKQLLELVELQRWPEAAALI QEKGEASQRREL VQVQRSHCGHFLEVARELGS GDTL
QVQLGTSLQHGFLVPSQLWTVAPGFSLCLEHVERPGDCFSGRVYRAPRDYRDVDEYACVWEFCALESA
TGAVAENDSVTLQHLVSVWEASRTPQGQLQGAFLRLEAAFL EENCADINFSCCYLCIRLEGLPAPTASPRPG
PSSLGPGLNVDPGTYTVAHGQTQDWDQERRADRQEAPRRVHLFVHHMGMEKVPEEVL RPGLTFTVELLPK
QLPDLRKEEAVRGLEEASPLVTSIALGRPVQPPLCRVIPS RFLERQTYNIPGGRHKLNPSQNVAVREALEK
PFTVIQGGPGTGKTIIVGLHIVFWFHKSNEQVQPGGPPRGEKRLGGPCILYCGPSNKSVDVLAGLLLRME
LKPLRVYSEQA EASEFPVPRVGRKLLRKS PREGRPNQSLRSITLHHRIRQAPNPYSSEIKAFDTRLQRGE
LFSREDLVVYKQVWEARKFELDRHEVILCTCSAASASLKILDVRQILVDEAGMATEPETLIPLVQFPQA
EKVVLLGDHKQLRPVVKNERLQNLGLDRSLFERYHEDAHMLDTQYRMHEGICAFPSVAFYKSKLKTWQGLR
RPPSVLGHAGKESCPVIFGHVQGHESLLVSTDEGNENSKANLEEVAEVVRITKQLTLGRTVEPQDIAVLT
PYNAQASEISKALRREGIAGVAVSSITKSQGSEWRVYLVSTVTRTCAKSDLDQRPTKSWLKKFLGFVVDPNQ
VNVAVTRAQEGCLIGDHLRLCCPLWRSLLDFCEAQOTLVPAGQVRVCRRTMPS

AUG initiation = 294.6 kDa
GUG initiation = 322.3 kDa

+++++

#3

NM_00101858

Extension conserved from human to fish but non-AUG initiation conserved only in mammals. Many other human paralogs exist (incl. BRCA1) with the extension but initiated by AUG codon and part of a larger extension.

RNF187 ring finger protein 187

Synonyms: RNF187

TC TAGCGAGGTGACAGCGTAGAACAGGTGCGCGTCCCCGGCGTTGGCGTCTTCGTCCTGTTGCTGGTCTC
CGTCCGGTGC CGCGCCGTCTAGGTCTCCGGCCCTCCCCAGCCGCTCCTGCGCCCTTGCCGGCCCCGCC
CGCAGCC CTGGCGCTCCCTGCGGGCCCCGCCAGGCCGCTGCGCCCTGTGCCAGCGCGCCCCGGAAC
CGGTGCGCGCCGACTGCGGCCACCGCTTCTGTGCGGCGTGCCTGGTGCCTTCTGGGCCGAGGAGCGGG
CCCTTCCCGTGC CCGGAGTGC CCGACGACTGCTGGCAGCGCGCCGTGGAGCCCGCAGGCCCCCGCTCAG
CCGCCGCTTCTGGCGCTCGAGGAGGCGCGCGCCGCGCGCGACGGCCCGCCAGCGAGGCCGCGC
TGCAGCTGCTGTGCCGCGCCGACGCCGCCGCTCTGCGCCGCTGCCGT ATGGCTGCGGGCCCCGAGCCG
CCCCGAGTGGGAACCGCGCTGGAGGAAGGCGCTGCGCGGCAAGGAGAACAAGGGGTCTGTGGAAATCATGAG
AAAGGACTTGAATGACGCCCGGGACCTGCATGGCCAGGCAGAGTCAGCAGCTGCAGTGTGGAAGGACACG
TGATGGACCGTAGGAAGAAGGCACTGACCGACTACAAGAAGCTGCGGGCCTTCTTTGTGGAGGAGGAGGAG
CATTTCTGCAGGAGGCTGAGAAGGAGGAGGGGCTCCCTGAGGACGAGCTGGCTGACCCCACTGAGCGGTT
CAGGTCACTGCTGCAGGCGGTCTCGGAGCTGGAGAAGAAGCATCGCAACCTGGGCCTCAGCATGCTGCTGC
AGTCA TGGCGCCAACCCGTGGCAGTCCCAGAGCTGGAGGCAGGAGGATGGATCCTCATCTCCATGGGAAGT
GTCAGCGTGTGGCTGCCAGGAAGCGTGGCAGGCGCCTGGCCTTGGGTCCATCTACATAGTTGCGTGTTC
ACAATGTCCATTTATCCTTACCCCGAGGCGTGT TTTGGGGGCTGCAAACACCTCCCGGTAGAGGCTGGA
CCTGAGGACCCTTCCCACCTGTGCCCCGCTCCCTTCTGAAGTCTTAGCCACAGCCCATCCTCCATGAGTCCC
GGCAGCTCTGGGT CATGCCCTTCCCTGGTCAACCATCTGCCCCACCTCGTCATCCAGGGACCCAGACCC
TGCACCTTCCATGTGGGCCACAGATCCTTGGCAGGTACCTGAGGTGCACCATTTGAGTGTGGGATTTGGG
TTAGCATCCAGAAAGAAGAATGCGCATGACGCTGTGTAAGGCTGGAACCTCAGGTCTTCAGGGAGAGAAAG
GAAGACTGGATTGCACCTTGTATGCCTCCTGAGGAGCGGCCCCCTCTTGGAGTGGGCGTGGGCCCGGCC
AGCCTTATCCAAGTCGCTCTGTCCACCTCCCCCTTCTGGCCCCACCCACTCCTGTGCCTCCCAGGAGC

CCTCCCTGTGCTCCACCTGCCTCCGCAGAAGGAAGCCTCTTTCTCTGTTTCCCTGGGTGAGGGGGCTGGCA
GGTGGCTAACCCCATTTAGCATCTCCAGGCCCTGCCATCGTGTCTCATCTTGCTGTTATCTCTAGCTCTTT
CCCTCCTCCCATTTCTTTAGTAGTTGAATTTTGCAAAGCTTGTAGCAGTAGCTCAGTTGCCTGCAGCATC
CTTGTGTGTAGATAAATTAGTCGACAGAACTCAGCACTGGGGACAGGATTGCAAAGTCGGGGACATAGAT
GCAGACAGTTGTTGAGATTTGGGGATAGCCGGGCTTGTGAGCGGTGCCATTTCCAGATGAAGCCTTTCCAG
CCCTTCTGAGTCCCCGGCCCTTGGTGCGATGTCTGTGAGTTTGACCTGCCAGCGTGTGGGCTGGCTCAAT
GCTGAATAAAGTGGGTTTGTGTGAGCTCGTTTGCCTTCGTCTCCGTGTGTCCACCTGGCCTCTTCCCCCTGC
CCTGGCCACCCTCCAGTGTCAAAGGAACTTCTCGTGACACGTGCTAAAGCATGGTGAGGAGGACTTTGA
TTGGGACCATTGAGATGGGTGTGGGACCCTTTCCTTGGGGCCTGGGGGGAGATGGGGCTCCACCCGACGT
AGCAGGGCAGGGGTTGGAGGAGCGAGGAGCAGTATAGGGTCCATGGGTGGGAATGACTGTGAGGAGACATC
AGGGCTGAGGGGCTCTGGCTAAACCCACCTCACAGATCCTTGTCTGCAGGCAGGCAGGCGATCAGACAT
TGGCTGCAAACGGTCAGAGAGGAACCCAGTCAGGTACCATTGAGGGTGGTCAGATATTATGGTTAACAAA
TTAGGGTTCTTGCTAAAACCTGGATTTTATAAGAAAGGGCAAAGAGGGCCCTAGGAGAAGATTCCAGAGCCT
GGCCAGAGTTTGGCCAAGTAGAGAATCTTTGTGACGACGCCAACACATCCCGACCCTGAGACCTCCAGTT
TGTCTTTCTCACTGTCTCCGCCTGCTGCAGTCTGCTGTGATCCCTGAGCATCCCTGCCCTGCCCTGCACA
CCTGTGATGCTTGGCCGACAGGTCCTGATGGCAGAGTCTCCACAACATCAGTGTCTCCACATCACCAGG
TCCGACAGTGGCTTACCATCCTCACCTAACCTAGCTGACCAGCAACATCCACCCCTGTCAATCACAACCT
CTTTCTATTTAAGAAAATTATATATTTATGGGGCACAGTG
CGTCCTGTTGCTGGTCTCCGTCCGGTCGCCGGCCGTCTAGGTCTCCGGCCCTCCCCAGCC

LALPAGPAEAACALCQRAPREPVRADCGHRFCRACVVRFWAEEEDGPFPCPECADDCWQRAVEPGRPPLSRR
LLALEEAAAAPARDGPASEAALQLLCRADAGPLCAACRMAAGPEPPEWEPRWRKALRGKENKGSVEIMRKD
LNDARDLHGQAESAAAVVWKGHVMDRRKKALTDYKKLRAFFVEEEHFLQEAKEEGLPEDELADPTERFRS
LLQAVSELEKKHRNLGLSMLLQ

AUG initiation = 14.6 kDa
CUG initiation = 26.2 kDa

+++++

#4

NM_001136108

CUG initiated extensions in mammal; in non-mammals extension is initiated by AUG
In *Bos taurus* the longest AUG initiated in-frame CDS is only 9 codons long!

R3HCC1 R3H domain and coiled-coil containing 1

Synonyms: DKFZp564N123; R3HCC1

CTCGGGCGCGCTGGCCCTGGGGACGCCGAGGGCGGGCTGCGACGCGCCGAGAGGGCCGCGGCTCTCCCACCT
GTCACCCTGGCCCTTCTCTGCTTGGATGGTGTCTTCTCTCCTCAGCCGAGAATGACTTCGTCCACCGGAT
CCAGGAGGAACCTGGACCGCTTTCTGCTGCAGAAGCAGCTGTCAAAGGTTCTTCTTTTCCCCCACTCTCCA
GTCGCCTCCGGTACCTGATCCATAGAACAGCAGAGAATTTGATCTCTTGAGCAGCTTCTCCGTTGGGGAG
GGCTGGAAGAGGAGGACGGTCATCTGTACCAGGACATCAGGGTACCCAGTTCCGATGGCCTCTCTGGCCC
CTGCCGCGCTCCTGCCTCCTGCCCCAGCAGGTACCACGGTCTCGGCCATCTCCAACCAAGGAGCAGCTG
CGGTTCCCCGAGGTGCCCGGCTGGCCGGTGGTATCGTGGACGCAAGCCTGACCAGCCTTTGTATGTGCC
CGGGTGCTGCGCAGGCAGGAAGAATGGGGCTGACCTCTACCTCGGTGCTCAAGAGAGAGGCCCCAGCTGG
CAGGGACCCAGAAGAGCCTGGAGATGTTGGTGCTGGAGACCCCAACTCTGATCAGGGACTCCCTGTGCTGA
TGACTCAGGGAACAGAGGACCTAAAGGGCCCAGGACAAAGGTGTGAGAATGAGCCACTGCTGGACCCTGTT
GGCCCTGAGCCTCTGGGGCCTGAGAGTCAGTCAGGGAAGGGAGACATGGTGGAGATGGCCACACGGTTTGG
GTCCACCCTGCAGCTAGACCTGGAAAAGGGGAAGGAGAGTCTGTTGGAGAAGAGGCTGGTGGCAGAGGAGG
AAGAGGACGAAGAGGAGGTGGAAGAGGATGGCCCCAGCAGCTGCTCGGAGGACGATTACAGTGAGCTGTG
CAGGAGATCACAGACAACCTGACGAAGAAGGAGATTAGATAGAGAAGATCCATTTGGACACATCCTCCTT
CGTGGAGGAGCTGCCTGGAGAGAAGGACCTTCCCCACGTGGTAGAGATCTATGACTTTGAACCAGCAGCTCA
AGACGGAGGACCTGCTGGCAACGTTTTCTGAGTTCCAAGAGAAGGGGTTCAGGATTCAGTGGGTGGATGAT
ACTCACGCACTCGGCATCTTTCCCTGCCTGGCCTCAGCTGCGGAAGCCCTGACCCGGGAGTTCTCGGTGCT

CAAGATCCGGCCCCCTCACACAGGGAAACCAAGCAGTCAAAGCTCAAAGCCTTGCAGAGGCCAAAACTCCTGC
GTCTGGTGAAGGAGAGGCCACAGACAAATGCGACTGTGGCCCGGCGGCTGGTGGCCCGGGCCCTGGGACTC
CAACACAAAAAGAAAGAGCGGCCTGCTGTCCGGGGTCCGCTGCCGCCCTGAGGCCTGGAGACCCAACTGGC
CTGGATCTGCGTCCCAGCTAGCTGGCGCCCCAACACCATAAGCCTTACAGACGCCAGAGCAGCCCCGC
ACCACCCTCGAGCTTACCATGGGGTGTGGTGGGCTTTAGTTTTAGTCCAGAAATGGAGAAAAATAAAAA
CTCACGTTGTTCTAATGTGAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LALLCLDGVFLSSAENDFVHRIQEELDRFLLQQLSKVLLFPPLSSRLRYLIHRTAENFDLLSSFSVGEW
KRRTVICHQDIRVPSSDGLSGPCRAPASCPSRYHGPRPISNOGAAVPRGARAGRWRGRKPDQPLYVPRV
LRRQEEWGLTSTSVLKREAPAGRDPPEEPGDVAGDPNSDQGLPVLMTQGTEDLKGPGQRCENEPLLDVGP
EPLGPESQSGKDMVEMATRFGSTLQLDLKKGKESLLEKRLVAEEEEDEEEVEEDGPPSSCEDDYSELLQE
ITDNLTKKEIQIEKIHLDTSFVEELPGEKDLAHVVEIYDFEPALKTEDLLATFSEFQEKGFRIQWVDDTH
ALGIFPCLASAAEALTRFVSVLKIRPLTQGTKQSKLKALQRPKLLRLVKERPQTNATVARRLVARALGLQH
KKKERPAVRGPLPP

AUG initiation = 28.3 kDa
CUG initiation = 49.1 kDa

+++++

#5

NM_003760

AUC initiated extension in mammals - In other vertebrates extension is initiated by AUG
EIF4G3 eukaryotic translation initiation factor 4 gamma, 3

Synonyms: eIF4GII; EIF4G3

TCACGCGTCCGCTGCTCGTGTGAGTGAAGAAAATCCACCGGCATCGCCTGAGCCCCGCTACCGAGAAGGGCG
CCGCTTCCTCCGGGGAGGGGATAAAGATCCCCCGCCCGGCCATGAGGATATTGCCGTGAAAGGCACA
GCGACTGCAGCAGGAACCGGACCCGGCACCAGGAGCGGCGGGCGGCGGCAGCAGCGGTACCGCCTCCTCA
CCCGGCGGCGGCAGCAGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCAGCGGTCCCCCTCCTCACC
CGAACATCAGGGCCCTCCAGACTCAGGCGCCCCAACAAATTCCTAGAGGACCTGTGCAACAACCTCTTGAG
GATCGAATCTTCACTCCCGCTGTCTCAGCAGTCTACAGCACGGTAACACAAGTGGCAAGACAGCCGGGAAC
CCCTACCCCATCCCCTTATTAGCAGCATGAAATAAACAAGGGGCATCAAATCTTGCGGCAACGCCCCCGG
GACATGCATCGTCCCCTGGACTCTCTCAAACCCCTTATCCCTCTGGACAGAATGCAGGTCCAACCACGCTG
GTATACCCTCAAACCCCTCAGACAATGAATTCACAACCTCAAACCCGTTCTCCGTTTTTCCAGAGGCCTCA
AATACAGCCTCCTAGAGCTACCATCCCGAACAGCAGTCCCTTCCATTTCGTCTGTCACAGACACCCACTG
CAGTGTACCAGGCTAATCAGCACATCATGATGGTTAACCATCTGCCCATGCCGTACCCAGTGGCCAGGGG
CCTCAGTACTGTATACCACAGTACCGTCATAGTGGCCCTCCTTATGTTGGGCCCCCAACAATATCCAGT
TCAACCACCGGGGCCAGGTCTTTTTATCCTGGACCAGGACCTGGGGACTTCCCCAATGCTTATGGAACGC
CTTTTTACCCAAGTACGCCGTGTATCAGTCAGCACCTATCATAGTGCCTACGCAGCAACAGCCGCCTCCA
GCCAAGAGAGAGAAAAAACTATAAGAATTCGGGATCCAAACAGGGAGGTAAAGACATAACAGAGGAGAT
TATGCTGGAGGTGGCAGCAGAAATCCTACTCCACCATAGGAAGACCCACGTCCACACCTACTCCTCCTC
AGCAGCTGCCAGCCAGGTCCCCGAGCACAGCCCTGTGGTTTATGGGACTGTGGAGAGCGCTCATCTTGCT
GCCAGCACCCCTGTCACTGCAGCTAGCGACCAGAAGCAAGAGGAGAAGCCAAAACAGATCCAGTGTAAA
GTCTCCTTCCCCAGTCTTAGGCTAGTCTCAGTGGAGAGAAGAAAGAACAAGAAGGCCAGACATCTGAAA
CTACTGCAATAGTATCCATAGCAGAGCTTCTCTGCCTCCATCACCTACCACTGTTTCTTCTGTTGCTCGA
AGTACAATTGCAGCCCCACCTCTTCTGCTCTTAGTAGCCAACCAATATTCACTACTGCTATAGATGACAG
ATGTGAACTCTCATCCCCAAGAGAAGACACAATTCCTATAACCCAGCCTCACATCTTGACAGAAACATCAG
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CATTGTGAAATAGTAAACAGGAAGTATTGCCATTGACTCTTGAATTGGAGATTCTCGAAAATCCCCAG
AAGAAATGAAACTGGAGTGTATCCAGCTCCCATACCCCTTCCACAGTTCCTTCTTCTTCTCCAACCTCCT
CCAACCTCCTCCAGCTTCTCCTCCTCACACTCCAGTCATTGTTTCTGCTGCTGCCACTACTGTTAGTTCTCC
GAGTGTGTCATCACAGTCCAGAGAGTCTAGAGGAGGACGAGAGCATAAGAACTTGCCTTAGTGAAGATG
CAAAGAGATTGAAACAAATAGAGGTAGAAGCAGATGGGCAAACAGAAGAGATTTTGGATTCTCAAAAC

TTAAATTCAAGAAGGAGCCCTGTCCCAGCTCAAATAGCTATAACTGTACCAAAGACATGGAAGAAACCAA
AGATCGGACCCGAACCACTGAAGAGATGTTAGAGGCAGAATTGGAGCTTAAAGCTGAAGAGGAGCTTTCCA
TTGACAAAGTACTTGAATCTGAACAAGATAAAATGAGCCAGGGGTTTCATCCTGAAAGAGACCCCTCTGAC
CTAAAAAAGTGAAGCTGTGGAAGAAAATGGAGAAGAAGCTGAGCCAGTACGTAATGGTGCTGAGAGTGT
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CAGCCTTTGCTGATTTTGGAAAGGCAGACACCTGGTGGAAAGAGGCGTACCTTTGTTGAATGTTGGGTACGA
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AGAGGAGAGGACAAGGCTTCATGATGAACTGGAAGAAGCCAAGGACAAAGCCCGGCGGAGATCCATTGGCA
ACATCAAGTTTATTGGGAACTCTTTAAACTCAAATGCTGACTGAAGCCATCATGCATGACTGTGTGGTG
AAGCTGCTAAAGAACCATGATGAAGAATCCCTGGAGTGCCTGTGTGCGCTGCTCACCACCATTGGCAAAGA
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CGAAGAGCAGATCAAGGGCCTAAAACATCGAACAGATTACAAAGAGGCTAAAATAGAAGAACAAGAAGA
GCAAAGGAAGGTCCAGCAACTCATGACCAAAGAGAAGAGAAGACCAGGTGTCCAGAGAGTGGACGAAGGTG
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CCTACAATTGATGAAAAAATTCAGCTGGTACCTAAAGCACAGCTAGGCAGCTGGGGAAAAGGCAGCAGTGG
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AACCTCCAGCACCCCTCAGGGTCCACGCCATCCACGCCTGTAGAGTTTGATTCCCGAAGGACCTTAACTAGT
CGTGGAAAGTATGGGCAGGGAGAAGAATGACAAGCCCTTCCATCTGCAACAGCTCGGCCAAATACTTTTCA
GAGGGTGGCAGCAAGACCTGCTAGACAATCAGTCTCAAGAAGAGCAGCGGAGAGATGCTGGAGA
CCGTGAAGCAGCTCACAGGAGGTGTGGATGTGGAGAGGAACAGCACTGAGGCTGAGCGAAATAAAAACAGG
GAGTCAGCAAAAACCAGAAAATTTAGCAATGTGAGCTCATGACAAGGCTGCATTATCAGAAGAGGAAGTGA
GAGGAAGTCAAAATCTATCATTGATGAATTTCTACACATTAATGATTTTAAAGGAAGCCATGCAGTGTGTGG
AAGAGCTGAATGCCAGGGCCTACTACATGTTTTTGTGAGAGTGGGAGTGGAGTCCACCCTGGAAAGGAGC
CAGATCACCAGGGATCACATGGGCCAATTACTCTATCAGCTGGTACAGTCAGAAAAACTCAGCAAAACAGGA
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TTTAGCAAACCTTTACTTCTGTTGGAAGAGCTGGGGTCTTGCTATCTGAAATATTGCACCTACTATGCAA
ACAAATGAGCCATAAGAAAGTGGGAGCCTTATGGAGGGAGGCTGACCTCAGCTGGAAGGACTTTTTACCAG
AAGGAGAAGATGTACATAATTTCTTTTGGAGCAGAAGTTGGACTTCATAGAGTCTGACAGTCCCTGTTCC
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CCTGCAGAGCAGAATGGGAAGGGCGTGGCTCTGAAATCTGTACGGCATTCTTACGTGGCTGCGGGAAGC
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CACGAGTGGGAGAGGGGAAAAGAGAAAAAAGGTGATCATGGAGGAAAAGGTAAGTGGATAAAAAGTAAACTT
CAAACCTTAGGGCGGGAGCACTAAAACCAAATACATGTATTATTTATAGAAAATATTTTCTGTTTTAATC
TTTTCTTTTTTAAACAAGGACTCATACTTAAAAAATGTTTAGCAAAAAAAAAAAAAAGTTGAGAATTTTTAA
TTTATTTTTAAGGACTGCAAATGCCAGTGAATTTTTTAAATTTGCAGTTTCTGTAAACAACCTGTATAATAG
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CCAGATTTGAGAAAAGTTTGGGGTGAACAAGGTAAGAAAGATTTTTTTTTTTTTTGGCATCAAATCTTTCTGC
CTGCCTCTCAGCTTGCTTCAGAAAATTTAAAAAATCACAATAGTAATCAAACATACATAACATTGAAACA
GAAGGAAATGCTGTGGACCACAGAACTCCAAGAATTTGTTAAAAAAGAAAGTGTACCTGAGAAAAGT
ACTCTTAATACTCTTGAATCTTTAGAGCAACTTTAAGGCTTGTAAATACATAGAACAATATTTAAAAAA

ACAAAAAGAAATTGACTCAGTACTATTTCTTTTCACTTTGAAAATATAAAGAACAAAATAAAGACAAACAT
TGCAAGTTTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LHRHRLSPATEKGAASSGEGDKDPPPPAHEDIAVKGTATAAGTGPGTGAAAAAAAVPPPHPAAAAAAA
AAAAAAAVPPPHPNIRALQTQAPQQIPRGPVQQPLEDRIFTPAVSAVYSTVTQVARQPGTPTSPYSAHE
INKGHPNLAATPPGHASSPGLSQTPYPSGQONAGPTTLVYPQTPQTMNSQPQTRSPFFQRPQIQPPRATIPN
SSPSIRPGAQTPTAVYQANQHIMMVNHLMPYPVPQGPQYCIQYRHSGBPYPVGGPPQQYYPVQPPGPGPFYP
GPGPGDFPNAYGTPFYPSQPVYQSAPIIVPTQQQPPPAKREKKTIRIRDPNQGGKDITEEIMSGGSRNPT
PPIGRPTSTPTPPQQLPSQVPEHSPVYGTVESAHLAASTPVTAASDQKQEEKPKPDPVLKSPSPVLRVL
SGEKKEQEGQTSETTAIVSIAELPLPPSPTTVSSVARSTIAAPTSSALSSQPIFTTAIDDRCELSSPREDT
IPIPSLTCTETSDPLPTNENDDDICKKPCSVAPNDIPLVSSTNLININGVSEKLSATESIVEIVKQEV
PLTLELEILENPEEMKLECIAPITPSTVPSFPPPTPPASPHTPVIVPAAATTVSSPSAAITVQRVL
EEDESIRTCLSEDAKEIQNKIEVEADGQTEEILDSQNLNSRRSPVPAQIAITVPKTKPKDRTRTTEEML
EALELEKAAEELSIDKVLSESEQDKMSQGFHPERDPSDLKVKVAEENGEAEAPVRNGAESVSEGEIDANS
GSTSSGDGVTFFPKPESWKPTDTEGKKQYDREFLLDFQFMPACIQKPEGLPPI SDVVLDKINQPKLPMT
LDPRILPRGPDFTPAFADGRQTPGGRGVPLLNVGSRSSQPGQRREPRKIITVSVKEDVHLKKAENAWKPS
QKRDSQADDPENIKTQELFRKVR SILNKLTQMFNQLMQVSGLTVDEERLKGVIDLVFEKAIDEPSFSV
AYANMCRCLVTLKVPMDKPGNTVNFRKLLLNRCQKEFEKDKADDDVFEKKQKELEAASAPEERTRLHDEL
EEAKDKARRRSIGNIKFIGELFKLMLTEAIMHDCVVKLLKNHDEESLECLCRLTTIGKDLDFEKAKPRM
DQYFNQMEKIVKERKTSSRIRFMLQDVIDLRLCNWVSRRADQGPKTIEQIHKEAKIEEQEEQRKVQQLMTK
EKRRPGVQRVDEGGWNTVQGAKNSRVLDPKFLKITKPTIDEKIQLVPKAQLGSWKGKSSGGAKASETDL
RSSASSLNRFSALQPPAPSGSTPSTPVEFDSRRTLTSRSGSMGREKNDKPLPSATARPNTFMRGGSSKDLLD
NQSQEEQRREMLETVKQLTGGVDVERNSTEAERNKTRSAKPEISAMSAHDKAALSEELELRKSKS I IDEF
LHINDFKEAMQCVEELNAQGLLHVFRVGVVESTLERSQITRDHMGQLLYQLVQSEKLSKQDFFKGFSETLE
LADDMAIDIPHIWLYLAELVTPMLKEGGISMRELTIEFSKPLLPVGRAGVLLSEILHLLCKQMSHKKVGAL
WREADLSWKDFLPEGEDVHNFLLEQKLDIESDPCSSEALSKKELSAEELYKRLEKLI IEDKANDEQIFD
WVEANLDEIQMSSPTFLRALMTAVCKAAI IADSSTFRVDTAVIKQRPVILLKYLDSDTEKELQALYALQAS
IVKLDQPANLLRMFFDCLYDEEVI SEDAFYKWESSKDPAEQNGKGVALKSVTAFFTWLREAEEESEDN

AUG initiation = 176.7 kDa
AUC initiation = 195.0 kDa

+++++

#6

NM_006375

Extension conserved from human to fish but non-AUG initiation conserved only in mammals

ecto-NOX disulfide-thiol exchanger 2 (ENOX2), transcript variant 1

Synonyms: APK1; tNOX; COVA1; ENOX2

GTGTGTGAGAGTCCAGCCTTGGGCCAGAGTGCCGGGTCTAGGCCTGGAAGCGCGAGGCGGGCATTTCGGAA
GAGAGTGGCGCGGCGTGGGGCGCCGCGAGGGCACTACGAGCCCAGGAAGTCCGCGCCGCGCCGATTTTCC
GCGGCTGTATAAGGACTAGCGCTTCGGTAGCCGGGAGCTGGAGGGAACCTGATTGAGATCAATTCTTGG
AGAACACAAAGAAGTGTGATGATTGAACAGCTGCCCTTTGACCCTGCTAACAACAACGAGCCCCTGCAG
TTTGGTAGTGCCAGTGGCCCTCTGGTCACAGAAGGCCTCATTGAGAAATGGAGGGGAATCAAGCAAGAAAAG
AAAGAGAACAATACTCCTTCAGCCGATAACAGTAGAACTCTGAACGTGGATTCCACTGCAATGACACTAC
CTATGTCTGATCCAACCTGCATGGGCCACAGCAATGAATAATCTTGAATGGCACCCTGGGAATTGCCGGA
CAACCAATTTTACCTGACTTTGATCCTGCTCTTGAATGATGACTGGAATCCACCAATAACTCCAATGAT
GCCTGGTTTGGGAATAGTACCTCCACCAATCCTCCAGATATGCCAGTAGTAAAAGAGATCATACTACTGTA
AAAGCTGCACGCTCTTCCCTCCAAATCCAAATCTCCACCTCCTGCAACCCGAGAAAGACCACCAGGATGC
AAAACAGATATTTGTGGTGGTCTGCCTGAAAATGGGACAGAGCAAATCATTGTGGAAGTTTTGAGCAGTG
TGGAGAGATCATTGCCATTCGCAAGAGCAAGAAGAACTCTGCCACATTCGCTTTGCTGAGGAGTACATGG
TGGACAAAGCCCTGTATCTGTCTGGTTACCGCATTTCGCTGGGCTCTAGTACTGACAAGAAGGACACAGGC

AGACTCCACGTTGATTTTCGCACAGGCTCGAGATGACCTGTATGAGTGGGAGTGTAAACAGCGTATGCTAGC
CAGAGAGGAGCGCCATCGTAGAAGAATGGAAGAAGAAAGATTGCGTCCACCATCTCCACCCCCAGTGGTCC
ACTATT CAGATCATGAATGCAGCATTGTTGCTGAAAAATTTAAAAGATGATTCCAAATTTCTCAGAAGCTGTA
CAGACCTTGCTTACCTGGATAGAGCGGAGGAGGTTCAACCGTCGTAGCGCCAATAACTTCTACTCCATGAT
CCAGTCGGCCAACAGCCATGTCCGCCGCTGGTGAACGAGAAAGCTGCCATGAGAAAAGATATGGAAGAAG
CAAAGGAGAAGTTCAAGCAGGCCCTTTCTGGAATTTCTCATTCAATTTGAGCAGATAGTGGCTGTGTACCAT
TCCGCCTCCAAGCAGAAGGCATGGGACCACTTCAAAAAGCCCAGCGGAAGAACATCAGCGTGTGGTGCAA
ACAAGCTGAGGAAATTCGCAACATTCATAATGATGAATTAATGGGAATCAGGCGAGAAGAAGAAATGGAAA
TGTCTGATGATGAAATAGAAGAAATGACAGAAACAAAAGAACTGAGGAATCAGCCTTAGTATCACAGGCA
GAAGCTCTGAAGGAAGAAAATGACAGCCTCCGTTGGCAGCTCGATGCCTACCGAATGAAGTAGAATGCT
CAAGCAAGAACAAGGCAAAGTCCACAGAGAAGATGACCTTAACAAAAGAACAGCAGCTGAAACTCCTGCAAC
AAGCCCTGCAAGGATGACAAGTTACAGGTGGAAAAATGTTGGAAAATCTTAAAGAAAAGGAAAGCTGTGC
TTCTAGGCTGTGTGCCTCAAACCAGGATAGCGAATACCCTCTTGAGAAGACCATGAACAGCAGTCCTATCA
AATCTGAACGTGAAGCACTGCTAGTGGGATTATCTCCACATTCCTTCATGTTCAACCATTTGGAGCAAGC
ATTGAATACATCTGTTTCTACTTGCACCGTCTTGATAATAAGATCTGCACCAGCGATGTGGAGTGTCTCAT
GGGTAGACTCCAGCATACTTCAAGCAGGAAATGACTGGAGTTGGAGCCAGCCTGGAAAAGAGATGGAAAT
TCTGTGGCTTCGAGGGCTTGAAGCTGACCTAAATCTCTTTGCCTAACAACTGGGATCCTGAAGATAAATA
TGTGTTGGACAAGCATAGAAAGTGATTTATATTTTTAATGGTTTTCAAGTGAAGTTCCCTTTGAATTTGTC
AGTTCATTCTGGAAAATCTTTTGGATTAATAAGGATCCTAGGACAGCACCTCGAACTACAGGCCCTAA
AGAGAAATTCCTCAAACCACAAGTGTGTAACCTCCTCCCCTTTCTGTCAATTTGGTTGTCTTTAAATATT
GCAAAAGTCTGATGCTAAACAGTATTTGGAGTGTTCAGTGTCTGTACTACTGTTGTAGACCTTGGTAT
TTTTTTAAACACTGTTAACTGAAATGTTTTGATGATTTGTATGTGATTTGTGTTTTCTAACTTCTCTTTAC
ATTAATGTTGTTACTGGTGAAGGCATGAGAGCAGCACTAAGTCTCTGTGTAACGCCATTGTCTTTCCA
ATCCCCAGTAGACCAGTAAATAAATAACACATCAGTGTCTTCTAGAAGGTGCCTGACCAGGTTACCTTTT
AAACGACAAAGCATGGTTTTGTGGCTTTTTGCAAAATTACTATGAACCAAAAGTTGACAAATGTTCCAAAGT
TATTTTCTCTAACATATCACATTAAGATCTGTTTTCAGAATTGTAAAAGTACATCTAGATGTGTTTACAG
AAAGCAAGTATCCAGTATGACTGGCATGTGTTTATGCTATTGTAATCACTTGTAAATAGTCTGCTTTTAA
AGGAGGCATGTTTCAAGTTTCTGTGAATTAATAATGCTCATTGTGTGGGCACACAGCACAAACACACACA
CGCAGCGCACAGTGGCAGAGGGATTTATTAATATTCTTTCCCCTCTGGCCTTCTTACAGTCTGTTGG
TCCCTTTGCTTCTGTTGTGAGTGTGTTGAATTGCAACCAGTACTGCTGTAAATACTATGTTTACTTTCAT
GCTGAATGTTTGCAAAGACTTGATATAAGTATTAATAGTAATGAATCAATGAATAAATAATGAGCTAGGGT
TTGTGAGGCTTTCTACAAATAGGTGAGCTCCACCTGGAGTGCGAATTGCCAGAGACACCTTGGTAGTGCC
ATCGGCAAAATCGCAATGGCAGCATGTGAGTGGACCATTGAGAACTTCTGCTTGGTGGAAAGTAAACAGAG
AGGATGGAGGTTTTGGGGCGAATGTCCTGAGGCAGAGATGGTCTTTATTGTGTGTGGTGGTGTGTTGTT
TTATAATAATGCAAGCATACTTCCCTTGGAGTCTCAATTGAAGATAAAAAGTACTGAGCAAGCAAAGC
CAATGGAGAGTATTTACAAAAATACTTTGTAATGAGATGCCAGTAGTGTCAAAGTTGTATTTTTAAAA
GATAAATATTCCTTTTTTATACCTCAGTTTTGTGTCCTGTTTTAATGACTTACGCTCTAAGTAATCCATTA
GTAGTTATCTCAGTTCCTTCTTTGGGTTACTAGAATGTTGGAAAAGATGCCAAGTCTGTCTTGACAAC
GGAAACAGGGTTCCACAGCAGCCATTCTGTGCTGAAAAGTGGCTTCCCCTGAAGCACCTGCTGTGGCAC
CAGCAGGAAGCTCAGGTTAATTTTACACTAGCTTGCTCACTGATGCATCTCTCATCAATGCTACGGAAGGC
TTTGATTTCATCAGTCTCGGGCTCTTGGAAATACCTAATTTTAAATAATATCTATGAAATCAAGGGAACTTTC
CATTTACAGTTATTTCTTGTTTAAATAAACTAAATTAATTTTTAGGGGAGAGCAGTAGGAAAAAGAGCTAA
TGCATGCGGGGTTTTAATACCTAGGTGATGGGTTGAGGTGCAGCAAAACCACCATGGCACACGTTACCTAT
GTAACAAACCTGCACATCTGCACATGTACCCCGGAACCTTACTTAAAA

LNQLPFDPANNEPLQFGSASGPLVTEGLIENGESSKKRKRNTNTPSADNSRTLNV DSTAMTLPMSDPTAW
ATAMNNLGMAPLGIAGQPILPDFDPALGMMTGIPPIIPMPPLGIVPPPIPPDMPVVKEI IHCKSCTLFPP
NPNLPPPATRERPPGCKTVFVGGLPENGTEQIIVEVFEQCEIIAIRKSKKNFCHIRFAEEYMVDKALYLS
GYRIRLGSSTDKKDTRGLHVDFAQARDDLYEWECKQRMLAREERHRRRMEEERLRPPSPPPVHVSDHECS
IVAELKDDSKFSEAVQTLTWTIERGEVNRSSANNFYSMIQSANSVHRRLVNEKAAHEKDMEEAKEFKQA
LSGILIQFEQIVAVYHSASKQKAWDHFTKAQRKNI SVWCKQAEERIRNIHNDEL MGIRREEEMEMSDEIEE
MTETKETEE SALVSQAEALKEENDSLRWQLDAYRNEVELLQEQGKVHREDDPNKEQQLKLLQALQGMQQ
HLLKVQEEYKKKEAELEKLDKDLQVEKMLENLKEKESASCASRLCASNQDSEYPLEKTMNSSPIKSEREALL
VGIISTFLHVHPFGASIEYICSYLHRLDNKICTSDVECLMGRLOHTFKQEMTG VGASLEKRWKFCGFEGLL
LT

AUG initiation = 66.6 kDa
ACG initiation = 73.0 kDa

+++++

#7

NM_176677

UUG/CUG initiation in mammals, birds and reptiles (and maybe all vertebrates)

FLJ36208 hypothetical protein FLJ36208

Synonyms: FLJ36208; NHLRC4

CAGCCACCCAGCCCCGAAGCAGGGCCCAGCGAGACAGGGCCCAGCCCCAAGCGTGA^{TGA}CCCAGCTGCAGAGAA
GCTGAGACGGTGATTCCGACTGACTGGACTCTGGCCTCCAGGTGTCTGCACCTCACA^{CTGG}ACCCACCTGG
AGACTCCACGGGCTCCCGGCAGCTCCGGCTGCTTGGGTGGATCCGGGTGCCCGCAGGGGCTGTGGGAGGGC
CCCGGGCCTGCACTGCTCCCCGATGGCCTGCTCTTCTCACGGCCGGGGCTGCACCCTGTGTCCACGTG
CTAGATCTGGAGGGACGCCCATCTGCCTCCTGCCCTGCCGCACTCCGGGGAGCGGGGCCTTCGTTCCAGA
GGACGTGGCTGTGACAGCGTCAGGGCTTGTGGTGGTCAGCGATCCCATCCATGGGGCTGTCCATGCACTCC
AGCACACAGCCCGGGACCCCGGGGGCCACTGGGTGACAGTGGGCACCTTCTGTCTCCCCGAGGGCTGGCT
GTGGATGCCCTCAACCGCCTCCTGGTGACGGACTACTTGCCTGGGGCTGTGCACAGCTTCTCGTTGGGTCC
TGCTTGGGAGCCCCTGGCCCCAGCCTCCATGCTGGGTCTGGAGGGCCCCTGCTGGGTGGGCCCAGGGCCTG
ATGGGGCCCTTGTGTGAGTGAGGAGTTTGGGGATGTGAGGCTGTTTGGCAGTGCCCGCCAACCCCTGGGC
TCCCTGGGGGGCTGGACGGGGCACACTTTCGGCTGCCAGCGGGCATCTGCTCCAACCTCAGAGGGCAATGT
TATTGTGGCAGACGAGCAGAGGGCCAGGTGACCTGTTTCCCCGGGCTGGGCCACCCATCTGCCTGGTGT
CAGAGGGGCTTGGGCAGCCCTTGGGAGTGGCCTGTGCACCCAGGGCCAGCTCCTGGTGGCTGATGCCAAG
GACAACTCCATCAAGGTGTACCAGGGCCTCAAGGAGCTGGCC^{TGA}CCTGAGGCTGGGTTGGAGCAGCCCTC
CTGTGCCTGAGGCCAGCTCCCAGGCCCTTGGATCACCGCGGGAGGAACCCTCAGGATGGGTGGAGCCTCCA
GGCTATGGGCATTGCCTGCCTGATGCCAGCACCACTGGGCTGGGGCCCTGGGCTTGGCTCGAGTTCTCCTG
CTGGTGAGGCTCCGGATCTCAGGAGCAGCCCTGAGTCTGCTTCCCAGGCTGCCCTGCCAGGCCTGCAGCC
TCCCCAGCCAGGGCTGCTCTCTGCTGTCCCCATTAGTGCCTGGCCCTGCATTATGCCCCCACACCC
CCTCAGGCCCTGTGCCTGGACTTTGGGGCTGGCAGCTGAAGCCTTGGATCCTGGGCCAGCTGCCGGCACA
CAGCTAGGCAGACTCTCCACCAGGTGCCCTGCCAGGCCTCCTAATCGGGGGCAGACAGGCAGGGAGGG
TGTGGCTGGGCTGGGCTGGGCGGGGCGGCCTGGGGCAGGGGTGTGGCCCCTAAATGTCCCCAACCTCAGAG
GGACCTAGAGTCTGAGCCTCCAGTAGCTTCTCTGGGCCTGGCAGAGGTAAGGGGGAGGCAACCCTGGAGT
GTCTGGAGGCCATGGCTGGCTGAACCCTGGATGCCTTTTCTTCCGCGTCCCATGAATGAAAGCTGTCTG
GGCCTTCACTTCTGCAGACAGGGACAAACAGCTCCATGCTGTTTGTCTCCAGTGCAGCCGTGCTGGGAGG
GTCTGGGGGAGCTTCTTACAAGGAGAGACTCCTGCTGCTTTGGAAAATGAGAAAAAATAGGGGTCTAACCC
CTCTCCTCCCATTTTACAAGTGGGAAATGAGGCGTGAAAGGAGAGGCGTCTGGGTACTCCGTGGGTCTG
GGGTCCAGGGAAGGGCCTGTATGGGGGAGGGAGCTGGGAGGGGACGGTGTCTGGCTCTACCCCTGTGGGGT
GGGGAGGTGGGGCTCCCCTGTATCACAGGACATCCCCCTGAGAGGTCCCTCATATGTCTGGGTCTGTGG
GTGGGGGACTAACTGCGCAATGTAGTTAGGTGCTCAATAAACCGGAGTTGCCGCTGAAAAAAAAAAAAAAAA
AAAAAA

LDPPGDSTGSRQLRLLGWIRVPAGAVGGPRGLHCS PDGLLFLTAGAAPCVHVL DLEGRPICLLPCRTPGSG
AFVPEDVAVTASGLVVSDPIHGAVHALQHTARDPGGHWVTVGTF LSPRGLAVDALNRLLVTDYLP GAVHS
FSLGPAWEPLAPASMLGLEGPCWVGPGPDGGLAVSEEF GDVRLFGSARQPLGSLGGWTGHTFGCPAGICSN
SEGNVIVADEQRRQVTLFPRAGPPICLVSEGLGQPLGVACAPQGQLLVADAKDNSIKVYQGLKELA

AUG initiation = 12.6 kDa
CUG initiation = 28.6 kDa

+++++

#8

NM_153756

AUA initiation in humans - in all others, including gorilla and chimp, there is AUG in place of the AUA

FNDC5 fibronectin type III domain containing 5

Synonyms: FRCP2; FNDC5

GCGGCCCGCCGGCGCCGAGCCGCGTCCCCCTGCGCCGCCCGGGCCTGCCGGCCGAGGAGCCACC^{ATA}ATAC
ACCCCGGGTTCGCCGAGCGCCTGGCCGCCCGCGCCCGCGCCGCTCCGCCTGTGGCTGGGCTGCGTCTGC
TTCGCGCTGGTGCAGGCGGACAGTCCCTCAGCCCCAGTGAACGTCACCGTCAGGCACCTCAAGGCCAACTC
TGCAGTGGTGAAGCTGGGATGTTCTGGAGGATGAGGTTGTATCGGATTTGCCATCTCCCAGCAGAAGAAGG
ATGTGCGGATGCTGCGCTTCATCCAGGAGGTGAACACCACCACCCGCTCATGTGCCCTCTGGGACCTGGAG
GAGGATACGGAGTACATAGTCCACGTGCAGGCCATCTCCATTAGGGCCAGAGCCCAGCCAGCGAGCCTGT
GCTCTTCAAGACCCCGCGTGGAGGCTGAGAAGATGGCCTCCAAGAACAAGATGAGGTAACCATGAAAGAGA
TGGGGAGGAACCAACAGCTGCGGACAGGCGAGGTGCTGATCATCGTCTGGTCTGTTCATGTGGGCAGGT
GTCATTGCCCTCTTCTGCCGCCAGTATGACATCATCAAGGACAATGAACCCAATAACAACAAGGAAAAAAC
CAAGAGTGCATCAGAAACCAGCACACCAGAGCACCAGGGCGGGGGCTTCTCCGCAGCAAGATATGA^{AA}AAAC
CTTTTCAGTGCTTGCCTCAGCAGCTAAGAAGACAGACAGTAGAGAATGTGAGAGGATCTCATGGTCTGA
TGATGATTATCCAACAAACATCTGGCCCTCTCTACATCTCTTCCCTCCATCTCCTTGTACCCCTCTGGCTTA
CTGTCTCTCTCTGGCGCACTTCTCTGAAGCCTCTTATTAACCTCCCATCTCCAGAAGCACCTCAACAATGT
CAGTGGCTGAGGCTGCACTCAGAGGGATGACTGCTGGGGGTAGACTGGGTGCCAGGGGCCATGGGCCCAGG
ACCCAGTCTTGGCCATTAGTTGAGTGAAGGCTGGGTTTGAAGGCAAAAAGACAAGACATCCA
GGCAGGCTTCTCTTTTCTTCCACAAGGGACAAGAGCTTGGCTTATTTAGGCTACAGCCCTGCTGCTGCT
CCCTTCTTCTCTGCTGCTTCCAGCCTTGCAAGAAGCTATTACAATTAGGCCTGCTTCTCTC
ATTTTTTCTCTCCAGTTTCCAACAAGCCCTCAGTGAACATCATTGAAGCGTACTGCTGCTGCAGGG
AGAAGGATTCATTTTTCTTCTCAGCTGGTCCCCAGGCCACGGGCACAGGGAGAGGGACAACCTGCAGCAG
TGGGGAGGAGGCACAGCTAGCTGCACAGTTCTCTTCTCTTCTGCTTAGTCAAGGAGGCTGCACT
ACAAACCCAAATTCTGCAAAAAAATAAAAAATAAGCCACAAAACATAAAGGCCTGGCCCCATTCTGAAAAG
GCAAAGCTGCATGAGACACAGCCTTCTGCCTCTCGCCTCTCTGGACTGGCTTCTCTTTGAGAAAATGC
ACAAAGCCCTGGGAGATGACAAGCACAAGGACTGACTCAAGCTGTGTCTTTTCCAGACCAAGGAACATCAGAG
AAGCTGTGGGGCTGCCTGCCAGGCAGGATCATGGCTGCCATCAAGCCTTTTCTGGATCCAGCCATCAAGGA
CATGTTTGTGGTGTGATGCACACTTTTGAAGCGTGTAAAGATGTTACCTGGTTTGTCTCTTTTGGAAAACA
AAAATCAGAAGGCTGCATTCTAGAGGGCAGAGAAATCCCCGAAGACTGAGCTGGTTGCCTGCATCCTCT
ATCTTCTTTGACCCTTATGACTGAAAGATCATCAGTTTGAAGGTAAGTGGTCCAATTTATTTAGGAAGTAT
CTCTTGGAGTTTCAAAAATGCTAGCTTGGACAACCTGAAAAGTACATCACAGCTGGCATTCTGGGGGCTAC
CAAAACACCCCTTCTGGAGTAGAAGCTGCTGGAAGGCAGGCCTGAGCCATTACCACGGACAGGAAGAGCA
GCTCTGGCTATCACCCTGGCCTCTGGGGTCTTCATATCTTGGCATCTCATCCAGGGTTCATGAAAAGTTA
CCCAGGGTCTCATGTCTTCTTCTAGAGCCTGAGTGGTGTGAGGTGACAGGTCTCTCTCTCCACTGCCCT
TTCTGGTTTAAAAAATGGTGTCTTATGAGGGAAGGTAGACTCTTCCCTAGGACTGACGAGTTACGGCTGC
CAGATGCCTGCATGGGAAGAGGTGGACATCTGCATCTTCCATTGGTGGTCAAGGATGGGTGTGGGAGAACC
ACACCTAGTGAAGCCTGGTACTCAGTAAATATTTGTTGAAATGAATGATAAGAGCATTGGTCCCCAAGCC
AGAGAGCCAGAAGCCATCACCCAATGACCCCTTCTTCCGGTCTACAAGAGCTCTCAAGGCTGGGTCT
GCCACCCTCTGCTTTGCCAAGTGTGACAGCACTGGGGAGGAGAGACAGGATAAAGGGCAGATGTGAGCA
ATACTAAGGGCTTCTCATGGGAGGGCATGAGGCTCCACTCATTGTCTTGTGACTTCCATCCCTGCTGAAT
GGGGCTGCAAGGCCAAGGCTCCTTAGGGGAGAGGTCTTACCTCTGATCCACTTAGAGCAATAACCACTTT
TAAATGTAAAATAAAAAAGACAAATGAAAAGGCCAAAAA

IHPGSPSAWPPRARAALRLWLGCVCFALVQADSPSAPVNVTVRHLKANSVVSWDVLEDEVVIGFAISQK
KDVRMLRFIQEVNTTTRSCALWDLEEDTEYIVHVQAIISIQQSPASEPVLFKTPREAEMKASKNKDEVMTK
EMGRNQQLRTGEVLIIVVFLFMWAGVIALFCRQYDI IKDNEPNNNKEKTKSASETSTPEHQGGLLRSKI

AUG initiation = 15.5 kDa
AUA initiation = 23.6 kDa

+++++

#9

NM_006688

Conserved in vertebrates

C1QL1 complement component 1, q subcomponent-like 1

Synonyms: CRF; C1QRF; C1QL1

GCGAGGCAGGAGCCGGCGGCTGGGCTCCGCAGCGCAGCCAGCGCAGCGCGGGCGCCCCGGGCCCCAT
 GCCCGCAGCCCCCGCGACCGTCCTTGAGCGCGGGCGCCTAGCCCCGCGCCCCCTGCCCGCCGGCACCATTG
 CCCCAGCGCGCGGCCGGGGCGGCCCGGGCGCTCCCCAGGCTCCGCGCGGGCCGAAAGACGCTGCTAGCGGCC
 GCCCGGGGTGTGGTGATGCTGCTGGTGCTGGTGGTGCTCATCCCCGTGCTGGTGAGCTCGGGCGGGCCCGGA
 AGGCCACTATGAGATGCTGGGCACCTGCCGCATGGTGTGCGACCCCTACCCCGCGCGGGGCCCGGGCGCCG
 GCGCGCGGACCGACGGCGGGCAGCCCTGAGCGAGCAGAGCGGGCGCGCCCCCGCCTTCCACGCTGGTGCAG
 GGCCCCCAGGGGAAGCCGGGCCGACCCGGCAAGCCCGGCCCTCCGGGGCCTCCCGGGGACCCAGGTCTCTCC
 CGGCCCTGTGGGGCCGCCGGGGGAGAAGGGTGAGCCAGGCAAGCCGGGCCCTCCGGGGCTGCCGGGCGCGG
 GGGCAGCGGCCCATCAGCACTGCCACCTACACCAGGTGCCCGCGCTGGCCCTTCTACGCCGGCCTCAAG
 AACCCCCACGAGGGTTACGAGGTACTCAAGTTTGACGACGTGGTCAACAACCTAGGCAACAACCTACGACGC
 GGCCAGCGGCAAGTTTACGTGCAACATTTCCGGCACCTACTTTTTTACCTACCATGTCCTCATGCGCGGCG
 GCGACGGCACCAGTATGTGGGCAGACCTCTGCAAGAATGGCCAGGTGCGGGCCAGTGCTATTGCCAGGAC
 GCGGACCAGAACTACGACTACGCCAGCAACAGCGTGATCCTGCACCTGGACGCCGGCGACGAGGTCTTCAT
 CAAGCTGGATGGAGGCAAAGCACACGGCGGCAACAGCAACAATAACAGCACGTTCTCTGGCTTCATCATCT
 ACTCCGACTGAGCTCCCCACGTCTCCCTCCACCCACGTCCCTCACCCGCGGGGTCCCCTCCGGGCGGGGC
 AGACGATGACTCGCCCCCTCGCCACCCGCTCGCTGCCCGGCCCTCCCCGGCTATGACGCCCCCGGCCCGTG
 CTCAACACCGCCTGGGCCACAGCTAGGCCCTCCACCGGCTCGCTGCAGAGCCGGGCCAGCGCGCCCTGT
 CCCCCTGCCAGGGAACCGGGGTTGACCGCCCCCGCCAGCCCGCGCTATATATTTGTACAATAGGACTGTT
 TACTGCCACCTCCGCTGCCAGCCACCCAGCCTGGGGAGAGGTGCGGGCGGGGGTTTGTCTTCTGCG
 CTCTGAGATGAGCTGCCCTCGGCTCCCTCCGGGGTGGCGCGCCGGGGGAGGGGGGAGTTGGGGGCTGGAT
 AGCTTCCAGCACCTCAGAGCCCCCGCCGGCTGTGCCCGTCTGACCAAAGTTATAATAAAAACATTTT
 CACCCCGCAAAAAAAAAAAAAAAAAA

IAPTARPGGPALPRLRAGRKTLAAAAGVVMLLVLVVLIPVLVSSGGPEGHYEMLGTCRMVCDPYPARGPG
 AGARTDGGDALSEQSGAPPPSTLVQGPQKPKGRGTGKPGPPGPPGDPGPPGPPVGGPKGEPKPGPPGLPG
 AGGSGAISTATYTTVPRVAFYAGLKNPHEGYEVLFKDDVVTNLGNNDYDAASGKFTCNIPGTYFFTYHVLMR
 GGDGTSMWADLCKNGQVRASAI AQDADQNYDYASNSVILHL DAGDEVFIKLDGGKAHGGNSNKYSTFSGFI
 IYSD

AUG initiation = 26.4 kDa
 AUU initiation = 29.4 kDa

+++++

#10

NM_145008

ACG initiated extension conserved in vertebrates

YPEL4 yippee-like 4 (Drosophila)

Synonyms: FLJ30213; MGC102723; MGC138324; YPEL4

AGTGTTATGATGCAGTTCACAACACACAGCCACATTACCCACAGACCGAGGTACAGAACGAGAGACAAC
 CTCTGCCCCCCAGCAGCTGGCCAGCTTTGCAGCCCCAGTCTTGAGCCCCAACTACCTCCCCCACCCA
 CCCCCATCCCCCTTCCCAATTGAAGGAGCGGAAAGAGAAGAGAGAAGAGTGAAGAGTGAAGAGAGATTGAGAGATTG
 AGAGAGAGAGAGAGATAGACGGAGATCTCTGGAGCAGACCTCAAGGTGACTTCTATTTCTATCTGTTT
 TCGTCTGGGGGGGCCCTGGCCGGGCAGCCCCCAACACTTCTCCTGCCCTGAAACACGGCTCTAGCCAACC
 TGCTCCGCTGCTTACCTGCGACCGTCTCTGCGGGGGCTGCACGGCGCCAGCCCCCTCCAGCCCACCAGGGC
 ATTGTCTCCAGCCCGTATGCCAGCTGTGACCCCGGTCCGGGCCCTGCCTGCCTCCCCACCAAGACTTT

CCGCAGCTATCTGCCCGCTGTCACCGCACTTACAGCTGTGTCCACTGCCGTGCACACCTGGCCAAACACG
ATGAGCTTATTTCCAAGTCCTTCCAAGGGAGCCATGGCCGAGCCTACCTGTTTAACTCCGTGGTCAACGTG
GGTTGCGGGCCAGCTGAACAGCGCCTCTTGCTCACGGGGCTCCACTCGGTAGCTGACATTTTCTGTGAGAG
CTGCAAAACCACACTGGGCTGGAAATATGAGCAAGCTTTTGAGACGAGCCAGAAGTACAAGGAAGGGAAAT
ACATCATTGAAATGTACACATGGTGAAGGACAACGGCTGGGACTGAGGGGCTCAGGCAGGGTGTGCCCTT
CCTCCGCATGCCCCCTCCCTCCCCACGGCCCTGCCAAGCAGTCTATAACCAGCATGAGTACTGCCCCACCCCT
GGGGGAAACCTGGCTCCAACCAACCCCTCCCTGCCTCCACCATATCCACTACCAGGCACCCCTTTAGAACA
GGGGTCTGGGGGTACCCAGGGGTGTTAAGGCTCAGGAGTGGGCAGCAGTACAGGGAGAGACAGAACTGGGG
GAAAGGGATGGTTGTGGGTCTTTCTGTTCCCAAGATCCTGAACATGGAAGCGATGGCAGGGCATAGACTCA
GGCAGAGGGATTGTGGGAGGAATCCGTTTTTGTCTCCACCTCTTTTTGAGTGAACAGAGGACAAACCTTGG
GTCACAGGGCAAGTAGATCATGGACCACAGAACAGCAGATGAGAAAAGACTTGGGTTGGAGTGAATTTCTG
GTCTCAGACACCAGGAGACCAGAGTCTCTGAGGATGAAGTTTTCTACCCCTATTTGTAGGGAAAAGGACTT
GAGTGCAGGGAAAACCTCAAATCCCAGGCCCTGGGAAATAGTAAAATAATCAAAGGGTTTTCCATTTCACTC
CACTTGTAGTTTTATCTTGGCACTGAAGAGGCACCTTTCGAGTATCTAACTTTTTGCCATTGGGTGGGGTGGG
GACAGCTGCTCGCGGAACAGCCCCTAGTCGGCTGCTTCCAGAGTAAGCAGTCTTTATGGGCTTTTCTCTGAG
GCCCAGTCACTGCTCCTGGGACCCAGTCCCCTGGAGGGGAGGTGGAAAATCAGTGCTACGGGGCCAGTCTT
TCCCGTGGCTGCCACCAGCGAATGAAACTTTTTGTATGATACATAAAGTGCTTGAGTCTATTTTTTAATAAAA
AGGGAAAAAGCAACTTGAAAAA

TALANLLRCFTCDRLCGGCTAPAPPAHQIIVLQPVMPSCDPGPGPAACLPTKTFRSYLPRCHRITYSCVHCRA
HLAKHDELIKSKFQSGHGRAYLFNSVNVVNGCGPAEQRLLLTGLHVSADIFCESCKTTLGWKYEQAFETSQK
YKEGKYIIEMSHMVKDNGWD

PROBABILITY of export to mitochondria: 0.3552 with extension
PROBABILITY of export to mitochondria: 0.2821 w/o extension

AUG initiation = 14.3 kDa
ACG initiation = 17.9 kDa

+++++

#11

NM_182528

Non-AUG initiation conserved in vertebrates

C1QL2 complement component 1, q subcomponent-like 2

Synonyms: CTRP10; C1QTNF10; C1QL2

GCTGATGACATGAGGGCTCCGTCTCCCAGTGATGGCAGCGCGCTGCTTCGCCGCCTCCGCCGCTCAGC
CCCGGACTCCTTACGTCAGGGTAGCGGGGTCCCCCTCCGCGCGGGAGCCAGCGAACAGCGAGAGAGCACA
GCAGAGCGCGCCGCGGAGCCGGGGCGCCCTCACTGCGCTAGGAGCCCCACTAAACCCAGCGGAGCGGAGCC
TGGCGGGAGGCAGCGCCGCGGAGCCAGCGCCGACGCCAAGCAGACTCCCGGCCAGCGCAAGCACTCC
CTGGCCGGCGCCGACCCCTCGGGGCGCCGATTCTGTTGTGTGCCCCACGTCATGCGCGCGGGCGTCCGC
GGTCTCCCAGCAGCCCCAGCGCGGTGGGCCAGGCTCAGAGGTCCTCGCTGAAGTAGTTG
GGTACCCGGGGCTGGGGTGCACAGTCCGGGGCGCGGCCAGGACCCGCGGAGCCCGTCCCGAGCGCGGG
GAGCGGGCCGCGCCGCGCCACCATTACCTCCCGGGCGCAAGGAGGAGCTGGTGGCGGTGCGCTC
CCGGCTGTGGCAGCGCGCGCGCTGCCTGCGCTGGCGGCCGTCCGGCTACTCTTGGCCATGGCGCTCGGGC
TGCTCATCGCCGTGCCGCTGCTGCTGCAGGCGCGCCCCGAGGCGCCGCGCACTATGAGATGATGGGCACC
TGCCGCATGATCTGCGACCCCTTACACTGCCGCGCCCGCGGGGAGCCCCGGGTGCAAAGGCGCAGCCACC
CGGACCCAGCACCGCCGCCCTGGAAGTCATGCAGGACCTCAGCGCCAACCCTCCTCCTTTTATCCAGG
GACCCAAGGGCGACCCGGGGCGACCGGGCAAGCCAGGGCCGCGGGGGCCCCCTGGAGAGCCGGGCCGCT
GGACCCAGGGGCCCTCCGGGAGAGAAGGGCGACTCGGGGCGGCCCGGGTGGCAGGGCTGCAACTGACGGC
GGGCACGGCCAGCGGCGTGGGGTGGTGGGCGCGGGGCCGGGGTAGGTGGCGATTCCGAGGGTGAAGTGA
CCAGTGCCTGAGCGCCACCTTCCAGCGCCCCAAGATCGCCTTCTATGTGGGTCTCAAGAGCCCCACGAA
GGCTATGAGGTGCTGAAGTTCGATGACGTGGTACCAACCTCGGCAATCACTATGACCCACCACGGGCAA

GTTTCAGCTGCCAGGTACGCGGCATCTACTTCTTACCTACCACATCCTCATGCGCGGGCGGCGACGGCACCA
GCATGTGGGCGGACCTCTGCAAGAACGGGCAGGTCCGGGCCAGCGCCATTGCACAGGACGCCGACCAGAAC
TACGACTACGCCAGTAACAGCGTGGTGCTGCACTTGGATTAGGGGACGAAGTGTATGTGAAGCTGGATGG
CGGGAAGGCTCACGGAGGCAATAATAACAAGTACAGCACGTTCTCGGGCTTTCTTCTGTACCCGGATTAGG
GGCGCGGGGGGTGCGAGGCGGGGTGGCTGCAGGCCGCCCGGTCTCCGCCCGGGCGCGGCTCCTTGGCAAAG
GCCACTCTCGATTATAACTTCTGACATCTCCTTTGGAAAAGACAAATCCCTGCGTCTCCTGCCCTGCCCC
GCTCCTGGCCTCAGTGCCTGCGACCCACCAGCTCAGGGCTGTGCTCCTGGTCTCCATCCCCATCCCGG
CAAGGGAGGAAGGGACGCCGAGCCCTTGAGGCGGCGGCACAGACTTTGCAAACCTGATTAGACTGGACAG
GCAGGGCCGGGAGCCTGCCCTCCTCAGACAGCCTCCTCCCAGTGCCTAGAAGCGGAGGGCTCCGGGCCCTG
GCCAGGGAGGTAGGCCAGAGGGAGCGCGGGCTTCTGGGGCGTCTTCTTTGTGACCCGAAATACTTGTGC
AGATTTCCCTGTCCATCAGCCAAAACCCACCCACAGCAGAATTCCAGCAAACAGAAAATTCACCTCTCCA
CACCGCATTCCCTCCTGACTCAGACTCACCGCATGCATTAATTATGTTTTTACTATG

ITSPGGKEELVAVASRLWQRRRRACLAAVGVLLAMALGLLIAVPLLLQAAPRGAHYEMMGTCRMI CDPYT
AAPGGEPPGAKAQPPGPSTAALEVMQDL SANPPPF IQGPKGDPGRPGKPGPRGPPGEPGPPGPRGPPGPK
GDSGRPLPGLQLTAGTASGVGVVGGGAGVGGDSEGEVTSALSATFSGPKIAFYVGLKSPHEGYEVLKFD
VVTNLGNHYDPTTGKFCQVRGIYFFTYHILMRGGDTSMWADLCKNGQVRASAI AQDADQNYDYASNSV
LHLDSGDEVYVKLDGGKAHGGNNKYSTFSGFLLYPD

AUG initiation = 29.5 kDa
ACG initiation = 33.0 kDa

+++++

#12

NM_000314

CUG initiation conserved in mammals

PTEN phosphatase and tensin homolog

Synonyms: BZS; DEC; MHAM; TEPI; MMAC1; PTEN1; 10q23del; MGC11227;

PTEN

CCTCCCCTCGCCCGGCGCGGTCCCGTCCGCTCTCGCTCGCCTCCCGCCTCCCCTCGGTCTTCCGAGGCGC
CCGGGCTCCCGGCGCGGCGGGGAGGGGGCGGGCAGGCCGGCGGGCGGTGATGTGGCGGGACTCTTTATGC
GCTGCGGCAGGATACGCGCTCGGCGCTGGGACGCGACTGCGCTCAGTTCTCTCCTCTCGGAAGCTGCAGCC
ATGATGGAAGTTTGTAGAGTTGAGCCGCTGTGAGGCGAGGCCGGGCTCAGGCGAGGGAGATGAGAGACGGCG
GCGGCCGCGGCCGGAGCCCTCTCAGCGCCTGTGACGAGCCGCGGGGCGAGCGCCCTCGGGGAGCCGGCC
GGCCTGCGGCGGCGGCGGCGGCTTTCTCGCTCTCTTCTTCTTCTTCTAACCCTGCAGCCTCTTCTCCT
CGGTTCTCCTGAAAGGGAAGGTGGAAGCCGTGGGCTCGGGCGGGAGCCGGCTGAGGCGCGGCGGCGGCGG
CGGCACCTCCCGCTCCTGAGCGGGGGGAGAAGCGGCGGCGGCGGCGGCGGCGGCGGCTGCAGCTCCAGG
GAGGGGTCTGAGTCGCTGTACCATTTCCAGGGCTGGGAACGCCGAGAGTTGGTCTCTCCCCTTCTAC
TGCCTCCAACACGG
GCCGCCGACCCCCCGTGGCCCGGCTCCGGAGGCCGCGGCGGAGGCAGCCGTTCCGGAGGATTATTCTGTC
TTCTCCCCATTCCGCTGCCGCGCTGCCAGGCCTCTGGCTGCTGAGGAGAAGCAGGCCAGTCGCTGCAAC
CATCCAGCAGCCGCGCAGCAGCCATTACCCGGCTGCGGTCCAGAGCCAAGCGGCGGCGAGCGGAGGGGCA
TCAGCTACCGCCAAGTCCAGAGCCATTTCCATCCTGCAGAAGAAGCCCCGCCACCAGCAGCTTCTGCCATC
TCTCTCCTCTTTTCTTTCAGCCACAGGCTCCAGACATGACAGCCATCATCAAAGAGATCGTTAGCAGAA
ACAAAAGGAGATATCAAGAGGATGGATTGCAGTTAGACTTGACCTATATTTATCCAAACATTATTGCTATG
GGATTTCTGCAGAAAGACTTGAAGGCGTATACAGGAACAATATTGATGATGTAGTAAGGTTTTTGGATT
AAAGCATAAAAACATTACAAGATATAAATCTTTGTGCTGAAAGACATTATGACACCCGCAAATTTAATT
GCAGAGTTGCACAATATCCTTTTGAAGACCATAACCCACCACAGCTAGAATTATCAAACCTTTTGTGAA
GATCTTGACCAATGGCTAAGTGAAGATGACAATCATGTTGCAGCAATTCAGTGTAAAGCTGGAAAGGGACG
AACTGGTGTAAATGATATGTGCATATTTATTACATCGGGGCAAATTTTTAAAGGCACAAGAGGCCCTAGATT
TCTATGGGGAAGTAAGGACCAGAGACAAAAAGGGAGTAATTTCCAGTCAGAGGCGCTATGTGTATTAT
TATAGCTACCTGTTAAAGAATCATCTGGATTATAGACCAGTGGCACTGTTGTTTACAAGATGATGTTTGA

AACTATTCCAATGTTTCAGTGGCGGAACTTGCAATCCTCAGTTTTGTGGTCTGCCAGCTAAAGGTGAAGATAT
ATTCCTCCAATT CAGGACCCACACGACGGGAAGACAAGTTTCATGTACTTTGAGTTCCCTCAGCCGTTACCT
GTGTGTGGTGTATATCAAAGTAGAGTTCTTCCACAAACAGAACAAGATGCTAAAAAAGGACAAAATGTTTCA
CTTTTGGGTAAATACATTCTTCATACCAGGACCAGAGGAAACCTCAGAAAAAGTAGAAAATGGAAGTCTAT
GTGATCAAGAAATCGATAGCATTTCAGATATAGAGCGTGCAGATAATGACAAGGAATATCTAGTACTTACT
TTAACAAAAATGATCTTGACAAAGCAAATAAAGACAAAGCCAACCGATACTTTTTCTCCAAATTTAAGGT
GAAGCTGTACTTCACAAAAACAGTAGAGGAGCCGTCAAATCCAGAGGCTAGCAGTTCAACTTCTGTAAACAC
CAGATGTTAGTGACAATGAACCTGATCATTATAGATATTTCTGACACCACTGACTCTGATCCAGAGAATGAA
CCTTTTGATGAAGATCAGCATAACAAAATTACAAAAGTCTGAATTTTTTTTTATCAAGAGGGATAAAAACAC
CATGAAAAATAAACTTGAATAAACTGAAAACTGGACCTTTTTTTTTTTAATGGCAATAGGCATTTGTGTGAGA
TTACCAGTTATAGGAACAATTCTCTTTTCCAGCAACTCTGTTTTTACCCTATACATCCACAGGGTTTTGA
CACTTGTGTCCAGTTGAAAAAAGGTTGTGTAGCTGTGTATATACCTTTTTGTGTCAAAGGACAT
TTAAAATTC AATTAGGATTAATAAAGATGGCACTTTCCCGTTTTATTCCAGTTTTATAAAAAAGTGGAGACA
GACTGATGTGTATACGTAGGAATTTTTTCTTTTGTGTTCTGTCCAACTGAAGTGGCTAAAGAGCTTTG
TGATATACTGGTTCACATCCTACCCCTTTGCACTTGTGGCAACAGATAAGTTTTGCAGTTGGCTAAGAGAGG
TTTCCGAAGGGTTTTGTACATTCTAATGCATGTATTCCGGT TAGGGGAATGGAGGGAATGCTCAGAAAGG
AAATAATTTTATGCTGGACTCTGGACCATATACCATCTCCAGCTATTTACACACACCTTTCTTTAGCATGC
TACAGTTATTAATCTGGACATTTCGAGGAATTGGCCGCTGTCACTGCTTGTGTTTGCGCATTTTTTTTTAA
AGCATATTGGTGTCTAGAAAAGGACAGCTAAAGGAAGTGAATCTGTATTGGGTACAGGAATGAACCTTCTGC
AACATCTTAAGATCCACAAATGAAGGGATATAAAAAATAATGT CATAGGTAAGAAACACAGCAACAATGACT
TAACCATATAAATGTGGAGGCTATCAACAAAGAATGGGCTTGAAACATTATAAAAAATTGACAATGATTTAT
TAAATATGTTTTCTCAATTGTAACGACTTCTCCATCTCCTGTGTAATCAAGGCCAGTGTAAAATTCAGAT
GCTGTTAGTACCTACATCAGTCAACAACCTTACACTTATTTTACTAGTTTTCAATCATAATACCTGCTGTGG
ATGCTTCATGTGCTGCCTGCAAGCTTCTTTTTTCTCATTAAATATAAAATATTTTTGTAATGCTGCACAGAA
ATTTTCAATTTGAGATTCTACAGTAAGCGTTTTTTTTCTTTGAAAGATTTATGATGCACCTTATTC AATAGCT
GTCAGCCGTTCCACCCTTTGACCTTACACATTCTATTACAATGAATTTTGCAGTTTTGCACATTTTTTAA
ATGTCATTAACTGTTAGGGAATTTTACTTGAATACTGAATACATATAATGTTTATATTA AAAAGGACATTT
GTGTTAAAAAGGAAATTAGAGTTGCAGTAACTTTCAATGCTGCACACAAAAAAGACATTTGATTTTTT
AGTAGAAATGTCCTACATGTGCTTTATTGATTTGCTATTGAAAGAATAGGGTTTTTTTTTTTTTTTTTT
TTTTTTTTTAAATGTGCAGTGTGAATCATTCTTCATAGTCTCCCCGAGTTGGGACTAGGGCTTCAA
TTTCACCTTCTTAAAAAATCATCATATATTTGATATGCCAGACTGCATACGATTTTAAAGCGGAGTACAA
CTACTATTGTAAAGCTAATGTGAAGATATTATTA AAAAGGTTTTTTTTTCCAGAAATTTGGTGTCTTCAA
TTATACCTTTCACCTTGACATTTGAATATCCAGCCATTTTGTCTTAAATGGTATAAAAATTCATTTTCAAT
AACTTATTGGTGTGAAATTTTCACTAGCTGTGGTCTGACCTAGTTAATTTACAAATACAGATTGAATAG
GACCTACTAGAGCAGCATTATATAGAGTTTGATGGCAAATAGATTAGGCAGAACTTCATCTAAAATATTCTT
AGTAAATAATGTTGACACGTTTTCCATACCTTGTGAGTTTCATTCAACAATTTTTAAATTTTTAACAAAGC
TCTTAGGATTTACACATTTATATTTAAACATTGATATATAGAGTATTGATTGATTGCTCATAAGTTAAAT
GGTAAAGTTAGAGACAACCTATTCTAACACCTCACCATTGAAATTTATATGCCACCTTGTCTTTCATAAAAG
CTGAAATTTGTTACCTAAAATGAAAATCAACTTCATGTTTTGAAGATAGTTATAAATATTGTTCTTTGTTA
CAATTTCCGGCACCAGCATATTA AACGTAACCTTTATTGTTCCAATATGTAACATGGAGGGCCAGGT CATAA
ATAATGACATTATAATGGGCTTTTGCAGTGTATTATTTTTCTTTTGGAAATGTGAAGGTCTGAATGAGGGT
TTTGATTTTTGAATGTTTTCAATGTTTTTGAAGCCTTGTCTTACATTTTATGGTGTAGTCAATGGAAATGGA
AAAATGGCATTATATATATATATATAAATATATATTATACATACTCTCCTTACTTTATTTTCAGTTACC
ATCCCCATAGAATTTGACAAGAATTGCTATGACTGAAAGGTTTTTCGAGTCTAATTTAAAATTTATTTATG
GCAGTATTCATAATTAGCCTGAAATGCATTCTGTAGGTAATCTCTGAGTTTCTGGAATATTTTCTTAGACT
TTTTGGATGTGCAGCAGCTTACATGTCTGAAGTTACTTGAAGGCATCACTTTTAAAGAAAGCTTACAGTTGG
GCCCCTGTACCATCCCAAGTCTTTGTAGCTCCTCTTGAACATGTTTGCACACTTTTAAAAGGGTAGTTGA
ATAAATAGCATCACCATTCTTTGCTGTGGCACAGGTTATAAACTTAAAGTGGAGTTTACC GG CAGCATCAA
TGTTTTCAGCTTTAAAAAATAAAGTAGGGTACAAGTTAATGTTTAGTTCTAGAAAATTTTGTGCAATATGT
TCATAACGATGGCTGTGGTTGCCACAAAGTGCCTCGTTTTACCTTTAAATACTGTTAATGTGTGCATGCATGC
AGATGGAAGGGGTGGAACCTGTGCACTAAAGTGGGGGCTTTAACTGTAGTATTTGGCAGAGTTGCCTTCTAC
CTGCCAGTTCAAAGTTCAACCTGTTTTCATATAGAATATATATACTAAAAAATTTTCAGTCTGTTAAACAG
CCTTACTCTGATT CAGCCTCTTCAGATACTCTTGTGCTGTGCAGCAGTGGCTCTGTGTGTAATGCTATGC
ACTGAGGATACACAAAAATACCAATATGATGTGTACAGGATAATGCCTCATCCAATCAGATGTCCATTTG
TTATTGTGTTTTGTTAAACAACCTTTATCTCTTAGTGTATAAACTCCACTTAAAATGATTAAGTCTCAT
TCTTGTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LERGGEEAAAAAAAAAAPGRGSESPVTISRAGNAGELVSPLLLPTTRRRRRRIQGPGPVLNLPASAAAAPP
VARAPEAAGGSRSEDIYSSSPHSAAAAARPLAAEEKQAQSLQPSRRSSHYPAAVQSQAAAERGASATAK
SRAISILQKKPRHQQLLPSLSSFFFSHRLPDMTATAIKEIVSRNKRRYQEDGFDLDTLYIYPNI IAMGFPAE
RLEGVYRNNIDDVRFLLDSKHKNHKYKIYNLCAERHYDTAKFNCRVAQYPFEDHNPPQLELIKPFCELDLQW
LSEDDNHVAAIHCKAGKGRGTGVMICAYLLHRGKFLKAQEALDFYGEVTRDKKGVTPSQRRYVYYSYLL
KNHLDYRPVALLFHKMMFETIPMFSGGTCNPQFVVCQLKVKIYSSNSGPTRRREDKFMFYFEPQPLPVCEDI
KVEFFHKQNKMLKKDKMFHFWVNTFFIPGPEETSEKVENGLCDQEIDSICSIERADNDKEYLVLTTLTKND
LDKANKDKANRYFSPNFKVKLYFTKTVEEPSNPEASSSTSVTPDVSDNEPDHYRYSDTTSDPENEPFDED
QHTQITKV

AUG initiation = 47.2 kDa
CUG initiation = 64.9 kDa

+++++

#12

NM_139239

CUG initiation conserved in mammals.

NFKBID nuclear factor of kappa light polypeptide gene enhancer in B-cells inhibitor, delta

Synonyms: MGC11314; TA-NFKBH; IkappaBNS; MGC149503; NFKBID

TTCCGCCGAGCGCGACCCGGGGACTCCCAGGCCTGTGGGCGGGCCCTGCCCAGGACTGGGCGGTGCCATAA
CCCCTAGTTTAAAAACTCGCGGGTACCGGACCCAAGATCGGGGACCCGGCGGGCTCCGCGGGGAAACA
GCGAGGCTGGCGCAGCGCCGAGGCCCGCGCCCTGGGGGCCCAATCCACGCCAGGAATCCCCGAGTGAG
CAGGGGTGAGCGCAGCCACTGCCAACGCAAACCGTGAAGAAGCTTCTGGAAGAGCAGAGGCCCGCCAGC
AGCAGCAGCCCGACGCTGGCGGGGTGCAGGGACAATTTCTCCCTCCCCAGAGCAGCCCCTGACCCCATCT
GTGAATGAGGCTGTGACTGGCCACCCTCCCTTCCCAGCACACTCGGAGACTGTGGGTTCTGGACCTAGCAG
CCTGGGCTTTCCAGACTGGGACCCCAACACGCTATGCTGCCTACACTGACAGCCCCTACTCTTGCCCTGCTT
CTGCTGCCGAAAATTTCTGCTCCTGACTTCTACCCACCCTCGGACCCAGGGCAGCCGTGCCCATTTCCC
CAGGGCATGGAGGCTGGACCCTGGAGAGTTTCTGCACCCCTTCCAGGACCCCAACAGTTCCCCGCTGTGGT
CCCTGGACCATCGCTGGAGGTGGCCCGAGCTCACATGCTGGCTTTGGGGCCACAGCAGCTGCTGGCCAGG
ATGAGGAGGGGGACACGCTCCTTACCTGTTTGCAGGCTCGGGGGCTGCGCTGGGCGGCATATGCTGCGGCT
GAGGTGCTCCAGGTGTACCGGCGTCTTGACATTCGTGAGCATAAGGGCAAGACCCCTCTCCTGGTGGCGGC
TGCTGCCAACCCAGCCCTGATTGTGGAGGATCTGTTGAACCTGGGAGCAGAGCCCAATGCCGCTGACCATC
AGGGACGTTCCGGTCTTGACAGTGGCCGCTACCTACGGGCTCCCAGGAGTTCTCTTGGCTGTGCTTAACTCT
GGGGTCCAGGTTGACCTGGAAGCCAGAGACTTCGAGGGCCTCACCCCGCTCCACACGGCCATCCTGGCCCT
TAACGTTGCTATGCGCCCTTCCGACCTCTGTCCCCGGGTGCTGAGCACACAGGCCCGAGACAGGCTGGATT
GTGTCCACATGTTGCTGCAAATGGGTGCTAATCACACCAGCCAGGAGATCAAGAGCAACAAGACAGTTCTG
CACTTGGCCGTGCAGGCTGCCAACCCCACTCTGGTTTACGCTGCTGCTGGAGCTGCCCCGGGGAGACCTGCG
GACCTTTGTCAACATGAAGGCCACGGGAACACAGCCCTCCACATGGCGGGCTGCCCTGCCCCCTGGGCCGG
CCCAGGAGGCCATCGTGCGGCACCTGTTGGCAGCTGGGGCGGACCCCACTGCGCAACCTGGAGAATGAG
CAGCCCGTTACCTGCTGCGGCCCGGGCCGGCCCTGAGGGGCTCCGGCAGCTGTTGAAGAGGAGCCGTGT
GGCGCCCGCAGGCTGTCTCTTAGGACTCAAACCCAGACCCCTGGACTGATTTTCCAGTCCCCACCGTCTCT
GCGGGACAGCCAGCGTATGCTAATGTTGCAAACCCATGATAATGTATGTGAATATCCTGCCATTGGGGTT
TTACATTAATAAACCCAGAATGGCTGCAGAGGGGTGAACAGGCCCAATATTTGGGGTCTGTGATAACCCCT
CTTCTACCCACAAGGAGCCCTCTTGATGATTTCTGTGAAATCGAGGCCCTTGATTGTTTCTGTGAAACAC
CCTGCACCCCTAGTCCTTTCCCACTGAGATCTTTCCGGTCTCTCCCTAACTCAGT

LAQRRGRGPGGPQSTPRNPRVSRGERSHCPTQTVKLLLEEQRRRQQQPDAGGVQGFLLPPEQPLTPSVN
EAVTGHPPFPAHSETVSGPSSLGFDPDWPNTAAAYTDSPIYSCPASAAENFLPPDFYPPSDPGQPCFPQ
MEAGPWRVSAAPSGPPQFPAVVPGPSLEVARAHMLALGPQQLLAQDEEGDTLLHLFAARGLRWAAYAAAEV
LQVYRRLDIREHKGTPLLVAANQPLIVEDLLNLGAEPNAADHQGRSVLHVAATYGLPGVLLAVLNSGV
QVDLEARDFEGLTPLHTAILALNVAMRPSDLCPVRLSTQARDRLDCVHMLLQMGANHTSQEIKSNKTVLHL

AVQAANPTLVQLLLELPRGDLRFTVNMKAHGNTALHMAAALPPGPAQEAIVRHLLAAGADPTLRNLENEQP
VHLLRPGPGPEGLRQLLKRSRVAPPGLSS

AUG initiation = 33.5 kDa
CUG initiation = 48.7 kDa

+++++

#14

NM_001015072

Extension conserved from human to fish but non-AUG initiation is conserved only in mammals. In the second human paralogs, UFSP2, the extension is conserved but is initiated by AUG codon and is part of a larger extension. In-frame AUG codon exists in mouse, Norwegian rat, kangaroo rat and dog upstream of the CUG.

UFSP1 UFM1-specific peptidase 1 (non-functional)

(the “non-functional” designation is apparently based on the fact that it is missing the conserved N-terminal domain of the protein but it is actually there if one starts from the first or second CUG)

Synonyms: UFSP; UFSP1

AGCATTGTGGGAGCTCCTCGGTCCGGTGCCGGTCCGGTGGCTGCCTATTGCGGCCTGCGGTGATCAACGAGGC
CCGGGGAGCGCGTCCCCAGTCTGCGCGCCGGTCTGCGGCAGCTGGCCCAAGACCCGGAGCCGAAAGGAAG
TGTTGGAGCCTGAGGTGCCTCCGCGCCGCTAGGAGGACGCTGTGCCTGGCCTGGGACCTCCGCTCCCGCC
ACCGCCCTGGAGCCGCTGAGGGACGTCCACGTGGGCCTGTCCCGCCGAGCCGCGGCCCTGTCCGCTGGC
GCTGCTCTCGGGCCACTACCTCTACTACCACTACGGCTGCGACGGCCTGGACGACCGCGGCTGGGGCTGCG
GCTACCGCACTCTGCAGACGCTGTGCTCGTGGCCAGAGGGCCAGCCCGCGGGCGTACCTGGACTGGCCGCC
GTACAGGCGGCCCTGGAGGACATGGGCGACAAGCCCCCGGCTTCCGGGGCTCCCGGGACTGGATCGGCTG
CGTGGAGGCCAGCCTCTGCCTCGCTCACTTCGGAGGGCCCCAGGGACGCCTCTGCCACGTACCCCGGGGAG
TGGGGCTGCACGGGGAGCTGGAGAGGCTTTACTCGCACTTCGCAGGGGGTGGGGGCCAGTCATGGTTGGG
GGGACGCAGATGCCAGGTCCAAGGCCTTGCTGGGAGTCTGCGTAGGGTCAGGCACGGAAGCCTATGTCCT
GGTATTGGACCCTCACTACTGGGGCACTCCAAAAAGCCCCAGTGAACACTACAGGCTGCTGGGTGGGTGGGCT
GGCAAGAGGTGAGTGCAGCCTTTGACCCCAACTCCTTCTACAACCTGTGCTTGACCAGCCTTAGCTCCCAA
CAGCAGCAGCGCACCTTGGACTGAGGACGAAGTTACAGAAGTACAGATTCTCGGGTCCAGACACGCACCTA
TGTACCTCCCACTGGTGTCCCTGCAAAGCCTGGCGCTTTTGACATCAATAATAAAAGTGGCAGGGCTGAGC
AAAAAAAAAAAAAAAAAAAAA

LEPLRDVHVGLSPPSRGPVRLALLSGHYLYYHYGCDGLDDRGWGCGYRTLQTLCSWPEGQPAGVPGLAAVQ
AALEDMDGDKPPGFRGRSDWIGVEASLCLAHFGGPGQRLCHVPRGVGLHGELERLYSHFAGGGPVMVGGD
ADARSKALLGVCVGSGETEAYVLVLDPHYWGTPKSPSELQAAGWVGWQEVSAAFDPNSFYNLCLTSLSSQQQ
QRTLD

AUG initiation = 15.0 kDa
ACG initiation = 23.2 kDa

+++++

#15

NM_020153

AUA initiated extension in mammals, AUG initiated in other vertebrates
C11orf60 chromosome 11 open reading frame 60

Synonyms: IFT46; C11orf2; FLJ21827; C11orf60

GTGACTCCTTGATCTTCTTCTGCGTGGAGAGCCTTCGCGGGTGAGGCTTAACGCGCAGGAGGTCTCACGA
GAGTGGAAAGCAACTCTCGCGAATTTTAAAATTTATCTTTTTGCCTAGCGACTGACAACAGGCTGGTTGCTT
GGCGTGGAATCCTAAAGTGGCCTGGCTTTGAGACTGGAGTGAGACCCAGCCCTAGGCTGGGGTTCTTTCC
ATTATAGAGGAGACGGATTGAGAAGGGCTACAGACCAAGGTTGTTGAAAACCAAACATATGATGAGCGTCT
AGAGATTAACGACTCCGAAGAGGTTGCAAGTATTTATACTCCAACCCCAAGACACCAAGGACTTCCTCGTT
CTGCCCATCTTCTAACAAGGCTATGGCTGATAACAGCAGTGATGAGTATGAAGAGGAAAATAGCAAGGTC
CTAAGGGAGGGCATGCCACAGGCTCCAGGCCACAGAGGCCAAAGACATGGACCCTGTTCCACCTGCCCTGC
AAGTCTCAAGTGCCACCAGACCCCTTCTCATGTACTTGAGAGGGTGGGATGGTACAGAGAGAGCCAGAAGC
ACAGAAAGGAGAAGAAGGAGACCTCACAGTTGACACCTCAACGGGGCTTTAGTAAAATGAGGATGACGAT
GATGATGATGATGATTGATCTGAAACTGATTCTGATTCTGATGATGATGATGAAGAGCATGGAGCCCTCT
GGAAGGGGCTATGACCCTGCAGACTATGAGCATTGCGCAGTTTCTGCTGAAATTAAGGAACTCTTCCAGT
ACATCAGTAGGTACACACCTCAGTTGATTGACCTGGACCACAACTGAAGCCTTTCATTCTGATTTTATC
CCAGTGTGCGGGATATTGATGCATTCTTAAAGTCCCACGTCCTGATGGAAAGCCTGACAACCTTGGCCT
ATTGGTATTGGATGAACCTTCTACAAGCAGTCAGACCTACGGTGCTCTCACTCTGGTTAACAGAGAATT
CTAAGCAGCAACATCACACAACATATGAAAGTAAAAGCCTAGAAGATGCAGAAAAGAATCCCAAAGCC
ATTGACACGTGGATTGAGAGCATCTCTGAATTACACCGTTCTAAGCCCCCTGCGACTGTGCACTACACCAG
GCCCATGCCCGACATTGACACGCTGATGCAGGAATGGTCCCCGGAGTTTGAAGAGCTTTGGGCAAGGTAA
GCCTGCCCACGGCAGAGATTGATTGCAGCCTGGCAGAGTACATTGACATGATCTGTGCCATTCTAGACATC
CCTGTCTACAAGAGTCGGATCCAGTCCCTCCATCTGCTCTTTTCCCTCTACTCAGAATTCAGAAGCTACA
GCATTTTAAAGCTCTCGCTGAAGGCAAGAAAGCATTCACTCCTTCATCCAATTCCACCTCCCAAGCTGGAG
ACATGGAGACATTAACCTTCAGCTGAGACTTCCCAAGCTGCTGTTTCAAGGCTGAGCTGGCCCCTCTGC
CCCAGCTGAGATGGACAGATCGTTGTCAGCTACTTGATGTCCTTGCCCATGCCACAGCTTGGCTCAGGGC
AGTGCATGTCCTGCTGCCCTCTCTGCCAGAGGGCACAGAACATGTTTGTAAATGAACCTGCCTGCCTCAG
ATTGCTGTCCCCGGGAGTTAATGCATCTACACCCTGTGGGGATTTGAGTTATAAGAATTGGAATTTCTG
AGATCCCATGGAGTTAGATTGGGAGGAAAGCTTAAAAGATGTCCTTTTTGTGAGAGGGATGGAATTTGTT
TCTTTTCAATTCGTAAGTTAGTGAGTAAAGATTTTATAAATCAAAAAAAAAAAAAAAAAAAAA

IEETDSEGLQTKVVENQTYDERLEINDSEEVASIYTPTPRHQGLPRSAHLPNKAMADNSSDEYEEENSKVL
REGMPQAPGHRGKMDMPVPPAPASLKKCHQTPSHVLERVGVYRESQKHKRKEKKETSQSLTPQRFSENEDEDD
DDDDSSSETSDSDDDDEEHGAPLEGAYDPADYEHLPVSAEIKELFQYISRYTPQLIDLHKLKPFIPDFIP
AVGDIDAFLLKVPKPDGKPDNLGLLVLEPSTKQSDPTVLSLWLTENSKQHNIHQHMKVKSLEDAEKNPKAI
DTWIESISELHRSKPPATVHYTRPMPDIDTLMQEWSPEFEELLGKVSLEPTAEIDCSLAEYIDMICAILDIP
VYKSRIQSLHLLFLSLYSEFKNSQHFKALAEKKAFTPSSNSTSQAGDMETLTFS

AUG initiation = 40.0 kDa
AUA initiation = 46.2 kDa

+++++

#16

NM_001005404

ACG initiated extension conserved in vertebrates

YPEL2 yippee-like 2 (Drosophila)

Synonyms: FKSG4; DKFZp761C2021; YPEL2

GCCGCGGCGGTGGCGGAGACTGTGGCTTTAAGAGCGTGCCGGGAGCCGAGCCCCAGCCGGGCCGCGCTTC
GCCGCTGCGCACCCAGCGGAGCCAAGCCCCACGCTGGCCGGACAGGGCCGCTGTGCGCGGGCTGCTGAG
AAGTAGCCCTAGACCTCTGCGTGAAGGTTCTTCTGCCGAAGACATCACCAGTGTGTGGAGCCTGCCACACC
CACCCGCTGCCAAACCACGGCCTTTACCTGTGTCTTCCGGTGTTCCTGCGACCCATCTGTGGGAGTG
CCTCGTGGGCTGCCCCAGAGTTACCCACACTCAGCAGCACCAATGGTGAAGATGACAAGATCGAAGACT
TTCCAGGCATATCTGCCCTCCTGCCACCGGACCTACAGCTGCATTCACTGCAGAGCTCACTTGGCCAATCA
TGATGAACTAATTTCCAAGTCATTCCAAGGAAGTCAAGGACGAGCATACTCTTTAACTCAGTAGTTAATG
TGGGCTGTGGGCTGCAGAAGAGCGAGTGTGCTAACAGGACTGCATGCAGTCGCAGACATTTACTGTGAA
AACTGCAAAACCCTCTGGGCTGGAAATACGAACATGCTTTTGAAGCAGCCAGAAATATAAAGAAGGCAA

ATACATCATTGAACTAGCACACATGATCAAGGACAATGGCTGGGACTGATTGGACAGCATCTACCCAACCC
AGTGTCCACGTGAACGCCATTCAACCGAACATTCTTCCCAAGCGTGAGAGAGTGACTGACACTTGGTTCCA
TCCATTTAGGGGCCTTGCCATCCGGGGCATCCTCCCACCCTGACGCCATCTTTCTGGTGACCGGCCTCTAA
ATCGCTGTCTCTCTGTCTCTTTGCTTTGTATCTGTTTGTGAGTTGATCCTGGCTTCTCTCTCTGTTCTAGT
TTTGGCTGAAAACAAAACAACAAAAGGAACAGATCCTTGACCGCATGGCGGCAGCCCACCTTGGTAAGGGC
CCCAGGGCCCATGCGAGAGCTGCCTGATGGCCTCTTGTGAGGAGAGCAGTGGCACGGGGGCGTGAGGAAGA
GGGAAAGGGGAAACTCTAAGGGTCTTGGCGCGGGGAAGGGGTGGAAGGGTGGAGGTAGGAACAAAATTGCG
CCGCTCCTGGAGACCTGATAACTTAGGCTTGAATAATTGACTTGTCTAAAAGGACAAAGAGAAAAAAAAA
ATACCTCATGACTGCATTCTCTCTGACTAGAAGCTTCTGTTCTGACACCAAATGTGCCAGGTTAGCAAAT
GAGCAACAAGATGTGGCCCTGATTCTAGTTGGTGGGGCAAGGGCCTGGTTCTCCTGGGCTGAGTGGGGGAGT
GTCCTGGCAGCAGCAGTGGCCAGTGGCCAGTGGCCAGGTGGGTGCGATGACTCTGATGCCTCACTCAGTCTC
TGGCAATCATCATCTTTGCTCTAGCCACCCTAGATAAGGTGTGAAGGGACTGCTGTTTGAATGGGCTT
ACCATCCAAATATCCCAAAGGCTTTGACCAGCAACCAAGTAAAATCAGTAATTGAGGAGAGCAGGGCACAA
AGGGGCTGCAGTTTGGGAGCTCCTGAAGAAATGGCTCAGATATTGAGTCAGAGAAATAAAAAGTAGGATCA
GTTAGCAATTCTAACTGCCCTTCTTCTGACCCCTCATAAGAGGAGTGTGGTGAGGGAGGGGACTGGGTAG
GGGTATCCCAGGAGGAGGGGTTTACATTGGAACCAGTTCAGGTTCCGGTGCATCTTCTCTTCCGTTTTTA
CAGTGGCTTCCGTGGGATCGTCAATTTCTTGTCTTAGAGTTTTCCGGTGTTTTTTCTCCAGTCTTGTACTG
TAGACTGTAGAAAGCACGGGCCCCAGGCTCTGAGCTTAGTAATAACCTGGCTGGTAGATTCTCATGCCCC
TAATTGTCCCCTTAGGCCTGAATGTCTTGCATGGAGAGAAATCTCCTGTCAGTGTGGTCCAGCAGCAGGG
AGGAGTTCTGCCCAAATTCGATATCACCCCTTCCCCATCCAAGCATCCTTCGATTAGGGAAGTGGAGAG
CACATCCCTGTAAGGCCATAAGAGAAAGAGGAGTTTTGTTACATTTAATCAACACTGTGAAGTCTGTTCTA
CAGCAATTCAGCCATTACACAGTATATGACTGAAACTCATTTAACTGGGTAAATTTCAATTTCTTAGACTGA
ATATATTATTGTTAAGATACGTGTGCGTGTAGGTAATTTCTCAGCATCTCCTCCAAGTAGGCCGACCTTCT
CGGAAAATTCACCCTAAAAGTCTCACAAAAGAATGAGTTTCATGGGGAGATTCTGTAAAGTGATGAACTGAG
ATGAAAGCAGCCAACAGCCAGGAGCTTTTTCAGAATAGCGTCTGCAGCAGAACCAGTTTTCCATTCAGAGCG
CGTCTTGGTGGAAATGCTTTTTTGTGTGTCTCCACGCGCTGATGGTGGAAATGGGAGCCCCAAGACGTGTG
GGCTTAGAAATCAACTTTTTGTTCCCAAGGCTTCTTGTCCAGATCTTTCAGTGTCTTTCATAGCCCTGGGA
GATCAAGTTGTTCTCCCCACTTTACTGCAAGGTAGACTGAAGTTTTCAGAAGAAATACTGAATTTCTGTCTCC
AGAAGAATAGTTTTCTCTGGCTCACAGGCCAAAGTTCTCAATGAAATCGTTTTTTTAACTTTACATTTCTTAA
GCTGGCTTCCCGGCAGAGAAGCCATGGATTTCCCTCTCTCCCTTCCCCCTCCTCAAGGAAATAGTCTTCC
TTTTATGGATTTTTCATTGGACTCTTTCCTCAGCGATTGTCTGGCTGTTTATTGATAGTCTTCCATAAGA
AAATGGGGTTAAACATGGGGTAGGTATTTTGTCTTTCAAACACAAATGGAATGTGGTGACATAAACTAGA
CATGGGGTGCCCTCAAGTTTTCCAAGGGACCAATGTGCCACTGTTCTTCTTGGGGATGAGGCCTTTGACT
GTTGGATGGATCAGAGCAGGCTCCAGTCAGACCCTGGTCTGAATGTTTTTTTTTTTCCGGTGACTATCCAGT
GAGCCTTCAGTGGGTGCAAGGCGCCATACTTGTGTGAGAGAGCTGAGTAGAGTGTGGTTTTTTCCATAAC
TACAGGGGGAAAAAAGTCAATTAGGCTTTCCCTTTGTGTGAGTAAACAAAAGTGTCTTTCACAACGTTT
GCTCTGTTTCATGGGTTGTCTATCTAACATTGAGCAGCATTGGAGAGGCCACAGCTGAGCTATGGAGATGCT
AAATTAACTCATGGCCTCAGTCAGTTTATTCTTTAATTTCTCACCAAATTAATTGACTTAGAGCATAACCA
AAGACCTCATTATTACCCCAGGTGGGTTGGGGTAATTGGAGTTTGTGGTGAAGTTTGGGGGCGGGGTG
TTGGGAGTAGAGACAGGGTAAGGGGACGTGAGAAAGGAAAAGGCATGAAGTTCTATACCTCAGCCAGCAGC
TGCCTTCGTTTTGGAAGTGAAGTCCAGCCAGCAGACTCTCTAGCTCCATCTCCCCTGTGCCACCCTAGGTCA
TATGACCTTGGCCACCTTGGAGTAGACCCAGACCCCTCGGGACCCGGGACATTAGTCTCAGGCTGCTGATG
GATTGATTTGACATGAACCAAACACAGCCAAACTCGATACCCACAAGCTGTCAGCTGAACCTGACTGAGTG
TTCTTCTGAGTTCACGAGGATAGGCTAGAGTGCATTTTTACTGGTGGATCAGTGTGTGCGAAAGAGATGA
CCCTTTATAAAGAGATTTTTCAAGTGGATATATATAAAAAGAAACAGTTGCTTGTAAAATATACTTTTTGAAA
TAATATTTAATTTTTTAAATAATATATTTGGTGTGTTTTCTCAGATCCCCTGAGAGCACTTTTTATTTTCT
CTTTTAAATTTCTATGGTTTTCTTTGCATTTCTTGAAGTATATTTTTAAGGGAAACAGTGATCACCATAACAT
GTTTTAGTTTTTTTTTTTTTAAAGTCTCTATCACTTAACTGAGTCAAGGCTTTGAAGCAATGCCTCT
CTGCATTTTTTTCCCGAGTGAACAGACTCTGCAGTACATTAATCAGGTTGAGAATTGAAATATTTTCTTGC
ATCAGTATTGGCTAGAAAAGAAAATAAATAAAACCAAGTTAATTTAGTAGTAACAACCTTACAGTGATTCTT
CCTGTTGGAAGAATTTCCAACAAATCAGAATCACGTTTTTGTGTTGTGCGTGTGCGCGCACACGTGTGTA
AAGCACTTTCGATTGTGCCTCCTGTTTTCTCGAGTGGGGACACTTTAACTACAGTTTACACCTCGGGCGCA
TAAAGTTTTTCTTCTCTTCTCTGTTTGTGTTTCTGTTTCTGAGTGGACCAACAGCAGAACCCACGAGGAT
TTGTTTTGAGTATGGAGCTGTTGCGGGTTTGTCTCTTTTTTCTGCTTTGCGTGCTCAGTTTTTACAGACTG
TAAAGGAGATGTGTTGTTTGTGAAGATGGAGCAGAGTCAAATCTGTGCTTCTAACTGAGATGAGAGTGTAT
TAATCACGTATCGAGGGCTCCAGCTGTTTTAGAAAGCCACATCATGTTAAACATTAAGTGGTTTTGATTAA
AAGAACATTAATATTATAATACACATATCTTAGTGGTAAACAGCTTTTTTTTTTTTTTAAAGTTCAGATTGCCTC

AGGTTT TAGAAAGAGGCTGAGAAATCAAATCTTGAACACAATCAACTTACATATTTTAAAGGAATCTGCCTC
AAATGAGAAAATATGCTAGTTATCTAGATAGAGGAAAGAGATATTTACTTTTTTAAAAATTTAAATAGTTA
TGAAATCTGGCAGAAAAGGTAAAGCCTAGAAGAACTATGAAAGCTATTCTCATGTTACCAAATTCTATCT
GCGCATATGTTTTTGTATAACATTTTCGGTGACAGTGGGAGTCGGTTCCCTTTCCCAACCTGCAGAGACTAT
CTTCCAATACAGAATCTGTCTATTTATGCTTGTGTTTACAACTGTATTTGTTGGGTTTTGGGTTTTTGT
TCTTTGGTGGCATTTTTTCAGGTCACTTTGCTTCTATAACAAAGGTAATTGTTTTCAAATAATTTGTCTTCA
CCTTTTCTGTATTTGTACATAGTGATTGATTGATTAGAGAAAAGTGCATTGTTTCTGTATATTTCCAATC
TGTGTTGGTGTCTATTTGAGAAAATAAAAGTTTTCAAATATTAACCTTTAAAAA

TAFTCVFRFCPCDPSCGSASWAAPFETPHSAAPMVKMTRSKTFQAYLPSCHRITYSCIHCRAHLANHDELIS
KSFQGSQGRAYLFNSVNVVNGCGPAEERVLLTGLHAVADIYCENCKTTLGWKYEHAFFESSQKYKEGYIIEL
AHMIKDNWD

PROBABILITY of export to mitochondria: 0.3792 with extension
PROBABILITY of export to mitochondria: 0.4946 w/o extension

AUG initiation = 13.6 kDa
ACG initiation = 17.0 kDa

+++++

#17

NM_020335

AUA initiation conserved in vertebrates

VANGL2 vang-like 2 (van gogh, Drosophila)

Synonyms: LPP1; LTAP; STB1; STBM; STBM1; KIAA1215; MGC119403;
MGC119404; VANGL2

GGATCCCAGTCTGATTCCTGATCCTTGATCCTTGATCCTTGGTCCCAGCATGGAGCCTGAGCGCCCCCT
ATCCCCCCTGGCCCCCAGCCCCCGGGCCCTTGAGGGGGAAGAGGCAGCGGTCTGGGACGGAGCAGGGGGT
GACCAGACTCAAGAACCCCCCCTCAACATCCCCATCGCGCGCTGCCTGTCCAGGAGCGCCGAGTTCCG
GAGCGACCCGGAGCGCTGCGGATACAAAGGCGACGGGCCGAGCGGGCGCCCGCGGAGCCACCCGGCAGT
TCGAGCGGGGAGCGTGCCTGATTTTTCTCTGAGACAAGCCACCCGTCCAGCAAAATAGAGTCCCTCA
GGGTGACAGTTGACTTCTGAAGGTGCCTCTTGGCCTAAAGAAGCCGGTGCTGAAGGAGGTGGCTGTGGGG
CCCCCAAGAGGCCCCAGCCTGCGGCCCTGGAGCGCTACAAGGCGCGCGTTTCAGACGCCATGGACACCGA
GTCCCAGTACTCGGGCTATTCTACAAGTCCGGCCACTCCCAGCTCCCAGCAAGCACAGGGACCGCCGGG
ACCGACACCGCTCTAAGAGTGCAGATGGGGGCCGAGGGGACAAGTCCGGTGACAATCCAGGCTCCCAGGGGAG
CCCCTGCTGGACAATGAGTCCACACGAGGGGATGAGCGGGATGACAACCTGGGGGAAACGACGACAGTAGT
AACGGGCACCTCAGAGCACAGCATCTCCATGATGACCTCACACGCATCGCCAAGGACATGGAGGACAGTG
TCCCTCTGGACTGCTCCCGTACCTGGGTGTGGCAGCGGGGCCACCCTGGCACTGCTGTCTTTCTCAGC
CCTCTGGCCTTCTGCTGCTGCCCCACTGCTGTGGCGGGAGGAGCTGGAGCCTTGCAGGACGGCCTGCGA
GGCCTCTTCTGCTGCTGCCTTCAAGCTGCTCATCCTGCTACTGGGCAGCTGGGCTCTGTTCTTCCGCC
GGCCCAAGGCCTCGCTGCCCGCGTCTTTGTGCTGCGTGCCCTGCTTATGGTGCTGGTTTTCTGCTCGTG
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GTTCCGCCGTGTGCTGGTGGACGCCCTTCTTTTCGTGCACTACCTGGCCGTGGTCTGCTGGAGCTGCGCC
AGCTCCAGCCTCAGTTCAGCTCAAGGTGCTGCGCTCCACCGACGGCGCCAGCCGCTTCTACAACGTTGGC
CATCTCAGCATCCAGCGCGTGGCAGTGTGGATCCTGGAGAAGTATTACCATGACTTCCCTGTCTACAACCC
TGCCCTCCTCAACCTGCCCAAGTCCGTCTGGCCAAGAAAGTGTCTGGCTTCAAGGTGTATTCCCTCGGAG
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AACAGTCAACATGAGTACTACTATGAGGAGGTGACTGAGCGAAGGGTGCAGAAAGGAGGAGGAGGAGGAGG
TGAGTGGCGGTGGAGGAGGCCCTTCACTCACATTAAGCGGCTGCAGGAAGAGGAGCAGAAAAACCCAGGG
AGGTGATGGACCCCGGGAGGCAGCCCAAGCCATCTTTGCATCCATGGCCCGTCCATGCAGAAGTACCTT
CGGACCACCAAGCAGCAGCCCTACCACACCATGGAGAGCATCCTGCAGCACCTTGAATTCTGCATCAGCA

TGACATGACGCCCAAGGCCTTCTTGGAGCGATACTTGGCGGCTGGACCTACCATCCAGTACCACAAGGAAC
GCTGGCTGGCCAAACAGTGGACATTGGTGGAGCGAGGAGCCGGTGGACCAACGGCCTCAAGGATGGCATCGTT
TTCCTCTTAAAACGCCAGGACTTCAGCCTGGTGGTGCACCAAGAAGGTCCCATTCTTCAAACCTCTCCGA
GGAATTTGTGGATCCCAAGTACACAAGTTTTGTATGAGGCTGCAGTCTGAGACCTCAGTGTGA

CTGTGCA
ACAGCAGGGGGAGTGGGAAACTCTGGGGGGTCTGAGGGGGTGGGAGGGGGCTTGGTTCTCAGGCCAGCC
ACATTCCTGCCACCCTTCTTCTTCTTGGCTCTTTTTTTTTTACTTGAATTAACGCACCCCCACCTTCTCTCC
TCGCTTCTTCTTATTTTACCCCATGTGAACCTGGAGAGACCATCCTGCTGTCAACAGTACCTGGGAAGGA
CTCCCACCTCACCAACAACCTTTTGTATTACTCTAGGCCCTGCAGGAATCAGTGCCTCTCTCCCTCTTCTTT
CCCTAGTCTTTTCCCAGATTACAGTCTCTCTGAAAGGGCACAGGGCCCTGCTGATTGTACTTTCCCCTCC
TGAGCCCCGACTCACAAATCCAAGTTCTTAAAACATTTCTCTTTCAGTGGCCCAACAGGGTTTTCTCTGGGGC
ACATGGACACTGACTCCAGAGAGCCACAGTGCACAACTCTCCAGGGCAGCAACTGGCCCTCTGTCCCTCA
CCCCAGCCACAACAACCTGGGTTCTAGGGCAGGGATACTCCTGCCACACAGCCCCGAGTTAGAAATCTCC
TTGCTAGGAGCATTGCTTCCACATATATTTAGAGCAAAGAAGGATCCCATCCTTTTCCCAGAAATCTCCA
CCTAATGTTTTTGGTTTTGTATGGTCACGTGACCATAGGCAACCACGTGGAAACCCTCTGTGACCACTTTTT
CAGGGACTTAGGGGAAGGTACCTTTCTTCCAATGTGTCTTCTTAGGCAGCCCCCTGAGGAGGAGGGCTGAAT
AGATCCCTGAGGTTTTGGAGAGACCCCCATCACTGACTCCTGCTCCCTAACCTACCCTCACTTTCGTCCC
CGCTCTTCCCAGTGAAGGATGGTATGTAGACTCCTGTACAGACATAGTGGCTTGCAGACCCTGACCCAGCC
CCTGTGGTCTTAGACAAATGTTTTTATTTTTGTACCAGCCACCCCTGTCTGCCGCCTTCTCTCGACTCC
AGAGACCTGTTGCCTCATCTCTTTTGGGGAAGAGCCGGCAGCTCCTCCTCATCCCCTGCCTTAAGTCCAGT
TCTTTGCCTCAGGGGTCTCGTTTCTTGGCCTTCCAGGGTCCCCACCCCTTTTCTCCCTGCCTGATTCTCT
GAGCTCTGGGCTCCGTCTGTATTGGGTTGAGGGGAAGGATTACTGCCTTTTGTAGGTACTTACCCCTCA
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TCTGGGGGTCTGTCTTTTTCTTCTTCTTCAAACAAATTTGTGTGAGAGTCCCTTCTGAGTACATAAATA
CCTCACTATCCTGAAAACAGGGCCTGGATGGTACTGGGGTATTGCCTTTGTGGACAGGATGGAGTGTG
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AGGGGCTGGGGAGTGTATTTTTAAGATCCTGCCATGTTTTTAATCACTGTGATTTTTTTTTTATTCCCCT
TTCCTAAAAAAATTTTTTCTTCAACTCTCTAAGCACTAAGGGCTGTGCCTGAGAATGGTAGCATTTTGG
GTCTTTTGTCTTCAAGACTGTGGTATCTTTGTCTTTTTTATTATTATTATTATTATTATTATTATTATTAC
TATTGTTTTTTAAATGTGAGGATGAATTGTGAGACATATGGCCATGTGTTTGTCTCTGCTTCTCCCCTG
TGGGAAGTTGTCTCCATGCTGTGAACCTGCTGTGGGGTGTGCAGCTGACTCAGTCCCTCTGAGCAGTTTCCC
CACTGTGTCTGTCCATCATGCGCTGGATCTGCTCATTCTCCTGCTGTGGGGTATGCCACCTCTTACCC
CCTTGACACCATAGGGCTGCTGTGGCTGGGCCTCACCAGCACTGTCTTTTGTGTGACTCATGGCATCCTCG
TTCATCCCCACCGTGCCTAGCAGGCCTTCTTTTACCACCTCGGAACGCTTGCCTTTTCTCCCTCCACAA
CAGGACGCTGTGCCTCAGTCTTACCTACCTCGCCACTCTGCCACTGTCCCCATTGGTCTTTTCTCCTAA
ACTGGTCTTTGTGCTCTCTTTGTTTTTTTCTTATTTCCCTCTTGTCTCTCATTTTTTTCTTCCCATTCCCCTC
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TCCGTGCGCAAAAGGAAGAGGGCTTTTTGAGTCCCTTCCAAGTGAAGATTGTAATGTAGAATTTTCCACTG
TTGGATCTAGATTTTTTTTTCTTTTTTTTTGGGGGGTGGGGTTACAGAGCTGAGACCTTGTGCATGCATGT
AGAAAATTGAAAATGAAAATTTTTTTTTAATATATAAAAAGCTTGTCTTACAGTTTGCAGTGGATCTAAA
CATTACGGCAATTTTAGGATTTTTTTCTTAAACATAGGAACTAAAACCTGTACAAAATTTTTTTTTATATAAAA
TAAAGACATTTGACTTTTTGTGGGAAAAAAAAAAAAAAAAA

IESLRVTVDLKVPLGLKPKVLEKAVGPPKRPQPAALERYKARRSDAMDTESQYSYSGYSKSGHSRSSRKH
RDRDRHRHSKSRDGGRGDKSVTIQAPGEPLLDNESTRGDERDDNWGETTTVVVTGTSEHSISHDDLTRIAKD
MEDSVPLDCSRHLGVAAGATLALLSFLTPLAFLLLPPLLWREELEPCGTACEGLFISVAFKLLILLGWSA
LFFRRPKASLPRVFLRALLMVLVFLLVVSYWLFYGVIRILDARERSYQGVVQFAVSLVDALLFVHYLAVVL
LELRQLQPQFTLKVVRSTDGASRFYVNGHLSIQRVAVWILEKYYHDFPVYNPALLNLPKSVLAKKVSQFKV
YSLGEENSTNNSTGQSRVIAAAARRRDNHNEYYEEAEHERRVRKRRARLVVAVEEAFTHIKRLQEEEQ

KNPREVMDPREAAQAI FASMARAMQKYLRTTKQOPYHTMESILQHLEFCITHDMTPKAFLERYLAAGPTIQ
YHKERWLAKQWTLVSEEPVTNGLKDGIVFLLKRQDFSLVSTKKVPPFKLSEEFVDPKSHKFMVRLQSETS
V

AUG initiation = 59.7 kDa
AUA initiation = 65.0 kDa

+++++

#18

NM_017457

CUG initiated extension conserved in eutherian mammals

CYTH2 cytohesin 2

Synonyms: ARNO; CTS18; PSCD2; SEC7L; PSCD2L; CTS18.1; Sec7p-L; Sec7p-like;
CYTH2

ATACCTACACCGGCTTTTTGTACGACTGTTGGCCCTGGAGAACGATCCTTTGGTGCGGAGGGCGGGGAGGA
CGAAAGCGCCCACTGTGGATTGGACAGTGTCAAAAAGAGGGGCGGTCCCTACTGAAGGGGCGGTTGGGCGA
CGAAGGGAAGAGTCTTTTCAGCGCTGAGGACTGGCGCTGAGGAGGCGGCGGTGGCTCCCGGGGCGTTTGG
CGGGCTCACCCGAGCCCGCGGGCCAACGCGGATCCAGGCCCGACTGGCGGGACCGCCCCGATTCCCCGCG
GGCCTTCTAGCCGCCATGGAGGACGGCGTCTATGAACCCCCAGACCTGACTCCGGAGGAGCGGATGGAGC
TGGAGAACATCCGGCGGGCGGAAGCAGGAGCTGCTGGTGGAGATTAGCGCCTGCGGGAGGAGCTCAGTGAA
GCCATGAGCGAGGTGGAGGGGCTGGAGGCCAATGAGGGCAGTAAGACCTTGCAACGGAACCGGAAGATGGC
AATGGGCAGGAAGAAGTTCAACATGGACCCCAAGAAGGGGATCCAGTTCTTGGTGGAGAATGAACTGCTGC
AGAACACACCCGAGGAGATCGCCCGCTTCTGTACAAGGGCGAGGGGCTGAACAAGACAGCCATCGGGGAC
TACCTGGGGGAGAGGAAGAAGACTGAACCTGGCAGTGTCCAGTCTTTGTGGATCTGCATGATTCACCGA
CTCAATCTGGTGCAGGCCCTCAGGCAGTTTCTATGGAGCTTTTCGCTACCCGAGAGGCCAGAAAATTG
ACCGGATGATGGAGGCCCTTCGCCAGCGATACTGCCTGTGCAACCCTGGGGTTTTCCAGTCCACAGACAGC
TGCTATGTGCTGTCTTCGCCGTATCATGCTCAACACCAGTCTCCACAATCCCAATGTCCGGGACAAGCC
GGGCTGGAGCGCTTTGTGGCCATGAACCGGGGCATCAACGAGGGCGGGGACCTGCCTGAGGAGCTGCTCA
GGAACCTGTACGACAGCATCCGAAATGAGCCCTTCAAGATTCTGAGGATGACGGGAATGACCTGACCCAC
ACCTTCTTCAACCCGACCGGGAGGGCTGGCTCCTGAAGCTGGGAGGGGGCCGGGTGAAGACGTGGAAGCG
GCGCTGGTTTTATCCTCACAGACAACTGCCTCTACTACTTTGAGTACACCACGGACAAGGAGCCCCGAGGAA
TCATCCCCCTGGAGAATCTGAGCATCCGAGAGGTGGACGACCCCGGAAACCGAACTGCTTTGAACTTTAC
ATCCCCAACAACAAGGGGAGCTCATCAAAGCCTGCAAACTGAGGCGGACGGCCGAGTGGTGGAGGGAAA
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GAGCAGCCCTGACCCCTGCCCCCAACTCCATTATTTATTACGGAGCTGCCCCGCCTGGGTGGCCGGACCC
CTGGGCCTTGGGGCTGTGGATCCTGGTTCCCTGTTTGGAAAATTACCACCTCTAGCTCCTCACTGTTCTT
TGTAATTAACACGCTGTTGGTAATCTTATTAATTATTTAACCACCTTGGCCTGCTGACCCCTCATTCTTG
GGTTGACAGAGTCGAGGTGCTCCGTGGAGCCAGCCTGTTTCCCTGGACAGGGGCCTGGACCCGCCTGTCT
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TAGTTCCCATCGTTGCTTTTCATGGGGCTTGGAGTCTTTGAGGGCAGGAGATGAAGCTGGTGGGTTGTGA
GCTGGGCCAGGGCTTTGAGGACAACCTGGAGCTGGAAGAACATGCGACCACCTCAGGGAGGGTCAAGGAAG
GATGAGTGGGGAGGTGGCCATGTCCTGCAAGGGCCTTGCTGATGGGATGTCCTGAAGGGCTGGGCAGCCT
TAGATCGGGCTAAGAGGGCAGGACTGTGGGCCAGTGCCAGAGCCAGGCTTGTCTGTTCTCAAAGGATCAGC
CTCCTTTGGAGGACATTTTGTGTCAAGGATAGGGCTGAGGACCTGCGTTCTGAACGTCTTTCTGGGATTC
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CTGGGCTAAGGTCTGTGACCTTTTGGCCCTCCAGTTGGGGTATGTGTGGTGTCCCCAAAGAACAAGGGCTCG
TGGATCCCGAGCAGGGTGCATGGCGGATTGGGAGGTCCCATGTCACTCTCCCATGCCCGCCTTTGAAGCT
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CCCCGAGGCGTGCCGCGAGTTGTAGTCCCTCCTGCCCGCTGTGTTGCTTTTGGAGCTCTCCGATGGGATGC
GGCGCTTCGGAATTTGGGCTTTGATCCCTGTCCCGCCTTGGCCACAGGCACCTGCCGGCCTGAAGGCC

CCGCGGTGGGGGTACCCTGCGCCCCTCCGCGGGAAGGTGGACTACAGTTATCGGCAGGCTGTGCGGGCCCA
AAGCCACGGTGACCCAGACCCGAGGTTTTTCCGGGCGTGCAGTTTTCCCGAGACTCCGTGGCGGGCTTTGT
CTTCTTTTTCTTAGTCAGATCCCCTACTTTTTGTGGAGGGTAGAGGAGGCTTTGACCGCCGCGGCCCCGGGG
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GGAGGCAGGGGCCTGACGTGTTTTGGATTGAGGTTGCAGGAGGGGCCCTGGCTGCTTCAGGGAGAATAATT
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GGGCCACGCTAGGAGTCTTGAAGAGGAGGCCAAAAGGACTTGCTGAGAGCCGCCGAGCTGGTGAATGACG
GTGCCATGACTGAGGTGGTTCGAAAGGGAGTATTTAAGGGGAAATCAGGCATTCCGTTTTGACCAAATTAAG
CTGGAGATGCCTGTGGAACATTCCAGCCAGGCTGCATCACGTCACTGACCTTCAGCATTGCCACAGTC
CATCTTCCCCCAGGACCTGAGGATTTTTGCGTCCGGCTCCCTCCTCGCCCAGGACCCCCAAGCTCCCAGCAC
GCTTCTGATTTTTTTTTGTAGGTTTTTTTTTTTTGTTTTTGTGTTTTGTTTTGTTTTGTTTTGAGAGGGAGTC
TCACTTTGTGCCCTAGACTGGAGTGCAATGGCGCCATCTCGGCTTACTGCAACCTCCACCTCCCAGGTGCA
AGCGATTCCCCTGCCTCAGCTTCCCAGTAGCTGGGATTACAGATGTGAGCCACCGTACCCAGCTAATTTTT
TGTATTTTTTAGTAGAGACGGGGTTTTACCATATTGGCCAAGCTGGTCTCGAACTCCTGACCTCAGGCGATC
CATCTGTCTCAGCCTCCCAAAGTGTGGGATTACAGGTGTGAGCCACCGCGCCAGGCCTCAGCCCCTTCT
TTTGGGTGGCAATGGTTTTGGATATCGTTTTGCTCTACTAAAATTTCATGTTGAGATTGAGCCCCAGTGTGG
CAGGTGTTGGGATGTGGGGCCTCATAAGGAGCTGTGTGGTCTTGGAGGTGGAGTCCTCATGGATAGATTAA
TGCCTGCCTTAAGGGGTGAGTGAAGTGTCCACCTTGGGAATTTGGGAATTTGGTTTTCTCTCCCTTGCTTC
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AGGGATGAGGGAGGTCCTCAGTGAGTGCACCTGCCAGTCTTGAACCTTCCAGCCATCAGAATCTGAGCCA
AATCAACCTCTTCTTTATAAAGACCCAGCCTCAGGTCTTCTGTGAGAGCAACACAAAATGGACTCAGCAC
GGATCAAATTGTGTCTCCCCACCCCCACAAAAAATTTATATTTAAATCCTAACCCCCAGCA

LRTGAEAAVAPGAFERAHPSPRANADPGPTGGTAPDSPRAFLAAMEDGVYEPDLTPEERMELNIRRK
QELLVEIQRLREELSEAMSEVEGLEANEKSKTLQRNRKMAMGRKKNMMDPKKGIQFLVENELLQNTPEEIA
RFLYKGEGLNKTAIGDYLGEREELNLAVLHAFVDLHEFTDLNLVQALRQFLWSFRLPGEAQKIDRMMEFAFA
QRYCLCNPGVFQSTDTCYVLSFAVIMLNTSLHNPVNRDKPGLERFVAMNRRGINEGGDLPEELLRNLYDSIR
NEPFKIPEDDGNLTHTFNPDREGWLLKLGGRVKTWKRRWFILTDNCLYFYEYTTDKEPRGIIPLNLS
IREVDDPRKPNCFELYIPNNKQLIKACKTEADGRVVEGNHMYRISAPTQEEKDEWIKSIQAAVSVDPFY
EMLAARKKRISVKKKQEQP*

AUG initiation = 46.5 kDa
CUG initiation = 51.0 kDa

+++++

#18

NM_001010908

Non-AUG extension conserved in vertebrates

C1QL3 complement component 1, q subcomponent-like 3

Synonyms: C1ql; K100; C1QTNF13; C1QL3

TCAGAGTAATGCCAACTCTCTCTGAGTGGGATGAGCAGAGCAGATGCTGCAATGAGATGCCAAAGCGGCT
CCCCTTCTCTGTGCCTTGGGTGCCTATAAATTGCTCCGGCGCGCTTTGTGAGCCTCCTCTTCTCCTGGC
AGGTGGTACCCAGGCAGAATTCTGCCTTCAGTCTCTCTCTCGCTCCGCTCCCGCCGTGAGGCGCTCGCCG
CTGCTCGCTCGCTCCTCCGCCCCAGCTCTGAGCCTCGCCGTGCCGACCGTGCCCGCCGCCGCCGCTGG
GCGCACCCGGGGACGCCCGGGCCCACGCGGGGCTTTGGGGTGCAGCTTATTGAGTTGTGGTGGTGGCA
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GGGCGCTGGGGGTGGTGAATGGTGCTGCTGCTGGTGATCCTCATCCCGGTGCTGGTGAGCTCGGCCGGCAGC
TCGGCGCACTACGAGATGCTGGGCACCTGCCGCATGGTCTGCGACCCCTACGGGGGCACCAAGGCGCCCAG
CACCGCTGCCACGCCCCGACCGCGGCCTCATGCAGTCCCTGCCACCTTCATCCAGGGCCCCAAAGGCGAGG
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CGGGGCCATCAGCGCCGCCACCTACAGCACGGTGCCCAAGATCGCCTTCTACGCCGGCCTCAAGCGGCGAG
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CAAGGATCCCAGGGGATGCCAATGGCAGGGCACCTCAGTTGTGTATATGTGGGGAAATCAAATGCTACCTG
ACTCACATCTGTATCACTCAGAAACATTATGTAATAAATATCAAAGCAAGATAAGCAGATGTGTGATCCAC
TACCGCCAAAGCAAATACTCCTTATCGTTAGTGTCCATGTGAATGAAGTCTATATAGATCACAAATTTTT
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TTAGATTC

ILSKSRQEDRPALSRLVGSRRRLIAAGALGVVMVLLLVILIPVLVSSAGTSAHYEMLGTCRMVCDPYGGTK
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NAAGAI SAATYSTVPKIAFYAGLKRQHEGYEVLKFDDVVTNLGNHYDPTTGKFTCSIPIGIYFFTYHVLMRG
GDGTSMWADLCKNNQVRASAI AQDADQNYDYASNSVVLHLEPGDEVYIKLDGGKAHGNNNKYSTFSGFI I
YAD

AUG initiation = 26.7 kDa
AUU initiation = 30.1 kDa

+++++

#20

NM_001008223

Non-AUG extension conserved in vertebrates

C1QL4 complement component 1, q subcomponent-like 4

Synonyms: C1QTNF11; MGC131708; C1QL4

ATACACCCGCGCCCCGGGAGGGAGGGGAGGAAGGTTAGGGAGGCGGAGAGGGACCCGCCCCGAGGAGAGA
GGCGCGGGCCAGGGCTCTAGCAGGGACTGGGGCCGCGGCAGGGGTAGCAAGGTGAGTCGGTGCTTGCCAAG
AGGCAGAGCGCAAAACCTACTAGGAGATCGCGCCCGGTGAGCAGCACCCGCGAGCTCAGAGCCCGGGACGTC
CGGAGCGCGGGGAGCAGTCCCCTCTCCATCAGGGAGTGGTCTATCTGGGCAGTCTGGGACCCAGGCACCGC
GCCATCCCTGAGAGAGCAGCAGTCTGGAGAGCAGGCATCTCAGATCCCTAAGAAACCAGCCGTCCGAGAAG
CCGCGGATCTCAGGTGCCCAGGATCGTTAGGACTGAACGGGAGGGTACTAGAGGACCACTGGCTCTGGACC
GTCGGGAGCTGCCCTGACGTAACCCACGAGGGGCCTCCCCTTGACGGACGGCTTGGGGAGCGGCACCGCC
GCGGCTGGAGCCCGCAGAGGCAGGGTAAGGGGAGCGGGGGCAGCCGTGCGGGGAGTGCAGACCCAGGCC
AAGGCGGGTACC GCCTCTGCCCCGCGGAGAGCCCCGGCCCCGCGAGCCATTGCGCCCAAGAGTGAGGAA
GATTTGCTGGCCCTGGCAGCGTCGCGGCTGAGCCGCCGAAGAGGGTGGCGGGCGCGCCGTGCGAGTGGC

CATGGTGCTGCTGCTGCTGGTGGCCATCCCGCTGCTGGTGCACAGCTCCCGCGGGCCAGCGCACTACGAGA
TGCTGGGTGCTGCCGCATGGTGTGCGACCCGCATGGGCCCCGTGGCCCTGGTCCCGACGGCGCGCCTGCT
TCCGTGCCCCCTTCCCGCCAGGCGCCAAGGGAGAGGTGGGCCGGCGGGAAAGCAGGCCTGCGGGGGCC
CCCTGGACCACCAGGTCCAAGAGGGCCCCCAGGAGAACCCGGCAGGCCAGGCCCCCCGGGCCCTCCCGGTC
CAGGTCCGGGCGGGGTGGCGCCCGCTGCCGGCTACGTGCCTCGCATTGCTTTCTACGCGGGCCTGCGGCGG
CCCCACGAGGGTTACGAGGTGCTGCGCTTCGACGACGTGGTACCAACGTGGGCAACGCCTACGAGGCAGC
CAGCGGCAAGTTTACTTGCCCCATGCCAGGCGTCTACTTCTTCGCTTACCACGTGCTCATGCGCGGGCGG
ACGGCACCAGCATGTGGGCCGACCTCATGAAGAACGGACAGGTCCGGGCCAGCGCCATTGCTCAGGACGCG
GACCAGAACTACGACTACGCCAGCAACAGCGTCATTCTGCACCTGGACGTGGGCGACGAGGTCTTCATCAA
GCTGGACGGCGGGAAAGTGCACGGCGGCAACACCAACAAGTACAGCACCTTCTCCGGCTTCATCATCTACC
CCGACTGAGCCCGCCCCCGCTGCCCGCTCGCCCCCTTCTCTCCCGTCCCTCACCCACCTCCTGCCCGC
CCCACCCGAGGCGCCACCCACCTTTGAGAGCCTGGCGGTGGGGTGGACCCCTCCGTTCCCGGAGGCGGC
CTAAATGGGCGAACTCTTGGTGTCAAGGGTATAAGTGGCCGGGAAGAGGAGGAGACCCGCGCCAGAGGAGC
AGAGCGACTTCCGGAGGGATCACCCGCACCCAAGTGCAGCGCTGGACCCCATAGGGGCAGAGGTCGTGGCTT
TCTCTTTTGTACAGAGATGGGGAGCAGTTTTTAATAGCGGGACTCAGAGGCCAGAAAGCCGGAGGGAAGCC
CCCGCAGCTTGCAGGGAAATAACAGAAACAGGAGGAGCCATTTAGGCAAGAGAAGACATTAACAGGG
TAGTGCAGGTTCTCCGTCAAACTTTCTCTCGCCACCCTCTCGTCCCCTCGTCTCCACTTTTCAGGCTCAGG
CTCCAGCCTTGGCAGCCTTCTGTGAACCTGGAGGAACAGTGAATTCTTTCTGGCATTAAACGCATTC
TGTACAGTCCCCATTCCCCCTATCCGGACTAGGCCCTGGGGCTACAGCTGCTGCTGCCTCTTCTAATAAA
GTGAGG

IAPKSEEDLLALAASRLSRRKRVAAGVAMVLLLLVAIPLLHSSRGPAPHYEMLGRCRMVCDPHGPRGP
GPDGAPASVPPFPAGAKGEVRRGKAGLRGPPGPPGPRGPPGEPGRPPGPPGPGPVAPAAGYVPRIA
FYAGLRRPHEGYEVLRFDDVVTNVGNAYEAASGKFTCPMPGVYFFAYHVLMRGGDGTSMWADLMKNGQVRA
SAIAQDADQNYDYASNSVILHLDVGDVEVFIKLDGGKVHGGNTNKYSTFSGFIIYPD

AUG initiation = 24.9 kDa

AUU initiation = 28.0 kDa

+++++

#21

NM_001002914

Conserved all the way to fish where the extension is initiated by AUG

KCTD11 potassium channel tetramerisation domain containing 11

Synonyms: REN; C17orf36; MGC129844; REN/KCTD11; KCTD11

ATTAGAGGCTCCAGCCCCGCCGACTTGCAGACGTGAGATCGGGCACACCTGAGCGGCGGGCGGGGCGGTTCGT
GGCCACATCCGGGGCGACGTGCCTGAGTACCCCGTCCCGCCAGCGTCTGCCAGTCCAGCCAGTCCGCCCA
GTCTCTCGCGTCCGAGACTCGCCTCCAGCCTCCACCTCCGCCCCGGGCGCGGAGCCTCGCGGGGGCGGG
GGCGGGGCGCAAGGGGCGGGGCTGTCTTTAAAGGGCCCCGGGCCGCTGCCCTTAGGCCACTTCTGGGG
GCGGAGAGGACCTCAGCGGCTGCGGCGACACCCAGGGAAGGCGGCGCGGCCGGGTCCCGAAACTCCTGGCT
GTTTCCATCAGAGCCCTCGGACACTCCAGCCCGGGCTGAGCACGCATCGTTCGCTCCCGGGCGGATAACAAG
GGGCTCCGCCATCCGCTCCCGTCAGTTCGGCCTCCATCTCTGGGACCCGCGCCGGCAGCCAGGCCAGGC
CTCTGAGTGGCCCCAGAGCCCTGGCTGGACTCGTCCACGGCGGCAGCGATCTGCCCGGGTCTCGGAGGCC
ATCCCTTCAGAGTCGGCCCTGTGCTCGCCACCCTCACCTGCTGGTTGGATTCCGGAACCCACTGTCTGAA
GACCACAGAGGGGTGTGCTGACCACCCCAAATCGGATACGTCCAGACCTCAAGCTCCCTTCCCCTCTCTG
GCTGCCCTCTGCTCTTTTCTCTCTCAACCTTTTGGGGATTTCTGTGCTCCTGACACCACCTCCCCA
TCCACCACAAAGTAGCCGGGGTGGAGCCCCAAACCTTACTGGGTGTGCTCCACCTGTGCCTCCAACCCAGC
GAATCTGACAGCTTCGACCCAATTCTGCACACACCCAGGAAGTTCTGCCTTTTCTTTTCTTTTCGGTGTCTC
CTGTACTTCCCAAAATTTCTCCTCCTCCTGTGCCCTCTTCGCCCCCTCCTTTGGGGCCCCGTGACCCTG
AATCTGGGGGGCACACTATATTCCACCCTTTGGAGACCCTGACCCGCTTCCAGACTCTATGCTGGGGGC
CATGTTTAGGGCCGGCACCCCATGCCCCCAACCTCAATTCCAAGGAGGCGGCCACTACTTCATCGACC
GGGATGGCAAGGCCTTCCGGCACATCCTCAATTTCTGAGGCTGGGCCGCTGGACCTGCCCGTGGGTAC
GGAGAGACAGCGCTGCTCAGGGCAGAGGCTGACTTCTACCAGATCCGGCCCCCTCCTGGACGCGCTGCGGGA

ACTGGAGGCTCTCAGGGGACCCCTGCACCCACAGCTGCCCTGCTCCACGCAGATGTAGATGTCAGCCCCC
GCCTGGTGCACCTTCTCTGCTCGCCGGGGACCCCATCACTATGAGCTGAGCTCCGTCCAGGTGGACACCTTC
CGAGCCAACCTTTTCTGCACCGACTCTGAGTGTCTAGGTGCTTTGCGGGCCCGATTTGGTGTGGCCAGTGG
GGATAGGGCAGAGGGGAGGCCACATTTTCATCTGGAGTGGGCCCCCGCCCCGTGGAACCTCCCGAGGTGG
AGTATGGGAGACTGGGGCTGCAGCCGCTGTGGACTGGGGGGCCAGGAGAGCGGGCGGGAGGTGGTGGGCACC
CCAAGCTTCCCTGGAGGAGGTGCTGCGGGTGGCTCTCGAGCACGGCTTCCGACTAGACTCTGTCTTCCCCGA
CCCCGAAGACCTGCTCAACTCCAGGTCTCTGCGCTTTGTCCGGCAGTGAAGGATGCTGTTCTCAGTTTGACT
GTGGGGAGGAGAGAGAATGGGGTACTAGCACCCCTGAAGCCTCTTTCAGCTCTGCTTCCAGGAGCTATGAG
AGTCGGGACTCTCCTGCACCTGACTGGAGCTCAGATGTGGGCAGGAATCCCAAACCTGAGCCCACCAAGG
ACTCACAAGTGGTCCAGAAGGTCTCAACCTGTGCTGACCTGGGAGGGGTAGGGAAGGTTCTCTCAGCTTG
TTCTTGCCTTAGCCTCAGCTCCAGTCTCCTTGTGATTTGGAGCTCAGTGTTTAAGGGCTTGGAAAAGG
GGGAACATCTCTTTACCCAGACTAGACCTAGCAAACCTGGAAGGATATTGAGGTCTGGGAAAAGGGA
GGACTTTCATTTTCCCAATGCGGTCTCTTGGACCATGGCTTCTACTCCTGAAGCTGGGTGGCCTGGCCTG
GCCTGACCAATGAGAGGCCAGAACACTCTGGAACATCGGAAGAGGAGTTCTTTGCTATGTTCCAAGCCATC
TACTGAGGGAGGCAGAAAGGCCACAACCCACCCTAGGTTGATGTATGGGAGCTAGGACAGTCCCCATGGCA
ATGGGGCTGGAGCATCCCTCATCTGGAAGAATCCCATACTGATGGCAGGGCTGGCCAGGGGGAAGAGGGTA
GTATCTGTGGGTCTTGGCCTTTCTTTCATGTGTGCGTGCATATCAGCCCGTGTGGCTGACTGATGTATAGGT
CCCTGGCATCCTGGTTCATATCTGTGTTGCTGACTACAGTGTCTGTGATGTCCGCATGTCCAGGCCTGTTT
GGGTTTGCCTAGCGACTCTTCTGGCACAGGGTGTGTCTGTGGTATACCTGTGAGGTGGTTGACAATTAGTA
GTTTAATCACAGGGT
GTAGCCAGGAGGGGCTGTTGGGGTTTGGAGTCACTGGGATCTTCCCTGGTGGAGAGGTAAGAGAAGTCACTGG
GCTTAGCTGGGCCTCTGAGGCCTGTATGGAACCTTTGGTTGCTGAGGCAACCATGGACCTGTTGCTAGGAG
ATAGCTGGGGAAGGCCAAGGCCCGCCAGGGCAGAGAGAGGAGACGAAGAGTTTGGGACAGTGGGGGAGGA
GATGGGAAGGGATGGGATTTCTGGGTCCCAGAGCGGGTGGGATACTCACGCACAGCTTCTTCACTGGTGGG
GGGTGGGGCACACATTATTTCTCACTGGTCAATGATTTACAAGAAGAAAAATAAACTGCTTTTGAACCCAC
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

ISPPVPVSSPPSFGGVPVTLNVGGTLYSTTLETLTRFPDSMLGAMFRAGTPMPPNLSQGGGHYFIDRDGKA
FRHILNFLRLGRLDLPRGYGETALLRAEADFYQIRPLLDALRELEASQGTAPTAALLHADVDVSPRLVHF
SARRGPHHYELSSVQVDTFRANLFCTDSECLGALRARFVAVSGDRAEGSPHFHLEWAPRPVELPEVEYGRLL
GLQPLWTGGPGERREVVTSPFLEEVLRVALEHGFRLDSVFPDPEDLLNSRSLRFVRH

AUG initiation = 25.9 kDa
AUU initiation = 29.9 kDa

+++++

#22

NM_025160

Two isoforms but both have the 5' extension

ACG and CUG extensions conserved from human to fish

WDR26 WD repeat domain 26

Synonyms: CDW2; MIP2; FLJ21016; WDR26

CCCGGCCCTCTCCCCGGCCCCCGCTCCCCCTCCCCCGCCTCGCCCCACCGGCTTCCCACCGGCCTCTCT
CGGCGAGGAAACTCTGGCCTCCGCTTCCCTCCTCCGACTCGGACACCGGCGGAGCCTCCCCGCCCGC
GGAAGAAACCCCGAGCCTCGGCGGCGGAGGGAGTAGGAGAGCCCGGGCTTCGGCAGGCAGAGCAGGCCTC
TCCCCCTCCGTCCTCGTCGTGTCGTCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCCTCGTGGTGGTAGTGGTGGGACTTCC
CCCGGCTGCTGCCCTCCCGCCGCCGCTGCTGTCCCCACCGAAGTAGCGGCCACAGCCTGGTCAGCGGCA
GCATCATGCAGGCCAATGGGGCAGGAGGAGGAGGAGGAGGTGGCGGCGGCGGCGGTGGAGGAGGAGGGGGC
GGCGGGGGCCAGGGACAGACCCCGGAACCTCGCCTGCTTGTGCGGCCAGAACGGGGAGTCTGTCCTCCTCGTC
GTCGTGTCGTCGGGGGACCTGGCCACGCCAATGGGCTCCTGCCTTCCGCCCCCTCCGCCGCCAGCAACA
ATAGCAACAGCCTGAATGTCAATAACGGGGTTCCCGGCGGGGCGGCCGCCGCATCCTCAGCCACCGTCGCA
GCTGCCTCCGCCACCACCGCCGCTCCTTCTTCTTGGCCACCCAGAAGTGGGCAGCAGCCTCAAGAAGAA
GAAGCGGCTCTCCAGTCAGATGAGGATGTCATTAGGCTAATAGGACAGCACTTGAATGGCTTAGGGCTCA

ACCAGACTGTTGATCTCCTCATGCAAGAGTCAGGATGTCGTTTAGAACATCCTTCTGCTACCAAATTCCGA
AATCATGTCATGGAAGGAGACTGGGATAAGGCAGAAAATGACCTGAATGAACTAAAGCCTTTAGTGCATTC
TCCTCATGCTATTGTGGTAAGAGGCGCACTTGAAATCTCTCAAACGTTGTTGGGAATAATTGTGAGGATGA
AGTTTTTGCTGCTGCAGCAGAAGTACCTAGAATACCTGGAGGATGGCAAGGTCCTGGAGGCACTTCAAGTT
CTACGCTGTGAATTGACGCCGCTGAAATACAATACAGAGCGCATTGTTCTTAGTGGGTATCTGATGTG
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TGGATAAACTTCAGACCTATTTACCACCATCAGTGATGCTTCCCCCACGGCGTTTACAGACTCTCCTGCGG
CAGGCGGTGGAACTACAAAGGGATCGGTGCCTATATCACAATACCAAACCTTGATAATAATCTAGATTCTGT
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TGA

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ACCAGTGAACATGTCAAAGCACTCTCAATATTACATTTGACAAAAAGTTTTGTACTTTTTACATAGCTT
GTTGCCCGTAAAAGGGTTAACAGCACAATTTTTTAAAAATAAATTAAGAAGTATTTATAGGATTAAGTG
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TCTGAAGTACAGTTTTAAAACACTTTTTTAAAAGTGGAGTAAAAGTGAGGCACATTTTACAAGAACATAAC
TCCTATTTAAACCGGAGTAACAACATGCAAAGGTTTCTATAGCAGCTAGGTGAGTTTTGTTTTCCGGGTCTG
TCTTAACTGGCAGCTTCTGTACATACTGGTACTTATTTGCTGTAAACGTCGTTTTCATACATTTGCCATG

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CCAAATAATTGGTTATTAATGGTAAAATGTTGGACTTGGGGATTACTGAGATTAGTATGTGGGTAGTAAAG
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TAACAGCTACATTTCTGTTGCTCTTATTGGCCAGATAAATGTGTTATATTAACCAGGTAAGTATTTTTAAA
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CTTAGTCTGAAAAAACAGCAGTAGTAATCTGGTGAATGTTATTATTAGGAGTGTCTGCCTCACAGTGG
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CCATGTCAGTGCAGCACTTAACAGTGTGTTGTATTCCCTTTCTTTCAATCCAATAAACAGAATGAATA
CCTAAATAA

TASLGEETLASASSSSSDTGGASPPPRKKPRASAAEGVGEPGASAGRAGLSPPSSSSSSSSSSSSSVVVV
VGLPPAAAPPAAAAVPHRSSGHSLSVSGSIMQANGAGGGGGGGGGGGGGGGGGGGGGQQTPELACLSAQNGES
SPSSSSSAGDLAHANGLLPSAPSAASNNSNSLNVNNGVPGGAAAASSATVAAASATTAASSSLATPELGSS
LKKKKRLSQSDEDVIRLIGQHNLGLNQTVDLLMQESGCRLEHPSATKFRNHVMEGDWDKAENDLNELKP
LVHSPHAIIVRGALEISQTLLEIIVRMKFLLLQQKYLEYLEDGKVLQVLRCELTPLKYNTERTIHLVLSG
YLMCSHAEDLRKAWEWEGKGTASRSKLLDKLQTYLPPSVMLPPRRLQTLRQAVELQRDRCLYHNTKLDNN
LDSVSLIIDHVCSRRQFPCYTQQILTEHCNEVWFCKFSNDGTKLATGSKDTTVI IWQVDPDTHLLKLLKTL
EGHAYGVSYIAWSPDDNYLVACGPDDCSELWLWNVQTGELRTKMSQSHEDSLTSVAWNPDKRFVTTGGQRG
QFYQCDLDGNLLDSWEGVRVQCLWCLSDGKTVLASDTHQIRIRGYNFEDLTDNRIVQEDHPIMSFTISKNGR
LALLNVATQGVHLDLQDRVLVRKYQGVYTIHSCFGGHNEFDIASGSEDHKVYIWHKRSELPIAELT
GHTRTVNCVSWNPQIPSMASASDDGTVRIWGPAPFIDHQNIIEECSSMDS

AUG initiation = 72.1 kDa
ACG initiation = 81.3 kDa

+++++

#23 NM_005078

Conserved in mammals – CUG in good context conserved from opossum to human
TLE3 transducin-like enhancer of split 3 (E(sp1) homolog, Drosophila)

Synonyms: ESG; ESG3; GRG3; FLJ39460; HsT18976; KIAA1547; TLE3

AGTCCCTATTTGAACTGCTCTCGCGGCAGTTTACAGACCTCGTGCTCGTCCCCTTCGCCTGTCTGTGTGTGG
TATCCGTAGGTCCGGGGCACTTTTTTTTTTTGGTGGG
TGGG
AGCTCCCCGGTCTCGGGCTGCGTCTCCCCTCCAGCGCTCTCCTGCCTGTGCGCTCCGACGCGGCAGCGGGC
GTGGCGCTGAGCGCTCCTCGGTGGGGACGCGGTGCTCAAGCTGGGAGCAGCGAGAACCCTTTGCGGAGGCT
TCCCGTGCCCGCTGGACTTAGGATGCCAGGGCGTTTATTGTTGCACCTACTGAGCCCGGAGTTTCTCCCCGG
CCCTGGGAAGGGCTTGCAGCGGGCGGGCGGGCGGGCAGCGGCAGTAGCAGACGGAACAGCAGGCTCTCC
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AGCAGCAGGTGGCGCAGGCAGTGGAGCGCGCCAAGCAGGTACCATGACGGAGCTGAACGCCATCATCGGG
CAGCAGCAGCTCCAGGCGCAGCACCTCTCCATGCCACACACGGCCCCCGGTCCAGTTGCCACCCCAACC
GTCAGGTCTCCAGCCTCCAGGAATCCCCCAGTGACAGGGAGCAGCTCCGGGCTGCTGGCACTGGGCGCCC
TGGGCAGCCAGGCCATCTGACGGTGAAGGATGAGAAGAACCACCATGAACTCGATCACAGAGAGAGAGAA
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ACAAGAGTGATGATCTGGTGGTGGATGTTTCCAATGAGGACCCCGCAACGCCCGGGTCCAGCCCGGCACAC
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GGCTCAAGTCCAACACACCAACCCCAAGGAACGACGCCCAACTCCAGGCACCAGCACGACCCCAAGGGCTC
AGGTGATGCCGGGTAAACCTCCGGGCATGGACCCGATAGGTATAATGGCCTCGGCTCTGCGCACGCCCAT
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AGGTGGCAAGGGCTGCGTGAAGATCTGGGACATCAGCCAGCCAGGCAGCAAGAGCCCATCTCCAGCTGG
ACTGCCTGAACAGGGACAATTACATCCGCTCCTGCAAGCTGCTCCCTGATGGGCGCACGCTCATCGTGGGC
GGCGAGGCCAGCACGCTCACCATCTGGGACCTGGCCTCGCCACGCCCCGCATCAAGGCCGAGCTGACGTC
CTCGGCTCCCGCTGTTATGCCCTGGCCATTAGCCCTGACGCCAAAGTCTGCTTCTCCTGCTGCAGCGATG
GGAACATTGCTGTCTGGGACCTGCACAACCAGACCCTGGTCCAGGCAGTTCCAGGGCCACACAGATGGGGCC
AGCTGCATAGACATCTCCATGATGGCACAAACTGTGGACAGGGGGCCTGGACAACACGGTGCCTCCTG
GGACCTGCGGGAGGGCCGACAGCTACAGCAGCATGACTTCACTTCCAGATCTTCTCGCTGGGCTACTGCC
CCACTGGGGAGTGGCTGGCTGTGGGCATGGAGAGCAGCAACGTGGAGGTGCTGCACCACACCAAGCCTGAC
AAGTACCAGCTGCACCTGCACGAGAGCTGCGTGCTCTCCCTCAAGTTCGCCTACTGCGGCAAGTGGTTTCGT
GAGCACTGGGAAAGATAACCTTCTCAACGCCTGGAGGACGCCTTATGGAGCCAGCATATTCCAGTCTAAAG
AATCCTCGTCTGTCTTGGTGTGACATTTAGCGGATGACAAATACATTGTAACAGGCTCTGGTGAACAAG
AAGGCCACAGTTTATGAGGTCATCTACTAAACAAGAATCCAGCAGGCTGTCAAATCTGGGAGAAACCC
ACTCGGCTCTGACAGGAGACCCCCAGGCGAGGGCCCCGAGGATGGCGGAGGATGGGCGGAGGATGGGCGAGCCG
AGCGTTCCAGGGCTGCGCTCCGGCCGGCTGAGAGGGCACGTGCCCGCTCACAGTCTGGACTCCTGGCCCTGG
ATTGATGTGTCTCACAGACTCGGAAGGGTTCTGCTCCTCCTCCTCCCCCTGAACAATGCTGGCAGTTGCTA
CAAATAGATTTATTGGAGGCTTATGGCTCCGGTTCCCCACAGACCCGCTCATGAGTCTCTGTTTTGTTCTT
CCCTTTTCTTTTGGCCTGTCCCTCACCTTGGGTGGGGGTGCTGGAGTGGACCACAATGTTGTGTGGGGG
ATGGGGGGGTCTCTCTTTGCCGATTGTGCAGTGCACAAGATTTGTGAAAATGTAAATAACAGACTCCTAT

TGCGGACTGATCAGTGGGAGAGGAGGCCCTTCCCACCGGAAACTCTGAGTGTGTATTTTCGCTGCTGTAT
TTGTAATCCACTCGTGGTGGTGGCTTTTTTTTTTTTTTTTTTTTTTAAATAAACAGATGCTCTCACCTGGGAA
GAGGAGACAGGGAGGGGAACCAATTGAAGAAAGAGGAGAAAAGTCTTAGAGTGTGGAAAAGGCAACCAGGT
TGGCCGTAAGGTGCCTGCTGGAATGCGTGTGCCTCCACACGGGTCTGGGCATCCGGACTGATAACCAGCCG
GCCAGACTGAGGGATGGAAGGCACTGAGATGGGGGCCCGTCCAGGCGGACACCCGCAGAAATGGAGCTTTC
TGTGGTCTCTTGCCTGCTGCTGCTTGGCCCTCTCTGTGTCTCTCTTTCTTGGTCTCTCCCTCTCTCCT
CCTCAGCCTGGTCTTTCTCTTTGGTGCACACTTAGTTATTGTTGTGAGCAATGGAAGTTCAAAGGAACTCC
CTCTCCAGCTCTTCTGAATCTTGGGACACAGCCTAAAAAGGACAAAAAGTTAGAAGACAGCATAGCAACTC
AGCTCAGGGAGCTACCAGAGAAAAATAGCAACTGATGTGGGTGCTTTTTTTTTTTTTTTAATTTGAATAAAA
AAGAATTAGAAGTGTATGCTTTTATAAAATGCCTTCTCCCCCTTCCCGCCTACAGTCTCTTCTCTCCCC
TTAGAGGGGGGAAAAGTGTATAAACCTACAGGGTTGTGAGTCTGAAAAGAGGATCCCCCTCACCCCCACCCT
GGCAGAGCAGTGGGGTTGGGGGGTGGGAGAGGGGGACACAGATCCTGGCACACTGTGGATATTTCTTGC
AGATTGCAGTCTCTTGTGGCCAAACAGGTTAGGTAGACTATCGCCTCTGGCAGGTGCCACCTTTTGGTAC
CAACATGTTCTGAGGTGTTAGGATTTGGGTTGGGTTTTTTTTTGTGTTGTTTTTTTTTCTTTTGGTCTTTT
TTTTTTTCTCTTTTAAAGAAAAGCTAAAGGCCGCTGTGAGTCTGGTGGCAGGCTCTCCATGGATGTAGC
ATATCGAAGATAATTTTTTATACTGCATTTTTATGGATTATTTTGTAAATGTGTGATTCCGTCTGCTGAGGAG
GTGGGAGGGGCTCCAGGGAAAGCCACCCACCTTTCAGTGGGTTGCTCCCCAGCTGAGCGCACCGGGCATGG
GATGTGGAGGCTGGCGACACACCCTGTGCCTCTCCAAGGCTGGGCGCGTGGGGCGTCCAGAGTCTCTCTGG
GTCTCAGATGTCCATCTGCCACCTCTTGTAAAGGCTCTAGCCAGAAGGGAGGGTGAGGGTAGAAGAAAGTT
ATCCCGAAGAAAAAAGAATGAAAAGTCATTGTACTGAACTGTTTTTATATTTTTTAAAAGTTACTATTTA
AAGTTAAAAAATAAAAAAAAAAAAAAAAAA

LGFRCENELGGPGASSRFPGRPPLGLGSPLPRTSPARALGASTLSESRPLPAMYPOGRHPAPHQPGQPGFK
FTVAESCRIKDEFQFLQAQYHSLKVEYDKLANEKTEMQRHYVMYYEMSYGLNIEMHKQTEIAKRLNTILA
QIMPFLSQEHQQQVAQAVERAKQVTMTELNAIIGQQQLQAQHLSHATHGPPVQLPPHPSGLQPPGIPPVVG
SSSGLLALGALGSQAHLTVKDEKNHHELDHRERESSANNSVSPSESLRASEKHRGSADYSMEAKKRKAEEK
DSLRYDSGDGKSDLLVVDVSNEDPATPRVSPAHSPPENGLDKARSLKDDAPTSPASVASSSTPSSKTKD
LGHNDKSSTPGLKSNTPTRNDAPTPTGTTTTPGLRSMGKPPGMDPIGIMASALRTPISITSSYAAPFAMM
SHHEMNGSLTSPGAYAGLHNIIPPQMSAAAAAAYGRSPMVSFGAVGFDPHPPMRATGLPSSLASIPGGK
PAYSFHVSADGQMOPVFPFDALAGPGIPRHARQINTLSHGEVVCVAVTISNPTRHVVYTGKGCVKIWDISQ
PGSKSPIQLDCLNRDNYIRSKLLPDGRTLIVGGEASTLTIWDLASPTPRIKAELTSSAPACYALAI SPD
AKVCFSCCSDGNIAVWDLHNQTLVRQFQGHDTGASCIDISHDGTGLWTGGLDNTVRSWDLREGRQLQOHDF
TSQIFSLGYCPTGEWLAVGMESSNVEVLHHTKPKDKYQLHLHESCVLSLKFAYCGKWFVSTGKDNLLNAWRT
PYGASIFQSKESSVLSCDISADDKYIVTGS GDKKATVYEVY

AUG initiation = 83.4 kDa
CUG initiation = 88.7 kDa

+++++

#24

NM_002250

GUG/CUG initiated extension conserved in mammals (AUG in *Pteropus vampyrus*)

KCNN4 potassium intermediate/small conductance calcium-activated channel, subfamily N, member 4

Synonyms: IK1; SK4; KCA4; hSK4; IKCA1; hKCa4; KCa3.1; hKCa1; KCNN4

GTCCTTCGGTGTCTGGGTGTGGTGTGAGTAGAGGTGTGTGTGACAAAGTACAGACCATTGTGTGTGACAAAGC
CCATCGTGTGTCTGTGTGTGTCTTTATCCACGTGGATGGACGTCTCTTTCTTGCTCTGCCCAAGACACAC
CCTAGCCCCCTCCTTATTCTCAAAGGGGGAGCTGGGGAGCCTCCCCCTACCCTGGGGCCTCCCCCTGCCCT
CCCCGCCCTGCCTGGCCGTCACTACTCCCCAGAGGGCAGGGGCTCTGCTGTGCCTCAGAGCAAAAGTCCC
AGAGCCAGCAGAGCAGGCTGACGACCTGCAAGCCACA GTGGCTGCCCTGTGCGTGTGCGAGGTGGGGGAC
CCTGGGCAGGAAGCTGGCTGAGCCCCAAGACCCCGGGGCCATGGGCGGGGATCTGGTGTCTGGCCTGGGG
GCCTTGAGACGCCGAAAGCGCTTGCTGGAGCAGGAGAAGTCTCTGGCCGGCTGGGCACTGGTGTGTCAGG

AACTGGCATTGGACTCATGGTGTCTGCATGCAGAGATGCTGTGGTTTCGGGGGGTGTCTCGTGGGCGCTCTACC
TGTTTCCTGGTTAAATGCACGATCAGCATTTCCACCTTCTTACTCCTCTGCCTCATCGTGGCCTTTTCATGCC
AAAGAGGTCCAGCTGTTTCATGACCGACAACGGGCTGCGGGACTGGCGCGTGGCGCTGACCGGGCGGCAGGC
GGCGCAGATCGTGTGGAGCTGGTGGTGTGTGGGCTGCACCCGGCGCCCGTGCGGGGCCCGCCGTGCGTGC
AGGATTTAGGGGCGCCGCTGACCTCCCCGAGCCCTGGCCGGGATTCTGGGCCAAGGGGAAGCGCTGCTG
TCCCTGGCCATGCTGCTGCGTCTCTACCTGGTGCCTCCGCGCCGTGCTCCTGCGCAGCGGCGTCTGCTCAA
CGCTTCTACCGCAGCATCGGCGCTCTCAATCAAGTCCGCTTCCGCCACTGGTTTCGTGGCCAAGCTTTACA
TGAACACGCACCCTGGCCGCTGCTGCTCGGCCTCACGCTTGGCCTCTGGCTGACCACCGCCTGGGTGCTG
TCCGTGGCCGAGAGGCAGGCTGTTAATGCCACTGGGCACCTTTCAGACACACTTTGGCTGATCCCCATCAC
ATTCCTGACCATCGGCTATGGTGACGTGGTGCCTGGGACCATGTGGGGCAAGATCGTCTGCCTGTGCACTG
GAGTCATGGGTGTCTGTGCACAGCCCTGCTGGTGGCCGCTGGTGGCCCGGAAGCTGGAGTTTAAACAAGCA
GAGAAGCAGTGCACAACCTTCATGATGGATATCCAGTATACCAAAGAGATGAAGGAGTCCGCTGCCCGAGT
GCTACAAGAAGCCTGGATGTTCTACAAACATACTCGCAGGAAGGAGTCTCATGCTGCCCGCAGGCATCAGC
GCAAGCTGCTGGCCGCCATCAACGCGTTCCGCCAGGTGCGGCTGAAACACCGGAAGCTCCGGGAACAAGTG
AACTCCATGGTGGACATCTCCAAGATGCACATGATCCTGTATGACCTGCAGCAGAATCTGAGCAGCTCACA
CCGGGCCCTGGAGAAACAGATTGACACGCTGGCGGGGAAGCTGGATGCCCTGACTGAGCTGCTTAGCACTG
CCCTGGGGCCGAGGCAGCTTCCAGAACCCAGCCAGCAGTCCAAGTAGCTGGACCCACGAGGAGGAACCAGG
CTACTTTCCCCAGTACTGAGGTGGTGGACATCGTCTCTGCCACTCCTGACCCAGCCCTGAACAAAGCACCT
CAAGTGCAAGGACCAAGGGGGCCCTGGCTTGGAGTGGGTTGGCTTGGCTGATGGCTGCTGGAGGGGACGCT
GGCTAAAGTGGGTAGGCCTTGGCCACCTGAGGCCCCAGGTGGGAACATGGTCACCCCCACTCTGCATACC
CTCATCAAAAACACTCTCACTATGCTGCTATGGACGACCTCCAGCTCTCAGTTACAAGTGCAGGCGACTGG
AGGCAGGACTCCTGGGTCCCTGGGAAAGAGGGTACTAGGGGGCCCGATCCAGGATTCTGGGAGGCTTCAGT
TACCGCTGGCCGAGCTGAAGAAGTGGGTATGAGGCTGGGGCGGGGCTGGAGGTGGCGCCCCCTGGTGGGAC
AACAAAGAGGACACCATTTTTCCAGAGCTGCAGAGAGCACCTGGTGGGGAGGAAGAAGTGTAACTCACCAG
CCTCTGCTCTTATCTTTGTAATAAATGTTAAAGCCAGAA

VAALCVLRGGGPWAGSWLSPKTPGAMGGDLVVLGLGALRRRKRLLLEQEKSLAGWALVLAGTGIGLMVLHAEM
LWFGGCSWALYLFVVKCTISISIFLLLLCLIVAFHAKVQLFMTDNGLRDWRVALTGRQAAQIVLELVVCGL
HPAPVRGPPCVQDLGAPLTPSPQWPWPGFLGQGEALLSLAMLLRLYLVPRAVLLRSGVLLNASYRSIGALNQV
RFRHWFVAKLYMNTHPGRLLLGLTLGLWLTTAWVLSVAERQAVNATGHLSDTLWLIPITFLTIGYGDVVP
TMWGKIVCLCTGVMGVCCTALLVAVVARKLEFNKAEKHVHNFMMDIQYTKEMKESAARVLEAWMFYKHTR
RKESHAARRHQKLLAAINAFRQVRLKHKRLREQVNSMVDISKMHMILYDLQNLSSSHRALEKQIDTLG
KLDALTELLSTALGPRQLPEPSQSK

Probability of export to mitochondria = 0.4881
AUG initiation = 47.7 kDa
GUG initiation = 50.1 kDa

+++++

#25 NM_004494

GUG initiated extension conserved in mammals

HDGF hepatoma-derived growth factor (high-mobility group protein 1-like)

Synonyms: HMG1L2; FLJ96580; DKFZp686J1764; HDGF

GAGGGAGGAGGAGGAGTGGGGACCGGGCGGGGGTGGAGGAAGAGGCCTCGCGCAGAGGAGGGAGCAATTG
AATTTCAAACACAAACAACCTGCACGAGCGCGCACCCACCGCGCCGGAGCCTTGCCCCGATCCGCGCCCGCC
CCGTCCGTGCGGCGCGCGGGCGGAGACGCCGTGGCCGCGCCGGAGCTCGGGCCGGGGCCACCATCGAGGC
GGGGCCGCGCGAGGGCCGGAGCGGAGCGGCGCCGCCACCGCCGCACGCGCAAACCTTGGGCTCGCGCTTCC
CGGCCCGGCGCGGGCGCCCGGAGCCCGCCATGTCGCGATCCAACCGGCAGAGGAGTACAAA
TGCGGGGACCTGGTGTTCGCCAAGATGAAGGGCTACCCACACTGGCCGGCCCGGATTGACGAGATGCATA
GGCTGCCGTGAAATCAACAGCCAACAAATACCAAGTCTTTTTTTTTCGGGACCCACGAGACCGCATTCTGG
GCCCCAAAGACCTCTTCCCTTACGAGGAATCCAAGGAGAAGTTTGGCAAGCCCAACAAGAGGAAAGGGTTC

AGCGAGGGGCTGTGGGAGATCGAGAACAACCCTACTGTCAAGGCTTCCGGCTATCAGTCCTCCAGAAAA
GAGCTGTGTGGAAGAGCCTGAACCAGAGCCCAGCTGCAGAGGGTGACGGTGATAAGAAGGGGAATGCAG
AGGGCAGCAGCGCAGGGAAGGAAGCTGGTCATTGATGAGCCAGCCAAGGAGAAGAACGAGAAAGGAGCG
TTGAAGAGGAGAGCAGGGGACTTGTCTGGAGGACTCTCCTAAACGTCCAAGGAGGCAGAAAACCTGAAGG
AGAGGAGAAGGAGGCAGCCACCTTGGAGGTTGAGAGGCCCTTCTATGGAGGTGGAAAAGAATAGCACCC
CCTCTGAGCCCGGCTCTGGCCGGGGCCTCCCAAGAGGAAGAAGAAGAGGAGGATGAAGAGGAAGAGGCT
ACCAAGGAAGATGCTGAGGCCCCAGGCATCAGAGATCATGAGAGCCTGTAGCCACCAATGTTTTCAAGAGGA
GCCCCACCCTGTTTCTGTCTGTCTGGGTGCTACTGGGGAACTGGCCATGGCCTGCAAACCTGGGAACC
CCTTTCCACCCCAACCTGCTCTCCTCTTCTACTCACTTTTCCCACTCCAAGCCCAGCCCATGGAGATTGA
CCTGGATGGGGCAGGCCACCTGGCTCTCACCTCTAGGTCCCATACTCCTATGATCTGAGTCAGAGCCATG
TCTTCTCCCTGGAATGAGTTGAGGCCACTGTGTCTTCCCTTCCGCTTGGAGCTATTTTCCAGCTTCTGGG
GCCTGGGACAACCTGCCACCTCCTGACACCTTCTCCCACTCTCCTAGGCATTCTGGACCTCTGGGTTG
GGATCAGGGGTAGGAATGGAAAGGATGGAGCATCAACAGCAGGGTGGGCTTGTGGGGCCTGGGAGGGCAA
TCCTCAAATGCGGGGTGGGGGCAGCACAGGAGGGCGGCCTCCTTCTGAGCTCCTGTCCCCTGCTACACCTA
TTATCCCAGCTGCCTAGATTAGGGAAAGTGGGACAGCTTGTAGGGGAGGGGCTCCTTTCCATAAATCCTT
GATGATTGACAACACCATTTTTTCTTTTGGCGACCCCAAGAGTTTTGGGAGTTGTAGTTAATCATCAAGA
GAATTTGGGGCTTCCAAGTTGTTCCGGCCAAGGACCTGAGACCTGAAGGGTTGACTTTACCCATTTGGGTG
GGAGTGTGAGCATCTGTCCCCCTTTAGATCTCTGAAGCCACAAATAGGATGCTTGGGAAGACTCCTAGCT
GTCCTTTTTCTCTCCACACAGTGTCTCAAGGCCAGCTTATAGTCATATATATCACCCAGACATAAAGGAAA
AGACACATTTTTTAGGAAATGTTTTAATAAAAAGAAAATTACAAAAAAAATTTTAAAGACCCCTAACCT
TTGTGTGCTCTCCATTCTGCTCCTTCCCATCGTTGCCCCATTTCTGAGGTGCACTGGGAGGCTCCCCTT
CTATTTGGGGCTTGATGACTTTCTTTTTGTAGCTGGGGCTTTGATGTTCTTCCAGTGTCAATTTCTCATCC
ACATACCCTGACCTGGCCCCCTCAGTGTGTGTCACCAGATCTGATTTGTAACCCACTGAGAGGACAGAGAGA
AATAAGTGCCCTCTCCACCCCTTCTCCTACTGGTCTCTCTATGCCTCTCTACAGTCTCGTCTCTTTTACCC
TGGCCCCCTCTCCCTTGGGCTCTGATGAAAAATTGCTGACTGTAGCTTTGGAAGTTTAGCTCTGAGAACCCT
AGATGATTTTCAAGTTCTAGGAAAATAAAACCCGTTGATTACTATAAAAAAAAAAAAA

REEEEWPGGGWRKRPRAEEGAIEFQTQTTARARTHRA GALPR SAPAPSVRRAGGDAVAPELGPATIEA
GAARGPERSGAATAARANLGSRF PARRGARGARSPAMSRSNRQKEYKCGDLVFAKMKGYPHWPARIDEMPE
AAVKSTANKYQVFFFGTHETAFLGPKDLFPYEESEKEKFGKPNKRKGFSEGLWEIENNPTVKASGYQSSQKK
SCVEEPEPEPEAAEGDGDKKGNAEGSSDEEGKLVIDEPAKEKNEKGALKRRAGDLLEDSPKRPKEAENPEG
EEKEAATLEVERPLPMEVEKNSTPSEPGSGRPPQEEEEEEDEEEEA TKEDAEAPGIRDHESL

AUG initiation = 26.8 kDa
GUG initiation = 31.6 kDa

+++++

#26

NM_013313

ACG initiated extension conserved in vertebrates – in humans three of the four paralogs have the ACG extension

YPEL1 yippee-like 1 (Drosophila)

Synonyms: FKS3; MGC64992; YPEL1

CAGGCGGCCCGCGGGGCGGCGGGGAGGATGCCTCGCGCCCTGCCTAGGCGTTAACGGCCTCAGCGCGTC
CCGGGCCCGCCGGGAACGCCTGAGAGCCGAGCCCGCGCTGACCGGGGCCCGGGCCGGATGGGCGCTGCGG
GCCGGGGCGCGGACCGCGGAGCGGCCGTTACGTTTTTCTCTCGTCCCAGCTGTGTGGACAGTGCCACACGC
CCTCCTGGACAACGACCGCTCTTGCCTGCAATTTCCAGTGTGCTTTTGTGTCAGAGAGGCCAGCAGAGCCAC
GGTTCTTCCAGAACCAGCCCTGAGCTGAGTGAGGAGTGCCAGGAGAGATGGTGAAAATGACAAAGTCCAA
AACTTTCCAAGCGTATCTGCCGAACGTGTCACCGAAGTACAGCTGTATCCACTGCAGAGCACACCTGGCCA
ATCATGACGAGCTCATCTCCAAGTCTTTCCAGGGAGCCAGGACGCGCCTACCTCTTCAATTCCTGGTG
AACGTGGGCTGCGGCCCTGCAGAGGAGAGGCTCCTTCTCACCGGGCTGCATGCGGTTGCCGACATCTACTG
CGAGAACTGCAAGACCACGCTCGGGTGGAAATACGAGCATGCCTTTGAGAGCAGTCAGAAATATAAGGAAG

GAAAATTCATCATTGAGCTTGCTCATATGATCAAAGACAATGGCTGGGAGTAA TGTGCGAACTTTCCCTTC
TCCTTTGAATGCTGTTTTGTGAAAGAACTGTGAATGTAATGGAAACGTAGGAGCATCTGGTGACAGCCTT
TCTTGGCCTCTGACCTCAAAGGCTAGCTGCGCATAGCTCTTGACACTCTCGCCATCTCTGTGGGTAAGGT
GTCCCTCGGATCTGTCTCTTCGTGTACACAGTTGTTTCTGAAAATTTTCAATGAGCTTTTTCTAACTTCT
CAAGTTCTAGAGAAAAGAAATTAACCAACTGATGACTTACCTGCCTAGTTAATATCTTCTTTTACCTTTGTC
TTCAATATAGTTGGGCTCTGCTTTTTTAAGGTTTCAAGTTGAAAACCAAACCTGGGGCCGGGTGCGGTGGCTCA
CGCCTGTAATCCCAGCACTTTGGGAGGCCAAGATGGGTGGATCACCTGAGGTCAGGAGTTCTAGATCAGCC
TGGCCAACATGGTGAACCCCATCTCTACTAAAAATACGAAAATTAGCCGGGCATGGTGGCGAGTGCCTGT
AATCTTAGCTACTCAGGAGGCTAAGGCAGGAGAATCACTTGAACCTGGGACACGGAGGTTGCAGTGAGCTA
AGATCATGCCATCGCACTCCAGCCTGGGGGACAAAAGTGGAGCATCGTCTCAAAAAAAAAAAAAAAAAAGTG
GGTATGGTGGCGCATGCCTTTAATCCCAGCTACTCGGGAGGCTGAGGCACGAGAATCACTTGAACCCAGGA
GGCGGAGGTTGCAGTGAGCCAAGATCGCGCCACTGCACCTCCAGCCTGGCAATAGGGCGAGACTCCGTCTCA
ATTTAAAAACAAAAGAGAACCAGACTGAGTCTCTGAAGACCACAGGGACAGGGTCTCTTTAGATAGCAAGTC
TCACCATTCCCTTTTTTAGAGAAAAGGTATTGTAGCCACCCTCCACCCGCTGTTTTTCTTAAATTTGCA
GAACTTCAAATTTGGCTATTCTCTTGCAAATGAACCTTAAAGTACAGTGTTATTTAAGAATCTTCCAGAG
GCAGTCAACAGACTTATACTAAGGGCATTTTTGGTTTTTAGCTTGTTCAAAAACAGAGGCCAGCACAGA
TGACATTTTAGATACACTCTAAATTTGAGAATGGTGTCTAGTGGAACATGTTTATTTAAGCCAGTAGATTCC
TTATCTAGAAAAGCAGGTGAGCTAGCCCTTAGAGAAGGCTGTCCCGGGGCCGAGAGGTGCCCTTACTGAG
GTGACAGCCTCACAGGGTCTGGTACCAGGGGTTGTGCCCTCAGCAGTGACAGCAGCTTAGGTGTCAGGCAG
TTGCTGAGTGGCTGGTCCATGTCTATAGAGTAACACACTGGACCGAGGAAAAGTCAGATTTTCATTTTCTAC
CCTGGATGTACTTTGAAGAAAAGAATTATTTTTGCATATGAAAGAGGCCAGAACCACAGGAAAACCTTCA
AACTTTGACATTTGCCAGAATGTTTAAATTTGTTTCAAAAAGGTTAAAGCAACAAGTTTAGCCTTTGTGC
ATGAAGACGCCTGGCCTGCTAGACGCGTTGCCCGTCCCTGCGTGGTGTCTGCCATGTCACTTGAACCTGAT
AGAGGGGCTGTGCAATCTCCTAAGGCCTGTGTTTTCTGCCATATATTTTATTATAAATTACAATCCACTCA
TCCACCTGCCCTCCACCAGGAGTGGGCACCCATAAGGGTTTAGGCCACTTTGCAGAGGATGGAGGTCAA
AACCCTCCAGATAAGTTTGGTTTTCAACATTTAGTAACTTGTCTCAGGGCAGAGGGCAGGCAGGGGGAC
CGAGGGGCAGCAGATAGGAGAGCACTGAGCCCGGATAGTTCTCAGCCTGGCAAGTGGCTCTGAAGCTGCCT
TCAGACAAGGCTAGTCTAGGGGCAAGAGTGCAGCTGGCTGACAATAAGAACGTGGCCACCTGCCAGCTT
CACACTCCCCGACTTCCAGCCCTTCTTAAACCCAGACTGCGGTCCAGGCAGGCAGGCAGGCAGGCAGC
CTCAGACTCACTGCCACACAGCATGCCTTTGGGTGCCATCTCTTTGCCCAAGCCTGGAAGCCTTTGGCAG
GTGGGAAATGCCGCTGCCCTGGTGGGCATGGCACTGAGATGCATCCACTCAGCAGGAGTGACAGAGGCAGA
AGTTCTTTTAAAGCACATCTTCCACTTAGGAAAGGAAGGAAATCTTTGTACTGTCTTGAAGCCTCCACAT
CCGGCTATGGCCCTGCAAGCTGCTTTATCCCTGCGCTAGTCTCCCCCGAGGGTTTTAGGCTGGCCCAGCACA
TCCTGTCTCTGAGCTCGCGTGCAGCCACCCAGAGCGCAGGGGTCACTGCACGCTGCAGGGCTCTTGCTG
CCATGGTCTCAAGCCTGAAGAGGCTCCGCCACAAGCTGGCCCATGAAGTTAGCAATGCCTGTGGCTTCCAG
TCAATTGTCTTGAGACTGTGAAGAGGCTGAAAGACACCTTCCCGGGTGAAGAAGGAGTTCACTGAAAAC
TATCTTAAACTGACCCTTCCCTTTGAGTGAGTCTTCACTTCTCTCCATGTGGGAACCCAGCCTCCGATGC
CCCGGGGACTAGGGGAAACAGTTGGAGGTTCTGTCCTTCCCGAGCCTGCCACGGGTGCGAGGACAGCCAAG
TCCTGAGTGACTCAAGATGCTTCACTTACATGGAAGAACTTCTAAAACCTTACCAGTGGTTTTTTGTATA
TACTAAAGTTCTATTTAGAGCTTTTTCTGTTTTGGGCAAGTTGCTGCTCCTTCTATTTGGGCACCTTTGGTT
TTTGTACTGTCTTTTGTGACGGCATTGATTGAACATTTTTTACTAGTAGTCTTATGACTTTTTGTATTTTTT
TTTTTTTTTTGTAATTTATACCAACAACACTTTTTATCACTTTTTTTTTTTGTTGGGCTTCTGCAAAATACAAGC
TCATTTTTTAAACCAAATGAACAGACCATGAGCTGGCTTCCAGGGGAAGTGCTATTACAGGACCATATCCAC
CACCTCTTAAATTCCTAAACAATATCATCTAGGACTTCTATTTAAGTTATTTAAAATAAATCTTCCCTTGA
GAGCCTTGGGAGGTGATGTGAGGTTATAAATGGCACAGTGCATTTGCTGTAGGAATGTGGTTTGGCATTG
TTTTATAACACACAGTATTTTTTATACCTTAATGCTTATTTCTTGATGGCATCTGTGAGATATTAGAATTGAA
AATAAGAATCTTCCCAAAATCCTTTAATTTACCTGATGCCCTCATCAGGTCGTTAAAATTTCAAATGGTTTT
TAATAGCTAAAAACATAAAATTAAGCTCTAAAACAAACAACTACAGAAATGTAACCTTCAATTTGCCAA
AGGTCTTGGTGGCCTGTCCCCTGCCCTGGGAGCAGATGGCCCTGAAGCCCTTCCCTCACTGTGCAGGCCA
CCGGGTGAGGCTGGACGGTCAACCATGGTGGCTTCACTGCAAGGAGCAGGACTGCCGAGCTCAAGCACGGG
GCCTTCACTTCCCCTGTCTCTGGCCACACCGCCAGCCCTTGGTCCTTATCTGTGTGAGGTTTACAAATA
AAGCTTCTGATGTCAAATGTTTAAAAAAAAAAAAAAAAAAAAA

TALACIFQCCFCQRGQOSHGSSRTSPELSEECPEGEMVKMTKSKTFQAYLPNCHRYSIHCRAHLANHDEL
ISKSFQGSQGRAYLFNSVNVVNGCGPAEERVLLTGLHAVADIYCENCKTTLGWKYEHAFFESSQYKEGKFI I
ELAHMIKDNGWE

PROBABILITY of export to mitochondria: 0.5853 with extension
PROBABILITY of export to mitochondria: 0.5239 w/o extension

13.6 kDa from the AUG codon
17.3 kDa from the AUU codon

+++++

#27

NM_022106

AUA initiation conserved in mammals

C20orf177 chromosome 20 open reading frame 177

Synonyms: dJ551D2.5; C20orf177

TCAGCTCAGCCAGGGAGCTCAGCGGAGCTGCGCGCCTCCGCCTCCAGCTCCCCTGCCGCAGCGCGCCGCAG
CCGGGCGTCCCCGCGCGGGCGCCGGAGAGGAAGGAAGGCTGGCAGCCTCGTACGTGTCCGCTGCAGTCGC
GAAACAGTTCGGTGGTGAGGAGACCTTTCCAATATAAGAGGAATAAGAAGTCACCTCCCCAGCTGTCA
TCATCTCCAGCAGATTGACCAAGAATATTTGAGCACTACAGGAAAGACAGTCCATCAAACCCGAGATGA
TGATCAGCCACGTGATTTTTCAAGAAGAGGAATAGGGTGAATGAATCTCATCAGAAAAGCAGCAATATGA
ATGCTGGCCCATCTTGGAAATAAAGTGCAACATTCAAAGAATTCTTCAGGAAAAAGGCAGAGTAAATCCCAA
GTACCCACGCTTCTTCCAGCCGAGAAGCAGCCTCACAGCTGTACCCAGCCTACTGAAGAAAACTTAA
AGAAAGCATTTCGCCGAAGCAAGACGCAAAAGGAATCCACTCGGTTCCAGGTGTGAGGGGGCCTCAGGGA
ATAAACTGTTTCTTGATTTTTCAGTCAATGAAAATTATTAAGAGAATGCTGATGAGGACAGTGCAAGTGAT
CTCTCTGATTTCGAAAGAATTCCCATTCCTCCTTCTCCCCTCACACCTCCAGATCTCAATCTTCGAGCTGA
AGAAATTGATCCAGTTTACTTTGATCTTACCCTGGTCAGGGCCATACAAAACCTGAATACTATTATCCTA
ATTTCTTCCATCCCCTTTTCAGCTCCTGGGACCTACGAGATATGGCCCTGCTTCTGAACGCAGAGAACAAA
ACGGAAGCCGTGCCCCGAGTGGGAGGACTTCTTGGGAAGTATATCGATAGACTTATTTCAGCTTGAGTGGCT
GCAAGTCCAGACTGTACAGTGTGAAAAAGCAAAGGGGGGCAAAGCAAGGCCCCCTGCCCCCTGGGACCT
CAGGGGCACTGAAAAGCCCTGGGAGAAGTAAGCTAATTGCTAGTGCTCTGTCCAAGCCACTACCTCACCAG
GAAGGGGCTTCAAAGTCAGGCCCTTCCGAAAGAAAGCTTTTACCATGAAGAAATCCACCCATCACATTA
TGCATTTGAGACTTCCCCTAGACCCATTGATGTGCTTGGTGGTACCAGGTTTTGTTCTCAGAGGCAAACCC
TTGAAATGAGGACAGAAGAAAAGAAAAGAAATCAAGTAAGAGTACGAAGCTGCAGCGCTGGGATCTGTCC
GGCAGTGGAAAGCAGCTCTAAGGTGGAAACCAGCGGTACATTCGAGTTCCCAAACAGGCAGCTGTGATTCT
GGACTCAGCAGATTCTGTAAAGCCCTCCAAAACACAAGCACATGCACATCCTAGGAAAAAGGAAAGGCAG
AGAGCTGTGGTTCATGCCACTGTATCGAGTGAGAAAAAACTGAAAACAAACGGAGTAAAGCAAACACATAT
AAACTAAAAATAATCTAAAATGCTGAATTTGCCAAGACCTGCAGGTACCTCAATGTTAGAGCGCTTTCAA
AAGTCAAATACTGTGAATTTTAAGGAATTTTACAATACTGACATTTAAGTAGTTGACTGGCATTTTTGT
CCACCTTTATTTCTACCCTGAGTGGGGTTATTTTCAAAGGAAGTGTCTTTCAATAAGCCTTTCTTTGTAT
TGTCAGTCTTAGGCAAATGAGAGCCCTTTAGATAAAAATTATGTAATAATATGTGCCATATAAAGGAATAAA
ATGGCACCTCTCCAGGAAAGTGTGAGTAAACCTCAGCTACAGTAGCCGGTCTGTGTAGAGCAGCTAGTG
GTGTTACCTCCCCATTTTACATGCACGTAAGTATATGAAATAGTGCAGACTGTTTCAAATGGTGTGGAAT
CCTAAATGTTTAAATAAGGTCTTCTTGCCCACTCCCTCGCTTACTTTTTTATAAACTCCTCAAGCAAAA
TTTCTGTTCATTTTACCCTTAGGAGAAGCTTTAGTTCTTCTCAAGTCAGGGAGTAGTGAGTTTGTATTTT
GAGTAGTCATTTCTACTAAGCTGGTTGCTTTCTAGAGAGACAGTGAATCTAGTACTTTAATACATTTTC
TCTGACATGGTTTTTTTTTTCTTTTTTGGGGGCATTTTAACTTAGAGGTGGTGGTAAAACCTACTTTTG
AGTTCTCCGAAGTGAAGTTAAAATAACTTGCAGAATTTTCAAAGTCAATGGGCTTAGCATGATTACTGCT
GTTTGGTGGGGCTGAGAATGAAATATTTGACATTCTGGAATTGCTGGCATGTAAAGCTTCTCCAGAGAGGC
ACCCAGGAAATCACTCTTTACAATTTGTAAGGAAGGGCCTGTAAGGATCAAACACATGGACCTAC
ATTCAGTGAATAGTTACAAAGTTACTGATTTGGGTTCCACACCCTGTGGTCTTAGTCAAAAATAATGAT
CTGTTTCAGTTTGAAGAGCAGGATTTTATTATTTGCTTGGGGTGGGGGCGGAGAGTGAATATGAGT
AAGGTTGCTGAATGAATTCTAAACTCGCTTATCTGGTCTTCAGGCTTCCCAACTCTCTCCAAGCCTTCTTA
TTTCACTGCAGTTAAATAACATCTTCTGTTCTATAGTTGTGCTGTGAGTTTTCTGTTTCAATTTGCGCA
GTGTATTTTAAATACGGCCCATGTCAATTATAGTTGATTTTATCCCTTTAAACAATTACTGTATTTGTTTTG
ACGTAGAGGTTTCAATTTTTTACCTTGGGGCAAATGAAAACTTGGCATTTTTTCAATTTGGGAACATATA

ATAGCTTGTAACCTTTTCAGACAGCAGTAAATGTCTGAAAAAATATCAAAAACAGCATAAAGACAAGATTA
TGTAGCTCTAATTATACGTATATAATTATAAAAAACAATGTGCAAGGGTTATATTTTAAGGTCTTTTAAAA
TCTGATTTTTGATCATACAAATGACATAATATTTTTTATGGTAGCCTTTTACTTTCAAGACTTAATTTTCA
GACTTGTACAAGTTCTTTCTTACATTCTTTCCCTCTCACACCATCCTACTGGAGAAAGCATACTTTTATGC
TAAGATCTTACTTTAAGCTTTTTATGTGAACAAAAGATGTACATATAGTAAGTATTACTTCCGTAGTCCTC
AAATTTACTATAACTTTTTGTACTTAGTATATGTTTTATATTTGGAAAACAGCACTACGCTTAGTTTTCTG
TAGTTCCTGAGTGATGTCTGTGTGTTCCCTTGCCCTGCCCCTTTTTTGTGAGCACAGATTAGTCTGTTATCCAT
GGCTGGCACTTCACTTATGATCCTTTCTCTGCTAGATTTTTATGCAGCTCTCTATGAAGTTTCATGGCCCA
TAGATATTCAAAAGCAAGATATTCTATACATATGTGTATATGTATATATACTCCTTATGTTAATACTAAAG
TGTTTTATGCTGAGTTGCTGCCTTTCCCCGTATGTATCCATGTGCATGCTCTTAGAGACCTTGAATGGTTG
AGGGTAAAGTGATTTATTAGTAATTCTACTTGCCTTGTGTATGTCTGAGCTGAAAACAATCGTGATTAAGA
AATTTAGAGGTGGCTGGCGTGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCCGAGGCAGGCGGA
TCACCTGAGGTCGGGAGTTCAAGACCAGCCTGACCAACATGGAGAAACCCTGTCTCCACTAAAAATACAAA
ATTAGCCGGGTGTGGTGGTGCATGCCTGTAATCCCAGCTACTCGGAAGTTTGAGACGAGAATCTCTTGAAC
CCGGGAGGCGGAGGTTGTGGTGGTGGTGCATGCCTGTAATCCCAGCTACTCGGAAGTTTGAGACGAGAATCTCTTGAAC
CCGTTTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

IRGIKKSPPQLSSSSSRLSKNILSTTGKTVHQTRDDDDQPRDFFKRNRVNEHQKSSNMNAGPSWNKVQHS
KNSSGKRQSKSQVPHASSQPRSSLTAVTQPTTEKLKESISPEARRKRNPLGSRQCGASGNKFLDFQSMKI
IKENADEDSASDLSDSERIPIPPSPLTPPDLNLRAEIIDPVYFDLHPGQGHKPEYYYPNPLPSPFSSWDL
RDMALLLNAENKTEAVPRVGGLLGKYIDRLIQLEWLQVQTVQCEKAKGGKARPPTAPGTSALKSPGRSKL
IASALSKPLPHQEGASKSGPSRKKAFHHEEIHPSHYAFETS PRPIDVLGGTRFCSQRQTLERTEEKKKKS
SKSTKLQRWDLSGSGSSKVVETSGHIRVPKQAAVILDSADSKASKTQAHAPRKKGKAESCGHATVVSSEK
KLKTNGVKQNTYKLLK

AUG initiation = 42.1 kDa
AUA initiation = 48.7 kDa

+++++

#28

NM_006079

CUG initiation conserved in mammals

CITED2 Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 2

Synonyms: MRG1; P35SRJ; CITED2

ACAGCTCATTGTTGGCAGCTGCCGGGCGGTCTGCGGAGCTGTGAGGGCAACGGAGGGGAAATAAAAGGGA
ACGGCTCCGAATCTGCCCCAGCGGCCGCTGCGAGACCTCGGGCGCCGACATCGCGACAGCGAAGCGCTTTGC
ACGCCAGGAAGTCCCCTCTATGTGCTGCTGAGCCGGTCTGGGACGCGACGAGCCCGCCCTCGGTCTTCGG
AGCAGAAATCGAAAAACGGAAGGACTGGAAATGGCAGACCATATGATGGCCATGAACCACGGGCGCTTCC
CCGACGGCACCAATGGGCTGCACCATCACCTGCCACCGCATGGGCATGGGGCAGTTCCCGAGCCCCCAT
CACCACCAGCAGCAGCAGCCCCAGCACGCCTTCAACGCCCTAATGGGCGAGCACATACACTACGGCGCGGG
CAACATGAATGCCACGAGCGGCATCAGGCATGCGATGGGGCCGGGGACTGTGAACGGAGGGCACCCCCGA
GCGCGCTGGCCCCCGCGCCAGGTTTAAACAACCTCCAGTTCATGGGTCCCCCGGTGGCCAGCCAGGGAGGC
TCCCTGCCGGCCAGCATGCAGCTGCAGAAGCTCAACAACCAGTATTTCAACCATCACCCCTACCCCCACAA
CCACTACATGCCGATTTGCACCCTGCTGCAGGCCACCAGATGAACGGGACAAAACCAGCACTTCCGAGATT
GCAACCCCAAGCACAGCGCGGCAGCAGCACCCCAAGCGGCTCGGGCGGCAGCAGCACCCCTGGCGGCTCT
GGCAGCAGCTCGGGCGGGCGGCGGGCAGCAGCAACAGCGGGCGGGCAGCGGCAGCGGCAACATGCCCCG
CTCCGTGGCCACGTCCCCGCTGCAATGCTGCCGCCAATGTATAGACACTGATTTTCATCGACGAGGAAG
TTCTTATGCTCTTGGTGATAGAAATGGGTTTGGACCGCATCAAGGAGCTGCCCGAACTCTGGCTGGGGCAA
AACGAGTTTGATTTTTATGACGGACTTCGTGTGCAAAACAGCAGCCCAGCAGAGTGAGCTGTGACTCGATCG
AAACCCCGGCGAAAGAAATCAAACCCCCAACTTCTTCGGCGTGAATTAAGAAACATTCCTTAGACACA
GTATCTCACTTTTCAGATCTTGAAAGGTTTGAGAACTTGAAACAAAAGTAAACTATAAATTTGTACAAATT
GGTTTTAAAAAAATGCTGCCACTTTTTTTTTCTGTTTTTGTTCGTTTTTGTAGCCTTGACATTCACC

ACCTCCCTTATGTAGTTGAAATATCTAGCTAACTTGGTCTTTTTTCGTTGTTTGTGTTTTACTCCTTTCCCTC
ACTTTCTCCAGTGTCAACTGTTAGATATTAATCTTGGCAAAGTCTTAATCTTGTGGATTTTTGTAGATGG
TTTCAAATGACTGAACTGCATTACAGATTTACGAGTGAAAGGAAAAATTGCATTAGTTGGTTGCATGAACTT
CGAAGGGCAGATATTACTGCACAACTGCCATCTCGCTTCATTTTTTTAACTATGCATTTGAGTACAGACT
AATTTTTAAAATATGCTAACTGGAAGATTAACAGATGTGGGCCAACTGTTCTGGATCAGGAAAGTCAT
ACTGTTCACTTTCAAGTTGGCTGTCCCCCCCCGCCGCCGCCCATATGTACAGATGATAATAGGG
TGTGGAATGTCGTGAGTGGCAAACATTTACAGATTTTTATTTTGTGTTCTGTCTTCAACATTTTTGACACT
GTGCTAATAGTTATATTAGTACATGAAAAGATACTACTGTGTTGAAAGCTTTTTAGGAAATTTTGCAGT
ATTTTTGTACAAAACATTTTTTTGAAAAATACTTGTAAATTTATTCTATTTTTAATTTGCCAATGTCAATA
AAAAGTTAAGAAA

LDATSPPSVFGAEIAKTEGLEMADHMMAMNHGRFPDGTNGLHHPAHRMGMGQFSPHHHQQQPQHAFNA
LMGEHIHYGAGNMNATSGIRHAMGPGTVNGGHPPSALAPAARFNNSQFMGPPVASQGGSLPASMQLQKLNN
QYFNHHPYPHNHYMPDLHPAAGHQMNGTNQHFRDCNPKHSGSSTPGGSGSSTPGGSGSSSGGGAGSSNS
GGGSGSGNMPASVAHVPAAMLPPNVIDTDFIDEVLMSLVIEMGLDRIKELPELWLGQNEFDFTDFVCKQ
QPSRVSC

AUG initiation = 28.5 kDa
CUG initiation = 30.6 kDa

+++++

#29

NM_182603

CUG initiated extension conserved in mammals but maybe not in Arfotheria (mouse, dog, orangutan, cattle, etc, have delimiting upstream in-frame stop codon).

ANKRD42 ankyrin repeat domain 42

Synonyms: SARP; FLJ37874; ANKRD42

GCGACGGCCCTGCTGCCTCTCCAGCCAAGTGGCTGGAGTCGGGAGGCTGGAAAGAGACTCCGAGAAAGTAC
CAGCGGAAGGCGGCCCGCTACGGCGATTTCGACGGGAGTAGCAGACGAAGACGGTGGCCGCCGACTAGC
CACCACGTGTGGAGGATAAACGGTCTACACGGCCATTCCGGCGCCGAGTCTAGGGAAAGAGTTAGCGACGA
CGGGGAAAGAAAATGTGAAGAGAGCGACCCCGCTCCAGGGTCGCTGCAGGAAGCCTAAGTGCAGACGCCG
GCTTCTCCGCGAGTACTTGAGAAGGGTCAGTGAAAACCTCGGCCACTGCCGACGCTCTCTAGGGAGAGA
GTTAGGGGAGATAGTGGCCACAGTACAGCTGCTCTTGGGAGAGAGTTAGGGGAGACAGCACCTTCTGCAG
CAGCGACGTGAATTTTGTGAAGTTGGAGGCCACCAAACCTACCGACTCCAGGGGAACAGCCAGAGAAGACC
GAGGCCTCCGCCTCAGTGGTCCTTGGGAGGGAGTCACTGACATTCCGGACCCGCGAAGTGTGACTTCGGG
GATAGAGTCACTGACGATCGCAGTCCCGCTTTCAGTGGCTCCTGGGAGGGAGGGAGTGTGCAAGGCGGCCA
CAGCGTTGGTAGTTCTTGGGAGGAAGTAAGTGGAGACCGCGCTACGCAGCCAGCGACTCCTCTGGTGTGA
GCGGCAGTGAAGACGCCAGCTACCGCTTTCAGTGGCTTTTGGGAGAGAGAAAGTGAAGACGAAGTTTCCGC
TGCAGCTTCTGGGAGAGAGCAAGAGAGGACCTTGGGCCCCGTCCTAGTGACGACGGAGAAGAGGGCCGCTG
CCGCTGCAGTGGCTCGTGGGTGAGAGCAAGTGAAGACCGCCGACGATCAGGGGCCTGGACTCAACTCCTC
CCCAGAGTCCGAGGTGTTGCGCCATGCCCCGGGTGGCCAATTCAGGCCCTCCACTTCTCTAGGGGAGACT
GCAAACCCCTGTTCCAGGAAGAAGGTGCATTTTTGGCAGCATAATGATGCAGTACGAGCTGGAGATGTA
GCAGCTTTCAGAAATAGTGTGCTTTCATTGGCTGCTCTGGCATGGAGCTGATATCACACACGTAACAACGA
GAGGTTGGACAGCATCTCACATAGCTGCAATCAGGGGTGAGGATGCTTGTGTACAGGCTCTTATAATGAAT
GGAGCAAATCTGACAGCCCAGGATGACCGGGGATGCACTCCTTTACATCTTGTGCAACTCATGGACATTC
TTTCACTTTACAAATAATGCTCCGAAGTGGAGTGGATCCCAGTGTGACTGATAAGAGAGAATGGAGACCTG
TGCATTATGCAGCTTTTCATGGGCGGCTTGGCTGCTTGCACCTTCTTGTAAATGGGGTTGTAGCATAGAA
GATGTGGACTACAATGGAACCTTCCAGTTCACTTAGCAGCCATGGAAGGCCACCTTCACTGTTTTCAAATT
CCTAGTCAGTAGAATGAGCAGTGCAGCAGCAAGTTTTAAAAGCTTCAATGATAATGGAGAAAATGTACTGG
ATTTGGCCCAGAGGTTCTTCAAGCAGAACATTTACAGTTTATCCAGGGGGCTGAGTATGGAAGAAAAGAC
CTAGAGGATCAGGAAACTTTAGCATTTCCAGTTCATGTGGCTGCCTTTAAGGGTGATTTGGGGATGCTTAA
GAAATTAGTGAAGATGGAGTAATCAATATTAATGAGCGTGTGATAATGGATCAACTCCTATGCATAAAG

CTGCTGGACAAGGCCACATAGAGTGTGGCAGTGGTTAATTAAAATGGGAGCAGACAGTAATATTACCAAC
AAAGCAGGGGAGAGACCCAGTGTGGCAAAGAGGTTTGGCCATTTGGCAGCAGTGAAGCTGTTAGAGGA
GCTACAGAAATATGATATAGATGACGAAAATGAAATTGATGAAAATGATGTGAAATATTTTATAAGACATG
GTGTTGAGGGAAGCACTGATGCCAAGGATGATTTATGTCTGAGTGAAGTGGATAAAAACAGATGCCAGAAGA
CCATCAAAGAAGTGCAGGGCCAGCTGGAGTATGAACGACTACGTAGAGAAAAATTAGAATGTCAGCTTGAT
GAATATCGAGCAGAAGTTGATCAACTCAGGGAAACACTGGAAAAAATTCAAGTCCCAAACCTTTGTGGCTAT
GGTTGGTGTCTCTTTTAAATACATTTATTTTTCTCAAGAAGTATATACAAGAGTGGCCAAGAGTACAAGCTT
TGGGCTGGGGCTCTTTGGACTTGAATCCTGGCTATAGTCTTTTTTGTATTTGGGCTACTCATTAACTTTT
TGTGCCTCAACTATAAACTGGAGATGATAACTTATACTTTCTAGAGCTGATGACAGGATTAAGGAATACA
CACACACACACACACACACACACACACACACTCTATATGTAACATAACTTTCTAGATACATACA
CACATCTGTCTATCTTCTTCAAACAGCAGCCTAGTTCTATAAGTATTATTGTTAACATTTGTACCATAGAAG
GAGAAAATGTTTTCTATAAGTAATCAATCAGAATTCTAAGACAGCTAGAGGATATGTATATTTTAAATTTCT
AAATAACCAAATAAAGTGCTTTGAATGGAATCCATATTTTCTTTCCATAGGGAAGTTTCTTCATCAATCA
TCATGGATGAATTAATTCTGTTTGGAGCTTGTGTACCTCAAATCTGATCTATTAATATTATAGAATCTTC
CTGGCTTCTTTTTATTTTGCACAACTAGTCACTGGTCTCTTTAATAACCACTTTAAAAATATTTAAATAA
TAAACATGTTTGTGTATAGTGTAAAAACAAGATAGATGTTCTTCTGACACTAAGTTCCTCTCCAG
AGGAAGCTATTGTTAACAATTTAGTACATACCATATTAGACAAAATTCTATTTATCTGCAAACATGTATGT
GTATTTCTATGCATATGCAAATATAACCACTTCTCAGTTTTCTCTGGGTTTTGGTGTCTCACCAGTGGTTG
ATTTTCCAAGAAATATAATTAACATAATAATT

LERDSEKVP AEGGRRY GDSQGV ADEDGGRRTSHHVWRINGLHGHSGAESRERVSDGGERKCEESDRRSRVA
AGSLADAGFSRSDLRRVSENLGHCRSVSRERVGD SGHSHSCSWERVGDSTFCSSDVNFSEVGGHQTTD
SRGTAREDRGLRLSGPWEVSDIRDPRTSDFGDRVSDDRSRFSGSWEGGSVEGGH SVGSSWEEVSGDRGY
AASDSSGVSGSEDASYRFSGFWERESEDEGFRC SFWERAREDLGPRPSDDGEEGRCSGSWVRASEDRRS
IRGLDSTPPQSRCCAMPGVANS GPSTSSRETANPCSRKKVHFGSIHDAVRAGDVKQLSEIVCLHWLLWHG
ADITHVTTRGWTASHIAAIRGQDACVQALIMNGANLTAQDDRGCTPLHLAATHGHSFTLQIMLRSGVDPSV
TDKREWRPVHYAAFHGRLGCLQLLVKWGCSI EDVDYNGNLPVHLAAMEGHLHCFKFLVSRMSSATQVLKAF
NDNGENVLDLAQRFFKQNILQFIQGAEYEGKDLEDQETLAFPGHVAAFKGDLGMLKKLVEDGVININERAD
NGSTPMHKAAGQGHIECLQWLKIMGADSNITNKAGERPSDVAKRFAHLA AVKLLLEELQKYDIDDENEIDEN
DVKYFIRHGVEGSTDAKDDLCLSDLDKTDARRPSKNCRASWSMNDYVEKN

AUG initiation = 43.1 kDa
CUG initiation = 76.1 kDa

+++++

#30

NM_014310

CUG initiated extension conserved in mammals.

RASD2 RASD family, member 2

Synonyms: Rhes; TEM2; MGC:4834; RASD2

TAGGAGCTGCTCCTTCATCACTGGAGTCGCCCCCTACCTCTCTGCCCCAGCCCCGAGAGCCCCAGGCGGGGA
CCCCGGATCGGACGTCCCCAAGCCTCCGGGCACCTGGCTCAGCAGGAGGCCCGGCTCGGGGCAGGGCA
GGGCCGGCGGGCGAGCCGGAGCCCGCCCCCTGCCCGGGCCCCGCCGAGCCCTCGGAGCCACCCATGGG
GCACCTGCCCCCTTGCCTCCTTGCCTGGCCGCGCCAGCCCGGCGTCCCGAGCAGCGCAGGGGAGGATCC
CCGCGCAGTGACCCGGGAGCCACCACAGACTCTGGGAGGCTCGGCGGCTGGAGCAGCAGCCAGCTCCCCG
AGCTCCCGGCGCTTCCAGGCAGCTCTCTGAGCCGTGCCAGAGGCCCGGCCATTCCAGCCCCGAGCC
ATGATGAAGACTTTGTCCAGCGGGAAGTGCACGCTCAGTGTGCCCGCCAAAAACTCATACCGCATGGTGGT
GCTGGGTGCCTCTCGGGTGGGCAAGAGCTCCATCGTGTCTCGCTTCTCAATGGCCGCTTTGAGGACCAGT
ACACACCCACCATCGAGGACTTCCACCCTAAGGTATACAACATCCGCGGCGACATGTACCAGCTCGACATC
CTGGATACCTCTGGCAACCACCCCTTCCCCGCCATGCGCAGGCTGTCCATCCTCACAGGGGATGTCTTCAT
CCTGGTGTTCAGCCTGGATAACCGGGAGTCTTCGATGAGGTCAAGCGCCTTCAGAAGCAGATCCTGGAGG
TCAAGTCTGCTGAAGAACAAGACCAAGGAGGCGGCGGAGCTGCCATGGTCACTGTGGCAACAAGAAC
GACCACGGCGAGCTGTGCCGCCAGGTGCCACCACCGAGGCCGAGCTGCTGGTGTCCGGGCGACGAGAAGT

CGCCTACTTCGAGGTGTCTGGCCAAGAAGAACACCAACGTGGACGAGATGTTCTACGTGCTCTTCAGCATGG
CCAAGCTGCCACACGAGATGAGCCCCGCCCTGCATCGCAAGATCTCCGTGCAGTACGGTGACGCCTTCCAC
CCCAGGCCCTTCTGCATGCGCCGCGTCAAGGAGATGGACGCCTATGGCATGGTCTCGCCCTTCGCCCCCG
CCCCAGCGTCAACAGTGACCTCAAGTACATCAAGGCCAAGGTCTTTCGGGAAGGCCAGGCCCGTGAGAGGG
ACAAGTGCACCATCCAGTGA GCGAGGGATGCTGGGGCGGGGCTTGGCCAGTGCCTTCAGGGAGGTGGCCCC
AGATGCCCCTGTGCGCATCTCCCCACCGAGGCCCGGCAGCAGTCTTGTTACAGACCTTAGGCACCAGA
CTGGAGGCCCGGGCGCTGGCCTCCGCACATTCGTCTGCCTTCTCACAGCTTTCCTGAGTCCGCTTGTCC
ACAGCTCCTTGGTGGTTTCATCTCCTCTGTGGGAGGACACATCTCTGCAGCCTCAAGAGTTAGGCAGAGAC
TCAAGTTACACCTTCTCTCCTGGGGTTGGAAGAAATGTTGATGCCAGAGGGGTGAGGATTGCTGCGTCAT
ATGGAGCCTCCTGGGACAAGCCTCAGGATGAAAAGGACACAGAAGGCCAGATGAGAAAAGGTCTCCTCTCTC
CTGGCATAAACACCCAGCTTGGTTTGGGTGGCAGCTGGGAGAACTTCTCTCCAGCCCTGCAACTCTTACGC
TCTGGTTACAGTGCCTCTGCACCCCTCCACCCCTCCACCCACACACACAAGTTGGCCCCCAGCTGCGCCTGA
CATTGAGCCAGTGGACTCTGTGTCTGAAGGGGGCGTGGCCACACCTCCTAGACCACGCCACCACTTAGAC
CACGCCACCTCCTGACCGGTTCTCAGCCTCCTCTCCTAGGTCCCTCCGCCGACAGTTGTGCTTTGTT
GTGGTTGACAGTGTTCGTGTCTGTATAGTAGTAAATGGAATCATTGTACTGTAAAAGCCTAGTGA
CTCCCTCCTTGGCCAGGCCCTCACCCAGTTCAGATCCACGGCCTCCACCCGGGACGCCTTCTCCTCTGCT
CCCAAACAGGGTTTCCGTGGCCTGTTTGCAGCTAGACATTGACCTCCGCCATTGAGCTCCACGGTTTACAG
ACAATTGCACAAGCGTGGGGTGGGCAGGCCAGGACTGCTTTTTTTAATGCTCCCATTTACAGAGGATAC
CACCGAGACTCGGAGGGGACACGATGAGCACCAGGCCACCTTTGTCCCCTAGCAAATTCAGGGTACAGC
TCCACCTAGAACCAGGCTGCCCTTACTGTGCTCGTTCCTCAAGCATTTATTAAGCACCTACTGGGTGCTG
GGTTCCTGTGCTCTAGGAAACCAAGAGGGTCCCAGTCTGGCCTCTGCCCGCCCTGCTGCCCCACCAC
CTTCTGCACACACAGCGGTGGGGAGGCGGGGAGGAGCAGCTGGGACCCAGAAGTGGAGCTGGGAGGGATCC
GACAGAAAAGCTCAGGGCGGGTCTTCTCCTTGTGCCCGGGATTGGGCTATGCTGGGTACCACCATGTACTC
AGGCATGGTGGGTTTTGAACCCATAAACCAAAGGCCCTTGTCTCAGCTCTTAACAAGTATATTTTTGTATT
TTAATCTCTCTAAACATATTGAAGTTTTAGGGCCCTAAGGAACCTTAGTGATCTTCTATTGGGTCTTTCTG
AGGTTTCAGAGAGGGTAAGTAACTTCTCCAGGTACACAGCAAGTCTGTGGGTGGCAGAAGCAAGCTAGCG
CTGGGCATTGAGTACATACCACGATGTGCTCCCTCTCTTGTGCTTGGCCCCCTGGGGCCTTCAGGGCTTTG
GGACATCTTGTCTCAACCCTCTCCCTAGATCAGTCTGTGAGGGTCCCTGTAGATATTGTGTACACCATGC
CCATGTATATAACAAGTACACACAGATGTACACACAGATGTACACATGCTCCAGCCCCAGCTCTGCATACCT
GCACCTGCACCCAGCCTTGGCCCCCTGCCTGCGTCTGTGCTCAAAGCAGCAGCTCCAACCCTGCCTCTGTC
CCCTTCCCCACCCACTGCCTGAGCCTTCTGAGCAGACCAGGTACCTTGGCTGCACCGGTGTGTGGCCCGCT
CTCACCCAGGCACAGCCCCGCCACCATGGATCTCCGTGTACACTATCAATAAAAAGTGGGTTTTGTTACAAA
AA

LAQQEAPGSGQGRAGGGEPEPAPCPGPAEPSEPTHGAPAPCASLPGRAQPGVPSSAGEDPRAVTPREPPQTL
GGSAAGAAGSSPQLPALPGSSLRARGPARHSQPRAMMKTLSSGNCTLSVPAKNSYRMMVVLGASRVGKSSI
VSRFLNRFEDQYTPTIEDFHRKVYNIRGDMYQLDILDTSGNHPPFAMRRLSILTDVFIILVSLDNRESF
DEVKRLQKQILEVKSCLKNKTKAAELPMVICGNKNDHGELCRQVPTTEAELLVSGDENCAFYEVSAKNT
NVDEMIFYVLFMAKLPHEMSPALHRKISVQYGDFAHPRPFCMRRVKEMDAYGMVSPFARRPSVNSDLKYIK
AKVLREGQARERDKCTIQ

AUG initiation = 30.4 kDa
CUG initiation = 40.6 kDa

+++++

#31

NM_002506

UUG/CUG initiation in mammals and most tetrapods

NGF nerve growth factor (beta polypeptide)

Synonyms: NGFB; HSN5; Beta-NGF; MGC161426; MGC161428; NGF

CGGACGCGTGGGGCGCTGGGAGCCGGAGGGGAGCGCAGCGAGTTTGGCCAGTGGTTCGTGCAGTCCAAGGGG
CTGGATGGCATGCTGGACCCAAGCTCAGCTCAGCGTCCGGACCCAATAACAGTTTTACCAAGGGAGCAGCT
TTCTATCCTGGCCACACTGAGGTGCATAGCGTAATGTCCATGTTGTTCTACACTCTGATCACAGCTTTTTCT

GATCGGCATACAGGCGGAACCACACTCAGAGAGCAATGTCCCTGCAGGACACACCATCCCCAAGTCCACT
GGACTAAACTTCAGCATTCCCTTGACACTGCCCTTCGCAGAGCCCCGAGCGCCCCGGCAGCGGCGATAGCT
GCACGCGTGGCGGGGAGACCCGCAACATTACTGTGGACCCAGGCTGTTTAAAAAGCGGCGACTCCGTTC
ACCCCGTGTGCTGTTTAGCACCCAGCCTCCCCGTGAAGCTGCAGACACTCAGGATCTGGACTTCGAGGTCG
GTGGTGTGCCCCCTTCAACAGGACTCACAGGAGCAAGCGGTTCATCATCCCATCCCATCTTCCACAGGGC
GAATTCTCGGTGTGTGACAGTGTGAGCGTGTGGGTTGGGGATAAGACCACCGCCACAGACATCAAGGGCAA
GGAGGTGATGGTGGTTGGGAGAAGTGAACATTAACAACAGTGTATTCAAACAGTACTTTTTTGGAGACCAAG
TGGCGGGGACCCAAATCCCCTTGACAGCGGGTGCCTGGGGCATTGACTCAAAGCACTGGAACATCATATTGTA
CCACGACTCACACCTTTGTCAAGGCGCTTTACCATGGGATGGCAAGCAGGGATAACCCTGGCCGGGTTATCC
CGGATGAGATACGGGCCGGGAAAAGTGGGGCTCAACAAGGGAGGATGAAGAGAAGGAGGCTAAAGGCTGG
CGGAAGGACATCCCCTTCCCCTGGGGCCATTCAAAAACCTTCTGCGGGGGGCCCTCCCTTAACCGGGAAC
CTGGTAAAATGGATTTTTTAAGGGTGGTAA

LASGRAVQAGWHAGPKLSSASGPNNSFTKGAIFYPGHTEVHSVMSMLFYTLITAFLLIGIQAEPHSESNVP
AGHTIPQVHWTKLQHSLDTALRRARSAPAAAIAARVAGQTRNITVDPRLFKKRRLRSRVLVSTQPPREAA
DTQDLDFEVGGAAPFNRTHRSKRSSSHPIFHRGEFSVCDSSVSVWVGDKTTATDIKKEVMVVGRSEH

AUG initiation = 18.3 kDa
UUG initiation = 22.7 kDa

+++++

#32

NM_152283

GUG (or ACG) initiated extension conserved in mammals – AUG in several species;
GUG->AUG *Bos taurus*, *Sus scrofa*, *Mus musculus* (two transcriptional isoforms in mice
one with AUG and one with GUG)

In human two 5' variants – one adding in-frame AUG just in front of the GUG

ZFP62 zinc finger protein 62 homolog

Synonyms: ZET; ZNF755; FLJ11344; FLJ34057; FLJ34231; FLJ58781; FLJ59694;
MGC176438; DKFZp667F2013; ZFP62

GTGAGTGATGATGATAAGCTCCCCTGCAGGTGTGAATAGAGACCCCGGAGGCGCGTCCCTAGCCCTCATCT
GGGGAAGCGCACCTGCATACAGACGGGTGCACCGGGGAGGAGGCGATCTGCCGCGTGTCCCTGCAAGCAGA
AAAGGAGTAACTAAGTGTACATTTGAAGACGAGCACTGAGGATGAGGAACCAACTGAAGAATATGAAAAT
GTTGAAATGCAGCATCTAAGTGGCCAAAAGTGGAGGATCCCTATCCCTGAATCTAAGGTTGGTGACACATG
TGTTTGGGATAGCAAGGTAGAGAATCAACAGAAAAGCCTGTGGAAAACAGGATGAAGGAGGACAAAAGCA
GCATCAGGGAAGCAATCAGCAAAGCCAAAGAGTACAGCAAAATATAAAGACAGAACAGGAAGGTGAGGCATCT
GAGAAGAGCTTGCATCTGAGCCCACAGCATATCACACACCAGACTATGCCTATAGGACAGAGAGGCGATGA
GCAAGGCAAACGTGTGGAGAACATTAATGGAACCTCCTACCCTAGTCTACAGCAGAAAACCAATGCTGTTA
AGAAATTACATAAATGTGATGAATGTGGGAAATCCTTCAAATATAAATCCCCTTGTTC AACATAAAATT
ATGCACACTGGGAAAAGCGCTATGAATGTGATGACTGTGGAGGGACTTCCGGAGCAGCTCGAGCCTTCG
GGTCCACAAAACGGATCCACACTGGGGAGAAGCCGTACAAGTGTGAGGAATGTGGGAAAGCCTACATGTCCT
ACTCCAGCCTTATAAACCACAAAAGCACCCATTCTGGGGAGAAGAACTGTAAATGTGATGAATGTGGAAA
TCCTTCAATTATAGCTCTGTTCTGGACCAGCATAAAAGGATCCACACTGGGGAGAAGCCCTATGAATGTGG
TGAGTGTGGGAAGGCCTTCAGGAACAGCTCTGGGCTCAGAGTCCACAAAAGGATCCACACGGGGGAGAAGC
CCTATGAATGCGACATCTGTGGGAAAACCTTCAGTAACAGCTCTGGCCTTAGGGTCCATAAAAGGATCCAC
ACAGGTGAGAAACCTTACGAATGTGATGAGTGTGGGAAGGCCTTCATTACTTGTAGAACACTTCTCAACCA
TAAAAGCATCCACTTTGGAGATAAACCTATAAATGTGATGAGTGTGAGAAATCTTTAATTATAGCTCTC
TTCTCATTACAGCATAAAGTCATCCACACTGGAGAGAAACCTTATGAATGTGATGAATGTGGGAAGGCTTTC
AGGAACAGCTCAGGCCTCATAGTGCATAAAAGGATCCACACAGGAGAGAAACCTTACAAGTGTGATGTCTG
TGGCAAAGCATTACAGCTATAGCTCAGGCCTCGCAGTCCATAAAAGCATTACCCTGGGAAGAAAAGCCCATG
AATGTAAGGAGTGTGGGAAATCCTTTAGTTATAACTACTACTTCTTCAAACACAGAACTATTACATACCGGA
GAGAGACCTTATGTATGTGATGTGTGTGGGAAAACGTTTCAGAAAACAAATGCAGGCCTCAAAGTCCACAGGAG

GCTCCATACTGGGGAAAAACCATATAAGTGTGATGTGTGTGGGAAAGCCTATATCTCACGCTCTAGCCTTA
AAAATCACAAAGGAATCCACCTTGGGGAGAAGCCCTATAAATGTAGCTATTGTGAGAAATCCTTCAACTAC
AGCTCTGCCCTTGAACAGCATAAAAGGATTACATACCAGGGAAAAACCCCTTTGGGTGTGATGAGTGTGGTAA
AGCTTTCAGAAATAATTCTGGCCTTAAAGTACATAAAACGAATCCACACTGGGGAACGACCTTACAAATGTG
AAGAATGTGGGAAAGCATAACATCTCTCTCGAGCCTTATAAATCATAAAAGTGTACACCCTGGGGAGAAG
CCCTTTAAGTGTGACGAGTGTGAGAAGGCCTTCATCACATACCGAACCCCTTACAAACCACAAAAAAGTTCA
TCTTGGGGAGAAGCCCTACAAATGTGATGTGTGTGAGAAATCTTTTAAATTACACATCGCTCCTTTCTCAGC
ACAGAAGGTCCACACTAGAGAGAAAACCCCTATGAATGTGACAGGTGTGAGAAGGTCTTCAGAAACAACCTCA
AGCCTTAAAGTTCATAAAAGAATCCATACTGGGGAGAGGCCCTATGAATGTGATGTGTGTGGAAAAGCCTA
CATCTCACACTCAAGCCTTATTAACCATAAGAGTACCCACCCTGGCAAGACACCCCATACATGTGATGAAT
GTGGAAAAGCTTTTTCTCAAGCAGAATCTTATAAGCCATAAAAGAGTCCATCTTGGGGAGAAAACCCCTTC
AAGTGTGTTGAGTGTGGGAAATCTTTCAGTTACAGCTCTCTCCTTTCTCAGCACAAGAGGATCCACACAGG
GGAGAAAACCCCTATGTGTGTGATAGGTGTGGGAAGGCCTTCAGGAACAGCTCAGGCCTCACAGTGCATAAAA
GGATCCACACAGGTGAGAAAACCCCTATGAATGTGATGAGTGTGGGAAGGCATACATCTCACACTCAAGTCTT
ATCAATCATAAAAGTGTCCACCAGGGGAAGCAGCCCTATAAATTGTGAGTGTGGGAAATCCTTCAATTATAG
ATCAGTCCTTGACCAGCACAAAAGGATCCACACTGGAAAAGAAGCCATACCGATGTAATGAGTGTGGTAAGG
CTTTTAAATATCAGATCAAATCTCACCAAGCATAAAAAGAACCCTACTGGAGAGGAATCTTTAAATGTGATA
TATGTGGGAAGTTATAGTGGCACATCCAGAAGAGAACCTATGAGGGAGGGAATGCCCTGGATGGGGGCAG
GATGAGGATGCCTCTGTAGCAGGCAGAGCTTACCAAGTCTCTCCGAACCTCAAATGGAAGAAATACCTTATG
AATGTAAGAATGTAGGGGGTTCATGGCTTGTAATTTACACAGTGTAAATGAAACCATCCTAGAGGATTATGA
GGAATCCTTTCTATGTGATTTTCAATCATAGCAAGCAAGAAAGGCTCCAGTGTCAAGGTAGTTCAGCTCTT
ACAGGATATAAAACAGTCCATACTTGAGAGAAAAACTTAGATCTGAGTGTGGAATGTGAAGCAAATCTTC
AAAATCAGTAGACATTTCTGGACATAAAACACAGATGAGGAAAGGGCTTCAATTAGAAGTTACGTAATCAC
CATCAGAAAGTTCATGTTTGGTAAATTTCTGTTACTAGAAATGTAGGAAATTCAGGTATAGCTTTGAATCCC
AATTACACATTTGGTCAAGTGGGAAAACCTAAGGGCCTCCAACAGGCAAATTCAGGGAGGATAGGTTTCAGGGA
ATATAAATTTATTTAATATTAGTGGTCTTTAAGTATAAACTTGATGTAATTTGGTTTGGGAGGGGGCAGTGA
TGATGACTTCTGAAACAAAATTTGGATTTCTTTTAGGAAAAGTAGAAAGCATAGACTTACAAGTCTAACA
GGAGATAGGAGAGAGTCACTCATAAAAAATGCAAATGATGAACGTACTATTGTGATACATTAGTTGAATG
GATGAAACTTTTTTAAAGTTTTCAGATGAATCCCAATGAAATGATGAATTTGTGATGAGGATAAATGG
AAGTGGTATTTCACACATTATGCTACAATAAAAGTTTCTACCGTGGAGAGGATTTTGCACATTAGTAACT
AATGGAACACACCGTCAACATGAATTCGCACCTTACATGACAGAAGTGATTGAGGGATTCTATGAATAGA
AATGCTGAGAAGGAACGCATTTTTATTGCAGAAGCTAAAAAGCTAAAGTACCAGTCATCTAGAGAGAAGGAA
ATTAATGTTTCTTAATAATCCTGTTAAATGTTTGGATTGTTTTTGGAAATGTGTTATTGTAAAGATGTCATGC
AGGACATGTATATGTTGTCTGTTGTAATAATGTTAACGAATACTTTGTTTCAGGGCTCACTCTCTTTTGTCA
TGAAAGCCAGCTCCTTGTGGCGAGGTAAAGTGAATTCCAATAAAGAAATTCCTTAAATCAAAA

VSHLKTSTEEDEEPTEEYENVGNAASKWPKVEDPIPIESKVGDTCVWDSKVENQKKPVENRMKEDKSSIREA
ISKAKSTANIKTEQEGEASEKSLHLSPQHITHQTMPIGQRGSEQGKRVENINGTSYPSLQKKTNAVKKLHK
CDECGKSFKYNSRLVQHKIMHTGEKRYECDDCGGTFRSSSSLRVHKRIHTGEKPYKCEECGKAYMSYSSLI
NHKSTHSGEKNCKCDECGKSFNYSSVLDQHKRIHTGEKPYECGECGKAFRNSSGLRVHKRIHTGEKPYECD
ICGKTFSNSSLRVHKRIHTGEKPYECDCEGKAFITCRTLLNHKSIHFGDKPYKCECEKSFNYSSLLIQH
KVIHTGEKPYECDCEGKAFRNSSGLIVHKRIHTGEKPYKCDVCGKAFSYSSGLAVHKS IHGPKKAHECKEC
GKSFSYNSLLQLHRTIHTGERPYVCDVCGKTFRNNAGLKVHRRLLHTGEKPYKCDVCGKAYISRSSLNKHG
IHLGEKPYKCSYCEKSFNYSSALEQHKRIHTREKPFGCDECGKAFRNNSGLKVHKRIHTGERPYKCEECGK
AYISLSSLINHKSVHPGEKPFKCECEKAFITYRTLINHKVHLGEKPYKCDVCEKSFNYTSLLSQHRRVH
TREKPYECDRCEKVFRRNSSLKVHKRIHTGERPYECDVCGKAYISHSSLINHKSTHPGKTPHTCDECGKAF
FSSRTLISHKRVLGEKPFKCEGKSFYSYSSLLSQHKRIHTGEKPYVCDRCGKAFRNSSGLTVHKRIHTG
EKPYECDCEGKAYISHSSLINHKSVHQGKQPNCECGKSFNYRSVLDQHKRIHTGKKPYRCNECGKAFNIR
SNLTKHKRTHTEEESLNVIVGYSYSGTSQKRTYEGGNALDGGRRMPL

AUG initiation = 95.6 kDa
GUG initiation = 102.4 kDa

+++++

#33

NM_001102654

UUG/CUG initiated extension conserved in mammals and likely most vertebrates

NTF3 neurotrophin 3

Synonyms: NT3; HDNF; NGF2; NGF-2; MGC129711; NTF3

AGTTGAAGCTCCTCTCCCTTCCGAACAGCTCCGCGCACCGCCCCGCGACGCAGCCCCGGCGCAACTACTTTTC
 TTCTCTCTCCTTTCTTTCTTCTCTCCTTTTTTCCCCTGCTGGGTAGTGGCTGCGGCGGGGTGGGGGAGACT
 TTGAATGACCGAGCTCGCGTCCACCTTTTCTCTTCATGTCGACGTCCCTGGAAACGGCCACACGGATGCCAT
 GGTACTTTTTGCCACGATCTTACAGGTGAACAAGGTGATGTCCATCTTGTTTTATGTGATATTTCTCGCTT
 ATCTCCGTGGCATCCAAGGTAACAACATGGATCAAAGGAGTTTGCCAGAAGACTCGCTCAATTCCTCATT
 ATTAAGCTGATCCAGGCAGATATTTGAAAAACAAGCTCTCCAAGCAGATGGTGGACGTTAAGGAAAATTA
 CCAGAGCACCTGCCAAAGCTGAGGCTCCCCGAGAGCCGGAGCGGGGAGGGCCCCGCAAGTCAGCATTCC
 AGCCGGTGATTGCAATGGACACCGAACTGCTGCGACAACAGAGACGCTACAACCTACCCGCGGGTCTGCTG
 AGCGACAGACCTCCCTTGGAGCCCCCGCCCTTGTATCTCATGGAGGATTACGTGGGCAGCCCCGTGGTGCC
 GAACAGAACATCACGGCGGAAACGGTACGCGGAGCATAAGAGTCAACGAGGGGAGTACTCGGTATGTGACA
 GTGAGAGTCTGTGGGTGACCGACAAGTCATCGGCCATCGACATTGCGGGACACCAGGTACCGGTGCTGGGG
 GAGATCAAAACGGGCAACTCTCCCGTCAAACAATATTTTTATGAAACGCGATGTAAGGAAGCCAGGCCGGT
 CAAAAACGGTTGCAGGGGTATTGATGATAAACACTGGAACCTCTCAGTGCAAAACATCCCAAACCTACGTCC
 GAGCACTGACTTCAGAGAACAATAAACTCGTGGGCTGGCGGTGGATACGGATAGACACGTCCTGTGTGTGT
 GCCTTGTGAGAAAAATCGGAAGAACA TGAATTGGCATCTCTCCCCATATATAAAATTATTACTTTAAATTA
 TATGATATGCATGTAGCATATAAAATGTTTATATTGTTTTTATATATTATAAGTTGACCTTTATTTATTTAAA
 CTTTCAGCAACCCTACAGTATATAAGCTTTTTTCTCAATAAAATCAGTGTGCTTGCCTTCCCTCAGGCCTCT
 CCCATCTGTTAAAACCTGTTTTGTGATCCGGCTCTCAGGAGTCACTCTGTAAAATCTGTGTACACCAGTAT
 TTTGCATTCAAGTATTGTCAAGGCCATGACTGTTGTTTTAGTAAACTTGTAAAATCAAAAAAAAAAAAAAA
 LNDRARVHLSLHVDVPGNGHTDAMVTFATILQVNKVMSSILFYVIFLAYLRGIQGNMMDQRSLPEDSLNSLI
 IKLIQADILKNKLSKQMVVDVKENYQSTLPKAEAPREPERGGPAKSAFQPVIAMDTELLRQRRYNSPRVLL
 SDSTPLEPPPLYLMEDYVGSPPVANRTSRRKRYAEHKSHRGEYSVCDSESLWVTDKSSAIDIRGHQVTVLG
 EIKTGNPQVQYFYETRCKEARPVKNGCRGIDDKHWSQCKTSQTYVRALTSENNKLVGWRWIRIDTSCVC
 ALSRKIGRT

AUG initiation = 30.8 kDa
UUG initiation = 33.3 kDa

+++++

#34

NM_003252

Possible GUG initiation. Strong conservation (in mammals) at least at nucleotide level.

TIAL1 TIA1 cytotoxic granule-associated RNA binding protein-like 1

Synonyms: TCBP; TIAR; MGC33401; TIAL1

TCTTCACGTCCCAGCGCGGGTGGGCGCCGGCGGCTCCTCTTAACCACAGGTTCCAGAAGTCCTCTGCAGAA
 GTGCTTCCCTCTCTCATTTCCAGGACCACAATTTCCAGAGACTTCCGGCTTACGACGTTTCTCTTTTTGCC
 CGATCTCTCCCGAGCTGGCTGGGCTTTCGGCCGGCCAGAGGCCACAGCGACGACGTGATCCGTGCTGAGC
 GGGTCCCAGGGTTTTCTCGGCGGCCCTTTTTTCTCTCCCTCGGTCGTCCTCCCTTGCAGGCTGTGCGGGCT
 GGCTTGAGCGGTGACCTGGCGGGTTCGCGCCTGCGCTCTGCCCTGTTTTCTGCTGGCTGGTGGCGGGCC
 ATTTTGTTCATCTCCTCCTCCTCCTGCTCCTCCTGGTTGGAGCGCAGTGTCCGGAGCGGGCTGGGGGGAG
 AGAGCCCAGAGCAGGGTTCGGTGCCTTTTCTCTGTCCCAGCCGGTGCAGAGCCCCCTCCCCTTCC
 TCCCCACCCCTCCCCTCCCCAACCTGCCCTCCCCCTTGTCCCGGATCGCTCCGTGCGACCCACCATGA
 TGGAAGACGACGGGACGCCCGGACTCTATACGTAGGTAACCTTTCCAGAGATGTGACAGAAGTCCTTATA
 CTTTCAGTTGTTTCAGTCAGATTGGACCCTGTAAAAGCTGTAAAATGATAACAGAGCATAACAAGCAATGACCC
 ATATTGCTTTGTGGAATTTTATGAACACAGAGATGCAGCTGCTGCATTAGCTGCTATGAATGGGAGAAAAA
 TTTTGGGAAAGGAGGTCAAAGTAACTGGGCAACCACCAAGTAGCCAGAAAAAGATACTTCCAATCAC

TTCCATGTGTTTGTGGGGATTTGAGTCCAGAAATTACAACAGAAGATATCAAATCAGCATTGCCCCCTT
TGGTAAAATATCGGATGCCCCGGGTAGTTAAAGACATGGCAACTGGAAAATCCAAAGGCTATGGTTTTGTAT
CTTTTTATAACAACTGGATGCAGAAAATGCGATTGTGCATATGGGCGGTGAGTGGTTGGGTGGTTCGTC
ATCCGAACCAATTGGGCCACTCGTAAACCACCTGCACCTAAAAGTACACAAGAAAAACAACACTAAGCAGTT
GAGATTTGAAGATGTAGTAAACCAGTCAAGTCCAAAAAATTGTACTGTGTACTGTGGAGGAATTGCGTCTG
GGTTAACAGATCAGCTTATGAGACAGACATTCTCACCATTTGGACAAATTATGGAAATAAGAGTTTTCCCA
GAAAAGGGCTATTCAATTTGTGAGATTTTCAACCCATGAAAAGTGCAGCCCATGCCATTGTTTCGGTGAACGG
TACTACGATTGAAGGACATGTGGTTAAATGCTATTGGGGTAAAGAATCTCCTGATATGACTAAAACTTCC
AACAGGTTGACTATAGTCAATGGGGCCAATGGAGCCAAGTGTATGGAAACCCACAACAGTATGGACAGTAT
ATGGCAAATGGGTGGCAAGTACCGCCTTATGGAGTATACGGGCAACCATGGAATCAACAAGGATTTGGAGT
AGATCAATCACTTCTGCTGCTTGGATGGGTGGATTTGGTGTCTCAGCCTCCCCAAGGACAAGCTCTCCCC
CTGTAATACCTCTCCTAACAAGCCGATATGGTATGGCAAGTTACCAAAACAGTGA

AAAAAAATTTGTAATTCATGATAGGCTTCGATTTTCTGTGACACTCTGAAGACATGAAAAGTAGACATCGGA
AAATGAAAATATTTATTTTAAAAATTTGAAATGTTTGGAACTTTAGCACAGATTTGCTTTGGTGAAGGACA
CGTGTCTTCTAGTTCTGCCTTTTTAAGTTTTTGTTCATGATGGATATGAACATGATTTTTCTTTATGTACA
AAAATAAAATAAAGTCAATAAAGACAATTCTGACTACAAATTTTGATATAATAGGAAAAATGGCTAATAC
ATTTTGATTCTTAGATACTATTCCATTTTTATCTTGCTGTTGAGTATTTTAACTCACTGTGTTTTTAAAG
AGCAAAAAGGGAGGATCGTGA AACCTGGGAATCACATATAAGTTCATCCTGAATCCTGATACTCCCCTC
CCCTTCCCTGAGGTGGACCACATTTGAAGTGCAGCAGAGAAAAAGTGTGATATTGAGAAGAAATGCGTGATT
TTGGAGTCGCTTTGGAGGAAATATTTTCTTCTCTATGCCTAAAGAACTGAAGCCAGACTGAAGTTTTGC
ACCCTAAAAAGGAACAGCATTGTTTGGAGTACTTGGAGCAAATGTTGGTGGTCCACGTTAAGACATATTTT
TAAAACCTTCCAAAAGTGTGATTATTAATTTGAGTATTTTACATTTTCAATTTTGGGGGGAAATCCAAGTA
TGGTGTGTTGATTGAAGTGCAGACAGTCATACTTGTGCTTTTACATGAAGTTTAAATGATACATATTGTA
TATTCAATAACTACAGTGTAAAAAGCATGCTTCAACATAGAAGTAGCAGCAATGTAATTTTGAAGTA
ACACTTAACACACTCCGCTGCATTGAATGCAGTGGATTGATCAGAATGTTAAGACTGACATTTCCAAGGTT
GGCTACTATGTA AAAATTA AAAATTAACAAAATTTGTGCAGAAAAAGCCTTAATTTTAAATTTTATACA
ATCTTT
GATGCATTAGTATGTTCTAAAATGTCATTGGGAATTAGTTTTTTGTTTTTGTTTTTTTTTTTTTTTTTTT
TGCTTTACATACTTGGTATGTAATACTTTGATTTAAACCTTGTAAACCAATTTCAAGGTTACTATAAGT
TGTATAGTACAAGTGTTTTTTAAAAATCTTGGGGTGTTTTTTAAAAATTAAGATATATTTTGCCCAAGAAT
TTTTTAAACAAGATTGCTAAAAACATCTTATTTAGACACTTCAATGTACCAATTTATAATTTGGATTCAGT
TTAAATAGTACACAGAGTTGTGGCTTTTTATTTTCAATTAATTTTTTTTCTTGTGGGCAGTGTGCATGGTAT
AATAAGCCTGAGCAGAGGCTTAAAGTTGTATGTGTGCAGAGTTTGTAAAGGAATCAATTGGAAGATGCAGAA
GACCGAGGTTTTGCTTTCAAGGTATTTTTTCAAGGCTGTGTGGGTAAAATTTGCCTCAAATTTCTATCAAACAG
GAATGTA AAAATAGATAAAAATCCTATGATTTGAATTGTGAGAGCTAGGGAGTGCAATGTTTTGGCAATGT
ATTCAAAATGCTGGCCTGGGCACCAAAGAGAAAATAGCCTTTTACAGTTACATAGTAAGATGCGATTAGTA
CCCACAAATTAATGTTTTCTAAACATTTGAAGTTTTACGATTAGCTTTAAAATAATGATTTTATAAATTGG
TGGTCACAATAATTTGGTATTACTTTCTCCTTTTCCCCTTAGCAATATAGCCAAATGTATTCAACATA
AAAATTCATAGGCTGTGAAATTCATAGCTGGGCCAAATTTTTTATGGCACCTTAGTTTTTACCATAATGGTC
ATCTATTACACTCTTCTGTTATAAAAATATACCCTTATTTCTTTTGTATAGTATCTTTGAGGAATGTTTT
TGGAAAAGTTAATTTATATTTTATAGGGAGAACACTCAATAAATTATGTTAACTGTGCCCCCGAGTTAAAA
ATTTTATGAGTATATGTGAACTTGAACAACCTGAAGACTTTTTTTAATTGATAAAAATGCTTAGTATGCCT
GTTTTGGTCTGCCAGTAAATTAAGTAGCTTATTGAGATAACTAACAGCTAAATATAGCTGTAGTGTTCCT
GACTGTATATTCTATGATTTAATAAAAATTATCCAGACTAGTTATATTGCCACAGTAAAA

VTWRVAPALCPVSLAGGGGHFVHPPPPAPPGWSAVSAGWGERAREQGSVPFPLSPAGAQSPPPLP
LPSPTLPSPLSRDRSVAPTMEDDGGQPRTLVGNLSRDVTEVLILQLFSQIGPCKSCKMITEHTSNDPYCF
VEFYEHRDAAAALAAMNGRKLILGKEVKVNWATTPSSQKKTDSNHFHVFGDLSPFITTEDIKSAFAPFGKI
SDARVVKDMATGKSKGYGFVSFYNKLEAENAIVHMGQWLGGRRQIRTNWATRKPAPKSTQENNTKQLRFE
DVVNQSSPKNCTVYCGGIASGLTDQLMRQTFSPFGQIMEIRVFPEKGYSFVRFSTHESAHAIVSVNGTTI
EGHVVKCYWGKESPDMTKNFQQVDYSQWGWQSVYGNPQQYQYQYMANGWQVPPYGVYQVWPNQQQFGVDQS
PSAAWMGGFQAQPPQQAAPPVIPPVPPNQAQYGMASYQTQ

AUG initiation = 41.6 KDA
CUG initiation = 50.6 KDA

+++++

#35

NM_024794

ACG initiation conserved in mammals

EPHX3 epoxide hydrolase 3

Synonyms: ABHD9; FLJ22408; MGC131519; EPHX3

CCATTTATTTCCCCCTTTCCAACCTCTTCTCCCCAGCCTCCGCACCCTACCCTTGTTTCCTGTCCCTGT
CGCGCCCAGGTGTTTACCTGGCACTCAGGTGAGTGGTGCGCTCTGGCTGTTTTCTGTGCGAGCCGCCCGCC
TCTTCCTTCAGCGCGTCCCACAAATCCCGACGGC**ACGGAGGGGGCCCCAGGCCAAGGGCGATGGGCCCTGA**
GCCCTGACACCGCTTCGCCGCTGCTGCAGGTGCCCTGGCCGGCAGCGCCGCCGTGGTCCCGGAGCGCGGC
GACATGCCGGAGCTGGTGGTGACCGCGCTGCTGGCGCCGTGCGGCCTGTGCTGAAGCTGCTGCGCGCCTT
CATGTGGAGCCTGGTGTTCCTGGTGGCGCTGGTGGCCGCGGGCGGTCTACGGCTGCATAGCGCTCACGCACG
TGCTGTGCCGGCCCCGGCGCGGCTGCTGCGGGCGCCGTGCGGAGCGCGTCCCCCGCCTGCCTGAGCGACCCC
TCGCTGGGTGAGCACGGTTTCTGAACCTCAAGAGCTCGGGCCTGCGTCTGCACTATGTCTCGGCTGGACG
AGGTAACGGACCCCTCATGCTGTTTCTGCACGGCTTCCCTGAGAACTGGTTCTCCTGGCGTTACCAGCTCC
GGGAGTTCAGAGCCGCTTCCATGTTGTGGCTGTGGACTTGCAGAGGCTATGGCCCCCTCGGATGCACCTCGG
GATGTGGACTGCTACACAATCGACCTGCTGCTGGTGGACATCAAAGATGTCATCCTAGGCCTGGGTTACTC
GAAGTGCATCCTTGTGGCCATGACTGGGGTGCCTCCTTGCCTGGCATTCTCCATCTACTACCCATCCC
TGGTCGAGCGGATGGTTGTGGTCAGTGGTGCCCCCATGTCGGTGTACCAAGACTATTCCTGCACCACATC
AGCCAGTTCTTCCGTTCCCACTACATGTTCTGTTCCAGCTGCCCTGGCTGCCCGAGAAGCTGCTGTCTAT
GTCTGACTTTCAGATTCTGAAGACCACCCTCACCCACCGCAAGACAGGCATCCCATGCTTGACCCCCAGCG
AGCTCGAGGCCTTCTTTATAACTTCTCACAGCCTGGTGGCCTCACTGGGCCCCCTCAACTACTACCGAAAC
CTCTTCAGGAACTTCCCCCTGGAACCCAGGAGCTGACCACACCCACATTGCTGCTGTGGGGGGAGAAGGA
CACTTACTTGGAGCTGGGGCTGGTGGAAAGCCATCGGCAGCCGCTTTGTGCCGGGCCGCTTGGAGGCCACA
TCCTGCCAGGCATAGGGCATTGGATCCACAGAGCAACCCCCAGGAGATGCACCAGTACATGTGGGCCTTC
TTGCAAGACCTGCTGGACTAGTGGTCTTGTGCTGGCCTGCCAGGAGGCATGGATACTCAGGAAGGAACACA
CACCCATTATCTGTGTGTGCCTGGGAGTCCATAAATGTCCATACATGGGTGAACCTTGAATCGCTCATA
GGCATGGGACTCCTGGATCCACACAAGCGCACCTATGGGTGCCTCGGGACACACCAACCCCTATACTCAC
ACACAGGCATGGATGCATGTGTGTGTAACAAACACTTTGACCCTGGGAAGTGGGTATACTCTCTTCCAGT
GGAGCCAGATGCCGAGACCGAGTGTCCACCTCCTCCCTTCCCTGGGGCCTCACTCTGCGCTTTGCCAAAGT
CGCTTCTCTGCCATAGCTGCACAGACCTTAAACCCTGACCTTCCCTGTCCCTGCCTTCGACCTCCTGCCTGG
GTCTTCAGCTCAGTGTACTCTGAATACAATACTGCTGACCACATTTGGCTACTTCAGCTTAAATGTATGT
TAATTGAAATGAAATACAATGAAAATGCAGTGTCTAGTCCCA

TEGPQAKGDGPLSPDTASPLLQVPLAGSAAVVPERGDMPELVVTTALLAPSRLSLKLLRAFMWLSLVFSVALV
AAVYGCIALTHVLCRPRRGCCGRRRSASPACLSDPSSLGEHGFNLKSSGLRLHYVSAGRNGPLMLFLHG
FPENWFSWRYQLREFQSRFHVAVDLRGYGPSDAPRDVDCYTIDLILLVDIKDVILGLGYSKILVAHDWGA
LLAWHFSIYYPSLVERMVVSGAPMSVYQDYSLHHISQFFRSHYMFLFQLPWLPEKLLSMSDFQILKTTLT
HRKTGIPCLTPSELEAFLYNFSQPGGLTGPLNYRNLFRNFPLEPQELTTPTTTTLLWGEKDTYLELGLVEAI
GSRFVPGRLEAHILPGIGHWIPQSNPQEMHQYMWAFLQDLLD

AUG initiation = 40.9 kDa
ACG initiation = 44.5 kDa

+++++

#36

NM_018646

ACG initiated extension conserved in mammals. Extension initiated by AUG in bats:
Myotis lucifugus and *Pteropus vampyrus*.

Synonyms: **TRPV6 transient receptor potential cation channel, subfamily V, member 6**

CAT1; CATL; ZFAB; ECAC2; ABP/ZF; LP6728; HSA277909; TRPV6

AGAGTCCTGGCTGGCTCTGCCAAGTGTAAACAACTCACAGCCCTCTCCAAACTGGCTGGGGCTGCTGGGAG
ACTCCAAGGAACCTCGTCAGGAAGGCAGGAGACAGGAGACGGGACCTCTACAGGGAGACGGTGGGCCGGCC
CTTGGGGGGCTGATGTGGCCCCAAGGCTGAGTCCCGTCAGGGTCTGGCCTCGGCCTCAGGCCCCCAAGGA
GCCGGCCCTACACCCCATGGGTTTGTCACTGCCAAGGAGAAAGGGCTAATTCTCTGCCTATGGAGCAAGT
TCTGCAGATGGTTCCAGAGACGGGAGTCTGGGGCCAGAGCCGAGATGAGCAGAACCTGCTGCAGCAGAAG
AGGATCTGGGAGTCTCCTCTCCTTCTAGCTGCCAAAGATAATGATGTCCAGGCCCTGAACAAGTTGCTCAA
GTATGAGGATTGCAAGGTGCACCAGAGAGGAGCCATGGGGGAAACAGCGCTACACATAGCAGCCCTCTATG
ACAACCTGGAGGCCGCCATGGTGTCTGATGGAGGCTGCCCCGGAGCTGGTCTTTGAGCCCATGACATCTGAG
CTCTATGAGGGTCACTGCACATCGCTGTTGTGAACAGAACATGAACCTGGTGCAGGCCCTGCT
TGCCCGCAGGGCCAGTGTCTCTGCCAGAGCCACAGGCACTGCCTTCCGCCGTAGTCCCTGCAACCTCATCT
ACTTTGGGGAGCACCTTTGTCTTTGCTGCCTGTGTGAACAGTGAGGAGATCGTGCGGCTGCTCATTGAG
CATGGAGCTGACATCCGGGCCAGGACTCCCTGGGAAACACAGTGTTACACATCCTCATCTCCAGCCCAA
CAAAACCTTTGCCTGCCAGATGTACAACCTGTTGCTGTCTACGACAGACATGGGGACCACCTGCAGCCCC
TGGACCTCGTGCCCAATCACCAGGGTCTCACCCCTTTCAAGCTGGCTGGAGTGGAGGGTAACACTGTGATG
TTTCAGCACCTGATGCAGAAGCGGAAGCACACCCAGTGGACGTATGGACCACTGACCTCGACTCTCTATGA
CCTCACAGAGATCGACTCCTCAGGGGATGAGCAGTCCCTGCTGGAACCTTATCATCACCACCAAGAAGCGGG
AGGCTCGCCAGATCCTGGACCAGACGCCGGTGAAGGAGCTGGTGGACCTCAAGTGGAAAGCGGTACGGGCGG
CCGTACTTCTGCATGCTGGGTGCCATATATCTGCTGTACATCATCTGCTTACCATGTGCTGCATCTACCG
CCCCCTCAAGCCCAGGACCAATAACCGCACGAGACCCCCGGGACAACACCTCTTACAGCAGAAGCTACTTC
AGGAAGCTACATGACCCCTAAGGACGATATCCGGCTGGTGGGAGCTGGTACTGTCTATTGGGGCTATC
ATCATCCTGCTGGTAGAGGTTCCAGACATCTTCAAGTGGGGGTCACTCGCTTCTTTGGACAGACCATCCT
TGGGGGCCCATTCATGTCTCATCATCACCTATGCCTTTCATGGTGTGGTACCATGGTGATGCGGCTCA
TCAGTGCCAGCGGGGAGGTGGTACCCATGTCTTTGCACTCGTGTGGGCTGGTGGCAACGTGATGACTTTC
GCCCGAGGATTCCAGATGCTAGGCCCTTACCATCATGATTGAGAAGATGATTTTTGGCGACCTGATGCG
ATTCTGCTGGCTGATGGCTGTGGTTCATCCTGGGCTTTGCTTTCAGCCTTCTATATCATCTTCCAGACAGAGG
ACCCCGAGGAGCTAGGCCACTTCTACGACTACCCCATGGCCCTGTTTCAGCACCTTCGAGCTGTTTCTTACC
ATCATCGATGGCCAGCCAACTACAACGTGGACCTGCCCTTTCATGTACAGCATCACCTATGCTGCCTTTGC
CATCATCGCCACACTGCTCATGCTCAACCTCCTCATTGCCATGATGGGCGACACTCACTGGCGAGTGGCCC
ATGAGCGGGATGAGCTGTGGAGGGCCCAGATTGTGGCCACCACGGTATGCTGGAGCGGAAGCTGCCTCGC
TGCCTGTGGCCTCGCTCCGGGATCTGCGGACGGGAGTATGGCCTGGGAGACCGCTGGTTCCTGCGGGTGA
AGACAGGCAAGATCTCAACCGGCAGCGGATCCAACGCTACGCACAGGCCTTCCACACCCGGGGCTCTGAGG
ATTTGGACAAAGACTCAGTGGAAAACTAGAGCTGGGCTGTCCCTTTCAGCCCCACCTGTCCCTTCTATG
CCCTCAGTGTCTCGAAGTACCTCCCGCAGCAGTGCCAATTGGGAAAGGCTTCGGCAAGGGACCTTGAGGAG
AGACCTGCGTGGGATAATCAACAGGGGTCTGGAGGACGGGGAGAGCTGGGAATATCAGATCTGACTGCGTG
TTCTCACTTCGCTTCTGGAACCTGCTCTCATTTCCTGGGTGCATCAAAACAAAACAAAACAAAACACC
AGAGGTCTCATCTCCAGGCCCCAGGGGAGAAAGAGGAGTAGCATGAACGCCAAGGAATGTACGTTGAGAA
TCACTGTCCAGGCCTGCATTACTCCTTTCAGCTCTGGGGCAGAGGAAGCCCAGCCCAAGCACGGGGCTGGC
AGGGCGTGAGGAACCTCCTGTGGCCTGCTCATCACCCCTTCCGACAGGAGCACTGCATGTGAGAGACTTT
AAAAACAGCCAGCCTGCTTGGGCGCTCGGTCTCCACCCAGGGTATAAGTGGGGAGAGAGCCCTTCCCA
GGGCACCCAGGCAGGTGCAGGGAAGTGCAGAGCTTGTGGAAAGCGTGTGAGTGAGGGAGACAGGAACGGCT
CTGGGGGTGGGAAGTGGGGCTAGGTCTTGCCAACCTCCATCTTCAATAAAGTCGTTTTTCGGATCCCTGAAA
AAAAAAAAAAAAAAAAAAAAA

TGPLQDGGPALGGADVAPRLSPVRVWPRPQAPKEPALHPMGLSLPKEKGLILCLWSKFCRWFQRRESWAQ
SRDEQNLLQKRIWESPLLLAAKDNDVQALNKLKLYEDCKVHQRGAMGETALHIAALYDNLLEAMVLMEEAA
PELVFEPMTSELYEGQTALHIAVNVNQNMLVLRALLARRASVSARATGTAFRRSPCNLIYFGEHPLSFAACV
NSEEIVRLLIEHGADIRAQDSLGNLTVLHILILQPNKTFACQMYNLLLSDYDRHGDHLQPLDLVPHQGLTPF
KLAGVEGNTVMFQHLMQKRKHTQWTYGPLTSTLYDLTEIDSSGDEQSLELEIITTKKREARQILDQTPVKE
LVSLKWKRYGRPYFCMLGAIYLLYIICFTMCCIYRPLKPRNTNNRTPRDNTLLQOKLLQEAYMTPKDDIRL
VGELVTVIGAIILLVEVPDIFRMGVTRFFGQITLGGPFHVLIIITYAFMVLVTMVMRLISASGEVVPMSFA
LVLGWCNVMYFARGFQMLGPFTIMI QKMI FGDLMRFCWLMAVVILGFASAFYIIFQTEDPEELGHFYDYPM
ALFSTFELFLTIIDGPANYVDL PFMYSITYAFAI IATLLMLNLLIAMMGDTHWRVAHERDELWRAQIVA

TTVMLEKRLPRCLWPRSGICGREYGLGDRWFLRVEDRQDLNRQRIQRYAQAFHTRGSEDLDKDSVEKLELG
CPFSPHLSLPMPSVSRSTSRSSANWERLRQGTLLRRDLRGIINRGLEDGESWEYQI

AUG initiation = 83.2 kDa
ACG initiation = 87.3 kDa

+++++

#37

NM_033315

non-AUG extension in mammals - multiple potential initiation start sites

Synonyms: **RASL10B RAS-like, family 10, member B**

RRP17; MGC47540; VTS58635; RASL10B

GCGCTCCGGAGGGAGAGCTGGGGCTGGAGGTTCTACCCCTCGGGCGCCCGCATCTGCCCCGCGCGCCC
GCCC**TGA**GCCCCGCCCCGACTGGGCAGGCGGGGAGCCCTACTTCTCTCCCCCGGGCGGGGAGCCGGGG
GGCAGCGCCGGAGCCCGGGGGAGCTCAGCCCCGCGACCGGCCAGGGCAGGGGGCAGCTAGGACGG
CCCCGGTCCAGGTGGAGGCCGAGAGGGCCAGGGCAAGCAGAGGCAGCAATGG**TTGGTCTGACGGTGGC**
TGAGCCCCAGCCCCTGGAATATGCAGCCCGGGGAGCCCCAGACAGCGGCAAGGACGAGGTGGCGGAGTG
GGGCGGGAGGCATGGTCTCCACCTACCGGGTGGCCGTGCTGGGGGCGCGAGGTGTGGGCAAGAGTGCCATC
GTGCGCCAGTTCTTGTACAACGAGTTCAGCGAGGTCTGCGTCCCCACCACCGCCCGCCCTTTACCTGCC
TGCTGTGCTCATGAACGGCCACGTGCACGACCTCCAGATCCTCGACTTTCACCCATCAGCGCCTTCCCTG
TCAATACGCTCCAGGAGTGGGCAGACACCTGCTGCAGGGGACTCCGGAGTGTCCACGCCTACATCCTGGTC
TACGACATCTGCTGCTTTGACAGCTTTGAGTACGTCAAGACCATCCGCCAGCAGATCCTGGAGACGAGGGT
GATCGGAACCTCAGAGACGCCCATCATCATCGTGGGCAACAAGCGGGACCTGCAGCGCGGACGCGTGATCC
CGCGCTGGAACGTTGTCACCTGGTACGCAAGACCTGGAAGTGCGGCTACGTGGAATGCTCGGCCAAGTAC
AACTGGCACATCCTGTCTCTTTCAGCGAGTCTCAAGAGCGTCCGGCTGCGCCCGTTGCAAGCACGTGCA
CGCTGCCCTGCGCTTCCAGGGCGCGCTGCGCCGCAACCGCTGCGCCATCATGTGA**CGCCTGCGCGCCCTC**
GGGCTGCACCGGCACTGGCCGAGCGGAGGGCGGGGCGTACTGCGGGGCTGGGGCGGGGAGCGGGCGGGAA
ATGGAAGTGTGACGGTCCCGCCCTGAGGCCCTGCAGCCACGCACCTCCCGGTGAGAAGCAGAGCGCGAGA
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GTATTTAGTGCAGTGCAGCGCCGACCCGCGGGGTGCCACAGCCTTTTGGGATGGGGGTGAGCGTGCAAT
GGAGGCTGGGGGTGGCGAGGTGCCGCCTTGGCCGGGCCCCACGTGTCTTCTCCAGAATGTGTCTGTCTTT
GCCTGGTGTCTTCTTTCCCGTGTCCGCCCCACCCAGCGTCTGTTGGTACTTACCTGTCTCACCTACCCCTC
CAGTCCCCTCCAGCTCCGCTCACAGGGCTCTCATTTTCGTCATCCCCTTGTGCGAGATCCTGGCAGCTTC
TTTGTGAGGCCAGGCCTTCTGACTGTGAGCACCACCGGCACAGGGCAGAGATGCGGGTGGCCCAAGGACCA
CGATCAAGGGGTCCGGGGGACCGAGGTCCAGATCAGTGAGGGGAGAAGGTTGAGCTCTCCGGCTTCCAGG
GAGACCTCCCCGCCCAGCAGCCCCAGAGACACAACAACCTACCTTCCAGCCTTAACTCGATGGTCCGTCC
CTGCCAGGTGCCCTCACTCTTCCCTGACCCCAAAGCCAGATCACCCCTGGGTTAAAACCTTTTTTTCTTTT
TTTTTTTTGGACAGAGTGTGGAAAGGGAGCCCCCAAAGGATAGCTTCTTTTTTCATGATGCCAGGCTCCAG
TCCTTTATTCCCTTCTGCATACTGCAATCTGATCTGTGAGACTGGGGAATGTTGGGTTCTGGGGTCTGGTC
GTGGGCAGGATGGTGCCAGAAGGGGTTAGGTTGTCCCAGTGAATAATTCTGTTGCCCGCTCTCAACCCCA
TCTGACTACCCAGACTCTGCCTGCCTCAGATCTCAGACTATCCTGATTAATCTGGGGAAGAACAGAGCCA
GGGAAAGAATGGTGGGGACCCCTGTACTTGGGGGAGACACACCTGCATCTTCTCTGCCAGATGGAGG
CCCTCAGGATCTGACACCCCTTGTCCCAACACCAGTCAAGCCCTATACCCTAACTCACTCCACCCATTTT
CTCCGGCTGCCTGGCCGGGTTTCTACCTCTCGTACCAGGCTGATCACTGTGAGTTTTGTACCGATTTAG
AAATAACAATAATAATGAAGATTCTAGGAATGGCATGAGGGATTGATGGGGACTTGGAGGGAGGGACAAG
TGGTGCCCTGTCCCCTGCTCCCCTGGCCAAAGAAAGCTGTCTTGGAGGCTGAGCCCTCAGCCCTGGCCTGG
TGGGGGACAGCAAGGTCCCTTGTATAAGAGGGGAGAGAGGACAACCTCCGCTTGGCCAACCTAGCCAA
GGCTGCAGCATATAGACCAGGAAATCAGGTAGCCAGACTGGTGTGAGGAGAGAGTCTGGGGGAAGGGTCG
TGGGTGGGGAATTTATACCAACATCCATTGTAGGGGGAATCTATGATTCTGCTTCCCCAGCGGATTCCCA
CTCTGTCCACCAAGTGGGGGTAGCACAGCCTCACAGCAACCGCCCTGACCTTGGGCAGTCTAGTGTTCCT
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AGAGGAGGTGGCTCCCCTTCCCCACACCTTAGAGTGGCTGGGAGGGTAACAAAGAGGGCCTGCCCTTTAG
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CACCAACTCTGAGGCACCTGGGGTGGGGGGGGCGGAGCCCAGGCCTCTGGCTGCTCCCCTGTGGGAGCCATT
GGAATGTATCCCCTGACAGGCCCCCTTCCGCCTCCACCTCAACCCAGGTCTTGGATTTTCAGGTCCCTCCAC
CCCCATTCTGAGTCTCTGTCTTCTCCTTCCACCCGCTCCCAGGGTTTCCCACCACAGGGTCTGGAAGTGT
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LVLTVAEPPAPGICSPGEPQTAARTRWRSGAGGMVSTYRVAVLGARGVVGKSAIVRQFLYNEFSEVCPPTTA
RRLYLPAVVMNGHVHDLQILDFFPISAFPVNTLQEWADTCCRGLRSVHAYILVYDICCFFDSFEYVKTIRQQ
ILETRVIGTSETPIIIVGNKRDLRGRVIPRWNVSHLVRKTKWCGYVECSAKYNWHILLFSELLKSVGCA
RCKHVHAALRFQALRRNRCAIM

AUG initiation = 23.2 kDa
UUG initiation = 26.5 kDa

+++++

#38

NM_001080510

CUG initiation in most mammals. The extension is AUG initiated in mouse, rat and opossum. In addition, the downstream in-frame AUG is immediately preceded by out-of-frame AUG in perfect context which means in the downstream in-frame AUG is usually inaccessible. Delimiting upstream in-frame stop codons in *Macaca fascicularis*, *Procyon capensis*, *Rattus norvegicus* and *Sus scrofa*.

C17orf95 chromosome 17 open reading frame 95

(homology to AdoMet-dependent methyltransferases)

Synonyms: C17orf95

AGTTCTGCGCGTGTGAGTCTCTTTCGCCTTGCTCCGGGCTTTCTTTCGCTCGCAGCGCGGCAGGGTTATCAC
CAGATCTGGGCTTTCCCCTTCTTGCCGTCAGGTGCTACGGCCACGTGGCCCCGGGCTTCCCCTCGCGCAG
TCTGGCAGCCCCGAGCCTTCCGCGTCCCCACCCCGGGGCCAACGACGCCCTACTGGGCGAGCACG
ATTCCGAGGACAGGGGGTCCGGGCCAGCGCTTTCGATTCTCGGAGGAGCCGGGTCCGGGGCCGACGGG
GCTGTCTGAGGTTCCAGTCCCAGGTCCTGCATCTCCAGTATGGAATGTATGTTTGGCCCTGTGCTGT
GGTCTGGCCAGTACCTTTGGTTTTACAGAAGATCTCTGCCAGGCAAGGCCATCTTAGAGATTGGAGCTG
GAGTGAGCCTTCCAGGAATTTTGGCTGCCAAATGTGGTGCAGAAGTAATACTGTCAGACAGCTCAGAACTG
CCTCACTGTCTGGAAGTCTGTGCGCAAAGCTGCCAAATGAATAACCTGCCACATCTGCAGGTGGTAGGACT
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LAARSLPRSPTRPGPNDAALLGEHDFRQGVRAQRFRFSEEPGPGADGAVLEVHVQPVLHLQYGMVYVWPCAV
VLAQYLWFHRRSLPGKAILEIGAGVSLPGILAACKGAEVILSDSSELPHCLEVCRQSCQMNNLPHLQVVGL
TWGHISWDLALPPQDIILASDVFFEPEDFEDILATIYFLMHKNPKVQLWSTYQVRSAGWSLEALLYKWD
KCVHIPLESFDADKEDIAESTLPGRHTVEMLVISFAKDSL

PROBABILITY of export to mitochondria: 0.9710 with extension
PROBABILITY of export to mitochondria: 0.4276 w/o extension

AUG initiation = 21.4 kDa

CUG initiation = 28.2 kDa

+++++

#39

NM_023110

Likely ACG initiated extension in mammals

FGFR1 fibroblast growth factor receptor 1

Synonyms: CEK; FLG; OGD; FLT2; KAL2; BFGFR; CD331; FGFBR; HBGFR; N-SAM; FLJ99988; FGFR1

AGATGCAGGGGCGCAAACGCCAAAGGAGACCAGGCTGTAGGAAGAGAAGGGCAGAGCGCCGGACAGCTCGG
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 CGGAGGAGGGACCAGCGCGGGTGGGAGTGAGAGAGCGAGCCCTCGCGCCCCGCGGCATAGCGCTCGGA
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^{AGGGTCAGTTTGAAAAGGAGGATCGAGCTCACTGTGGAGTATCCATGGAGATGTGGAGCCTTGTCAACCAAC}
^{CTCTAAGCTCAGAACTGGGATGTGGAGCTGGAAGTGCCTCCTTCTGGGCTGTGCTGGTCACAGCCACAC}
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^{TCCTTCTGGTCCACCCCGGTGACCTGCTGCAGCTTCTGTGCGGCTGCGGGACGATGTGCAGAGCATCAA}
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^{GGTCCGTTATGCCACCTGGAGCATCATAATGGACTCTGTGGTGCCTCTGACAAGGGCAACTACACCTGCA}
^{TTGTGGAGAATGAGTACGGCAGCATCAACCACACATAACAGCTGGATGTCGTGGAGCGGTCCCCTCACCGG}
^{CCCATCCTGCAAGCAGGGTTGCCCGCAACAAAACAGTGGCCCTGGGTAGCAACGTGGAGTTTATGTGTAA}
^{GGTGTACAGTGACCCGCAGCCGCACATCCAGTGGCTAAAGCACATCGAGGTGAATGGGAGCAAGATTGGCC}
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^{CTTCACTTAAGAAATGTCTCCTTTGAGGACGCAGGGGAGTATACGTGCTTGGCGGGTAACTCTATCGGACT}
^{CTCCCATCACTCTGCATGGTTGACCGTCTTGGAAAGCCCTGGAAGAGAGGCCGGCAGTGATGACCTCGCCCC}
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^{TACAAGATGAAGAGTGGTACCAAGAAGAGTGACTTCCACAGCCAGATGGCTGTGCACAAGCTGGCCAAGAG}
^{CATCCCTCTGCGCAGACAGGTAACAGTGTCTGCTGACTCCAGTGCATCCATGAACTCTGGGGTTCTTCTGG}
^{TTCCGGCCATCACGGCTCTCCTCCAGTGGGACTCCATGCTAGCAGGGTCTCTGAGTATGAGCTTCCCGAA}
^{GACCCCTCGTGGGAGCTGCCTCGGGACAGACTGGTCTTAGGCAAACCCCTGGGAGAGGGTCTCTTGGGCA}
^{GGTGGTGTGGCAGAGGCTATCGGGCTGGACAAGGACAAACCAACCGTGTGACCAAAGTGGCTGTGAAGA}
^{TGTTGAAGTCGGACGCAACAGAGAAAGACTTGTGAGACCTGATCTCAGAAATGGAGATGATGAAGATGATC}
^{GGGAAGCATAAGAATATCATCAACCTGCTGGGGCCTGCACGCAGGATGGTCCCTTGTATGTCATCGTGA}
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^{GGCATGGAGTATCTGGCCTCCAAGAAGTGCATACACCGAGACCTGGCAGCCAGGAATGTCTGGTGCAGA}
^{GGACAATGTGATGAAGATAGCAGACTTTGGCCTCGCACGGGACATTACCACATCGACTACTATAAAAAGA}
^{CAACCAACGGCCGACTGCCTGTGAAGTGGATGGCACCCGAGGCATTATTTGACCGGATCTACACCCACCAG}
^{AGTGTGTGTGGTCTTTCGGGGTGTCTCTGTGGGAGATCTTCACTCTGGGCGGCTCCCATAACCCGGTGT}
^{GCCTGTGGAGGAACCTTTCAAGCTGCTGAAGGAGGGTACCAGCATGGACAAGCCCAGTAACTGCACCAACG}

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TGA

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AGTCTTCATAAGTCTTTGGGAGAGGTGCTAGAAAAATATAAGGCACTATCATAATTACAGTGATGTCCTTG
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TGACCTGAAAAAAAAAAAAAAAAA

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AKTVKFKCPSGTPNPTLRWLKNGKEFKPDHRIGGYKVRATWSIIMDSVVP SDKGNYTCIVENEYGSINH
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TAGVNTTDKEMEVLHLRNVSFEDAGEYTCLAGNSIGLSHSAWLTVLEALEERPAMVTSPLYLEIIIIYCTG
AFLISCMVGSVIVYKMKSGTKKSDFHSMQMAVHKLAKSIPLRRQVTVSADSSASMNSGVLLVVRPRLSSSGT
PMLAGVSEYELPEDPRWELPRDRLVLGKPLGEGCFGQVVLAEAIGLDKDKPNRVTKVAVKMLKSDATEKDL
SDLISEMEMMKMIGKHKNIINLLGACTQDGPLYVIVEYASKGNLREYLQARRPPGLECYNPSHNPEEQLS
SKDLVSCAYQVARGMEVYLSKCCIHRLAARNVLTEDNVMKIADFGGLARDIHHIDYKKTNTNGLRVPVKWM
APEALFDRIYTHQSDVVSFVGLLWEIFTLGGSPYGPVVEELFKLLKEGHRMDKPSNCTNELYMMMRDCWH
AVPSQRPTFKQLVEDLDRIVALTSNQEYLDLSMPLDQYSPSFPDTRSSTCSSGDSVFSHEPLPEEPCLPR
HPAQLANGGLKRR

AUG initiation = 91.9 kDa

ACG initiation = 96.7 kDa

+++++

#40

NM_153369

CUG initiation conserved in mammals. Extension initiated by AUG in *Pteropus vampyrus* and *Loxodonta africana*. Curiously in mouse the first downstream in-frame AUG has become GUG. The next available in-frame AUG there is 48 codons further downstream.

KIAA1919

Synonyms: NaGLT1; MGC33953

GATAGCGGTTGGCGAGAGGCCACATTTCCGCCACGTGACCCGCGCATGCGCCTGCTTGCTGGAGAGCGAGC
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LELEVELRGAGPPAAGQRLQLQAEAPAENEPEPEVVVSWQSGGTGSKLRWFTTLLMLCASFLGLGLSVAIVG
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LCLLFLFFFYVGAEVTYGSYVFSFATTHAGMKESAAAGLNSIFWGTFAACRGLAIFATCLQPGTMIVLS
NIGSLTSSLFLVLFDKNPICLWIATSVYGASMATTFPSGVSWIEQYTTIHGKSAAFFVIGASLGEMAIIPAV
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GTNV

AUG initiation = 56.2 kDa
CUG initiation = 62.0 kDa

+++++

#41

NM_001144886

CUG initiation conserved in mammals

CITED1 Cbp/p300-interacting transactivator, with Glu/Asp-rich carboxy-terminal domain, 1

Synonyms: MSG1; CITED1

AGAAGGGGCACCGCTGAGCTGCCGAGAGGAAGCTCGCTCTGCCCGGCTGCCCTCTTGTAGTCCGCCGGCGA
GGGGCAGTTCTCGGTGAGGAGGAAGAGAGCAGCGGACGGCACAGCACCCGCGCGGGCCCTCCACAACAGC
TCCAGCTGGCAGCATCACTTCCCGCCAATTTATCCAATTTCTGCCAAGGCTCTGAAATGCCAACACGTCG
AGGCCTGCACTTGATGTCAAGGGTGGCACCTCACCTGCGAAGGAGGATGCCAACCAAGAGATGAGCTCCGT
GGCCTACTCCAACCTTGCGGTGAAAGATCGCAAAGCAGTGGCCATTCTGCACTACCCTGGGGTAGCCTCAA
ATGGAACCAAGGCCAGTGGGGCTCCCCTAGTTCTCGGGATCTCCAATAGGCTCTCCTACAACCACCCCT
CCCCTAAACCCCATCCTTCAACCTGCACCCCGCCCCTCACTTGCTGGCTAGTATGCACCTGCAGAACT
TAATAGCCAGTATCAGGGGATGGCTGCTGCCACTCCAGGCCAACCCGGGGAGGCAGGACCCCTGCAAACT
GGGACTTTGGGGCCCAGGCGGGAGGGGCAGAATCACTCTCTCTCTCTGCTGGTGGCCAGAGCCCTGCTATC
ATCGATTCCGACCCAGTGGATGAGGAAGTGTGATGTGCTGGTGGTGGAACTGGGGTTGGACCGAGCCAA
TGAGCTTCCGGAGCTGTGGCTGGGGCAGAATGAGTTTGACTTCACTGCGGACTTTCCATCTAGCTGCTAAAT
GCCAAGTGTCCCTAAAGATGGAGGAATAAAGCCACCAATTCTGTTGTAATAAAAAATAAAGTTACTTACAA
AGAGACGGGCCAAAAA

LAASLPANLSNFCQGSEMPPTSRPALDVKGGTSPAKEDANQEMSSVAYSNLAVKDRKAVAILHYPGVASNG
TKASGAPTSSSGSPIGSPTTTPPTKPPSFNLHPAPHLASMLHQKLNQYQGMMAATPGQPGEAGPLQNW
FGAQAGGAESLSPSAGAQSPAIIDSDPVDEEVLMSLVVELGLDRANELPELWLGQNEFDFTADFPSSC

AUG initiation = 19.9 kDa
CUG initiation = 21.6 kDa

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#42

NM_006645

Possible GUG initiation conserved in mammals

STARD10 StAR-related lipid transfer (START) domain containing 10

Synonyms: PCTP2; CGI-52; MGC14401; NY-CO-28; SDCCAG28; STARD10

CAAGCCGAGAGTCTCGGGATCGACACGTGGGGGCGCCTGAGCGAAGATAACCGTAATAAATAGTAACCTAA
CGGTCCAGTCATCGTTCTGTGGTCCCTTTCTTTTATGATTACAAGGAATGACCCTCTTCATCGCCTCTCCT
AATTCAGTCCTCACAACAGTCCTTTTACAAATGGGACAACAGGTTAGAGGAAGTCAGGCAGATTTCCAGCA
TCATAGAGAGTAAAGGACCAGGGAAGGATCAGGATTCAAGGACTGCACCCAGGCTCTGCTTCCAGCTTGCT
GTGTGACTTTGGGTAATTTTGTTCCTTAGGGAACTGAGCTTTCTCATTTGTAAATGCAAACAGGCTGTTG
GGAGGATCAAATGAGATCCAGGGGTGAAAACAGCTTAGTTTACTTTTCAGGAATTTACCCACGCGGTATATA
AAGGCAAAATATTATTATAGTCAGGTGATTGTAGATTGAGGAACCCATTTCCCTCATTCTGCAAATTGCAA
CCTGAGGGCCCAAAGAGGGACAGGGGCTTGCCCCAGGTCTCAGCAGGCTGTGAGCAAGAGCTAAAGCCTAA
TCCTCCTGCCTTTGGGCCTGGAGCCCTTCCCTGTACCCCAGGGGTGAGTGTCTTTGTTGGATACAGGCTTA
GATTGACTGACTGTACCTTGAGAACCTAGGGGAGTCCCTGTTCCCAATTCTTCTCCTACCCACCTTGCC
CTGATGGAGGAAGACCCTGCTGTGTTGAGATGAGCACCAGAGCCAAGAAGCTGAGGAGGATCTGGAGAATT
CTGGAGGAAGAGGAGAGTGTGCTGGAGCTGTACAGACCCTGCTTCTCAGGTCCAGGAAGGTGGCGTCAG
CATCTGCAGCCGCGTCGACGTTGTCTGGAGCCTCCGCGGAGGCCAGGAGAGCCGGACTAGGACCAGGGCC
CTGGGCCTCCCCACACTCCCCATGGAGAAGCTGGCGGCCTCTACAGAGCCCCAAGGGCCTCGGCCGGTCCT
GGGCCGTGAGAGTGTCCAGGTGCCCGATGACCAAGACTTTTCGCAGCTTCCGGTCAGAGTGTGAGGCTGAGG
TGGGCTGGAACCTGACCTATAGCAGGGCTGGGGTGTCTGTCTGGGTGCAGGCTGTGGAGATGGATCGGACG
CTGCACAAGATCAAGTGCCGGATGGAGTGTCTGTGATGTGCCAGCCGAGACACTCTACGACGTCCTACACGA
CATTGAGTACC GCAAGAAATGGGACAGCAACGTCAATTGAGACTTTTGACATCGCCCGCTTGACAGTCAACG
CTGACGTGGGCTATTACTCCTGGAGGTGTCCCAAGCCCCTGAAGAACCGTGATGTCATCACCCTCCGCTCC
TGGCTCCCCATGGGCGCTGATTACATCATTATGAACTACTCAGTCAAACATCCCAAATACCCACCTCGGAA
AGACTTGGTCCGAGCTGTGTCCATCCAGACGGGCTACCTCATCCAGAGCACAGGGCCCAAGAGCTGCGTCA
TCACCTACCTGGCCAGGTGGACCCCAAAGGCTCCTTACCCAAGTGGGTGGTGAATAAATCTTCTCAGTTC
CTGGCTCCCAAGGCCATGAAGAAGATGTACAAGGCGTGCCTCAAGTACCCCGAGTGGAAACAGAAGCACCT
GCCTCACTTCAAGCCGTGGCTGCACCCGGAGCAGAGCCCCTTGCCGAGCCTGGCGCTGTCTGGAGCTGTCTGG
TGCAGCATGCGGACTCACTGGAGAACATCGACGAGAGCGCGGTGGCCGAGAGCAGAGAGGAGCGGATGGGC
GGCGCGGGCGGCGAGGGCAGCGACGACACCTCGCTCACC TGA GCGCCGCACCGCTTCAGGGACGGAGA
CAGGACCGGGCGAGCCCTGGGGCGGCGGCCGCTCCTGCACCTTCTCCCTCCCCACCCGGCACCTGGTGG
CACCGGGCCAGGCCAGGCGGGTGTCTGCAGCCTGGCTGGACAGAGCCCCAATAAACGATCCCACAGCCTCA

VASASAAASTLSEPPRRQTESRTRTRALGLPTLPM EKLAASTE PQGPRPVLGRESVQVPDDQDFRSFRSEC
EAEVGNLTYSRAGVSVWVQAVEMDRTLHKIKRMECCDVPAETLYDVLHDI EYRKKWDSNVIETFDIARL
TVNADVGYYSWRCPKPLKNRDVITLRSWLPMGADYIIMNYSVKHPKYPPRKDLVRAVSIQTGYLIQSTGPK
SCVITYLAQVDPKGLPKWVVKSSQFLAPKAMKKMYKACLKYPEWKQKHLPHFKPWLHPEQSPLPSLALS
ELSVQHADSLENIDESAVAESREERMGGAGGEGSDDDTSLT

AUG initiation = 33.0 kDa
GUG initiation = 36.6 kDa

B)

#1

NM_002097

Extension well conserved in vertebrates. CUG initiation conserved only in mammals.

GTF3A general transcription factor IIIA

Synonyms: AP2; TFIIIA; GTF3A

TGCGCGATCTCCCGGAGCATGCGCAGCAGCGGCGCCGACGCGGGGCGGTGCCTGGTGACCGCGCGCTCC
CGGAAGTGTGCCGGCGTCGCGCGAAGGTTTCAGCAGGGAGCCGTGGGCCGGGCGCGCCGGTTCCCGGCACGT
GTCTCGGCACGTGGCAGCGCGCCTGGCCCTGGGCTTGAGGCGCCGGCGCCCTGGATCCGCCGGCCGTGGT
CGCCGAGTCGGTGTGCTCCTTGACCATCGCCGACGCGTTTATTGCAGCCGGCGAGAGCTCAGCTCCGACCC
CGCCGCGCCCCGCGCTTCCAGGAGGTTTCATCTGCTCCTTCCCTGACTGCAGCGCCAATTACAGCAAAGCC
TGGAAGCTTGACGCGCACCTGTGCAAGCACACGGGGGAGAGACCATTGTTTGTGACTATGAAGGGTGTGG
CAAGGCCTTCATCAGGGACTACCATCTGAGCCGCCACATTCTGACTCACACAGGAGAAAAGCCGTTTGT
GTGCAGCCAATGGCTGTGATCAAAAATTCAACACAAAATCAAACCTGAAGAAACATTTTGAACGCAAACAT
GAAAATCAACAAAAACAATATATATGTCAGTTTTGAAGACTGTAAGAAGACCTTTAAGAAACATCAGCAGCT
GAAAATCCATCAGTGCCAGCATAACCAATGAACCTCTATTCAAGTGTACCCAGGAAGGATGTGGGAAACACT
TTGCATACCCAGCAAGCTGAAACGACATGCCAAGGCCACGAGGGCTATGTATGTCAAAAAGGATGTTCC
TTTGTGGCAAAAACATGGACGGAACCTCTGAAACATGTGAGAGAAACCCATAAAGAGGAAATACTATGTGA
AGTATGCCGGAAAACATTTAAACGCAAAGATTACCTTAAGCAACACATGAAAACCTCATGCCCCAGAAAGGG
ATGTATGTGCGTGTCCAAGAGAAGGCTGTGGAAGAACCTATACAACCTGTGTTTAACTCCAAAGCCATATC
CTCTCCTTCCATGAGGAAAGCCGCCCTTTTGTGTGTGAACATGCTGGCTGTGGCAAAAACATTTGCAATGAA
ACAAAGTCTCACTAGGCATGCTGTTGTACATGATCCTGACAAGAAGAAAATGAAGCTCAAAGTCAAAAAAT
CTCGTGAAAAACGGAGTTTGGCCTCTCATCTCAGTGGATATATCCCTCCCAAAGGAAAACAAGGGCAAGGC
TTATCTTTGTGTCAAAACGGAGAGTCAACCAACTGTGTGGAAGACAAGATGCTCTCGACAGTTGCAGTACT
TACCCTTGGCTAAAGAACTGCACTGCTTTGTTTAAAGGACTGCAGACCAAGGAGCGAGCTTTCTCTCAGAGC
ATGCTTTTCTTTATTTAAATTAATGATGCAGAACATTTGATTCTTATCATTTT

LDPPAVVAESVSLTIADAFIAAGESSAPTPPRPALPRRFICSPDCSANYSKAWKLD AHLCKHTGERPFV
CDYEGCGKAFIRDYHLRHLRHLTHTGKPFVCAANGCDQKFNTKSNLKKHFERKHENQKQYICSFEDCKKT
FKKHQQLKIHQCQHTNEPLFKCTQEGCGKHFASPSKLRHAKAHEGYVCQKGC SFVAKTWT ELLKHVRETH
KEEILCEVCRKTFKRKDYLKQHMKTHAPERDVCRCPREGCGRTYTTVFNLQSHILSFHEESRPFVCEHAGC
GKTFAMKQSLTRHAVVHDPDKKKMKLKVKKSRKRS LASHLSGYIPPKRKQGLSLCQNGESPNCVEDKM
LSTVAVLTLG

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#2

NM_001418

Region conserved from insects to human.

EIF4G2 eukaryotic translation initiation factor 4 gamma

Synonyms: P97; AAG1; DAP5; NAT1; FLJ41344; EIF4G2

GCAGACGGCAACCGGGCCGCTGATTGGGCGGCGAAGGAGCCATTCCGGGAGACTCTGGTGGGTTCCGGCTGC
CCCAAGAGTGATAAGTTTCGGCTTTCAGACACGCCTTAGCGCCAGCAGTGAGTCGGAGCTCTATGGAGGTGGC
AGCGGGTACCGAGTGGCGGCTGCAGCAGCGACTCCTCTGAGCTGAGTTTGGAGCCGTCCCGACTCCTTCC
TCCCCCTTCCCTCCCCCTTTTTTTTTGTTTTCCGTTCCCTTTCCCTTCCCTTCCCTATCCCCGACGACCGG
ATCCTGAGGAGGAGCTGCGGTGGCAGCTGCTGAGTTCTCGGTGAAGGTATTTTATTTCTCCTGTCCCTC

CCCTCCCCACCCCATCTATTAATATTATTCTTTTGAAGATTCTTCGTTGTCAAGCCGCCAAAAGTGGAGAGT
GCGATTGCAGAAGGGGGTGCTTCTCGTTTCAGTGCTTCTTCGGGCGGAGGAGGAAGTAGGGGTGCACCTCA
GCACTATCCCAAGACTGCTGGCAACAGCGAGTTCCTGGGGAAAACCCAGGGCAAACGCTCAGAAATGGA
TTCCTGCACGAAGCACTAGACGAGATGACAACCTCCGCAGCAAACAACCTCCGCAAACGAAAAAGAACGACAT
GATGCAATCTTCAGGAAAGTAAGAGGCATACTAAATAAGCTTACTCCTGAAAAGTTTTGACAAGCTATGCCT
TGAGCTCCTCAATGTGGGTGTAGAGTCTAAACTCATCCTTAAAGGGGTGCATACTGCTGATTGTGGACAAAG
CCCTAGAAGAGCCAAAGTATAGCTCACTGTATGCTCAGCTATGCTCTGCGATTGGCAGAAGATGCACCAAAC
TTTGATGGCCCAGCAGCAGAGGGTCAACCAGGACAGAAGCAAAGCACCACATTGACACGCCTCCTAATTTT
CAAATTACAAGATGAATTTGAAAACCGAACTAGAAATGTTGATGCTATGATAAGCGTGAAAATCCCCTCC
TCCCCGAGGAGGAGGAACAGAGAGCCATTGCTAAGATCAAGATGTTGGGAAACATCAAATTCATTGGAGAG
CTTGGCAAGCTTGATCTTATTACGAATCTATCCTTCATAAGTGCATCAAAACACTTTTGGAAAAGAAGAA
GAGATCCAACCTCAAAGATATGGGAGAGGATTTGGAGTGCCTCTGTAGATAATGAGGACAGTGGGACCTA
GATTAGACCATGAACGAGCCAAAGTCTTAATGGATCAGTACTTTGCCGAATGTGCTCCTTGATGTTAAGT
AAGGAATTGCCAGCAAGGATTCGTTTTCTGCTGCAGGATACCGTAGAGTTGCGAGAACACCATTGGGTTCC
TCGCAAGGCTTTTTCTTGACAATGGACCAAAGACGATCAATCAAATTCGTCAAGATGCAGTAAAAGATCTAG
GGGTGTTTTATTCTGCTCCTATGGCTCAAGGGATGAGAAGTGACTTCTTTCTGGAGGGACCGTTTCATGCCA
CCCAGGATGAAAATGGATAGGGACCCACTTGGAGGACTTGTGATATGTTTGGACAAATGCCAGGTAGCGG
AATTGGTACTGGTCCAGGAGTTATCCAGGATAGATTTTACCCACCATGGGACGTCATCGTTCAAATCAAC
TCTTCAATGGCCATGGGGGACACATCATGCCTCCACACAATCGCAGTTTGGAGAGATGGGAGGCAAGTTT
ATGAAAAGCCAGATTAGCCTGAGGCCTGCTCAGTCTTCTTAATGAATAAAAATCAAGTGCCAAAGCTTCA
GCCCCAGATAACTATGATTCCTCCTAGTGCACAACCACCACGCACTCAAACACCACCTCTGGGACAGACAC
CTCAGCTTGGTCTCAAACTAATCCACCGCTTATCCAGGAAAAGCCTGCCAAGACCAGCAAAAAGCCACCA
CCGTCAAAGGAAGAACTCCTTAACTAACTGAAACTGTTGTGACTGAATATCTAAATAGTGAAATGCAAA
TGAGGCTGTCAATGGTGTAAAGAGAAATGAGGGCTCCTAAACACTTTCTTCTGAGATGTTAAGCAAAGTAA
TCATCCTGTCACTAGATAGAAGCGATGAAGATAAAGAAAAAGCAAGTTCTTTGATCAGTTTACTCAAACAG
GAAGGGATAGCCACAAGTGACAACCTCATGCAGGCTTTCTGAATGTATTGGACCAGTGTCCCAAACCTGGA
GGTTGACATCCCTTTGGTGAATCCTATTTAGCACAGTTTGCAGCTCGTGCCATCATTTCAGAGCTGGTGA
GCATTTCAGAACTAGCTCAACCCTAGAAAAGTGGCACCCTTTTCTCTCTTCTACTTTTGTCTTCAGCAG
TTAGCTAAATTAAGATCGAGAATGGTTAACAGAACTTTTTCAACAAAGCAAGGTCAATATGCAGAAAAT
GCTCCCAGAAATGATCAGAATAAGGACCGCATGTTGGAGATTTTGAAGGAAAGGGGACTGAGTTTCTTAT
TCCCCTCCTCAAATGGAGAAGGAAGTGTGAAGCAAATAAAGTTGGATCCATCCCCTCAAACCATATAT
AAATGGATTAAGATAACATCTCTCCCAAACCTCATGTAGATAAAGGATTTGTGAACATCTTAATGACTAG
CTTCTTACAGTACATTTCTAGTGAAGTAAACCCCCCAGCGATGAAACAGATTTCATCCTCTGCTCCTTCCA
AAGAACAGTTAGAGCAGGAAAAACAACCTACTACTATCTTTCAAGCCAGTAATGCAGAAAATTTCTTCATGAT
CACGTTGATCTACAAGTCAGTGCCCTGTATGCTCTCCAGGTGCACTGCTATAACAGCAACTTCCCAAAGG
CATGTTACTTTCGCTTTTTTGTGCACTTCTATGACATGGAAATATTGAAGAAGAAGCTTTCTTGGCTTGG
AAGAAGATATAACCCAAGAGTTTCCGGGAAAAGGCAAGGCTTTGTTCCAGGTGAATCAGTGGCTAACCTGG
TTAGAAACTGCTGAAGAAGAAGAATCAGAGGAAGAAGCTGACTAAAGAACCAGCCAAAGCCTTAAATTGTG
CAAAACATACTGTTGCTATGATGTAAGTGCATTTGACCTAACCACTGCGAAAATTCATTCCGCTGTAATGT
TTTCACAATATTTAAAGCAGAAGCAGTCAGTTAGGATTTCTTCTGCATAAGGTTTTTTTTGTAGTGTAAT
GTCTTAATCATAGTCTACCATCAAATATTTTAGGAGTATCTTTAATGTTTAGATAGTATATTAGCAGCATG
CAATAATTACATCATAAGTTCTCAAGCAGAGGCAGTCTATTGCAAGGACCTTCTTTGCTGCCAGTTATCAT
AGGCTGTTTTAAGTTAGAAAACCTGAATAGCAACACTGAATACTGTAGAAATGCACTTTGCTCAGTAATACT
TGAGTTGTTGCAATATTTGATTATCCATTTGGTTGTTACAGAAAAATTTTAACTGTAATTGATGGTTGTT
GCCGTAATAGTATATTGCCTGTATTTCTACCTCTAGTAATGGGCTTTATGTGCTAGATTTTAAATATCCTTG
AGCCTGGGCAAGTGCACAAGTCTTTTTAAAAGAAACATGGTTTACTTGCACAAAACCTGATCAGTTTTGAGA
GATCGTTAATGCCCTTGAAGTGGTTTTTGTGGGTGTGAAACAAATGGTGAGAATTTGAATTGGTCCCTCCT
ATTATAGTATTGAAATTAAGTCTACTTAATTTATCAAGTCATGTTTCATGCCCTGATTTTTATATACTTGTAT
CTATCAATAAACATTGTGATACTTGTATGATGTA

VESIAIEGGASRFSASSGGGSRGAPQHYPKTAGNSEFLGKTPGQNAQKWI PARSTRRDDNSAANNSANEK
ERHDAIFRKVRGILNKLTPKFDKLCLELLNVGVE SKLILKGVILLIVDKALEEPKYSSLYAQLCLRLAED
APNFDGPAAEQPGQKQSTTFRLLISKLQDEFENRTRNVVDYDKRENPLLPEEEEEQRAIAKIKMLGNIKF
IGELGKLDLIESILHKCIKTLLEKKKRVQLKDMGEDLECLCQIMRTVGPRLDHERAKSLMDQYFARMCSL
MLSKELPARIRFLLQDTVELREHHWVPRKAFLDNGPKTINQIRQDAVKDLGVFIPAPMAQGMRSDFFLGEP
FMPPRMKMDRDLPLGLADMFGQMPGSGIGTGPVIGQDRFSPTMGRHRSNQLFNGHGGHIMPPTQSQFGEMG

KGFMKSQISLRPAQSFLMNKNQVPKLQPQITMIPPSAQPPRTQTPPLGQTPQLGLKTNPPLIQEKPAKTSK
KPPPSKEELLKLTETVTVTEYLNLSGNANEAVNGVREMRAPKHFLPEMLSKVIIISLDRSDEDKEKASSLISL
LKQEGIATSDNFMQAFNLVLDQCPKLEVDIPLVKSYLEAQAARAIISELVSISELAQPLESGTHFPLFLLC
LQQLAKLQDREWLTELQFQSKVNMQKMLPEIDQNKDRMLEILEGKLSFLFPLLLKLEKELLKQIKLDPSPQ
TIYKWIKNISPKLHVDKGFVNILMTSFLQYISSEVNPPSDETDSSSAPSKEQLEQEKQLLLSFKPVMQKF
LHDHVDLQVSALYALQVHCYNSNFPKGMLLRFFVHFYDMEIEEEAFLAWKEDITQEFPGKGKALFQVNQW
LTWLETAEEEESEEEAD

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#3

NM_001017371

Region highly conserved from zebrafish to human - the non-AUG initiation goes at least as far back as chicken.

SP3 Sp3 transcription factor

Synonyms: SPR2; DKFZp686O1631; SP3

CCTCGCCCGCCTGCCGCCTTTTTGTGCGCGTGTGAGTGTGGGCCCCAGCGTGCCTCCCGGGGGTGGGTTCC
CGGGCGGAAGGCGGAGGCCCGGCGCGCAGCCCGCCCGCCGCTGCCCGCGGACCGGGGAGCCGGGGTGTCTT
GGAGCGGGGGACGCCAGGCGTGGGCTGGCGGGCGGGACCAGGAGGAGGAGGAGGAGGAGGAGGAGGAGCGCGG
GCTGGCGCTTGCCCGGGCGCAGTCGGCGGGGACCGAGTCGTACTTCTGTGCGAAAGGCGGCCCGACCCCTA
ACCGCCACCCCTCCCTGTCTCCCTCTCTGAACCCGCCATTGGGGGTAGGACACTCAGCCGTACCAGC
TCGCTCTGCTGGCCGCTACCTGCAGCAAGATAGGGCCGCCATCGCCGGGCGACGACGAGGAGGAGGCGGCC
GCCGCGCCGGGGCCCCCGCCGCGCCGAGCAGCAGGTGATTTGGCTTCTGCACAGTTAGGAGGAGCACC
AAACCGATGGGAGGTTTTGTGACCCACACCTACAACATAAAAAGATGAAGCTGGTAATCTAGTCCAGATTC
CAAGTGTCTACTTCAAGTGGGCAGTATGTTCTTCCCTTTCAGAAATTTGCAGAATCAACAAATATTTTCC
GTTGCACCAGGATCAGATTCATCAAATGGTACAGTGTCCAGTGTCAATATCAAGTGATACCACAGATCCA
GTCAGCAGATGGTTCAGCAGGTTCAAATGGTTTTACAGGCTCTTCAGATAATGGGGTATAAATCAAGAAA
GCAGTCAAATTCAGATCATTCTGGCTCTAATCAAACCTTACTTGCCTCTGGAACACCTTCTGCTAACATC
CAGAATCTCATACCACAGACTGGTCAAGTCCAGGTTCCAGGGAGTTGCAATTGGTGGTTCATCTTTTCTGG
TCAAACCCAAGTAGTTGCTAATGTGCTCTTGGTCTGCCAGGAAATATTACGTTTTGTACCAATCAATAGTG
TCGATCTAGATTCTTTGGGACTCTCGGGCAGTTCTCAGACAATGACTGCAGGCATTAATGCCGACGGACAT
TTGATAAACACAGGACAAGCTATGGATAGTTCCAGACAATTCAGAAAGGACTGGTGAGCGGGTTTTCTCCTGA
TATTAATGAAACTAATACTGATACAGATTTATTTGTGCCAACATCCTCTTCATCACAGTTGCCTGTTACGA
TAGATAGTACAGGTATATTACAACAAAACACAAATAGCTTGACTACATCTAGTGGGCAGGTTTATTCTTCA
GATCTTCAGGGAAATTATATCCAGTGCCTGTTTCTGAAGAGACACAGGCACAGAATATTAGGTTTCTAC
AGCACAGCCTGTTGTACAGCATCTACAACCTCAAGAGTCTCAGCAGCCAACAGTCAAGCCAAATTTGTGC
AAGGTATTACACCACAGACAATCCATGGTGTGCAAGCCAGTGGTCAAATATATCACAACAGGCTTTGCAA
AATCTTCAGTTGCAGCTGAATCCTGGAACCTTTTTAATTCAGGCACAGACAGTGACCCCTTCTGGACAGGT
AACTTGGCAAACGTTTCAAGTACAAGGGGTCCAGAATTTGCAGAATTTGCAAATACAGAATACTGCTGCC
AACAAATAACTTTGACGCCTGTTCAAACCTCACACTTGGTCAAGTTGCGGCAGGTGGAGCCTTCACTTCA
ACTCCAGTTAGTCTAAGCACTGGTCAAGTGTCCAAATCTACAAACAGTTACAGTGAATCTATAGATTCTGC
TGGTATACAGCTACATCCAGGAGAGAATGCTGACAGTCTGCAGATATTAGGATCAAGGAAGAAGAACCTG
ATCCTGAAGAGTGGCAGCTCAGTGGTATTCTACCTTGAATACCAATGACCTAACACACTTAAGAGTACAG
GTGGTAGATGAAGAAGGGGACCAACAACATCAAGAAGGAAAAAGACTTCGGAGGGTAGCTTGCACCTGTCC
CAACTGTAAAGAAGGTGGTGGGAAGAGGTACCAATCTTGGGAAAAAGAAGCAACACATTTGTATATACCAG
GATGTGGTAAAGTCTATGGGAAGACCTCACATCTGAGAGCTCATCTGCGTTGGCATTCTGGAGAACGCCCT
TTTGTGTTGTAAGTGGATGACTGTGGTAAAAGATTTACTCGAAGTGTGAATTACAGAGGCACAGAAGAAC
ACATACAGGTGAGAAGAAATTTGTTTGTCCAGAATGTTCAAACGCTTTATGAGAAGTGACCACCTTGCCA
AACATATTAACACACCAGAATAAAAAAGGTATTCACTCTAGCAGTACAGTGCTGGCATCTGTGGAAGCT
GCGCGAGATGATACTTTGATTACTGCAGGAGGAACAACGCTTATCCTTGCAAATATTCAACAAGGTTCTGT
TTCAGGGATAGGAACTGTTAATACTTCCGCCACCAGCAATCAAGATATCCTTACCAACACTGAAATACCTT
TACAGCTTGTACAGTTTCTGGAAATGAGACAATGGAGTAAATATTACACAAATACTTATTATTGTTGGTT
ATTTTTTATACAGTAGTGAGAAGAATATTGTTCCCTAAGTTCCTTAGATATCTTTTTATTGATGTGCAAAAAT

TTTGGATTGACAGTAACTTGGTTATAACATGACACTGAAATGCCTTACTTTGTATGATATTCCATAGTATAT
TAAAAATGGTAAAATTGCATGGGTTTTGTAGGTACTTTTTGGAATCTAGAAGAAATGAAATTTTACCAAGTT
ATATAAAGAGAAAATTGAATTTAACAATGCGAATGGTAGTCTAACCAAATGCATCAATCCTGTGTGGTTTA
GTGTA AAAATGAGAACATGTTGGTATTTATCTATTGTAAGATAAAAAAGCTGGTGGGTGAAAGAAATCATG
TTATGATAAAAAATTTTGTAAATTTCTTGATGACTGGAATTTTTATTATGCATAACTGACAAATCAAGTTT
CCAAGCAAATGTTACATAGTGTAGGCTTTACTTAGCTTATCAATTTGTCATTTTGAAGCTAATTTTTAA
TTAGGTAACTATGTACAATATTTTAAAGCATTACTCTTGTAAAGATTTTGA AAACTACATTTTAAACATGGAA
CTCTAGGGATAGTCACCTTTTAAATCCTGTTGAAAAGCCATGTTTAAAGATTTAATTTGCCAAAATAATGTC
TTGTTAATATTCTTTCAATAACGAAGTTGGGCAATATAACCAATGTTTAAAAAAGTTTAAAAATGTATAAGT
TGAGGCATTTGGGTGGTAAGAGAATGTTATAGTGAATTATCCCTTTTCTTGACTATTGGAGGACCAAAAA
ATAAGGTGTATTGCGTCTTAGCAGTGATTTTTATCCAATCTTGTTC AAAAACCATGTCTCCAGGCCT
TAAAGCCATCATGTAAATACCAGTAAAGTAAACATATGCAAACATAACAAAATCACTTCCATAGTGAC
GATACTCCAACCATATGGATATTAGTCATAGAAGAACTAGAGGTTTTATGATATTTTTTTAAGTCTTTTTT
TTTTTTGTCTAGGTAGTCAGTCTGCACTTAAATATCAATCATTTTTCTTTTTTGTCTTCTCCCTTAAAT
TATATGTATCCAGTACATTTAATTGAGAAGCGTATGTTTTTTATTATGCTGTATTTTTCTTTTTATTTTTTA
ATTATTGTTTATATTTTCAATTCAAAAATGTACAAAATAAAGTTACATTGCTGGTCTTGTAAAGAGCTATAC
AGTTTTCTTAAATGTATACCTGTA ACTGCAGCAGTTCACCTATTTCAAAAATTTGGAATTTCTGTTCAATTTG
TTATTCTTAAAGACCACCTCAAATTTAAAGGCTACCTTATTGTACGTTTAAAGTGTATTATAACAGTGTGGT
AGTTAATAAAACACTATTTTTTTTTCTTTTGA AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAA

IGPPSPGDDEEEAAAAGAPAAAGATGDLASAQLGGAPNRWEVLSATPPTTIKDEAGNLVQIPSAATSSGQY
VLPLQNLQNLQIFSVAPGSDSSNGTVSSVQYQVIPQIQSADGQQVQIGFTGSSDNGGINQESSQIQIIPGS
NQTLASGTPSANIQNLIPTGQVQVQVQVAIGGSSFPQGTQVVANVPLGLPGNITFVPINSVDLDSLGLSG
SSQMTAGINADGHLINTGQAMDSSDNERTGERVSPDINETNTDIDL FVPTSSSSQLPVTIDSTGILQQN
TNSLTSSGQVHSSDLQGNIIQSPVSEETQAQNIQVSTAQPVVQHLQLQESQQPTSQAQIVQGITPQTIHG
VQASGQNISQQALQNLQLQNLNPGTFLIQAQTVTPSGQVTWQTFVQVQVQNLQNLQIQNTAAQQITLTPVQT
LTLGQVAAGGAFTSTPVSLSTGQLPNLQTVTVNSIDSAGIQLHPGENADSPADIRIKEEEPDPPEEWQLSGD
STLNTNDLTHLRVQVVDDEEGDQHQEGKRLRRVACTCPNCKEGGGRGTNLGKKKQHI CHIPGCGKVKYKTS
HLRAHLRWHSGERPFVFNWMYCGKRFTRSDQLRHRRTHTGEKKFVCPCESKRFMRSDHLAKHIKTHQNKK
GIHSSSTVLASVEAARDTLITAGGTTLILANIQQGSVSGIGTVNTSATSNDILNTNTEIPLQLVTVSGNE
TME

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#3

NM_175886

Highly conserved throughout vertebrates and beyond but it looks like in all other species, including chimps, there is an AUG in place of the ACG – there is actually a human paralog on a different chromosome, much more common in the EST database, with AUG too.

PRPS1L1 phosphoribosyl pyrophosphate synthetase 1-like 1

Synonyms: PRPS1; PRPS3; PRPSL; PRS-III; PRPS1L1

ATTAGAGTCTGTGCTTCACTTCCGTTCCAGCCTCAGCGGCAGCTGGATCGCTCGACGGAGTGCCTCTGGTA
GTTGGCCAAAGACGCCGAATATCAAAATCTT CAGCGGCAGCTCCCACCAGGACTTATCCAGAAAATTGCTG
ACCGCCTGGGCCTGGAGCTAGGCAAGGTGGTACTAAGAAATTCAGCAACCAGGAGACCTGCGTGGAAAT
GATGAGAGTGTGCGTGGAGAGGATGCTACATCGTTCAGAGTGGTTGTGGCGAAATCAACGACAGTCTAAT
CGAGCTTTTTGATCATGATTAATGCCTGCAAGATTGCTT CAGCTAGCCGAGTTACTGCAGTCATCCCATGCT
TCCCTTATGCCCGACAGGATAAGAAGGATAAGAGCCGGTCCCCAATCTCTGCCAAGCTTGTTGCAAAATATG
CTCTCTATAGCAGGTGCGGATCATATCATCACCATGGACCTACATGCTTCTCAAATTCAGGGCTTTTTTGA
TATCCAGTAGACA ACTTGTATGCAGAGCCA ACTGTCTGAAGTGGATAAGGGAGAATATCCCTGAGTGGAA
AGA ACTGCATTATTGTCTCGCCAGATGCTGGTGGAGCTAAAAGAGTGACCTCCATTGCAGACCAGTTGAAT

GTGGACTTTGCTTTGATTTCATAAAGAACGGAAGAAGGCCAATGAAGTGGACTGCATAGTGTCTAGTGGGAGA
TGTGAATGATCGTGTGGCTATCCTTGTAGATGACATGGCAGACACTTGTGTTACAATCTGCCTCGCAGCTG
ACAAACTTCTCTCAGCTGGAGCAACCAGAGTTTATGCTATCTTGACTCATGGAATCTTTTCTGGCCCAGCC
ATTTCTCGCATCAACACTGCATGCTTTGAAGCAGTGGTAGTCACCAATACCATACCTCAAGATGAGAAGAT
GAAGCATTGCTCCAAAATACGAGTAATTGACATCTCCATGATCCTTGCAGAAGCCATAAGGAGAAGCTCATA
ATGGGGAATCTGTTTCTACCTGTTTCAGCCATGTTCTTTTAAACAGAAATAACTTCTAGGTTATGCTATTT
TAAAATAAATAAGATTAATAAAAAA

TPNIKIFSGSSHQDLSQKIADRLGLELGKVVTKKFSNQETCVEIDESVRGEDVYIVQSGCGEINDSLMELL
IMINACKIASASRVTAVIPCFPYARQDKKDKSRSPISAKLVANMLSIAGADHIITMDLHASQIQGFFDIPV
DNLYAEPTVLKWIRENIPEWKNCIIVSPDAGGAKRVTSIADQLNVDFALIHKERKKANEVDCIVLVGDVND
RVAILVDDMADTCVTICLAADKLLSAGATRVYAILTHGIFSGPAISRINTACFEAVVVNTNIPQDEKMKHC
SKIRVIDISMILAEAIRRTHNGESVSYLFSHVPL

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#5

NM_003213

Region and non-AUG initiation conserved from zebrafish to human.

TEAD4 TEA domain family member 4

Synonyms: TEF3; RTEF1; TEF-3; EFTR-2; TEFR-1; MGC9014; TCF13L1; hRTEF-1B;
TEAD4

GTGGCCCCGCCGCGCCACTCCCTCCGGCTCCCTCCCTCCCGCCGCGGGCGCGCATCTCATTCCAGCCCTCATT
CGCGCATTCCAGCGTCTCCTCGCACACTCGAGGCCAGGGGGCGGGAGGGCCGAGCTCCGGCGCCGCGC
GTCCC GCCAGAACGATCGCCGCGGCCGGAAGAGTTGGCGCTCGGGGCGGACTCCTTGGAACTGGCTTAGCG
CACCCATCCCACCTTCCCGCACCTGGGACCGGTCCAACGAGCGCTCCTCCAAGCGGAGCCTTGGAGGGCA
CGGCCGCCACCATTACCTCCAACGAGTGGAGCTCTCCACCTCCCCTGAGGGGAGCACCGCCTCTGGGGGC
AGTCAGGCACTGGACAAGCCATCGACAATGACGCAGAGGGCGTGTGGAGCCCGGATATTGAGCAGAGTTT
CCAGGAGGCCCTCGCCATCTACCCGCCCTGTGGCAGGCGCAAATCATCCTGTTCGGACGAGGGCAAGATGT
ATGGTCGGAACGAGCTGATTGCCCGCTACATCAAGCTCCGGACAGGGAAGACCCGCACCAGGAAGCAGGTC
TCCAGCCACATCCAGGTGCTGGCTCGTCGCAAAGCTCGCGAGATCCAGGCCAAGCTAAAGGACCAGGCAGC
TAAGGACAAGGCCCTGCAGAGCATGGCTGCCATGTCGTCTGCACAGATCATCTCCGCCACGGCCTTCCACA
GTAGCATGGCCCTCGCCCGGGCCCCGCGCCAGCAGTCTCAGGGTTTTGGCAAGGAGCTTTGCCAGGC
CAAGCCGGAACGTCCCATGATGTGAAGCCTTCTCTCAGCAAACCTATGCTGTCCAGCCTCCGCTGCCTCT
GCCAGGTTTGGAGTCTCCTGCAGGGCCCCCAGTCCGCTCTCGCCCCCGGCACCCCCATGGCAGGGCC
GCAGCGTGGCCAGCTCCAAGCTCTGGATGTTGGAGTCTCTCGCTTCTGAGCAGCAGCAGGACCCGGAC
ACGTACAACAAGCACCTGTTCTGTCACATTTGGCAGTCCAGCCCAAGCTACAGCGACCCCTACCTCGAAGC
CGTGGACATCCGCCAAATCTATGACAAATCCCGGAGAAAAAGGGTGGACTCAAGGATCTCTTCGAACGGG
GACCCTCCAATGCCTTTTTTCTTGTGAAGTCTGGGCAGACCTCAACACCAACATCGAGGATGAAGGCAGC
TCCTTCTATGGGGTCTCCAGCCAGTATGAGAGCCCCGAGAACATGATCATCACCTGCTCCACGAAGGTCTG
CTCTTTCCGCAAGCAGGTGGTGGAGAAAGTTGAGACAGAGTATGCTCGCTATGAGAATGGACACTACTCTT
ACCGCATCCACCGGTCCCCGCTCTGTGAGTACATGATCAACTTCATCCACAAGCTCAAGCACCTCCCTGAG
AAGTACATGATGAACAGCGTGTGGAGAACTTACCATCCTGCAGGTGGTCAACAACAGAGACACACAGGA
GACCTTGCTGTGCATTGCCTATGTCTTTGAGGTGTGAGCCAGTGTGACACGGGGCTCAGCACCATCTACA
GGCTGGTGAAAGAAATGAGAGACTCGGGGAGCAGGGAGGGGGGAAGAGACGTGTGTGCAGGAAACGGGGACG
TGGGGAGGGGACCTGCAGGGGCAGCCCCCTGAAGTGCCAAGAGAGCTGAGAGGAGCAGTTGTGACTCTACC
CAGGAACAAACTGTGCCTGAACCTGAGGTGCCCAACCCCAATAAACCCAAGATGCTGTGTATTTTCAGAG
GAAAA

LEGTAGTITSNEWSPTSPEGSTASGGSQALDKPIDNDAEGVWSPDIEQSFQEALAIYPPCGRRKIILSDE
GKMYGRNELIARYIKLRTGKTRTRKQVSSHQVLARRKAREIQAKLKDQAAKDKALQSMAMSSAQIISAT
AFHSSMALARGPGRPAVSGFWQALPGQAGTSHDVKPFSSQTYAVQPPLPLPGFESPAGPAPSPSAPPAP

WQGRSVASSKLWMLFSAFLEQQQDPDITYNKHLFVHIGQSSPSYSDPYLEAVDIRQIYDKFPEKKGGLKDL
FERGSPNAFFLVKFWADLNTNIEDEGSSFYGVSSQYESPENMIITCSTKVCSTKQVVEKQVETEVARYENG
HYSYRIHRSPLCEYMINFIHKLKHLPEKYMMNSVLENFTILQVVTNRDTQETLLCIAVFEVSASEHGAQH
HIYRLVKE

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#6

NM_003214

Region and non-AUG initiation conserved from zebrafish to human.

TEAD3 TEA domain family member 3

Synonyms: TEF5; TEAD5; TEF-5; DTEF-1; ETRF-1; TEAD3

TCCTCAACACAAACTTTCCGTCCTCCGCTCCCTCCTCCGCGCTCGGCGCCTCCCGCTCCAGCCCGGCTC
ATTCGCGACATTCCGGCCAGCCCCCTCCCCACGACCCCCCTTCCCGGCCCCCTTGCAGCTCCCTCGGGC
CCGGCCGAGCGGCCCGGCCGAGCGCCCCGCGAGCTCGGACCAGGCTCAGCCGCCAGTGGGCTCAGGCC
CAGAGCCAGAGCAACCAGCACAATAGCGTCCAACAGCTGGAACGCCAGCAGCAGCCCCGGGGAGGCCCGG
GAGGATGGGCCCGAGGGCCTGGACAAGGGGCTGGACAACGATGCGGAGGGCGTGTGGAGCCCGACATCGA
GCAGAGCTTCCAGGAGGCCCTGGCCATCTACCCGCCCTGCGGCCGGCGGAAGATCATCCTGTGACAGGAGG
GCAAGATGTACGGCCGAAATGAGTTGATTGCACGCTATATTAACCTGAGGACGGGGAAGACTCGGACGAGA
AAACAGGTGTCCAGCCACATACAGGTTCTAGCTCGGAAGAAGGTGCGGGAGTACCAGGTTGGCATCAAGGC
CATGAACCTGGACCAGGTTCCAAGGACAAAGCCCTTCAGAGCATGGCGTCCATGTCTCTGCCAGATCG
TCTCTGCCAGTGTCTGCAGAACAAAGTTACGCCACCTTCCCCTCTGCCCCAGGCCGTCTTCTCCACTTCC
TCGCGGTTCTGGAGCAGCCCCCTCTCCTGGGACAGCAGCCTGGACCCTCTCAGGACATCAAGCCCTTTC
ACAGCCAGCCTACCCCATCCAGCCGCCCTGCCGCCGACGCTCAGCAGTTATGAGCCCTGGCCCCGCTCC
CCTCAGCTGCTGCCTCTGTGCCTGTGTGGCAGGACCGTACCATTGCCTCCTCCCGGCTGCGGCTCCTGGAG
TATTACGCTTTCATGGAGGTGCAGCGAGACCCTGACACGTACAGCAAACACCTGTTTGTGCACATCGGCCA
GACGAACCCCGCTTCTCAGACCCACCCCTGGAGGCAGTAGATGTGCGCCAGATCTATGACAAATTCCCCG
AGAAAAAGGGAGGATTGAAGGAGCTCTATGAGAAGGGGCCCTAATGCCTTCTTCTTGTCAAGTTCTGG
GCCGACCTCAACAGCACCATCCAGGAGGGCCCGGGAGCCTTCTATGGGGTCACTCTCAGTACAGCTCTGC
TGATAGCATGACCATCAGCGTCTCCACCAAGGTGTGCTCCTTTGGCAAACAGGTGGTAGAGAAGGTGGAGA
CTGAGTATGCCAGGCTGGAGAACGGGCGCTTTGTGTACCGTATCCACCGCTCGCCCATGTGCGAGTACATG
ATCAACTTCATCCACAAGCTGAAGCACCTGCCCGAGAAGTACATGATGAACAGCGTGTGGAGAAGTTCC
CATCCTGCAGGTGGTCCAGAGCCGGGACTCCCAGGAGACCCTGCTTGTGCTTTTGTCTTTCGAAGTCT
CCACCAGTGAGCACGGGGCCAGCACCATGTCTACAAGCTCGTCAAAGACTAGGGTGCCTCTGCGCCTCC
TTAAGGATGCAGGGTGCAGCATCTCCTCTCCACACCTGCCTGGCACCCTGGGGGGTCCAGGATTGAGGAT
TCATCTACCTGCCAGGCCTCAGGCCAGGACCCAGGAGGCCTCCCCACCTACCCAGCACACACTCCCT
GCCACTGTTCTGCGCTTTAATTGTGGGAGAAGAGAGGAGAGGAGGGCTCAGCGGTGGGGCAGCCTGTCCGG
GGCGCTGACCCACCATACCCTGCTCTGCCAGCCTCGCGTGACCTCAGAGAGGTGGGGATAGGGGACACC
TTCAGCCTCCAGCATGTGTGGCCACTGTACCCCAACCCCTTGGGGGAGCATGATGGGCAGGTGAGGGC
AGGATGGAGACCAAGGGAGTCACTGAGCAGAGGCCCTGGGAGTGTCCGGTTGGGGTTGGACTGAGGACAGA
GGGGCCACACTTCTTGGCCCTTTGTGTCCAGGCCTGGTGCCAGACTCCTTGCATGGCTTGTGTGGTC
CTCAGACTCCGCACAGCGAGCGTAGGTCTCTGGGTTTTAGATGAAGTGCCAGGCTCCAGGAAGTTGAGGG
ACCCACAGGAGAGGTGGGCAGAGCTGGAGTTCTCATCCAGGGCTGCTTGTCCCCAGAGCCCAGGTTTATAC
TACCTCCCTGGGGCGGGGCTGGCCGAGGGTAGGGGAGAGGCTCTGCAGTGTGGAGTGGAGCCTCATCGA
GGGGCGCTGGGTTAGGGGAGCACCTGTTTTCAGACTGGGCATGAAGAAGGGAGCACAGCAGCTACTAGACCC
CATTAGCACCTCATTAGCCACAAGCCAGCCAGGGGCCCCAGGAAGATGGGGCACCCCCAGCACCCCTCCA
GATTGAGAGCAAGGTAGAGGAAGGAGTCCAGCCTCTGGGCAGACCAGAGGCCCCAGAGGGAGAGAGTAGCA
GAAGGCTTTTGTATTTTCTCTTGCCTGAGGCTTGAATCTGACAAACCCTTGGTGGGCACTGCTCCCTTAGG
TTCTTCCCCACCTCAATCTACCTGCCTAGAGTAGCAGCTCCAGACCCAGTTCTGGGACTGAAGGTTAACC
CTTCACCTGCTGTCCCTTCTTAACACCCAGGCCCCAGAGCCAGCTGGGCCTGTCCAGCAGCCACCTGTGG
GTATTTATGAGTTTCATATGAAGTACTGTGCCCTTCCCCTTCTCATCCCGACCCTGCCCGAGCTTCCCTGA
AGGTCTCCTACTGTTTGCATATCGCTCAGGCCACCTCCAAACCCACCTAGGTTTTATAATGTATATTATAT
ATTTTTTTGTGTATTTTTTAAAATCCAGCTGTGATGGGTTATATCATAAATGCAGCTTGGGGTTGGAGCAGG

GGCCCTCAAAGGCCAGCTCCTGCTCAAAAAAAAAAAAAAAAAAAAAAAAAAATTAAAGTTATTTGTTTGTGGGTCA
GTCATGTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

IASNSWNASSSPGEAREDPGLDKGLDNDAEGVWSPDIEQSFQEALAIYPPCGRRKIILSDEGKMYGRNE
LIARYIKLRTGKTRTRKQVSSHIQVLARKKVREYQVGIKAMNLDQVSKDKALQSMASMSAQIVSASVLQN
KFSPPSPLPQAVFSTSSRFWSSPPLLGQQPGPSQDIKPFAPAYPIQPPLPPTLSSYEPLAPLPSAAASVP
VWQDRTIASSRLRLLEYSAFMEVQRDPDTYSKHLFVHIGQTNPAFSDPPEAVDVRQIYDKFPEKKGGLKE
LYEKGPPNAFFLVKFWADLNSTIQEGPGAFYGVSSQYSSADSMTISVSTKVCSEFGKQVVEKQVETEARLEN
GRFVYRIHRSPMCEYMINFIHKLKHLPEKYMNSVLENFTILQVVTSRDSQETLLVIAFVFEVSTSEHGAQ
HHVYKLVKD

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#6

NM_031895

Conserved in vertebrates though in some fish initiated at AUU while others at AUG,
though the AUG initiated one might be another paralog.

CACNG8 calcium channel, voltage-dependent, gamma subunit 8

Synonyms: CACNG8

CCCCGCTTCTGCCTGCGCTGTGAACCCCCCCCCAGCCGCCGGCACGGCCCCGCCCGCTGCCCGGTGGT
GGCCACGGCCCCCGGCTGCCCGTGGTCAAACTGGAGTCGCTGAAGCGCTGGAACGAAGAGCGGGGCCTC
TGGTGCAGAGAAGGGGGTGCAGGTGCTGCTGACGACGGTGGGCGCCTTCGCCCTCATGACCAT
CGCCATCAGCACTGACTACTGGCTCTACACGCGCGCCCTCATCTGCAACACCACCAACCTCACGGCCGGCG
GCGACGACGGGACCCCCACCGCGGGGGCGGCGGCGCCTCGGAGAAGAAGGACCCCGGCGGCTCACGCAC
TCGGGCTCTGGAGGATCTGCTGCCTGGAAGGGTTGAAAAGAGGCGTCTGCGTGAAGATCAATCATTCCC
GGAGGACACGGACTACGACCACGACAGCGCGGAGTATCTACTCCGAGTTGTCCGGGCTCCAGCATCTTCC
CCATCCTTAGCGCCATCCTGCTGCTGCTCGGGGGTGTGTGCGTGGCGGCCTCCCGCTTACAAGTCCAAG
AGGAACATCATTCTGGGCGCAGGGATCCTGTTTCGTGGCAGCAGGCCTGAGCAACATCATCGGCGTGATCGT
GTACATCTCCGCCAACGCGGGCGAGCCGGGCCGAAGCGGGACGAGGAGAAGAAAAACACTACTCGTACG
GCTGGTCTTCTACTTCGGCGGGCTGTCTGTTTATCCTGGCCGAGGTGATAGGCGTGTGGCCGTCAACATC
TACATCGAGCGCAGCCGCGAGGCGCACTGCCAGTCTCGCTCGGACCTGCTCAAGGCCGGCGGGGGCGGG
CGGCAGTGGCGGGAGCGGCCCTCGGCCATCCTCGTCTGCCAGTTACCGCTTCCGCTACCGCCCGCT
CCCGCTCTAGCTCCCGCTCCAGCGAGCCGTGCGCGTCCGCGGACGCGTCTCCCGCGGCCCCGGGGGCCG
GGCTTTGCCTCCACGACATCTCCATGTACACGCTCAGCCGCGACCCCTCCAAGGCAGCGTGGCCGCGGG
GCTGGCGGGGGCCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGG
GCGGCGGCGGAGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGG
CACAACGCCTTCCCCAAGGAGGCGGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGG
GCCCCGCGCCACCGCGCCCTCTGCGCCCGCCCCGGGACCCTGGCCAAGGAGGCGCGCCTCCAACACCA
ACACGCTCAACAGGAAAACCACGCCTGTGTAGGGCGCGGCGGGGAGCCGAGGGGCGTGTCCGGGGC

LES�KRWNEERGLWCEKGVQVLLTTVGAFAAFGLMTIAISTDYWLYTRALICNTTNLTAGGDDGTPHRGGG
GASEKKDPGGLTHSGLWRICCLEGLKRGVCVKINHFPEDTDYDHDSA EYLLRVVRASSIFPILSAILLLLG
GVCVAASRVYKSKRNIILGAGILFVAAGLSNIIGVIVYISANAGEPGPKRDEEKKNHYSYGWSFYFGGLSF
ILAEVIGVLAVNIYIERSREAHQSRSDLLKAGGGAGSGSGPSAILRLPSYRFRYRRRSRSSRSSEPS
PSRDASPGGPGGPGFASTDISMYTLSRDPSKGSVAAGLAGAGGGGGGAVGAFGGAAGGAGGGGGGGGAGA
ERDRGGASGFLTLHNAFPKEAGGGVTVTVTGPPAPPAPAPPAPSAPAPGTLAKEAAAANTNTLNKRTTPV

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#8

NM_016178

CUG initiation well conserved in mammals.

OAZ3 ornithine decarboxylase antizyme 3

Synonyms: AZ3; OAZ-t; TISP15; OAZ3

GTTGCCTAAACCTCTGCCACCCACCTGTGAACTTCACTTTGCCACAGGGAGGCACCTGAACTGAAAACTGC
CTTGTAAGAGGTGTGCGCCCTCTGTCTACTCCCTTTCTTATATCAAGAGGGGAAAAACACGTAACCTACCTC
TACCCGATCTGGTCACCATACGCCTATTACCTTTACTGTTACAAGTACCGGATCACTCTCCGGGAGAAGAT
GCTGCCTCGTTGTTATAAAAGCATCACTTATAAGGAAGAGGAGGACTTGACACTCCAGCCCCGTTCCCTGCC
TCCAGTGCTCCTGAGTCCCTAGTAGGCCTCCAGGAGGGCAAAAGCACCGAGCAGGGTAACCACGACCAGCT
TAAAGAACTGTATTCCGGCTGGGAACTTGACGGTGTGGCTACTGACCCCTGCTCCACCAGGACCCAGTAC
AGTTAGACTTTCACTTCCGCCTTACCTCCCAGACCTCTGCCATTGGCACGGCCTTCTCTGTGACCGTCA
CTCTTCCCTGGATATCCCATATCAGGCCTTGGATCAAGGCAACCGGAAAGTTTGACTGCAACCCTGGAGTA
CGTGAAGAGAAGACAAATGTGGACTCTGTGTTGTGAACTTCCAGAATGATCGGAACGACAGAGGTGCC
TGCTGCGGGCCTTCAGCTACATGGGCTTTGAGGTGGTCAAGACAGATCACCTGCCCTCCCTCCCTTGGAC
AATGTCATCTTTATGGTGTATCCCCTTGAAGGGATGTTGGCCACCTGCCCAGTGAGCCTCCTTGAACATG
CTTATTCCAACGCTTTGAGGGGCTGGAAGCCTTGACACATGGAATCAGGGGCCCGGGATGTGATTCCAGGAC
ACTTTCCATCCTAGGAATAAAGGGTAGTGCAATCAAAAAAAAAAAAAAAAAA

LPCKRCRPSVYLSYIKRGKTRNYLYPIWSPYAYLYCYKYRITLREKMLPRCYKSITYKEEDLTLQPRS
CLQCSESLVGLQEGKSTEQGNHDQLKELYSAGNLTVLATDPLLHQDPVQLDFHFRLTSQTSAHWHGLLCDR
RLFLDIPYQALDQGNRESLTATLEYVEEKTNVDSVFNFNQDRNDRGALLRAFSYMGFEVVRPDHPALPLP
DNVIFMVYPLERDVGHLPSPEP

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#9

NM_021961

Region and non-AUG initiation conserved from zebrafish to human.

TEAD1 TEA domain family member 1 (SV40 transcriptional enhancer factor)

Synonyms: AA; REF1; TCF13; TEF-1; TEAD1

TTCCGAACATTCTTAGCATCGCTCGCGCCGCGCCGCGCCCTGAGCCGAGCCGAGCCTCTGCTGCCGCCG
CCGCGCCCCCGCCCGCCCGCGGGCGCCACCAAGCACTTTGCAGACTCGCTTCCACCCTGCGGGCCATT
CCGCGCGGGGGCCCGGGCCCGGGCGGCGCGTCCAGGCACAGGCCATGCAGTGACGCCCCCACC
TCCACCTTTGCCCGGAGCGCGGGCAGCAGCCAGCGCGCCAGCCGGCCCCGGGGCAGGAGCGGTGCTAGGC
AGGGGTGGGGTGGCCGGGCCAGGGACCGGGAGCCGGGGAGGGAGCCGGGCACCGAGCAGAGGGCGGGGA
AGCGGCGCCGAAGTTTGCCTCGGACTCGCCGGGCGCTGCGGTGGCTCCCTGGGCGGAGGACTGTTGCTGCC
GCTGCCGCCCGCTTCAATTGCACATTCAAGTGGAAAATTTTTCAGGAGTCAGCAGAAAACATTGTGTCCAAA
AAAGACTGAGTGCAGTTACCACCAAACCCAGGAGGAGACTCTCCCTGGAAAACCTCCCTTCCCTTTCCGGT
TTATTTTCTTGAAGAGGCTCCAGGCTTCCGGCTTGAAAATCCCACCGCCAAAATTGAGCCCAGCAGCTGGA
GCGGCAGTGAGAGCCCTGCCGAAAACATGGAAAGGATGAGTGACTCTGCAGATAAGCCAATTGACAATGAT
GCAGAAGGGGTCTGGAGCCCCGACATCGAGCAAAGCTTTTCAGGAGGCCCTGGCTATCTATCCACCATGTGG
GAGGAGGAAAATCATCTTATCAGACGAAGGCAAAATGTATGGTAGGAATGAATTGATAGCCAGATACATCA
AACTCAGGACAGGCAAGACGAGGACCAGAAAACAGGTGTCTAGTCACATTCCAGGTTCTTGCCAGAAGGAAA
TCTCGTGATTTTCAATCCAAGCTAAAGGATCAGACTGCAAAGGATAAGGCCCTGCAGCACATGGCGGCCAT
GTCCTCAGCCCAGATCGTCTCGGCCACTGCCATTATAACAAGCTGGGGCTGCCTGGGATTCCACGCCCGA
CCTTCCCAGGGGCGCCGGGGTTCTGGCCGGGAATGATTCAAACAGGGCAGCCAGGATCCTCACAAGACGTC
AAGCCTTTTGTGCAGCAGGCCTACCCCATCCAGCCAGCGGTACAGCCCCCATTCCAGGGTTTGGACCTGC
ATCGGCCCCAGCTCCCTCAGTCCCTGCCTGGCAAGGTGCTCCATTGGCACAACCAAGCTTCGCCTGGTGG
AATTTTCAGCTTTTCTCGAGCAGCAGCGAGACCCAGACTCGTACAACAAACACCTCTTCTGTGCACATTGGG

CATGCCAACCAATTCTTACAGTGACCCATTGCTTGAATCAGTGGACATTCGTCAGATTTATGACAAATTTCC
TGAAAAGAAAGGTGGCTTAAAGGAACTGTTTGGAAAGGGCCCTCAAATGCCTTCTTCTCGTAAAATTCT
GGGCTGATTTAAACTGCAATATTTCAAGATGATGCTGGGGCTTTTTATGGTGTAAACCAGTCAGTACGAGAGT
TCTGAAAATATGACAGTCACCTGTTCCACCAAAGTTTGTCTCTTTGGGAAGCAAGTAGTAGAAAAAGTAGA
GACGGAGTATGCAAGTTTTGAGAATGGCCGATTTGTATACCGAATAAACCGCTCCCAATGTGTGAATATA
TGATCAACTTCATCCACAAGCTCAAACACTTACCAGAGAAATATATGATGAACAGTGTTTTTGGAAAACCTT
ACAATTTTATTGGTGGTAAACAAACAGGGATACACAAGAACTCTACTCTGCATGGCCTGTGTGTTTGAAGT
TTCAAATAGTGAACACGGAGCACAAATCATATTTACAGGCTTGTAAAGGACTGAACATGGTTATTTATAT
ATATAGATATCTGTATATACACACACACATATGTGCACACACACACTCTCTCTCCATTATCGAACGACTGA
CTGTAAACCTCACCACACAGGGTGGTGCCTGGCCCCGAGGTACCCCCGACTTTTCTAAATCTTGTGTTGAG
TGAAGTCATTTTTTTCATGTGTTTACACTATCATTGTAGCTGTGAAGTTCTGGTACAGTTGTAAGAAAGAGAA
ATTGAGTTGTTTTCTCTATGTTCTTTCAGATGTCAGCCACAATTCCTCGGAAAGGTGAACCTGAACAAACC
CAAGTCTCTCTGAGAGCCCTGTTTTCTAATTGTGGTAGAAAATATTGAGACAGAGCATTGGCCATGGGA
CATTACAGCCTTTATACAAATGTATTTAGTTCTCTTTTTTCCAACATAAAAATTCTTGTGTTTTAAGATACAA
GTAAAATTAATCTTTAAATATAAATGTAAATTAGTACACAAAATAAGAATCTTTAGACTTATCTTTGTAA
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AACTTCACCCCTTATCCTTAAACATATATAGTATATTTAAAAAATATAAAAATTGTATTGTACTAATGTGATG
ATGGATTATTTAATGAAAAAGAAAAATGGCTCTTTTTGCAATAAGTAGATACATACTGAAAAAATCTAAA
CTTACAATGTTTATAGTCTTGTGTGTGCAGTTATATTTTATATGGACGACCAAATTTTTTATTAAGATGAG
TAAATATTTGAACCACTGAATTTAATAACAAAATTTTAAAATTGGCATGAATACGGAATACTGCACTGTG
AGATGCAAAGTATACAGAATCTGTGGCTGGGAGAAAATTTTATCAAATAGACAAGTAAAAGGCTCATCAGT
TTTAGCATCTCTGCTCCCCAGAAAATTGTAAGCATCCTCACCAGCCTGTGGATACATTCTTTATTTCTAGT
GACCAATATGCATATTAACCTGCTATAACTAGGGCTATATGTGTAGGTATGTGTATACATATACACAAAT
GCACATATAGAGTTAACACATTTAGTGAACACTTGTTTAGTGTCACTCAGTTTGTAGGTGCTGATATGTA
CGTATATCTCAATGTGTCTGTAGACTTAGATAACATCCTCTTGAAGCACATCCATTTCTTTAGCGTCTCTCA
GTAAGTTACAGTACTTGTGTTGACTTAGGTTTAAAGAGGCCAGCTACCTATCTCTGACCTTTTCAAATAGGC
TCATTTGGGAGATTTCTTTTGGCAGGAGAGATTTCAACTTTCCAATCTAAGTATTCCAGAGCATGCCAGGC
AGAGTTGGTTGATGTGGCCAGATGTTTTGAGTTATTTCCCTTAAAGTGTCTTACTGGGGAGAGAACAGGGA
GTGCTCCTCCAGCTTCCCAAAGAAATATGTTTTTGTAAAGTGGTAGGAACATGTGCACACAATAGAACATGA
AATAAGTTTTTTAACTTGTAAAACATGTCAAGATTTTTTCCACCAAGCTAGAAAATAAAAAACTTAGTTCTA
CCACATCCAATTAACCTTACACACCCCTTCCCTGTCTCAACACCTGCTTTGACCCTGCTTTTTCTATTATTA
CATCAGTCAGCATCTTGTGGTCCCTAACATGAGGATGTGGCTGGCTCGTGGGAAACAGCAAAACACTAAGC
CTGACCTCTCCCAAATTTGGGAAGACCAGAGGAGAAAGTGCAAAACTGTCCCCATTTGGAATGCCATTCTCT
TCTAGAAACCAGTTGGACAGTGTCTCTGCCCCTTATAAACAGACTACTGTTGGGTCCCTGATTCCAGGC
TGGCCTGTGAAGGATTGCCCCAGGTGTCCCCTTTCACGGTTGTACATTTACAGTGACTTCTGTTGAACAC
CCCTCTTAGGGATGTTTTCTTTGCTCTTATTTCTGCATCTTTCTTAAAGGAAGCCCCATCCTCTCCCAG
GACCAGGAGTTTATGACCAGGCGAGCACAAATGGCTAAAAGCCAAGCTGTCTTAGAATTCAGTGGGAGAG
CTGTCTGGTTTCAATTTCTACCCAGGAATGGTACTTTTTCAGTGCAGCCAGGAGGGCTCTTGGGATTTCTTT
CCAAAGCACAAAATACTGGGACCCAAGAAGAACAGCTAGAGGACAACCTCTGTTGGCACAGAGACGGGGAC
AGCCCAGTCTGCTGACCTCACAGGGTCAGCTGGGCCCCCTGGTGCTTACCACCTGCATCCTCTTGCTCA
GAATGCCTTTGCAGTTGAGTTTTCTGGGTTTTCTATGATTGACCTTGAGGTTTACTCCTTGCTCTTACAACA
TTTTCTAAGGATTTTTAAAAGTTTACTTCTTGTCTTGTCTTCTTAAAGCTTTCTCCAGGACAGATATTTTCC
CTGTCTTAAACACTGGTCCAGTCATCCAGTGGGCTTCTCTTTGTCTCTCCAGATTAGACCTTTGGGTGA
GATTGGCATCACAACATCTAATCTGAGTCTGTCTTTTGTCTTCTTAAAGCTTTCTCCAGGACAGATATTTTCC
TAAAAGCTTTCTAAAGCATACTAAAGAAGCCTTCCAGAGCCCCGTCTTGCTTCTCTCCAGGTGCTCTAT
CCCCCTCGAGACCTCTGTTGCCAGGCTTGTCTTACGGCCATCTTGTGTTGTCACTGCAGAGTTTGGAGGCC
AGTTTTCCACAGCCTAAACAGGGAGGAGCTGCAGAATGGGGCTCTGGTCTCTGGGCATTCAATTTCCCTCAT
AGAGGCTGAGAATAAAAACAAGGACTTATTACACATGTTCTAGAACCCCAGAATGGCCCAAGTTACCTGAG
ACCAGGGTTTTCTCAACCTTGACACCATTGACATTTTGGACTGGGTAATTCTTTGTTCTGCAGAGCTGTCTT
TTGCACTGTAGGAGATTTACTAATATCCCTGGCCTCTACCCAGTAGTACCCTAGCACCTATTCCCCACCC
AGCGTGTCTCCAGATATTGTCAAATATCCCATCGGGTGCAAAATGATCCCTGGTCAAGATCTGTTGCCCAA
GATGTTACAGGTCACAATGACCACATTTGAAATTGTTTTCCCTTTTCAATTTACCCTGTGAAAGCATCTCTC
CTAGAGCCTTGCAAGAGGCAGGTGACATTGTGTCCATATTTCTTCTGTTTCCAGAACTTCTGTTTACAAC
AATTTCTCTCTCGCTACAAGTATTTCTTCACTCAGCACTGGGGAAGTTGGGAACAGCTGGTCACCATCATC
CCTTTAATCAACTCACACCTGTTTTAAAGAGTGTCTGATTTGACCTTATCCCTTAGTTTTACTGGCGTTA

AAAAAAGTCTCAGCAATTTTTCATTATTTCTCGTGGGTCTCATTATCAAACCTTTACTTATTTTCGGCATATT
TCCTCTGGGCTTCTTCTAGTTTCTGCCTTACAAGCAATGCTGTTCTGTAAATTTATTGAAACCTCTGGAAC
ATTTACCTTTAGAGATGGAGGATGGAAGGATTGGTACCAGAAGAGGGCTAAGATACGTTTTCTGTCTTGA
GCTGAAAGCACAGTCTACTCTCCTTCGTTTTGTGATGAGAAAGTTGAGGCCAGAGGGGAGGTGACATGTT
TAGAGTCACCCAGCTGGTTAGTGACAGAAAAAGCGTGAGAGTTGTCTAGGATTCCTGCCACTTTGGTCCCT
GGCCTCTCCTGGGGGAGGCTGCTGTTCTTAGGTGCTCTAAGCTTAATCCCTCAGAATGTGTGGACAGGTCA
GCTTAGAAGAGATGGGGAGATTCCAGGATCCCCCTGTGCCAGAGCACAGCCTCACCGGATGCTGCTTCCCAC
ACTGAAGTGTCTGTCCGACCATTGCTATCTGAGGCATCCACAAGCAGGTAGGAAAGCTGGCGAGCCATTT
TACTTCTGAGGACAATTCCCCAGCCACAGGCTCTGAGTCAAATTTCTATTTGGTAAGCATCCTAGCAGCA
AAGTCTGCACCTCAGACCAGCCAAAAACAGCCCCATTCCAAGTACTTGGTGTCAAAAGTCCCCGAACGA
CTTTTAAACCCCAAGTCTTCTTAAGGTTTCAGTACTGTGGTGGCTTTAGCAGTTGTTTTGTGCAACTATAA
ATTTTAAATCATCTGAGATGACAGTCAATTTTACAACAGGTACATATTAATTTGTATAATTTGTAT
ATGCTCTGGTACACTACCTGAACTAACGAAGGGTAGAACTAATTCTGTTTGTGAGTGTTCACACCTGTAAC
ATTAGGAGGATATGTCTGCATTGCTTATTTCTTTATGTTGGTGTCTTCTGTGGCAAAGCCCTGCACATGGCA
TTTCTGAAAAGCCTTAAATCTTTAAGATGTTGCATGTAGGGTATGCAGTGCAAAAGGCTGCCTCAGAAGT
TGAGCCCTTTTGTAAAGCTGGAAGCATTCTCTTACTACTGTTACTTTTGTAGGAAGTTTTCAATTCAGAGC
TGCCAAAGTGTTCCTCGTAAGCAGTGCCTTAGTAATACCTTAGTCATGCCGCCAGCCTTTTCTTACACCAAT
TCCTAATGTTTCATTTACGAATTGGCCCAATATTGGAACAAAAACAAGCAAAATTTGTCTTCATTTTTGTTT
TGTAAGCCCATTTTTTCTCCAGTTCTATAGGAACTGACTGCTTGGTGTAAAATCCGAAACTGGACACAAG
TCAGTTCTTTTACCACACTCAAATGTATATACAAAACAAAAGTTGCAACTTCATAGTTTACTATGAAAA
GCAATTTGTACTTTTTAATGTTGCCTTTTTAAATTCATGACCAAATACTTAGCTATTTGTGAATCTTCTGCA
CTCTAGCATGAAAGTGCCTTTGGTTTGGAGATTCCAGCTTAGAAAAGTGTGCCATAATAACGATAATTTGT
AGAGAGACCAAAAAATTTTTGAGATCACCGTAATGCCTTTGGTTTACCGGGATGAGTAACCAACCACAGGC
CTCTGTTTACAAGAGCACGACGTGGTCCCCGCCTGCTGCTAGTCTGTCTGCCACTGGGGGCCTCCCAACAT
CCATAGCACACTTCAGCGGAAGGACCCAGAACTGTTGTGTTTGTGTGTGCTGATGACCTAGTGTGTCAT
TTCACCTCGTCACCCAGCCCTGCGTCCGGATGAGGGGACTTCTGCACAAATGACAGAATCTCGGCTGGTGG
ACAGATACTACAGCTTTCTCCTCCTCCTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTTGTGTTT
AATGACAGTGCACACTTATCTGGTTTACACAATGATACCATTTTAAAAGTTGGAAGCCTCAAACCTGAGACG
ACAGTGCAGAAAAACAAAAGTGAAGTTAGGGTCTTAAAATTTGAAGTGTCTTCTTAGGGCAAAACATGTT
GACTCCGAGTATTGTGATGATGCTACGAGAACTTCAAAGAGCACCATTACAATTTGGCATTTTT
AAAGAATGTTCCAGCCCTCAAAGGGCAACTCTTTAAAGTCTTGTGGCTTTTATCCAAACCTTGTAGAA
ATTGGGAAAGCTGATAGAGGTAAGGAAGACGAGTGAAGGACAAGAAGGCCAAACACCAGCCAAAAAGAA
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TATCAAATGAAAAGAAAATGTACTCAACCTAACTTATAGTTAGCAGCTGGAATTTCAACTCTTCCCTGCC
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TGCTTTGTTTGAAGTAGTTTTCTCTCTCAAAGCCGTTGCTTATATCGTTAAGAATGAAGGTTTGTGTTTA
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TATTGTCCTACTTCTAAGCCGTAACCTCTTTTCTCTGTGAATTTGCATTGAGTCACTCATGCTACACTA
CATCGCTTTAGTATTTGAGATGGCATTATGTTTCTCTCGTTTATCATGAAATGGGGTCAGATTCCATCA
GATTCACCTCTGTGAGGTGGACTCTTGTCTGCCTTCCATGATGAGATTTTTTTTTCTCCTTCCCCTTTCTT
TAAGAGAGGCTGACAGATCTAGGTGTCAATCAATTGGAACCCAGTCTCTGATTTTTTTTTCTATTAGTTATTT
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CGGGTAACTGGGTTCTTCTTGGGTAGATTGGAGAGATGGGGGTGGGCGTGGGCAAATTTCTCACACATGTTT
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CAAAGTGACACATTTTGTATGCCTTCTTGATAAAGTGGTAGACATTTTGTAGCTTTCTAGAACTTTGTATT

CATACGGTATCAATGAAAAATAAAGAAAATGAAAGTGTGGGTACCTTTTTTATCTGCAAAAAAAAAAAAA
AAAAA

LENPTAKIEPSSWSGSESPAENMERMSDSADKPIDNDAEGVWSPDIEQSFQEALAIYPPCGRRKIILSDEG
KMYGRNELIARYIKLRTGKTRTRKQVSSHIQVLARRKSRDFHSKLKDQTAKDALKQHMAAMSSAQIVSATA
IHNKLGLPPIPRPTFPGAPGFWPGMIQTGQPGSSQDVKPFVQAYPIQPAVTAPIPGFEPASAPAPSVPAW
QGRSIGTTKLRLVEFSAFLEQQRDPDSYNKHLFVHIGHANHSYSDPLLESVDIRQIYDKFPEKKGGLKELF
GKGPQNAFFLVKFWADLNCNIQDDAGAFYGVTSQYESSENMTVTCSTKVCSFGKQVVEKVETEYARFENGR
FVYRINRSPMCEYMINFIHKLKHLPEKYMNSVLENFTILLVVTNRDQETLLCMACVFVSNSEHGAQHH
IYRLVKD

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#10

NM_001098504

Apparently conserved in mammals though in-frame stop codon in mice, rats and elephants. Likely initiated at a “ACGGUG” tandem downstream)

DDX17 DEAD (Asp-Glu-Ala-Asp) box polypeptide 17

Synonyms: P72; RH70; DKFZp761H2016; DDX17

GTTAAGTTGGAGCCGACTCAGCGGCCGCCCATTTTTGTGCAGTCGCTGGGAAGGAAGGAGACGCCTAAAC
CGCGGCACTGCCCGGTTTTGAGCGTAGCCAAACCTGCCACCAGGCTTTGTAGCCCCGATTCTCTGTGTTTTG
CTCCCGTCTCCGACGAGAGAGGCGGCGACGGTGGCGTCTGCGACGGGAGACAGCGCGTCGGAGCGAGAGAG
CGCTGCGCCTGCCGCCGCCCAACAGCGGAGGCGCCGCCCATCGGTCTGTACCAGACCGGAGCCGCAGG
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TTTTGGGACCGGGACCGGGATCGTGACCGTGGAGGATTTGGAGCAAGAGGTGGTGGTGGCCTTCCCCGAA
GAAATTTGGTAATCCTGGGGAGCGTTTTGCGTAAAAAAAGTGGGATTTGAGTGAGCTCCCCAAGTTTTGAGA
AAAATTTTTATGTGGAACATCCGGAAGTAGCAAGGCTGACACCATATGAGGTTGATGAGCTACGCCGAAAG
AAGGAGATTACAGTGAGGGGGGAGATGTTTTGTCTAAACCCGTGTTTGCCTTCCATCATGCTAACTTCCC
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CGTTGGCTCTTAGTGGCCGGGATATGGTGGGCATTGCTCAGACTGGCTCTGGGAAGACGTTGGCGTATCTC
CTGCCTGCAATTGTTTCATATTAACCACCAGCCATACTTGGAAAGGGGAGATGGCCCAATCTGTCTAGTTCT
GGCTCCTACCAGAGAGCTTGGCCAGCAAGTACAGCAGGTGGCCGATGACTATGGCAAATGTTCTAGATTGA
AGAGTACTTGTATTTATGGAGGTGCTCCTAAAGGTCCCCAGATTTCGAGACTTGGAAAGAGGTGTTGAGATC
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CCTTGTATTGGACGAAGCTGACAGAATGCTTGGATGTTGGGTTTTGAACCCAGATCCGTAAAATTTGTTGACC
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GATTTCCCTTCGTGATTACACCCAGATCAACGTAGGCAATCTGGAGTTGAGTGCCAACCACAACATCCTCCA
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CGTAGCACCAACAAGGGTACCGCCTATACCTTCTTCAACCCAGGGAACCTAAAACAGGCCAGAGAGCTTAT
CAAAGTGCTGGAAGAGGCCAATCAGGCTATCAATCCAAAACCTGATGCAGCTTGTGGACCACAGAGGAGGCG
GCGGAGGCGGGGTAAGGGTGGTCTGTTCTCGTTACCGGACCACTTCTTCCAGCCAACAATCCAATCTGATG
TATCAGGATGAGTGTGACCGAAGGCTTCGAGGAGTCAAGGATGGTGGCCGGAGAGACTCTGCAAGCTATCG
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GCATTGTTTTCTACAACCAAATTTCTGGGTTTTTTTTCTTCTTTCTTTAAACATAGAGGTACCACCACAAGGG
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ACAATTCGTTGTGTGGACTTCTCATCTAAAAGGTTAGTGGCTTTTGGCTTGGGATCAGTGTCTCTATTGAT
GTTCTTGGCTGGTCTCCAGACACATTCCTGTTGCATTAAGACTTGAAGACTTGTAGATGTGTGATGTTTCCAG
GCACAGGATGCTGAAAGCTATGTTACTATTCTTAGTTTGTAAATTGCTCTTTTGTATACCATCATCTTGT
TCTTTTTGTAGGTATAAATAAAAAACTGTTGACAATAAAAAAAAAAAAAAAAAA

TVASATGDSASERESAAPAAAPTAEAPPPSVVTRPEPQALPSPAIRAPLPDLYPFGTMRGGGFGDRDRDRD
RGGFGARGGGGLPKKFGNPGERLRKKKWDLSELPKFEKNFYVEHPEVARLTPYEVDLRRKKEITVRGGD
VCPKPVFAFHANFPQYVMDVLMQHFTEPTPIQCQGFPLALSGRDMVGIQGTSGKTLAYLLPAIVHINH
QPYLERGDGPICLVLAPTRELAQQVQVADDYKCSRLKSTCIYGGAPKGPQIRDLEGRVEICATPGRLI
DFLESKTNLRRCYLVLDEADRMLDMGFEPQIRKIVDQIRPDRQTLMWSATWPKEVRQLAEDFLRDYTI
NVGNLELSANHNILQIVDVCMESEKDHKLIQLMEEIMAEKENKTIIFVETKRRCDLRRMRRDGPAMCI
HGDKSQPERDWVLEFRSGKAPILIAITDVASRGLDVEDVKFVINYDYPNSSEYVHRIGRTARSTNKG
TAYTFFTPGNLQARELIKVLEEANQAINPKMLQVLDHRGGGGGGGKGRSRYRTTSSANNPNLMYQDECD
RRLRGVKDGGRRDSASYRDRSETDRAGYANGSGYSPNSAFGAQAGQYTYGQTYGAAAYGTSSYTAQ
EYAGT YGASSTTSTGRSSQSSSQFSGIGRSGQQPQLMSQQFAQPPGATNMIGYMGQTAYQYPPPPPPPPSRK

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#11

NM_001025366

Region is conserved in mammals. In-frame stop codons and broken frames in: *Callithrix jacchus*, *Felis catus*, and *Echinops telfairi*.

VEGFA vascular endothelial growth factor A

Synonyms: VPF; VEGF; MVCD1; MGC70609; VEGFA

GGCTTGGGGCAGCCGGGTAGCTCGGAGGTCGTGGCGCTGGGGGCTAGCACCAGCGCTCTGTCTGGGAGGCGC
AGCGGTTAGGTGGACCGGTGACGGACTCACCAGCCAGGGCGCTCGGTGCTGGAATTTGATATTCATTGAT
CCGGGTTTTATCCCTCTTCTTTTTTCTTAAACATTTTTTTTTTAAACTGTATTGTTTCTCGTTTTAATTTA
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GTGGATTTTGGAAACCAGCAGAAAGAGGAAAGAGGTAGCAAGAGCTCCAGAGAGAAGTTCGAGGAAGAGAGA
GACGGGGTTCAGAGAGAGCGCGGGCGTGCAGCAGCGAAAGCGACAGGGGCAAAGTGAAGTGCCTGCTTT
TGGGGGTGACCGCCGGAGCGGGCGTGCAGCCCTCCCCCTGGGATCCCGCAGCTGACCAGTCCGCTGACG
GACAGACAGACAGACACCGCCCCAGCCCCAGCTACCACCTCCTCCCCGGCCGGCGGGCAGAGTGGACGC
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GTAGACACACCCACCCACATACATATATATATATATATATATATATAAAAATAAATATCTCT
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LTDRQTDTPSPSYHLLPGRRTVDAAASRGQPEPAPGGGVEGVGARGVALKLFVQLLGCSRFGGAVVRA
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SGRGGRVARRGAEESGPPHSPSRRGSASRAGPGRASET MNFLLSWVHWSLALLLYLHHAKWSQAAPMAEGG
GQNHHEVVKFMDVYQRSYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTTESNITM
QIMRIKPHQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVRGKKGQKRKRKKSRYKSWSVYVGARCCCLMP
WSLPGPHPCGPCSERRKHLFVQDPQTCKCSCKNTDSRCKARQLELNERTCRCDKPRR

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#11

NM_022002

Region conserved from insects to human. Non-AUG initiation conserved in mammals; in non-mammals the region is initiated by AUG.

NR1I2 nuclear receptor subfamily 1, group I, member 2

Synonyms: BXR; PAR; PRR; PXR; SAR; SXR; ONR1; PAR1; PAR2; PARq; NR1I2

TTCTTAACCCTTTCCAGCTTTCCACCCTCTTTGGCTTTAGCCATGGCCTTCTGATCTGTGTTTCTCAGGG
GACCTGCAGGCCCCAGATATAGCCCCATGCTGTCTCCTACCCAGAGCACACTGTTTCAGGCTACTTCCAC
TGGTACTGAAATCCAGTATTTCACTTACTCTTTTTCTTTCCAATATCCTCATGACATTCAATATTTCACTT
ACTCTAGGTCTCCTGCCTAAGGCCCAAGTCAACTTTCTGTCCAGTGGGATTTGTAATCCAATACCTCCT
AGCCCTAGCAGAATCCCATGTGGATAATCAGAAATGTGACTGGAAAAAGGACAGAGCTCTATGGCTGTGGG
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TGAAAACAGCAAGGCAAGCATCCACTTGAGAAATGTCAACCCTAGGAAATCCCAGCCTCAAGTCTTTCTC
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TCTTTATAAAACAAAGCAAGTAGAAGAAACACATCCTGGTATCCACCACATTCGGCTTTTGTGATTCTGTT
CACTTGGGAGCACCTGCTGCTAGGGAATAAGAAGGTTGAGGCTGAAGAGTGAGGACTCTTCAGCTCCCCTC
TGGCAGGACCCGGGAGAGGAAAGAGCCCTCAGCTGGTCCATCCTCCCCTCCTGGTCAGCCTTCTGTTCT
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CTATCACTTCAATGTCAATGACATGTGAAGGATGCAAGGGCTTTTTTTCAGGAGGGCCATGAAACGCAACGCC
GGCTGAGGTGCCCTTCCGGAAGGGCGCCTGCGAGATCACCCGGAAGACCCGGCGACAGTGCCAGGCCTGC
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ACTGCAGGTGGCTTCCAGCAACTTCTACTGGAGCCCATGCTGAAATTCCACTACATGCTGAAGAAGCTGCA
GCTGCATGAGGAGGAGTATGTGCTGATGCAGGCCATCTCCCTCTTCTCCCCAGACCGCCAGGTGTGCTGC
AGCACC CGTGGTGGACCAGCTGCAGGAGCAATTGCGCATTACTCTGAAGTCCTACATTGAATGCAATCGG
CCCCAGCCTGCTCATAGGTTCTTGTTCCTGAAGATCATGGCTATGCTCACCGAGCTCCGCAGCATCAATGC
TCAGCACACCCAGCGGCTGCTGCGCATCCAGGACATACACCCCTTTGCTACGCCCCCTCATGCAGGAGTTGT
TCGGCATCACAGGTAGCTGAGCGGCTGCCCTTGGGTGACACCTCCGAGAGGCAGCCAGACCCAGAGCCCTC
TGAGCCGCCACTCCCGGGCCAAGACAGATGGACACTGCCAAGAGCCGACAATGCCCTGCTGGCCTGTCTCC
CTAGGGAATTCTGCTATGACAGCTGGCTAGCATTCTCAGGAAGGACATGGGTGCCCCCACCCTCAGTT
CAGTCTGTAGGGAGTGAAGCCACAGACTTTACGTGGAGAGTGCCTGACTGACCTGTAGGTGAGGACCATGAG
GAGGCAAGGTTGCCCTTTCTTTTAAAAGGCCCTGTGGTCTGGGGAGAAATCCCTCAGATCCCACATAAAGT
GTCAAGGTGTGGAAGGGACCAAGCGACCAAGGATGGGCCATCTGGGGTCTATGCCACATACCCACGTTTG
TTCGTTTCTGAGTCTTTTTCATTGCTACCTCTAATAGTCTGTCTCCCACTTCCCCTGTTCCCCTCCTC
TTCCGAGCTGCTTTGTGGGCTCCAGGCCTGTACTCATCGGCAGGCGCATGAGTATCTGTGGGAGTCTCTA
GAGAGATGAGAAGCCAGGAGGCCTGCACCAAATGTCAGAAGCTTGGCATGACCTCATTCCGGCCACATCAT
TCTGTGTCTCTGCATCCATTTGAACACATTATTAAGCACCGATAATAGGTAGCCTGCTGTGGGGTATAACAG
CATTGACTCAGATATAGATCCTGAGCTCACAGAGTTTATAGTTAAAAAACAACAGAAACACAAACAATT
TGGATCAAAAGGAGAAATGATAAGTGACAAAAGCAGCACAAAGGAATTTCCCTGTGTGGATGCTGAGCTGTG
ATGGCGGGCACTGGGTACCCAAGTGAAGGTTCCCGAGGACATGAGTCTGTAGGAGCAAGGGCACAACTGC
AGCTGTGAGTGCCTGTGTGTGATTTGGTGTAGGTAGGTCTGTTTGGCACTTGTATGGGGCCTGGGTTTGTTC
CTGGGGCTGGAATGCTGGGTATGCTCTGTGACAAGGCTACGCTGACAATCAGTTAAACACACCCGAGAAGA
ACCATTTACATGCACCTTATATTTCTGTGTACACATCTATTCTCAAAGCTAAAGGGTATGAAAGTGCCTGC
CTTGTATATAGCCACTTGTGAGTAAAAATTTTTTGCATTTTACAAATTATACTTTATATAAGGCATTCC
ACACCTAAGAAGTGTGTTGGGAAATGTAGCCCTGGGTTTAAATGTCAAATCAAGGCAAAAGGAATTAATA
ATGTACTTTTGGCTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LEVRPKESWNHADVFHCEDESVPGKPSVNADEEVGGPQICRVCGDKATGYHFVMTCEGCKGFFRRAMKR
NARLRCPFRKGACEITRKRTRQCQACRLRKCLESGMKKEMIMSDEAVEERRALIKRKKSERGTQPLGVQG
LTEEQRMMIRELMDAQMKTDFDTTFSHFKNFRLPGVLSGCELPELQAPSREEAAKWSQVRKDLCSLKVSL
QLRGEDGSVWNYKPPADSGGKEIFSLPHMADMSTYMFKGIISFAKVISYFRDLPIEDQISLLKGAAFELC
QLRFNTVFNAETGTWECGRLSYCLEDTAGGFQQLLLEPMLKFHYMLKQLHEEEYVLMQAIISLSPDRPG
VLQHRVVDLQEQFAITLKSYLECNRPQPAHRFLFLKIMAMLTELRINAQHTQRLRLRIQDIHPFATPLMQ
ELFGITGS

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#11

NM_001172131

Region conserved in mammals.

HCK hemopoietic cell kinase

Synonyms: JTK9; HCK

GTCCCAGCTCGGGAGCACATCAGAGGCTTAGAGGCGAGTGGGAAGGGACTCAGACAGTGCAGGACGAGAAA
CGCCCCGCGGCACCAAAGCCCTCAGAGCGTCGCCCCCGCCTCTAGTTCTAGAAAGTCAGTTTCCCGGCCT
GGCACCCCGGAACCTCAGGGGCTGCCGAGCTGGGGGGCGCTCAAGCTGCGAGGATCCGGGCTGCCCGCGA
GACGAGGAGCGGGCGCCAGGATGGGGTGCATGAAGTCCAAGTTCCTCCAGGTCCGAGGCAATACATTCTC
AAAACTGAAACCAGCGCCAGCCACACTGTCTGTGTACGTGCCGGATCCCACATCCACCATCAAGCCGG
GGCCTAATAGCCACAACAGCAACACACCAGGAATCAGGGAGGCAGGCTCTGAGGACATCATCGTGGTTGCC
CTGTATGATTACGAGGCCATTACCACGAAGACCTCAGCTTCCAGAAGGGGGACCAGATGGTGGTCTTAGA
GAACTCGGGGAGTGGTGAAGGCTCGATCCCTGCCACCCGGAAGGAGGGCTACATCCCAAGCAACTATG
TCGCCCCGTTGACTCTCTGGAGACAGAGGAGTGGTTTTTCAAGGGCATCAGCCGGAAGGACGCAGCGC
CAACTGCTGGCTCCCGGCAACATGCTGGGCTCCTTCATGATCCGGGATAGCGAGACCACTAAAGGAAGCTA

CTCTTTGTCCGTGCGAGACTACGACCCTCGGCAGGGAGATACCGTGAAACATTACAAGATCCGGACCCTGG
ACAACGGGGGCTTCTACATATCCCCCGAAGCACCTTCAGCACTCTGCAGGAGCTGGTGGACCACTACAAG
AAGGGGAACGACGGGCTCTGCCAGAACTGTCCGGTGCCTGCATGTCTTCCAAGCCCCAGAAGCCTTGGGA
GAAAGATGCCTGGGAGATCCCTCGGGAATCCCTCAAGCTGGAGAAGAACTTGGAGCTGGGCAGTTTGGGG
AAGTCTGGATGGCCACCTACAACAAGCACACCAAGGTGGCAGTGAAGACGATGAAGCCAGGGAGCATGTCC
GTGGAGGCCTTCTGGCAGAGGCCAACGTGATGAAAACCTCTGCAGCATGACAAGCTGGTCAAACCTTCATGC
GGTGGTCACCAAGGAGCCCATCTACATCATCACGGAGTTCATGGCCAAAGGAAGCTTGTGGACTTTCTGA
AAAGTGATGAGGGCAGCAAGCAGCCATTGCCAAAACCTCATTGACTTCTCAGCCCAGATTGCAGAAGGCATG
GCCTTCATCGAGCAGAGGAACTACATCCACCGAGACCTCCGAGCTGCCAACATCTTGGTCTCTGCATCCCT
GGTGTGTAAGATTGCTGACTTTGGCCTGGCCCGGTTCATTGAGGACAACGAGTACACGGCTCGGGAAGGGG
CCAAGTTCGCCATCAAGTGGACAGCTCCTGAAGCCATCAACTTTGGCTCCTTACCATCAAGTCAGACGTC
TGGTCTTTGGTATCCTGTGATGGAGATCGTCACTACCGCCGATCCCTTACCAGGGATGTCAAACCC
TGAAGTGATCCGAGCTCTGGAGCGTGGATAACCGGATGCCTCGCCAGAGAAGTCCCAGAGGAGCTCTACA
ACATCATGATGCGCTGCTGGAAAAACCGTCCGGAGGAGCGGCCGACCTTCCAATACATCCAGAGTGTGCTG
GATGACTTCTACACGGCCACAGAGAGCCAGTACCAACAGCAGCCATGATAGGGAGGACCAGGGCAGGGCCA
GGGGGTGCCAGGTGGTGGCTGCAAGGTGGCTCCAGCACCATCCGCCAGGGCCACACCCCCCTTCTACTC
CCAGACACCCACCCTCGCTTCCAGCCACAGTTTCTCATCTGTCCAGTGGGTAGGTTGGACTGGAAAATCTC
TTTTTGACTCTTGCAATCCACAATCTGACATTCTCAGGAAGCCCCAAGTTGATATTTCTATTTCTGGAA
TGGTTGGATTTTAGTTACAGCTGTGATTTGGAAGGGAAACTTTCAAATAGTGAATGAATATTTAAATAA
AAGATATAAATGCCAAAGTCTTTACCAAAAAAAAAAAAAAAAAAAAAA

LGGRSSCEDPGCPRDEERAPRMGCMKSKFLQVGGNTFSKTETSASPHCPVYVPDPTSTIKPGPNSHNSNTP
GIREAGSEDIIVVALYDYEAIIHEDLSFQKGDQMVVLEESGEWWKARSLATRKEGYIPSNYVARVDSLETE
EWWFKGISRKDAERQLLAPGNMLGSFMIRDSETTKGSYLSVRDYDPRQGDTVKHYKIRTLDNNGFFYISPR
STFSTLQELVDHYKKGNDGLCQKLSVPCMSKPKQKPEKDAWEIPRESLKEKKGAGQFGEVWMATYNKH
TKVAVKTMKPGSMSVEAFLAEANVMKTLQHDKLVKLVHAVVTKEPIYIITEFMAKGSLLDFLKSDEGSKQPL
PKLIDFSAQIAEGMAFIEQRNYIHRDLRAANILVSASLVCKIADFGGLARVIEDNEYTAREGAKFPIKWTAP
EAINFGSFTIKSDVWSFGILLMEIVTYGRIPYPGMSNPEVIRALERGYRMPRPENCPEELYNIMMRCWKNR
PEERPTFEYIQSVLDDFYTATESQYQQQP

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#14

NM_000378

Region conserved in mammals. Broken frame in some: elephants, *Myotis lucifugus*, etc.)
The CUG site designated as initiation site in humans (shown underlined below) is not
conserved at all but a CTG close by in much better context is.

WT1 Wilms tumor 1

Synonyms: GUD; AWT1; WAGR; WT33; WIT-2; WT1

CCAGGCAGCTGGGGTAAGGAGTTCAAGGCAGCGCCACACCCGGGGGCTCTCCGCAACCCGACCGCCTGTC
CGCTCCCCACTTCCCGCCCTCCCTCCCACCTACTCATTACCCACCCACCCACCCAGAGCCGGGACGGCA
GCCAGGCGCCCGGGCCCGCCGTCTCCTCGCCGCGATCCTGACTTCTCTTGCTGAGGACCCGGCTTC
CACGTGTGTCCCGGAGCCGGCGTCTCAGCACACGCTCCGCTCCGGGCCTGGGTGCCTACAGCAGCCAGAGC
AGCAGGGAGTCCGGGACCCGGGCGGCATCTGGGCCAAGTTAGGCGCCGCGAGGCCAGCGCTGAACGTCTC
CAGGCGCGGAGGAGCCGGCGGGCGTCCGGTCTGAGCCGAGCAAATGGGCTCCGAGCTGCGGGACCTGAA
CGCGCTGCTGCCCCGCCCTCCCTCCCTGGGTGGCGGCGCGGCTGTGCCCTGCCTGTGAGCGGCGCGCGC
AGTGGGCGCCGGTGTGACTTTGCGCCCCGGGCGCTTCGGCTTACGGGTGCTTGGGCGGCCCCGCGCGC
CCACCGGCTCCGCCGCCACCCCGCCGCGCCGCTCACTCCTTCAACAACAGGAGCCGAGCTGGGGCGG
CGCGGAGCCGCACGAGGAGCAGTGCCTGAGCGCCTTCACTGTCCACTTTTCCGGCCAGTTCACTGGCACAG
CCGGAGCCTGTGCTACGGGCCCTTCGGTCTCCTCCGCCAGCCAGGCGTCATCCGGCCAGGCCAGGATG
TTTCTAACGCGCCCTACCTGCCAGCTGCCTCGAGAGCCAGCCCGCTATTGCAATCAGGGTTACAGCAC

GGTCACCTTCGACGGGACGCCCAGCTACGGTACACGCCCTCGCACCATGCGGGCGCAGTTCCCCAACCCT
CATTCAAGCATGAGGATCCCATGGGCCAGCAGGGCTCGTGGGTGAGCAGCAGTACTCGGTGCCGCCCCCG
GTCTATGGCTGCCACACCCCCACCGACAGCTGCACCGGCAGCCAGGCTTTGCTGCTGAGGACGCCCTACAG
CAGTGACAATTTATACCAAATGACATCCCAGCTTGAATGCATGACCTGGAATCAGATGAACTTAGGAGCCA
CCTTAAAGGGCCACAGCACAGGGTACGAGAGCGATAACCACACAACGCCCATCCTCTGCGGAGCCCAATAC
AGAATACACACGCACGGTGTCTTCAGAGGCATTAGGATGTGCGACGTGTGCCTGGAGTAGCCCCGACTCT
TGTACGGTCGGCATCTGAGACCAGTGAGAAACGCCCTTCATGTGTGCTTACCCAGGCTGCAATAAGAGAT
ATTTTAAGCTGTCCCCTTACAGATGCACAGCAGGAAGCACACTGGTGAGAAACCATAACCAGTGTGACTTC
AAGGACTGTGAACGAAGGTTTTCTCGTTTCAGACCAGCTCAAAAGACACCAAAGGAGACATACAGGTGTGAA
ACCATTCCAGTGTAAAACCTTGTGAGCGAAAGTCTCCCGGTCCGACCACCTGAAGACCCACACCCAGGACTC
ATACAGGTAATAACAGTGAAGAACCCCTCAGCTGTGCGGTGGCCAAGTTGTGAGAAAAGTTTGCCCGGTCA
GATGAATTAGTCCGCATCAACATGCATCAGAGAAAACATGACCAAACCTCCAGCTGGCGCTTTGAGGGGT
CTCCCTCGGGGACCGTTTCAGTGTCCCAGGCAGCACAGTGTGTGAACTGCTTTCAAGTCTGACTCTCCACTC
CTCCTCACTAAAAGGAAACTTCAGTTGATCTTCTTCATCCAACCTTCCAAGACAAGATACCGGTGCTTCTG
GAACTACCAGGTGTGCCTGGAAGAGTTGGTCTCTGCCCTGCCTACTTTTAGTTGACTCACAGGCCCTGGA
GAAGCAGCTAACAATGTCTGGTTAGTTAAAAGCCCATTGCCATTTGGTGTGGATTTTCTACTGTAAGAAGA
GCCATAGCTGATCATGTCCCCCTGACCCTTCCCTTCTTTTTTTATGCTCGTTTTTCGCTGGGGATGGAATTA
TTGTACCATTTTCTATCATGGAATATTTATAGGCCAGGGCATGTGTATGTGTCTGCTAATGTAACTTTGT
CATGGTTTCCATTTACTAACAGCAACAGCAAGAAATAAATCAGAGAGCAAGGCATCGGGGTGAATCTTGT
CTAACATTTCCGAGGTGAGCCAGGCTGCTAACCTGGAAAGCAGGATGTAGTTCTGCCAGGCAACTTTTAAA
GCTCATGCATTTCAAGCAGCTGAAGAAAAAATCAGAACTAACAGTACCTCTGTATAGAAATCTAAAAGAA
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CAAATGGAGGGGAATTCATTTTCATCACTGGGAGTGTCTTAGTGTATAAAAACCATGCTGGTATATGGCT
TCAAGTTGTAAAATGAAAGTGACTTTAAAAGAAAATAGGGGATGGTCCAGGATCTCCACTGATAAGACTG
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ATCCATTGTTTAAAGATGGTCGT
TTTTAAGGGAGGGAATTTATTATTTACCGTTGCTTGAATTACTGTGTAAATATATGTCTGATAATGATTT
GCTCTTTGACAATAAATTAGGACTGTATAAGTACTAGATGCATCACTGGGTGTTGATCTTACAAGATAT
TGATGATAACACTTAAAATTGTAACCTGCATTTTTCACTTTGCTCTCAATTAAGTCTATTCAAAG

LDLFLLLQDPASTCVPEPASQHTLRSGPGCLQQPEQQGVDRDPGGIWAKLGAAEASAERLQRRSRGASGSEP
QQMGSDVRLNALLPAVPSLGGGGCALPVSQAAQWAPVLDFAAPPASAYGSLGGPAPPPAPPPPPPPPH
SFIKQEPSWGAEPHEEQCLSAFTVHFSGQFTGTAGACRYGPFPPPPSQASSGQARMFPNAPYLPSCLES
QPAIRNQYSTVTFDGTSPYGHTPSHHAAQFPNHSFKHEDPMGQQGSLGEQQYSVPPPVYGCHTPTDSTG
SQALLLRTPYSSDNLQMTSQLECMTNQMNLGATLKGHSTGYESDNHTTPILCGAQYRIHTHGVRGIQD
VRRVPGVAPTLVRSASETSEKRPFMCAYPGCNKRYFKLSHLQMHRSRKHTEKPYQCDFKDCERRFSRSDQL
KRHRQRRHTGVKPFQCKTCQRKFSRSDHLKTHTRTHTGKTSEKPFSCRWPSQKKFARSDELVRHNMHQRN
MTKLQLAL

THE UNDERLAINED CUG IS THE ONE MARKED IN GENBANK

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#15

NM_001172415

CUG initiated extension conserved in mammals.

BAG1 BCL2-associated athanogene

Synonyms: HAP; RAP46; BAG1

GCAGGCCGGGGCGGGGCTGGGAAGTAGTCGGGCGGGGTTGTGAGACGCCGCGCTCAGCTTCCATCGCTGGG
CGGTCAACAAGTGCGGGCCTGGCTCAGCGCGGGGGGGCGCGGAGACCGCGAGGCGACCGGGAGCGGCTGGG
TTCCCGGCTGCGCGCCCTTCGGCCAGGCCGGGAGCCGCGCCAGTCCGAGCCCCCGGCCAGCGTGGTCCGC

CTCCCTCTGGGCGTCCACCTGCCCGGAGTACTGCCAGCGGGCATGACCGACCCACCAGGGGCGCCGCCGCGC
GGCGCTCGCAGGCCGCGGATGAAGAAGAAAACCCGGCGCCGCTCGACCCGGAGCGAGGAGTTGACCCGGAG
CGAGGAGTTGACCCTGAGTGAGGAAGCGACCTGGAGTGAAGAGGCGACCCAGAGTGAGGAGGCGACCCAGG
GCGAAGAGATGAATCGGAGCCAGGAGGTGACCCGGGACGAGGAGTTCGACCCGGAGCGAGGAGGTGACCAGG
GAGGAAATGGCGGCAGCTGGGCTCACCGTGACTGTCACCCACAGCAATGAGAAGCACGACCTTCATGTTAC
CTCCCAGCAGGGCAGCAGTGAACCAGTTGTCCAAGACCTGGCCCAGGTTGTTGAAGAGGTTCATAGGGGTTT
CACAGTCTTTTCAGAAACTCATATTTAAGGGAAAATCTCTGAAGGAAATGGAAAACCCGTTGTGACACTT
GGAATACAAGATGGTTGCCGGGTTCATGTTAATTGGGAAAAAGAACAGTCCACAGGAAGAGGTTGAACTAAA
GAAGTTGAAACATTTGGAGAAGTCTGTGGAGAAGATAGCTGACCAGCTGGAAGAGTTGAATAAAGAGCTTA
CTGGAATCCAGCAGGGTTTTCTGCCAAGGATTTGCAAGCTGAAGCTCTCTGCAAACCTTGATAGGAGAGTA
AAAGCCACAATAGAGCAGTTTATGAAGATCTTGGAGGAGATTGACACACTGATCCTGCCAGAAAATTTCAA
AGACAGTAGATTGAAAAGGAAAGGCTTGGTAAAAAAGTTTCAGGCATTCTAGCCGAGTGTGACACAGTGG
AGCAGAACATCTGCCAGGAGACTGAGCGGCTGCAGTCTACAAACTTTGCCCTGGCCGAGTGAAGGTGTAGCA
GAAAAAGGCTGTGCTGCCCTGAAGAATGGCGCCACCAGCTCTGCCGTCTCTGGAGCGGAATTTACCTGATT
TCTTCAGGGCTGCTGGGGGCAACTGGCCATTTGCCAATTTTTCTACTCTCACACTGGTTCTCAATGAAAAA
TAGTGTCTTTGTGATTTTGTAGTAAAGCTCCTATCTGTTTTCTCCTTCTGTCTCTGTGGTTGTACTGTCCAG
CAATCCACCTTTTTCTGGAGAGGGCCACCTCTGCCCAAATTTCCAGCTGTTTGGACCTCTGGGTGCTTTC
TTTGGGCTGGTGAGAGCTCTAATTTGCCTTGGGCCAGTTTCAGGTTTATAGGCCCCCTCAGTCTTCAGATA
CATGAGGGCTTCTTTGCTCTTGTGATCGTGTAGTCCCATAGCTGTAAAACCAGAATCACAGGAGGTTGCA
CCTAGTCAGGAATATTGGGAATGGCCTAGAACAAGGTGTTTGGCACATAAGTAGACCACTTATCCCTCATT
GTGACCTAATTCAGAGCATCTGGCTGGGTTGTTGGGTTCTAGACTTTGTCTCACCTCCCAGTGACCCTG
ACTAGCCACAGGCCATGAGATACCAGGGGGCCGTTCTTGGATGGAGCCTGTGGTTGATGCAAGGCTTCT
TGTCCCAAGCAAGTCTTCAGAAGGTTAGAACCAGTGTGACTGAGTCTGTGCTTGAAACCAGGCCAGAG
CCATGGATTAGGAAGGGCAAAGAGAAGGCACCAGAATGAGTAAAGCAGGCAGGTGGTGAAGCCAACCATAA
ACTTCTCAGGAGTGACATGTGCTTCTTCAAAGGCATTTTTGTTAACCATATCCTTCTGAGTTCTATGTTT
CCTTCACAGCTGTTCTATCCATTTTGTGGACTGTCCCCACCCCACTTCTGTTTTTAAAAAATTA
AGGCCTGGCGCAGCAGCTCATGCCTATAATCCCAGCACTTTGGGAGGCTGAGGCGGGCGGATCACTTGAGG
CCAGGAGTTTGGAGACCAGCCCAGGCAACATAGCAAAACCCATTCTGCTTAAAAAATAAAAAAAAAAAAA
TTAGCTTGGCGTAGTGGCATGTGCCTATAATCCCAGTACTGGGAGGCTGAGGCACAAGAATCATTTTGAA
CTGGGAGGTAGAGTTGCTGTGAGCCGAGATTACGCCCTGCCTCCAGCCTGAGTCCAGAGTCCAGAGT
CCATCTCAGAAAAAATAAATTGAGTCAGGTGCAGTAGCTCCTTCTGTAGTCCCAGCTACTTGGGAGGC
TGAGGCTAGAGGATCACTTGAGCCCAGGAGTTTGTAGTCTAGTCTGGGCAACATAGCAAGACCCCATCTCTA
AAATTTAAGTAAGTAAAAGTAGATAAATAAAGAAAAAATAAAGTGTATGTGCTCATCATAAAGTAGAA
GAGTGGTTTTGCTTTTTTTTTTTTTTTTTGGATTAATGAGGAAATCATTCTGTGGCTCTAGTCATAATTTATG
CTTAATAACATTGATAGTAGCCCTTTGCGCTATAACTCTACCTAAAGACTCACATCATTGAGCAGAGAGAG
AGTCGTTGAAGTCCCAGGAATTCAGGACTGGGCAGGTTAAGACCTCAGACAAGGTAGTAGAGGTAGACTTG
TGGACAAGGCTCGGGTCCCAGCCCACCGCACCCCACTTTAATCAGAGTGGTTCATATTGATCTATTTTT
GTGTGATAGCTGTGTGGCGTGGGCCACAACATTTAATGAGAAGTTACTGTGCACCAAACCTGCCGAACACCA
TTCTAAACTATTATATATATATTAGTCATTTAATTTTACATAACTTGAGAGGTAGACAGATATCCTTATTT
TAGAGATGAGGAAACCAAGAGAATTCAGGTATTAGCGCAAGGTTGTAGAGTAAGCGGCAAAGCCAAGACA
CAAAGCTGGGTGGTTTTGGTTTTAGAGCCAGTGCTTTTTCCCTCTACTGTACTGCCTCTCAACCAACACAGG
GTTGCACAGGCCATTCTCTGATTTTTTCTCTTGTCTCTGCCTCTCCCTCTAGCTCCCCTTCTCTC
TGCTCTAGTTCATTTCTTTAGAGCAGCCGAGTGATCATGAAGTGCAAATCTTGCCATGTCAGTCCCCTG
CTTAGAACCTCCAATGGCTCACTTTCTCTTTAGGCAAAAGTCTTTACCCCATGCCTTCTCCCATCTCATC
TCAACCCCTCATTGTTGGCTGTCTGTCTGTGAGCCACTCTTCTTTTCCAGTCCCTCAGATGCACTGCACCCT
CTCCTGCCTGGGGTCTTTGCTCCTGCTACTACCTCTGCTTGAACAGCTCCTCACCTTCTTCTCTCAACCC
CACCTTTGTATAGGTGACTTTTTGTTTATCCTTTCAGAAATCAACTCACATGTCTCTTGCATGGAGAACCCT
CTACTACTGTGTTGAGACCCTGTCCAGCCCCAGGTGGGATCCTCTCTCGACTTCCCATACATTTTTTCA
CAGCATTTACATAGTCCATGATAGTTTACTTGTGGGATTATTTGGTTAATCTTTGCCTTTAACACCAGGGT
TCCTTGGGTGAAGGAGCTTCTTTATCTTGGTAACAGCATTATTTCAAGCATAACTTGTAATATAGTTATAT
TACATATATAACATATATATATATAACATAACATATATAACATATATAACAAGCATAACTTGTATATAGT
CTTGTATATAGTAAGACCTCAATAAATATTTGGAGAACAAAAAATAA

LAQRGGARRPRGDRERLGSRLRALRPGREPRQSEPPAQRGPPPSGRPPARSTASGHDRPTRGAAAGARRPR
MKKKTRRRSTRSEELTRSEELTLSEEATWSEEATQSEEATQGEEMNRSQEVTRDEESTRSEEVTREEMAAA
GLTVTVTHSNEKHDHLHVTSQQGSSEPVVQDLAQVVEEVIGVPQSFQKLIKFKGSLKEMETPLSALGIQDGC

RVMLIGKKNSPQEEVELKCLKHLEKSVEKIADQLEELNKELTGIQQGFLPKDLQAEALCKLDRRVKATIEQ
FMKILEEIDTLILPENFKDSRLKRKGLVKKVQAFLAECTVEQNICQETERLQSTNFALAE

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#16

NM_001099456

Region conserved from zebrafish to human – in non-mammals and even some mammals initiated by AUG.

NPW neuropeptide W

Synonyms: L8; L8C; PPL8; PPNPW; NPW

GTACCCACTCCCTGGCACTTCCACTCCTAGAGGGAGGAGGCTGAGCAGGCAGAGAATGGGACGTGTCCCCT
CAGAGGAGCCTCGAGCCCAGTTCCAGCCAGCGGCCACTCAGTGAAGGTGCTCAAGTACCCACGTCCCCCGC
CAGCTGCCAGGGTTCCCTCTCCTCCCTCCGTCCCTCCCCCATCTGGGGAGCCAGCGGTACTGAGGGGGC
GGAACGAGGCGGGGCCACCGAGCGGTTATAGCTGGGCCTGCAGGGGACCCACGGCTCGCCTCCAGCCTCCT
GCGCTCCGGTACCTGGGCGTCCCAACTCCACTGCGCGCCAAACCCAGCCGAGCCGGTTCGTGGCCCGCCC
CGCCGGGCGGCCGTGCAGCGGAGCGCCCTGGCGTGGCGCCAGGGGAGCGGGGGGCTCCCGCGAGCCGGCC
GCGGCTGGCACTGCTGCTGCTTCTGCTCCTGCTGCCGCTGCCCTCCGGCGCGTGGTACAAGCACGTGGCGA
GTCCCCGCTACCACACGGTGGGCCGCGCCGCTGGCCTGCTCATGGGGCTGCGTTCGCTCACCCCTATCTGTGG
CGCCGCGCGCTGCGCGCGGGCCGCGGGCCCTGGCCAGGGACACCCTCTCCCCCGAACCCGCAGCCCGCGA
GGCTCCTCTCCTGCTGCCCTCGTGGGTTTCCAGGAGCTGTGGGAGACGCGACGCAGGAGCTCCCAGGCAGGGA
TCCCCGTCCGTGCGCCCCGGAGCCCGCGCGCCCCAGAGCCTGCGCTGGAACCGGAGTCCCTGGACTTCAGC
GGAGCTGGCCAGAGACTTCGGAGAGACGTCTCCCGCCAGCGGTGGACCCCGCAGCAAACCGCCTTGGCCT
GCCCTGCCTGGCCCCCGGACCCTTCTGACAGCGTCCCCCGCCCGCCGTGGCGCCTCCGCGCCTGACCCAG
GAGGAGTGGCCGCGCGCTTCCAGGAGCCGCTCATAGACCCCGCCTGCCGTCCGGTCAATAAAAATCCGCCTG
ACTCCTGCGCCCCCGCATGCGAAAAA

LAWRPGERGAPASRPLALLLLLLLLPLPSGAWYKHAVSPRYHTVGRAAGLLMGLRRSPYLWRRALRAAAG
PLARDTSLPEPAAREAPLLLPSWVQELWETRTRSSQAGIPVRAPRSPRAPEPALEPESLDFSGAGQLRRD
VSRPAVDPAANRLGLPCLAPGPF

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#17

NM_002467

CUG initiation conserved in some mammals but the sequence of the extension is not
MYC v-myc myelocytomatosis viral oncogene homolog (avian)

Synonyms: MRTL; c-Myc; bHLHe39; MYC

ACCCCCGAGCTGTGCTGCTCGCGGCCGCCACCGCCGGGCCCCGGCCGTCCCTGGCTCCCCTCCTGCCTCGA
GAAGGGCAGGGCTTCTCAGAGGCTTGGCGGGAAAAGAACGGAGGGAGGGATCGCGCTGAGTATAAAAGCC
GGTTTTCGGGGCTTTATCTAACTCGCTGTAGTAATTCCAGCGAGAGGCAGAGGGAGCGAGCGGGCGGCCGG
CTAGGGTGAAGAGCCGGGCGAGCAGAGCTGCGCTGCGGGCGTCCCTGGGAAGGGAGATCCGGAGCGAATAG
GGGGCTTCGCCTCTGGCCCAGCCCTCCCGCTGATCCCCAGCCAGCGGTCCGCAACCCCTTGCCGCATCCAC
GAAACTTTGCCATAGCAGCGGGCGGGCACTTTGCACCTGGAACCTTACAACACCCGAGCAAGGACGCGACTC
TCCCAGCGGGGAGGCTATTCTGCCCAATTTGGGGACACTTCCCCGCCGTGCCAGGACCCGCTTCTCTGA
AAGGCTCTCCTTGAGCTGCTTAGACGCTGGATTGTTTTCGGGTAGTGGAAAACAGCAGCCTCCCGCGAC
GATGCCCCCTCAACGTTAGCTTACCAACAGGAACTATGACCTCGACTACGACTCGGTGCAGCCGTATTTCT
ACTGCGACGAGGAGGAGAACTTCTACCAGCAGCAGCAGAGCGAGCTGCAGCCCCCGCGCCAGCGAG

GATATCTGGAAGAAATTCGAGCTGCTGCCACCCCGCCCCTGTCCCCTAGCCGCCGCTCCGGGCTCTGCTC
GCCCTCTACGTTGCGGTACACCCTTCTCCCTTCGGGGAGACAACGACGGCGGTGGCGGGAGCTTCTCCA
CGGCCGACCAGCTGGAGATGGTGACCGAGCTGCTGGGAGGAGACATGGTGAACCAGAGTTTCATCTGCGAC
CCGGACGACGAGACCTTCATCAAAAACATCATCATCCAGGACTGTATGTGGAGCGGCTTCTCGGCCGCCGC
CAAGCTCGTCTCAGAGAAGCTGGCCTCCTACCAGGCTGCGCGCAAAGACAGCGGCAGCCCGAACCCCGCCC
GCGGCCACAGCGTCTGCTCCACCTCCAGCTTGTACCTGCAGGATCTGAGCGCCGCCGCTCAGAGTGCATC
GACCCCTCGGTGGTCTTCCCCTACCCTCTCAACGACAGCAGCTCGCCCAAGTCCTGCGCCTCGCAAGACTC
CAGCGCCTTCTCTCCGTCTCGGATTCTCTGCTCTCCTCGACGGAGTCCTCCCCGAGGGCAGCCCCGAGC
CCCTGGTGTCCATGAGGAGACACCGCCCACCACCAGCAGCGACTCTGAGGAGGAACAAGAAGATGAGGAA
GAAATCGATGTTGTTTCTGTGGAAAAGAGGCGAGGCTCCTGGCAAAGGTGAGAGTCTGGATCACCTTCTGC
TGGAGGCCACAGCAAACCTCCTCACAGCCACTGGTCTCAAGAGGTGCCACGTCTCCACACATCAGCACA
ACTACGACGACCTCCCTCCACTCGGAAGGACTATCCTGCTGCCAAGAGGGTCAAGTTGGACAGTGTGAGA
GTCCTGAGACAGATCAGCAACAACCGAAAATGCACCAGCCCCAGGTCCTCGGACACCGAGGAGAATGTCAA
GAGGCGAACACACAACGTCTTGGAGCGCCAGAGGAGGAACGAGCTAAAACGGAGCTTTTTTTCGCTGCGTG
ACCAGATCCCGGAGTTGGAAAACAATGAAAAGGCCCCCAAGGTAGTTATCCTTAAAAAAGCCACAGCATA
ATCCTGTCCGTCCAAGCAGAGGAGCAAAAGCTCATTCTGAAGAGGACTTGTTCGCGAAACGACGAGAACA
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ACAGAAATGTCCTGAGCAATCACCTATGAACTTGTTCCAAATGCATGATCAAATGCAACCTCACACCTTG
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AAGATTTACACAATGTTTCTCTGTAAATATTGCCATTAATGTAATAACTTTAATAAAACGTTTATAGCA
GTTACACAGAATTTCAATCCTAGTATATAGTACCTAGTATTATAGGTACTATAAACCTAATTTTTTTTTAT
TTAAGTACATTTTGTCTTTTTTAAAGTTGATTTTTTTCTATTGTTTTTGTAGAAAAATAAAATAACTGGCAAAT
ATATCATTGAGCCAAAAAAAAAAAAAAAAAAAAA

LDFFRVVENQPPATMPLNVSFTNRNYDLDYDSVQPYFYCDEEENFYQQQQSELOPPASEDIWKKFELL
PTPPLSPSRRSGLCSPSYVAVTFPSLRGDNDGGGGSFSTADQLEMVTELLGGDMVNQSFICDPDDETFIKN
IIIIQDCMWSGFSAAAKLVSEKLASYQAARKDSGSPNPARGHSVCSTSSLYLQDLASAAASECIDPSVVFYP
LNDSSSPKSCASQDSSAFSPSSDSLSSSTESSPQGSPEPLVLHEETPPTTSSDSEEEQEDEEEDVVSVEK
RQAPGRSESGSPAGHSKPPHSPLVLKRCHVSTHQHNYAAPPSTRKDYPAAKRVKLDVSRVLRQISNNR
KCTSPRSSDTEENVKRRTHNVLERQRRNELKRSFFALRDQIPELENNEKAPKVVILKKATAYILSVQAEEQ
KLISEEDLLRKRREQLKHKLEQLRNSCA

C)

#1

NM_002006

Does not appear conserved beyond humans.

FGF2 fibroblast growth factor 2 (basic)

Synonyms: BFGF; FGFB; HBGF-2; FGF2

CGGCCCCAGAAAACCCGAGCGAGTAGGGGGCGGCGCGCAGGAGGGAGGAGAACTGGGGGGCGCGGGAGGCTG
GTGGGTGTGGGGGGTGGAGATGTAGAAGATGTGACGCCGCGGCCCGGGTGCAGATTAGCGGACGCGG
TGCCCGCGGTTGCAACGGGATCCCGGGCGCTGCAGCTTGGGAGGCGGCTCTCCCAGGCGGCGTCCGCGGA
GACACCCATCCGTGAACCCAGGTCCCGGGCCGCGGCTCGCCGCGCACCAGGGGCCGGCGGACAGAAGAG
CGGCCGAGCGGCTCGAGGCTGGGGGACCGGGGCGCGGCCGCGCGCTGCCGGGCGGGAGGCTGGGGGGCCG
GGGCCGGGGCCGTGCCCCGAGCGGGTTCGGAGGCCGGGGCCGGGGCCGGGGACCGCGGCTCCCCGCGCGG
CTCCAGCGGCTCGGGGATCCCGGCCGGGCCCGCAGGGACCATGGCAGCCGGGAGCATCACACGCTGCC
GCCTTGCCCCGAGGATGGCGGCAGCGGCCTTCCCGCCCGGCCACTTCAAGGACCCCAAGCGGCTGTACTG
CAAAAACGGGGGCTTCTTCTGCGCATCCACCCGACGGCCGAGTTGACGGGGTCCGGGAGAAGAGCGACC
CTCACATCAAGCTACAACCTCAAGCAGAAGAGAGAGGAGTTGTGTCTATCAAAGGAGTGTGTGCTAACCGT

TACCTGGCTATGAAGGAAGATGGAAGATTACTGGCTTCTAAATGTGTTACGGATGAGTGTTCCTTTTTTGA
ACGATTGGAATCTAATAACTACAATACTTACCGGTCAAGGAAATACACCAGTTGGTATGTGGCACTGAAAC
GAACTGGGCAGTATAAATCTGGATCCAAAACAGGACCTGGGCAGAAAGCTATACTTTTTCTTCCAATGTCT
GCTAAGAGCTGAATTTAATGGCCACATCTAATCTCATTTTACATGAAAGAAGAAGTATATTTTAGAAATTT
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GAAAAGAGGCTTTTTAAATGTGCATGTTTAGAAAACAAAATTTCTTCATGGAAATCATATACATTAGAAAAT
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AACATATAAATGTGAATTTAATCAATTCCTTTTATAGTTTTATAATTCTCTGGCAGTTCCTTATGATAGAG
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CGGACCTGAATTTCTGATTTTTATACCAGTCTCTTCAAACCTTCTCGAACCCTGCTGCTCCTACGTAAAAA
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TCAAGAAATCCCAAATATTTTCTTACCCTGTAAATTCAGAAGCTTTTGAAATGCTGAATATTTCTTTG
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TCCAAAAGGTAAAATATAGATTGAAAAGTTAAAACATTTTGCATGGCTGCAGTTCCTTTGTTTCTTGAG
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TCCAATAGTTTAAGGAATAGGTAGGAAAATTTGGTTTTCTATTTTTCGATTTTCTGTAAATCAGTACATAA
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LVGVGDDVEDVTPRPGGCQISGRGARGCNGIPGAAAWAALPRRPRRHPSVNPRSRAGS PRTRGRTE
ERPSGRLGDRGRGRALPGGRLGGRGRGRAPERVGGGRGRGRGTAAAPRAAPAARGSRPGPAGTMAAGSITTL
PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLR IHPDGRVDGVREKSDPHIKLQLQAEERGVVSIKGV CAN
RYLAMKEDGRLLASKCVTDECFERLESNNYNTYRSRKYTSWYVALKRTGQYKLGSKTGPGQKAILFLPM
SAKS

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#2

NM_014293

No conservation found.

NPTXR neuronal pentraxin receptor

Synonyms: NPR; NPTXR

CGGCCCGGCGACAGCTCCAGCTCCGGCTCCGGCTCCGGCTCCGGCTCCGGCTCCGGCTCCCGCGCTGCCCCGCTC
GGCCCAGCGCGCCC GGCTCCGCGCCCGACCCCGCCCGCGCTGCCGGGGCCTCGGGCGCCCCGCC
GCCCCGCTCAGCTGAAGTTCTGGCCGCTGCTGGCCCGGGCATGCTGGCGTTTCTCGGTGCCGTGAT
CTGCATCATCGCCAGCGTCCCCTGGCGGCCAGCCCGCGCGGGCGCTGCCCGCGGCGCCGACAATGCTT
CGGTGCCTCGGGCGCCGCGCTCCCCGGGCGCCGAGCGGAGCCTGAGCGCGCTGCACGGCGCGGGCGGT
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CAGCCGCTTCTGTGCACGCGCTGGCTGCTGCCTGCCCGTCCGGGGCCAGCAGGGGGACCGGGCGGGCG
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CAGCAGGAGGCGCATCCGCGCCGACAGGACACCATCCGTGAGCTCACCGGCAAGCTGGGCCGCTGCGA
GAGCGCCTGCCCGCGGCCTCCAGGGCGCGGGCCCCCGCGCACACCATGGCCGACGGGCCCTGGGACT

CGCCTGCGCTCATTCTGGAGCTGGAGGACGCCGTGCGCGCCCTGCGGGACCGCATCGACCGCCTGGAGCAG
GAGCTTCCAGCCCCTGTGAACCTCTCAGCTGCCCCAGCCCCAGTCTCTGCTGTGCCACCGGCCTACACTC
CAAGATGGACCAGCTGGAGGGGAGCTGCTGGCCCAGGTGCTGGCACTGGAGAAGGAGCGTGTGGCCCTCA
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CATGTACGCCCCGCGTGCAGGAAGGCTCTGCCCGAGCTCTACGCATTACCCGCCTGCATGTGGCTGCGGTCCA
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CTAGAGGCGGGCCATGAGCCCATGGAGCTGCTGATCAACGACAAGGTGGCCCAGCTGCCCTGAGCCTGAA
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GGGAGCTGCAGGGCTCCGGTGAGAACCTGGCTGCCTGGCACCCCATCAAGCCTCATGGGATCCTTATCTTG
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TTGAGGGGGGTATATTCCCTCCTCAGCCTGCCACGCCTGGCCTTCCCTCCTGCCCCACTCCTGGCTGT
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TTCCCTCATTTCGTGAGCTGAGCCCTCGCTTTGGTCAATTTGCTCTCCAGATTGGGTGTGAGCTTCTGTG
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GTGGATGGGATGCAGCCAGTTCATGGGTTAGGGTTCAGCAGAGACTCAGAGTCCAGGGCAAGGTTCAAGGCAG
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TGAGAGTGTCTCAAAGGGCTGATGGCTTCCCTGGTCCCCTTGGATCATCACCCAGCTTCCCCAAGAGAGTGT
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GCCCCGTAAGACCTTTGAGTTCAGTCTACACCTAAGCAGGTAGACATCCGCGAGGTGAGATGCTTTCCAAC
ATGACACCTGAACATCTTCCCTTATGCAACACCCAAACATCTTGGCATCCCCACCCAGGAAGTGCGGGGA
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GCCCAGCCCCTCCAGTACAATCCCCTGGAAGAAAAGGCAATGGCGGGCTTCAGCCAGACCTGCTGAGACC
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CCCAGCACCACTGTTTGGGTCCCCTTTTCTATCTTCTGCTGCCCTGAGCACATCCAAGCAGACAGGGA
AAGAGGAGTCAGACATGGCCCAGTCACATCCTGAGCTGCTCCTGGCTGATAACCACGATGGAGCCCGTGT
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CACTCACCTGTGTAGAGTGCCATCTGGGCACCATTGCTCCAGACGTGTTCCGACCCCTTTCCCAGCCCACA
GGGCTTGAAGTGAAGGAACAGAGGCAGGGGTGGGCCAGCCCCAGGGCCAGGGTCCCCTTGGTGAAGCCGT
GCCAGGGGGCTCAGCTGCTTCAGGGAATGTGTCCCTCCCACCATGGGCCAGAGCTTCAGCCCTTCTTTAGC
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TCTGCCAGATCTTCCCATCTTGTGGCATGTGGTGGCCCCACCAACATCCCAAGGGGACCAATCCCCTTGGC
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TACAGATGAGGAAGCTGAAGCCCGGGGAGGGGAGCGACCCTCAAGGCCACCCAGCTGGACACGGGAGACTT
GAGCCCAGCCTTCTGACTGCATTAGCCCTCTCTAGGACGCAGCAGCCTCTCCCCAGCACTGAGTCCCCC
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LKFLAVLLAAGMLAFLGAVICIIASVPLAASPARALPGGADNASVASGAAASPGPQRSLSALHGAGGSAGP
PALPGAPAASAHPLPPGPLFSRFLCTPLAAACPSGAQQGDAAGAAPGEREELLLLQSTAEQLRQTALQOEA
RIRADQDTIRELTGKLRGRCESGLPRGLQGAGPRRDTMADGPWDSPALILELEDAVRALRDRIDRLEQELPA
RVNLSAAPAPVSAVPTGLHMKMDQLEGQLLAQVLALEKERVLSHSSRRRQREVEKELDVLQGRVAELEHG
SSAYSPPDAFKISIPIRNNMYARVRKALPELYAFTACMWLRSRSGTGQGT PFSYSVPGQANEIVLLEAG
HEPMELLINDKVAQLPLSLKDNGWHHCIAWTTRDGLWSAYQDQELQSGENLAAWHPKPHGILILGQEQ
DTLGGFRDATQAFVGDIAQFNLWDHALTPAQVLGIANCTAPLLGNVLPWEDKLVEAFGGATKAADFVCKGR
AKA

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#3

NM_021182

No conservation found.

HMHB1 histocompatibility (minor) HB-1

Synonyms: HB-1; HLA-HB1; HMHB1

CCACATCCCAGGAGGCCGAGGCGGCTTGCCCCGCATCTCAGAAGCCGGGCAGGCCCTGAGCCTTCTGACCT
CACATCCTCTGCCACACCACAGTGGAGAAACCAGAAAGTGGAGGAGCAGCCAGAATGCAGAGAAGAAAAAAG
AGGTTCTCTGCATGTTTTGGAAGTCGGAATTGGTTGAAGTTGAAGATGATGTGTATCTGAGGCACAGCTCTT
CCCTGACTTATAGGCTTTGACTGCTGTTGAGGTTTGACTCGAAGCCCAGAGTTTTGGTGTGGATGAGCA
GGGACAAATTGCTGAGCATGAAGAAGAGTAAATTAAGCAAGTGAACATATGCCCTTTGCCTCTGCTCTG
CACAGTGAATGAAAAGTCAACCTTTGAAAAAAAAAAAAAA

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#4

NM_001169118

The first annotated AUG (not conserved) actually precedes the supposed UUG initiation codon. In any case nothing upstream of the second in-frame AUG is conserved beyond humans.

STIM2 stromal interaction molecule 2

Synonyms: FLJ39527; KIAA1482; STIM2

GGCGGAGCGTGGTACTACGACCAGCGCGGGCCGGAGGGGGCGGGGGGATGCGCCGCGGGCGGGCGGGCGCG
GGAGCTGGGGTTGGTGTGGCGGCGCCAGAGCAGCGGATCCCAGTCTCGCCGAGCAGCAGCGCGGGTGT
CGTGCACCGCCTGAAGACGCCGTACCTTTCTACCCCCACCTTTTTTTTTTTTTTTTTTTTTAAATAACCGGAA
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GCGAGCTGCAGGCGGGCCGGGGCGCCGCTGCGCTTTACCCCGGCTTCTCCTCGGCCTTCATCCCGCCTCG
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TGCACGAACCTTCATTTATGATCTCCAGTTGAAAATCAGTGACCGGAGTCAACAGACAAAACTTCAGCTC
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AAATTAAGAAAGAGAAGCAGCTTTTGGGACTCTGCACGTTGCACACAGCTCCTCCCTAGATGAGGTA
GACCACAAAATTCTGGAAGCAAAGAAAGCTCTCTCTGAGTTGACAACTTGTTTACGAGAACGACTTTTTTCG
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CCCTTTATTCTGATCACAGCTGGGTGGTGTGATGCCAGAGTCTCCATTCCACCCTATCCAATTGCTGGAGGA
GTTGATGACTTAGATGAAGACACACCCCAATAGTGTCAAAATTTCCCGGGACCATTGGCTAAACCTCTGG
ATCATTAGCCAGAAGCAGCCTGTGCCGTTACGCCCGCAGCATTGTGCCGTCTCGCTCGCTCAGCCTCAGC
GAGCTCAGCTTGTCCACACGCCCCCCCCCGTCAACCCCTCGGCACCTCACCACCCGCAACACACACCA
CACTCCTTGCTTCCCCTGATCCAGATATCCTCTCAGTGTCAAGTTGCCCTGCGCTTTATCGAAATGAAGA
GGAGGAAGAGGCCATTTACTTCTCTGCTGAAAAGCAATGGGAAGTGCCAGACACAGCTTCAGAATGTGACT
CCTTAAATTCTTCCATTGGAAGGAAACAGTCTCCTCCTTTAAGCCTCGAGATATACCAAACATTATCTCCG
CGAAAGATATCAAGAGATGAGGTGTCCCTAGAGGATTCTCCCGAGGGGATTGCGCTGTAACCTGTGGATGT
GTCTTGGGGTTCTCCCGACTGTGTAGGTCTGACAGAACTAAGAGTATGATCTTCAGTCTGCAAGCAAAG
TGTACAATGGCATTGTTGGAGAAATCCTGTAGCATGAACCAGCTTTCCAGTGGCATCCCGGTGCCTAAACCT
CGCCACACATCATGTTCCCTCAGCTGGCAACGACAGTAAACCAGTTGAGGAAGCCCCAAGTGTGCCAGAAT
AAGCAGCATCCACATGACCTTTGTATAATGGAGAGAAAAGCAAAAAGCCATCAAAAATCAAAAGCCTTT
TTAAGAAGAAATCTAAGTGAAGTGGCTGACTTGGTGAATCATGTTCAAGTGGCATCTGTAAACTATTATC
CCCCACCCTCCACTCCCCACCTTTTTTTGGTTAATTTTAGGAATGTAACCTCATTGGGGCTTTCCAGGC
CGGATGCCATAGTGAACATCCAGAAGGGCAACTGTCTACTGTCTGCTTATTTAAGTGAATATATATAATC
AATTCATCAAGCCAGTTATTACTGAAAAATCATTGAAATGAGACAGTTTACAGTCATTTCTGCCTATTTAT
TTCTGCTTTGTTCTCAGTGTATATGCAACATTTTGTGAAAGCCACGATGGACTTACAAGCTTTAATG
GACTCGTAAGCCAGCATGGGCTTGCAAAAATTTCTTGTTTACCAGAGCATCTTCTTATCTTTCCACAGAGC
TATTTACATCCTGGACTATATAACTTAAAAGAAGTAAAACGTAATTGCACTACTGTTTTCCAGACTGGAAA
AAAAAAAATCTCTGCAAGTGAACCTGTATAGAGTTTATAAAAATGACTATGGATAGGGGACTGTTTTCACT
TTTAGATCAAAATGGGTTTTTAAAGTAGAACCTAGGGTTTTCTAATTGACTTGATTTCTGGAAATGAAAACCC
TCGCTTTTATTATGGGAAGCTTCTTGAAGTGCATTTACTATTGTGAAGTTTCAAGTCCCCTGTAAAGATC
ATGTTGTTTTGTTTTCCCAGGGCTTTCACTGTGATTTACTGCATTGCAGGCTGTATGATAAAACACACAT
AATTTAAAGAGAGAAGGCTCTTGATTCTTATGCAAGTGAAGAGTTGAAACTTGATTGAAGGACTTAAAA
CATTACAACTTAAAGCCGAGGTGGGGGGATATGGGGATTGAGCAATTGTTTACACACTTTGAATAACTG
CAAAGGATTTACGGTTTTGTGAAAATGTGTACTGTGAAAAGATAATAAATGAAAGACATTATTGTGTGGG
ATTGTGCTGATTTTTGTTGATAACACAAAAAACTATGTTTTCTGGAGAGCTGTGTAAGCTGTCTTGTG
CTTAGTTGCAATATAAGAAATAGTGTATTTTTGGACGTAAGTTGTCAACAAATTTCTATTTTATATTGTTA
TATTTTTATGTAGTTTGAATGTAATAATGTTCTAATATCAAGATTAACAAATATAAATTTATGGTGCATT
TAGAAAAA

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#5

NM_005354

From the GenBank description:

In addition, three non-AUG codons also support translation, an ACG codon (in-frame with JunD) and a CUG are positioned in the 5'-untranslated region, and a CUG codon (also in-frame with JunD) is located downstream of the short open reading frame.

In reality the non-AUG sites were observed in the rat sequence. They are not conserved in human.

JUND jun D proto-oncogene

Synonyms: AP-1; JUND

AGGAGCCGCGCCAGTGGAGGGCCGGGCGCTGCGGCCGCGGCCGGGGCGGGCGCAGGGCCGAGCGGACGGG
GGGGCGCGGGCCCCCGGGAGGCCGCGGCCACTCCCCCGGGCCGGCGCGGGGGAGGCGGAGGATGG
AAACACCCTTCTACGGCGATGAGGCGCTGAGCGGCCTGGGCGGCGGCCAGTGGCAGCGGCGGCAGCTTC
GCGTCCCCGGGCGCTTGTTCGCCGGGGCGCCCCGACGCGCCGCGGCCGAGCATGATGAAGAAGGACGC
GCTGACGCTGAGCCTGAGTGAGCAGGTGGCGGCAGCGCTCAAGCCTGCGGCCGCGCCGCTCCTACCCCC
TGCGCGCCGACGGCGCCCCAGCGCGGCACCCCCGACGGCCTGCTCGCCTCTCCCGACCTGGGGCTGCTG
AAGCTGGCCTCCCCGAGCTCGAGCGCCTCATCATCCAGTCCAACGGGCTGGTCACCACCACGCCGACGAG
CTCACAGTTCCTCTACCCCAAGGTGGCGGCCAGCGAGGAGCAGGAGTTCGCCGAGGGCTTCGTCAAGGCC
TGGAGGATTTACACAAGCAGAACCAGCTCGGCGCGGGCGCGGCCGCTGCCGCCGCCGCCGCCGCCGGG
GGGCCCTCGGGCACGGCCACGGGCTCCGCGCCCCCGGCGAGCTGGCCCCGGCGGGCGGCCCGCCGAAGC
GCCTGTCTACGCGAACCTGAGCAGCTACGCGGGCGGCGCCGGGGGGCGCGGGGGCGCCGCGACGGTGCCT
TCGCTGCCGAACCTGTGCCCTTCCCGCCGCCACCCCCAGGCGCGTTGGGGCCGCCGCGCCTGGCTGCG
CTCAAGGACGAGCCACAGACGGTGCCTGACGCTGCCGAGCTTCGGCGAGAGCCCGCCGTTGTGCGCCATCGA
CATGGACACGCAGGAGCGCATCAAGGCGGAGCGCAAGCGGCTGCGCAACCGCATCGCCGCTCCAAGTGCC
GCAAGCGCAAGCTGGAGCGCATCTCGCGCCTGGAAGAGAAAGTGAAGACCCTCAAGAGTCAGAACACGGAG
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CAGCGGCTGCCAGCTGCTGCCCCAGCACACAGGTGCCCGCGTACTGAGTCCGCGCGGGGGCGCATGCGCGG
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AGGTGCCAGGACTCGACAAGCTGGACCCCCCTGCTCCCGGGGGCGAGCGCATGACCCCCCGCCCTCG
CGTGCCTCTTTCCCCCGCGGGCCGCCCGTGTTCACAAACCCGCGGTCTCGGCTGCCCTTTGTACA
CCGCGCCGGAAGGGGGCTCCGAGGGGGCGAGCCTCAAACCCTGCCTTCTTTACTTTTACTTTTTTT
TTTTTTTCTTTGGAAGAGAGAAGAACAGAGTGTTCGATTCTGCCCTATTTATGTTTCTACTCGGGAACAAA
CGTTGGTTGTGTGTGTGTGTGTTTTCTGTGTTGGTTTTTTAAAGAAATGGGAAGAAGAAAAAAATTCT
CCGCCCTTTTCTCGATCTCGCTCCCCCTTCGGTTCTTTTCGACCGGTCCCCCTCCCTTTTTTTGTTCTGT
TTTGTGTTTTGTTGCTACGAGTCCACATTCCTGTTTGTAAATCCTTGGTTTCGCCCGTTTTCTGTTTTTCAGT
AAAGTCTCGTTACGCCAGCTCGGCACAAAAA

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#6

NM_001098579

Region conserved from zebrafish to human but it is very difficult to analyze because there are at least four human transcript variants with one of them having 5' AUG codon.

MRV11 murine retrovirus integration site 1 homolog

Synonyms: IRAG; JAW1L; MRV11

GGCGCTGGCCCAGGGTCTTCTCCAGGCTCACATGCTTGCTGGAGGCTCCAGGCGGGTGGGGAGATCTGCAG
GGTCCCTTTGTTCCCGTCCGGCCAGGACAGTGTCCAGTGGCACGAGTTGCCATGGGGACTGCCATCTGCTG
TGTGGATAACCCATCGGAGGGGCCAGGGTGTAGCGACTGCCCCAAAGGCCAGCCTGCCCTGAGCCCTGAGG
CCAGCTGGTTCGGCTTTCCCTGCCATTATCCCCGAGCCAGGCCGGAGTGGGGCTCCAGAGGAGCTCTCGG
CTCTAAGTCCCAGCCCCTCTCAGAGGAGGCGTGCAGGCGAGGTTCTGCAGCCAGAGGCTTCTCGGCTCTGA
GCTCCGGAGCCAGATGTAACATTGACCTTAAATGGTAAAAGCTCCCCAGAGTGAAGAGAGGCTGGCCAGAG
GAGGAAAGGAGAATAACTCAGTTTTAGACAGGGTCTCGCACTGTCACCCAGGCTGGAGTGCAGTGGTGCAA
CCCCACCTCCCGGGTTCAAGCAATTCTCATGCCTCAGCCTCCCAAGTAGCTGGGATTACAGGGTCTCTCTA
CCGAGGAGTATCTTGCAGTCCAACCTCCCACGATTGTCCTGACTGGGGATGCCACTTCACCAGAAGGAGAA
ACCGACAAAAACCTGGCCAACAGAGTTCACAGTCCCCACAAGAGGCTTTCTCACCGACACTTGAAGGTGTC
CACTGCCTCCCTGACATCTGTGGACCCCGGGGCACATCATTGACCTGGTGAATGACCAGCTGCCAGACA
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TTCTGACCCCGCGTGGGAGGAAGTCCAGGAGCAGCCCCGGAGACTCCCCATCAGCTGTTTTCCCCGAACCT
CAGCCCCAGCGCTTCTCTACATCTCTCGGAGCAACTCACTTACAGTCCCCACCCCGCAGGTTTGGATG
TGTGCAGTGGCCCGCCATCCCCTCTGCCTGGAGCACCACCACAGAAGGGGATGAGGCCGACGTCTCTTCA
CCTCACCTGGCGAGCCTAACGTCCCCAAAGGGCTAGCTGACAGGAAGCAGAATGACCAGAGGAAAGTGTG
TCAGGGCAGGCTGGCTCCTCGTCTCTCCAGTTGAGAAGTCCAAAGAGATTGCAATAGAACAAAAGGAAA
ACTTCGATCCCCTCCAGTACCCCGAGACCACACCCAAAGGCCTAGCTCCTGTTACAAACAGCAGTGGGAAA
ATGGCCCTGAACAGCCCTCAGCCTGGCCCCGTGGAGAGCGAGCTGGGGAAGCAGCTCTTGAAAACGGGCTG
GGAGGGCAGCCCTCTGCCGAGAAGTCCAACCCAGGATGCGGCAGGAGTGGGTCCCCCAGCCTCCCAGGGGA
GAGGCCAGCTGGAGAGCCGATGGGGCCCGAGGCTGGCTCCAAAGCTGAGCTTCCACCCACTGTGTCCCGG
CCCCCGCTGCTGCGAGGGCTCTCCTGGGACAGTGGCCCTGAAGAACCTGGCCCCCGGCTGCAGAAAGTGT
TGCCAAGCTGCCACTGGCAGAGGAAGAAAAGCGTTTTGCAGGCAAGGCCGGCGCAAGCTGGCCAAGGCC
CTGGTCTCAAAGACTTTTCAGATACAAGTGCAGCCCGTGCAGGATGCAGAACTGACCAAGCTCCGAGAGGAG
CACATCCTGATGAGAAATCAGAACTTAGTGGGGCTCAAGCTTCCAGACCTTAGTGAAGCAGCTGAGCAGGA
AAAAGGGCTTCTTCTGAACTCTCCCCAGCTATTGAGGAAGAAGAGTCAAAGAGTGGCTTAGATGTCATGC
CTAATATTTCTGATGTGCTGCTGCGCAAACCTGCGGGTCCACAGGAGTCTCCCTGGAAGTGGCCCTCCACTC
ACTGAAAAGGAAGTTGAGAACGTGTTTGTGCAACTGTCTTGGCCTTTAGAAATGACAGCTACACTCTGGA
ATCTAGAATTAACCAGGCTGAAAGGGAAACGCAACCTGACAGAGGAGAACTGAGAAAAGAACTGGAAAAC
TCAAAGCTTCCATTACGTCTCAGCTTCACTCTGGCACCCTGTGAGCACCGGGAAACCTACCAGAAGTTG
CTGGAGGACATCGCTGTCTGCAACCGCTGGCTGCCCCCTCTCCAGCCGAGCTGAGGTGGTAGGCGCCGT
CCGCCAGGAAAAGCGCATGTGAAAAGCAACGGAAGTGTGATGCAGTATGTGGAGAATCTAAAGAGACGT
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CCCTCTGAAGATGGGGTCCCTCGCACGGCACGGTCCATGTCCCTCACGCTGGGAAAAGAATATGCTCGCCG
GAGGGTACGCTTGTGTGGTTTCTAAGTTTAAATGCCCTGAATCTGCCTGGCCAAACTCCCAGCTCATCAT
CCATTCCCTCCTTACCAGCCTTGTGGAATCACCCAATGGGAAAGGCAGCCTACCTGTCACTTCAGCACTG
CCTGCACTTTTGGAAAATGGAAAGACAAATGGGGACCCAGATTGTGAAGCCTCTGCTCCTGCGCTGACCCT
GAGCTGCCTGGAGGAGCTTAGTCAAGGAGACCAAGGCCAGGATGGAGGAAGAAGCCTACAGCAAGGGATTCC
AAGAAGGTCTAAAGAAGACCAAAGAACTTCAAGACCTGAAGGAGGAGGAGGAAGAACAGAAGAGTGAGAGT
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ATTGGTCCATTTCTTACAAGTCATGTATCCCAAACCTGTGTGAGCACTGGCAAGTGATCTGGATGATGGCTG
CAGTGATGCTGGTCTTACTGTTGTGCTGGGGCTCTACAATTCCTATAACTCTTGTGCAGAGCAGGCTGAT
GGGCCCTTGGAAAGATCCACTTGCTCGGCAGCCAGAGGGACTCCTGGTGGAGCTCAGGACTCCAGCATGA
GCAGCCTACAGAGCAGTAGGAAACCTCACACCTAGCCAGTGCCTGCTCTGAGACACTCAGACTACCACCC
TTTCCCCAAGTATAACGTGAGGCCAAGTGTGGACACACTGCCGCCCATCCCATCAGGTCATGAGGAAGGG
TTCTTTTAACTCGGCACTTCTGTGGGAGCTATTATACACAGTGACTTGATGTTCTTGGAGGATCAACA
AAACTGCCCTGGGAAAGCATCCAGTGGATGAAGAAGTCACTTCCCAAGGAACCTTATTGGAAGGGAAGG
TCTCCTGCCCCTAGCTCAGGTGGCTGGGGAGAACTAAAACACCTTCACTGGTGGTTGGGGGTAAGGAGCGG
GGCAAGGAGGAGGAGGTAGGGGGCAGTAAAAAACTTACTCTTTTTTCTCTCTGTAATTTGTTATC
AGGAAGAATTTGCTTAAATGACTAACACCCTAAGCACTCAGACTGGAATTTGGAGTTGCAAGTGACTACTC
TCCCATTTCCCATCTCATTTTTCAATAACTTACGCCTCCCATTCTTTCTTTGGAATGAGAGTTTTCTTTTA
CAGAAGTAGGAAAGGCTTCTCAGAAAAAAGTATAGGCTGAATTTAGCTCAGTGCTTGAATGG
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GCCTGTGCACAGAGCCAACAACCCTTCAAAGTGTGCTCTGGGTGTGTACCTCTGGATAAATAAGATGCAT
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CAGGTGAATGAGGAGAGAAGATGTGCTTTCTGCTTCAGTCTCTTACTCTGTGTGTGACCACATGCAAGAGT
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TCCCCAGTTATTTAGCACAACACTGAAGGAGCACATCCCCTCTCCATTTTGACTTCTCTCCCCACTTTTTAC
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TGTTTTGTTATTGATATTGTTTGCTTTTCATTGCTAAAACCTCATATACGACTTACTATGAGCCAAGCACTGT
TCTCAGTATTACATAGGTATGAATTCATTTAAGTCCTGAAGAAAAAGAAAAAAAATACGAAGTGGATATT
ACCCTTCCCATTTTCAAATAAGGAAACTGAAGCACAAAAAGAACAAGTAACTTGACAAGGACACCCCGGTA
GTAAATCATGGGGCTGGAGCTCAACCCAGGGTAGGCTGGCTCCAGAGCTGTGCTCTCCTTGACTCTTCTG
ATGGTCTCCTAGCTGGAAGCCTCACATTTTCAGTCTCATTCCCCCAAGTGGCCCATCAGCTTACTCCATCTCT
GGCTCCCCAACTAAACAGTTTTCTCTCATAGTGTGACCTCCACTACTAGTTTTTTTTTCCAGCTGTTCTT
CTCTTTTTCTTCAGGTCCTCTCTCGACCGAGTGCAAAAATTATCCCCTCCATACCAGCTTTGATGACCTT
CCTTCCATACTCCTCACCAGACACAACATAATAGGTACACACTCCTCTGTGCTTTCTGGCAGTTTTTAAA
CATTATTATTATTGACCTTTACCTATAGTATAACCATGGCCTATTTATGTATCCATCTCCCCTAGCATTTTT
CCTCAAAGACAAGAACCATGTCTTACCCATCTCTTGGGTAAGTGCCTAGCATGGTGGCTGACGCTTGGGAG
GGTGTCAATTAATGTTGCTCAAAGAACAAGCAAACATTTAAGGTGGTGGAGAGCAGCCTGGGGACAGCTG
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GGACTGGGCTCAATGCAGTCACTCCTTCAGAGAGACCCCCACCCCAAGCATGCCCCACTTTAAAATAGCA
TGTTTTATTGAAGGGGGCATCCTTTACAGTAGCTAGAAAATGACTGAGGCCCAAGCCAGGGTTGATCAAGGA
TGTGCCATTAAGGTAAAGAGTTACAGAGCAGGGCAGAGGGACTCTGGGGGCAGAAGTGGATGATTTGCCCG
GCCTCTTCCAGGGGGTCTGGATACAACCTGAAGGAGCTTTAGCTACATGAGGCCCTCAGAGCCAAAGACAGG
ATGCAATAGAGTTCTAGAGAGTGGCCGTGGAAGCAGAACTCCAGGTGGGGAATGTTCAATCTCTGCCTCC
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TGAGTCAAAGGCCAGGAAGGCAGTTATGGAGAGCTCCTGCACCTCCAGCTGCCCCACAGAAAAGCCTGCAA
GAGTACTTCCAGGCACAGGCCCTCTCCCACCCTATTCCATTTGTAAGCAAGGGAGGTGAGGAAAAGGACA
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TGGAGAGGAAGTGTGATTTGTGTATCACTGGCTATCAGTTCCCTCATGTTGTTAAGCCTCACACAGGTGT
GCTAGCATTGAACTGTAGAGTGTACATACCTGAGTTTGAAAATAAAAGCACATTTCCAAACCTCAAAAAA
AAAA

LTGDATSPEGETDKNLANRVHSPHKRLSHRHLKVSTASLTSVDPAGHIIDLVDQLPDISISEEDKKNLA
LLEEAKLVSERFLTRRGRKSRSSPGDPSAVSPNLSASPTSSRSNSLTVPTPPGLDVCSGPPSPLPGAP
PQKGDEADVSSPHPGEPNVPKGLADRQNDQRKVSQGRAPRPPVVEKSKEIAIEQKENFDPLQYPETTPK
GLAPVTNSSGKMALNSPQPGPVESELGKQLLKTGWEGSPLPRSPTQDAAGVGPASPQGRGPAGEPMGPEAG
SKAELPPTVSRPPLLRLGLSWDSGPEEPGPRQLQKVLAKLPLAEEEKRFAGKAGGKLAKAPGLKDFQIQVQPV
RMQKLTKLREEHILMRNQNLVGLKLPDLSEAAEQEKGLPSELSPAIEEESKSGLDVMPNISDVLLRKLRLV
HRSLPGSAPPLTEKEVENVFVQLSLAFRNDYSYTLERINQAERERNLTEENTEKELENFKASITSSASLWH
HCEHRETYQKLLIEDIAVLHRLAARLSSRAEVVGAVRQEKRMSKATEVMMQYVENLKRTEYKDHAELEMEFKK
LANQNSSRSCGPPSEDGVPRTARSMSLTLGKNMPRRRVSVAVVPKFNALNLPQTPSSSSIPSLPALSESPN
GKGLPVTSPALPALLENGKTNGDPDCEASAPALTLSCLEELSQETKARMEEEAYSKGFQEGKKTKELDL
KEEEEEEQKSESPPEEPEVEETEEEEKGRSSKLEELVHFLQVMYPKLCQHWQVIWMMAAVMLVLTVVVGLY
NSYNSCAEQADGPLGRSTCSAAQRDSWSSGLQHEQPTEQ

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#7

NM_001085386

No conservation found.

NF-E4 transcription factor NF-E4

Synonyms: NF-E4

GACAATTCCTGTTTACGGGAAGACTATAAAAACCTGCCCCCTACTCATTGGTGCTGACGCCATTTTAGGCC
TTAGCCTGCCTGCACCCAGGCGCTCATTAAAAACAGCAGGTTGCTCCACACTGCCTCGTGTTGTCTGTTGGC
ACACTCTCAAGAGTTTGAACGGATACAAGAATCTTTCATCTGGTGCCGAAACCCGGGAGGGGCTCCGGTCT
TCGTCCCCCGTGGACCTACCCCTCCGCCCCAGAAAGCAGGCCACAGCAGCCGGACAAAGGAAGCTCCTCAG
CCTCCAGTTGCTTCTCTGTGCATGCACATCAGTCACTGATCTCACCTACTGGGGCCCTGCAGGCCATGGGG
CCACAGCTCCACACAGAAGCCTCCTAGCAATCCACCTCCACCTGGTGCCTGCTTCAAGTGCGGCAATGAAG
GCCACTGGCCCCACACAATGCCCAAACCCAGGTAAACCCACGAGGCCATGCCCCCTCTGCGGAGGACCCCCAC
TGGAAGTTGGACTGTGAGCGGCCCTGCAAGGACCACCCCATCCCTTCTGAGCCAATCAAACCTCCTA
CTCGGATCTCGTCAGCCTTGCCGCTGAAGACTGATAGTGCCTTGGAAACAGACACCCAGCAACTACCATCG
CTTCATCTGAGCCAAGGGTAAACCTGATGGTGGCAGGCCAGTCCCAAGGCGCAAGGCCACTTGTGCCAGC
AGTGTGAGTCAGCAAGATAGCAGAAGCAGGAAGAGAGCCGGCCAGAAGACACCTACTCTGACTGGGAGACA
CGTACCCCTGAAGATTGAGAAAGAGGCCATCCAGGTACCACATAGCAGTTACATCAGACTGGGACATTTCC
TGTTTACAGGAGACTATAAAAACCCCTGCCCCCTACTCATTGGTGCTGACGCCATTTTAGGCCCTCAGCCTG
CCTGCACCCAGGTACTCATTAAAAACAGCGTGTGGTCCAAAAA

LPRVVCWHTLTKSLNGYKNLSSGAETREGLRSSSPVDLPLRPRKQATAAGQRKLLSLQLLLCACTSVDLTY
WGPAGHGATAPHRSLLAIHHLVLPASSAAMKATGPHNAQTQVNPRGHAPSAEDPTGSWTVSGPCKDHPHPF
LSQSNPPTRISSALPLKTDSDALEQTPQQLPSLHLSQG

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#8

NM_199072

No conservation found.

MDFIC MyoD family inhibitor domain containing

Synonyms: HIC; MDFIC

CCCAGGCCGGCTCTGGCCTCCTGACCCAGACAGCGCAGGGCGCGAGGGATCGCGCGGCCGAGCCCGGGTGC
CGCCGCTCCCAGCATCGGGGCCGCTAGCCAAGAGTTTCGAGGCCCTTCCCGATCCGGATGTGATGAAAAAGAG
CAACAGAGGGGAGAAGTGTTCAGGATTGTAGGAGTGAAGAGGGGAAAGAGAGGCAGAGAGGGGGAAGGCC
CCCTCGCAGGGGAGCCGGCTGGAGTGAGCTGGCTGGAAAGAGGGGGCGGAGTCCGCGGAGTCAAGCCGCC
ACCGCTGCCGCAGTTGCCGCCACTGCGGCGTCTGGGCTGAGCCGGAGGGAGGCGGGAGGACCGCGCAGGGGC
GGCCGCCCGCTCGTCAGGCCACCGGGGCGAAAATGCGGCCGCTGCCGGAGGCTCGCTAACTTTCCGGGGC
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CGCGGGCTCGGCGGAGCGGCCATGTCGCGGCGGGGCGAAGCCCTCGCTCCCGGGCCCGTGGGGCCGCGAGC
GCGTGGCCGAGGCGGGCGGGCCAGCTGGGCTCCACAGCCAGGGAAAATGTGATAAAGACAATACTGAG
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CAAGTGGTGAGGAAATAGGCAAGATAAAGAACGGCCACACAGGTCTGAGCAATGGAAATGGAATTCACCAC
GGGCCAAACACGGATCCGAGATAATCGAAACTTTCAGCACCTGTTTCTCAAAAAATGCATAGAAAAAT
TCAGTCCAGCTTGTCTGTAACAGCGATATCAGTAAGAAGAGCAAAGTAAATGCTGTCTTTTCCAAAAAGA
CAGGCTCTTACCTGAAGATTGTTGTGTCCTGATCCTGGCTTGTGTTCTGCGAATTCCTGACCCCTT
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CGAGATGGGGGATGATTGTAACCTGCCCTTGTGATATGGACTGTGGCATCATGGATGCCTGTTGTGAATCAT
CAGACTGCTTGAAATCTGTATGGAATGCTGTGGAATTTGTTTTCTTCAATAATATTTATCTTTTGTGTTG
TGTTAAAACCTGGAGAGTGTAAAAATTTCTTTTGGGGGGAAGAAAAGCACATTGTAAGATTCTCATGAA
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CTACATGGTTTTAATATGTGAAATTTAACTACTTTAACTAGTTTTATAAATTTCTTAATATGTTACAATAA
CTTAGGGACATTTTGACACCCCTTCCCAAATGTTAAATGCCTTCTCCTTTTTACCGATATTTCTGTTTC

TTTTAACCGTTCTCAGGAGCACTTTGCTCCAAATATATTATTTTTTCAGTGTGTATTTAAACGAGGCAGTTT
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AATAAAGAAGATTGAGTACTCTGACACATTTCAATTTAAATTAGGAAATTTTTAATATTAATAATCCCAGTGT
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AGGAAATCTTTATACTATTTTACAGTAACCACAATCTAAATATTTACATATACCCAAAATTAACCTTATGCT
CATATATTAGGATGTGAGAATATCATCTGTTTTATGGACACATGAAACCTCCTAATGACCTGGAATTTGTTAG
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AATTTGTGATGAAAATATTAGCACATTTGCAATAATGTTTCTCCATAACAGAGAATGTTAATGGATACCAG
AATTTTTATTTTTGTATTTATGTTTATAGTACTTTTTCTCCTTGTCTACTCCAGACAGTTATTCCATAAAGCA
TTTGTATAATTTAAAGGAAAACAGAAAAAGGAAAAGTAGGCAAATGTGAAAATAGTTTCAATATATCTTAT
GATTTCTTAATGTAAATGTTTTGTTGAAGTATATGGCTATCATGACTAAGTGCTAGAATTTATAGTTACA
GGCGGTGTCCTTTTTAAATGTGGAAGGCTTTTTAAATATTTTTAAACTGGACCTGTATTATCCTGAATACA
CTATTTTGAATTTTTTAAATGACTTCTTTATTTTGTCTTTACCGTATGTTTATATCTAATTGACATATT
GACTAATGTTTGAAGAATTCAACCATAAGTTAAAATCTGAAGTTATCTTTATCATGTTTTCATCCCTGTC
TGAAGATTTCTAGTCTTCTTATGTAAATCACATGACTCATGTCCGTAAATGAACTATGAAAGATATCGAT
CAGTTTATGATCATTGACATGTGATTTCAAACACAGTGTCTTTTTAAATCTATAATATGTCAAATAC
AAGTTTTTTTTTTTTACATCGTTTTAGTAAGTTAATTTCAATTTTACTTTGGAGCTATATTTCCACTTA
GAAAACTAAGGTAATTTTACAATATATGCTGAGATTAATAAACCAGGTAATAATGATCAAACATATATGA
AATTGAGTCTTAGATTTAATGAATTTCACTCGAAAATAAATGATCAGAAGAATTTTTCATCTAA

VRGVRAATAAAVAATAASGLSRREAGGRAGAAA VVRPPGRKCGRCRRLANFPGRKRRRRRRKGLGATTGG
CGEAVSSLHPHSPSSVRPAGRRRARRRRGAGSAERPMSGAGEALAPGPVGPQRVAEAGGGQLGSTAQGG
CDKDNTEKDITQATNSHFTHGEMQDQSIWGNPDSGELIRTQPQRLPQLQTSQVPSGEEIGKIKNGHTGLS
NGNGIHHGAKHGSADNRKLSAPVSVQKMRKIQSSLSVNSDISKKSKVNAVFSQKTGSSPEDCCVHCILACL
FCEFLTLCNIVLGQASCGICTSEACCCCGDEMGGDCNCPDMDCGIMDACCESSDCLEICMECCGICFPS

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#9
NM_005583

Not well conserved beyond humans.

LYL1 lymphoblastic leukemia derived sequence 1

Synonyms: bHLHa18; LYL1

CAGCCTGGCCCTTATCTGCACTGGGCCAGCATCCTCCGGCCGCTGCGCCGCCAGGGGTGAGAGGGAGGAAA
CCGGGCCCGCCGGGGCGGGGAGAAGGCGGGCCGGCCCGGGAGCCGCTCACTTTCCCTGGGGGGACCTACG
CGGAGACCTCGGCTATCCTGGCCTTCCGAGGCCACGAGGAGGCGCGCCCAACGCCGGGCCTGGAGCAT
TGAGGCCGGACCCTCGCGAGACAGCAGAGCCTGGCCTGACGCTGGAAACCACACCCTGGCCAGACTGCCA
GCCCTGACGGGACAGAGCCAGGGCACTCACCAGGCTGCAAGAACAGTGCTGGGGTGAGTACCCCCACGTCG
GGGTCCATGTGCCCGCCTCAGGCACAGGCAGAGGTGGGCCCCACCATGACTGAGAAGGCAGAGATGGTGTG
TGCCCCCAGCCCAGCGCCTGCCCCACCCCCTAAGCCTGCCTCGCCTGGGCCCCCGCAGGTGGAGGAGGTGG
GCCACCGAGGAGGCTCCTCGCCCCCAGGCTGCCACCTGGTGTACCAGTGATCAGCCTGGGCCACAGCAGG
CCCCCAGGGGTAGCCATGCCACCACAGAGCTGGGCACTCTGCGGCCCCCGCTGCTGCAACTCTCCACCCT
GGGAACTGCCCCGCCACTTTGGCCCTGCACTACCACCCTCACCCCTTCTCAACAGTGTCTACATTGGGC
CAGCAGGACCTTTTAGCATCTTCCCTAGCAGCCGTTGAAGCGGAGACCAAGCCACTGTGAGCTGGACCTG
GCTGAGGGGCACCAGCCCCAGAAGGTGGCCCGGCGCTGTTACCAACAGCCGGGAGCGCTGGCGGCAGCA
GAACGTTAACGGCGCCTTCCGCGAGCTGAGGAAGCTGCTGCCGACGCACCCGCCCGACCCGGAAGCTGAGCA
AGAACGAGGTGCTCCGCCTAGCCATGAAGTACATCGGCTTCCCTGGTGC GGCTGCTGCGCGACCAAGCCGCA
GCTCTGGCCGCAGGCCCCACCCCTCCCAGGCTCGCAAACGGCCGGTGCACCCGGGTCCCAGACGACGGCGC
CCGCCGGGGATCCGGACGCAGGGCCGAGGCGGCAGCGCGCTCGCAGCCCGCGCCCCCGGCCGACCCCGACG
GCAGCCCCGGTGGAGCGGCCCGGCCCATCAAGATGGAGCAAACCGCTTTGAGCCCAGAGGTGCGGTGA
CACGCGGCAGCACCTCTGAGCCGGAGGGCACCAGGGACTCGGCCCAGGGCCGTCAAGGAAAGGGCAGTGGA
CGTGTCTCGCATGTTTCGGGAGCGAACTCCCCGAAGAAGGACCAGTGAAGACGTCAGGGCAAGGTCTCGG
GGTCCGGAAGGGTGATCATCGACCCCCAAGGGACCCGAGACCCCTTAAAAAATCACCCACAACCCTCTG
GAAGTGGCCTTGCCCGGTCCCCTTCCAGGGCGAGGTGGCAAAGCAACATGGCAGAGCAGTCATAGGAA
AAAAAAAAAAAAAAAAAAAA

LAQTASPDGTEPHSPGCKNSAGVSTPTS GSMCPPQAQAEVGPMTTEKAEMVCAPSPAPAPPPKPASPGPP
QVEEVGHRGGSSPRLPPGVVIVISLGHSRPPGVAMPTTELGLTRPPLLQLSTLGTAPPTLALHYHPHPFLN
SVYIGPAGPFSIFPSSRLKRRP SHCELDLAEGHQPKVARRVFTNSRERWRQNVNGAFAELRKL LPTHP
DRKLSKNEVRLAMKYIGFLVRLLRDQAAALAAGPTPPGPRKRPVHRVPDDGARRGSGRRAEAAARSQPAP
PADPDGSPGGAARPIKMEQTALSPEVR

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#10

NM_004936

Apparently conserved in primates only.

CDKN2B cyclin-dependent kinase inhibitor 2B (p15, inhibits CDK4)

Synonyms: P15; MTS2; TP15; CDK4I; INK4B; p15INK4b; CDKN2B

GGCTCCCCACTCTGCCAGAGCGAGGCGGGCAGTGAAGGACTCCGCGACGCGTCCGCACCCTGCGGCCAGAG
CGGCTTTGAGCTCGGCTGCGTCCGCGCTAGGCGCTTTTTCCAGAAGCAATCCAGGCGCGCCCGTGGTTC
TTGAGCGCCAGGAAAAGCCCGGAGCTAACGACCCGCGCTCGGCCACTGCACGGGGCCCCAAGCCGAGAA
GGACGACGGGAGGGTAATGAAGCTGAGCCAGGTCTCCTAGGAAGGAGAGAGTGCGCCGGAGCAGCGTGGG
AAAGAAGGGAAGAGTGTCTTAAGTTTACGGCCAACGGTGGATTATCCGGGCCGCTGCGCGTCTGGGGGCT
CGGGAATGCGCGAGGAGAACAAGGGCATGCCAGTGGGGGCGGCAGCGATGAGGGTCTGGCCAGCGCCGCG
GCGCGGGGACTAGTGGAGAAGGTGCGACAGCTCCTGGAAGCCGGCGCGGATCCCAACGGAGTCAACCGTTTT
CGGGAGGCGCGGATCCAGGTCATGATGATGGGCAGCGCCCGCGTGGCGGAGCTGCTGCTGCCACGGCG
CGGAGCCCAACTGCGCAGACCCTGCCACTCTCACCCGACCGGTGCATGATGCTGCCCGGGAGGGCTTCTG
GACACGCTGGTGGTGTGTCACCGGGCCGGGGCGCGGCTGGACGTGCGCGATGCCTGGGGTCTGCTGCCCGT
GGACTTGGCCGAGGAGCGGGGCCACCGCGACGTTGCAGGGTACCTGCGCACAGCCACGGGGGACTGACGCC
AGGTTCCCCAGCCGCCACAACGACTTTATTTTCTTACCCAATTTCCACCCCCACCCACCTAATTCGATG
AAGGCTGCCAACGGGGAGCGGGCGAAAGCCTGTAAGCCTGCAAGCCTGTCTGAGACTCACAGGAAGGAGGA

GCCGACCGGGAATAACCTTCCATACATTTTTTTCTTTGTCTTATCTGGCCCTCGACACTCACCATGAAGCG
AAACACAGAGAAGCGGATTTCCAGGGATATTTAGGAGTGTGTGACATTCCAGGGGTCGTTTTGCTTTTCAGG
GTTTTCTGAGGGAAAGTGCATATGAAATCCTTGACTGGACCTGGTGGCTACGAATCTTCCGATGGATGAAT
CTCCCCTCCAGCGCTGAGTGGGAGAAGGCAGTGATTAGCACTTGGGTGACGGCAGTCGATGCGTTCACTC
CAATGTCTGCTGAGGAGTTATGGTGAACCCACAACCTTAGGCCCTAGCGGCAGAAAGGAAAACCTGAAGACT
GAGGACAAAGTGGAGGAGGGCCGAGGTGGGCTTCAGTAAGTCCCGGGCGGCGCTTTAGTTTTGAGCGCATGG
CAAGTCACATGCGTAAACGACACTCTCTGGAAGCCCTGGAGACCCTCGCCCAACTCCACCAGATAGCAGAG
GGGTAAGAGAGGATGTGCAAGCGACGACAGATGCTAAAATCCCTGGATCACGACGCTGCAGAGCACCTTTG
CACAGGATGCTGGCCTTTGCTCTTACTACACTGAGGAGAGATTCCCGCGGGTCCGCAGGCAGACTACACA
GGATGAGGTGGTGGAGTGGAGTGAAGCAATTGTAACGGTTAACTGTAACGTTTTCTTTACACACACACA
CACACACACACACACATGCTAGGATGCGGAAATCCCCTTATGACTTGTACTTTTTGATTTTGTGATAT
TTTTGTACTTTTTAGTTGTTTTCAGCAACTGTCTTATTTAATGGGGAGATTTTAAGTAACATAAAGTGGCTC
TCAGTTAAAATGTGAGGAAGAACTACAGCTCTTAAATGTAGCAATGGCACTGTTGCAAACTCAGTGCAAAC
GCCTAGATTGCTTTCTTCTTAACTATTTATTTCTTTGTTAAATTTTTCTGATTGTTTCTTTATAGAGTG
TCTCAGGGTGCAGAGGTGACACTAAGAAATATTTCCAAATGTCTTTTAGAAGATAGATGCACTTATGCAGTA
AATTATCTTGGGATAGTTCCCAAAAGATTGCTGAAAAAGTAGATTGAGTATAAAAACTTGAAAATATATGA
TGGCTCGTGGGATGCTCTACTATCACTGAACAACTAAAGGTGCACTGCTTTGGGATTTAATTTCCAGGGT
TGCTTGATCATTATATCATTGGAACAACCTGATACTTCACTACTTTAATAAAGAATTAACAGAGATTGAACT
CCAAGAGGTGGGTAATTTGGTTTTAAAAATACATGTTTCATGGGTTTACCCTAACTCCTGAGAAATGTTAAA
GGTTCACAGGGGTTCCCTTCTCTCAATGTTTGTAAATAATTGCTCATAAGCAATACCAGCAATTCATAAAAA
CTGCTTACTTATGCCATAGAAAATTAACACAAAGTGTATACATGTATTATGCTTCTAAATGCTCATTCTA
CCAGATACACATTTAAAAGAGAAAAAAGGAACAGAAACAAGTCATTTGAGAGTGGAGACTTATAAGAAGGA
GTACATTTGAGTTGAATACACAAATCTTTACTTCTCTACCAATTCCTATTCCCAAAATGAACATATTACTG
GGGAAAGTTAGTTGAGAATCAGAGCATATGTTATTGGGGAAAGGATATGTTTATTGACACATAATCTGTAC
CAGGTATGCATTAATAATATTTGTTAATTTAATATTTAAACCTGAGAGATAGGTATTGTTTCCAGATGA
GGACAATGAGGCAAAGAAATATCAAGTAACTTGCCAAAGGTTACAAGATATTCATTCCATGGATGCACAAA
GAAGTGCATCTAGTTCCACAGCTGATTATGGTTGTCTTGCTTTTCTTCCATTGCACCAGCTTGTCTCTCA
AAATCATGAATGATACACATGAAGATAACTTTTTTTAAAAAAGCAGAAATACACAATGATCTCCCTTGT
AAGTCCTAAGTGGCTTTTTCTTCTCTAATCTTAGTAAATATAAACGGTTTTGTTTTGAAAACATTTTTAA
AATGTCAACAATATGGAGAATAACCCCCCAACACACCTATAAAAAACCAAAATTTTTTGGAAACAAAGATAA
TGGAACCTCCATTTTCAAACCTGAAGCACAGGGACAGAAAATATATTTCTAGTTATCACTTAAGCACTCAAT
CATTAGAGGCTACAAGAATAATATTTTTTAAAGTTACAGTATTTTACAATTATTAGAAAACATTCTATATAA
AAGAAGTCAGTTGATACTTTAAAATCTCCATTTGGTTTTATAAAATCCCTTAATTTGACCTCTATATCTTA
AATTCCAAGATGTTTAAATTTGCTAGTTGCATTATACTGGGTCATGAAAAATTATCCCTTGAAATAGATAT
GAAACATGTTACTTCAATTTCTGGTTTTAAATAACTTGTGGAATCTTTCCTAATGACAACCTGATATTAAGGG
AACTAAAGAAAATGTTATTGTGGATCCCACAGTACTATATTACACTGTTTTTTTTTTGTTTGTGTTTGTAGT
TTTTTTTTATTTAAAGCAAACCTCAAACATTATTGGGTATCAATTACCACCTGGTTGTATTGAAATAGTAAC
TTATCAATGCCATGTAATAAATTAATTCATTTTGAAGCCACCTGGCAGACAGGTTTAGCTGTTTCATCAG
CAGCCTAATATATACTGTTAAATTTGTTAAGGATTTCACTTTGAAGGATACATGCAAAACATATAGTTACT
ATTTTCATGAGTCTGCTTCTAGCTCCATTGTGGAATACAGAAAATTAATATACCTGTTAAGTTCGTATC
TAAACCTAAGACATTACCAAGGTTTGTACAAATTTACTACCTGACATTTATTCCAAGAAGATCTGGAAAG
TTAAATAAATTTATAAATTTAATAACAAAAAAAAAAAAAAAAAAAAAA

TVDYPGRCASGGCGMREENKGMPSGGGSDEGLASAAARGLVEKVRQLLEAGADPNGVNRFRRAIQVMMMG
SARVAELLLLHGAEPNCADPATLTRPVHDAAREGFLDTLVVLHRAGARLDVRDAWGRLPVDLAEERGRD
VAGYLRATATGD

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#11

NM_001085386

Apparently conserved in primates only.

NFE4 transcription factor NF-E4

Synonyms: NF-E4

GACAATTCTGTTTACGGAAGACTATAAAACCCTGCCCCCTACTCATTGGGTGCTGACGCCATTTTAGGCC
TTAGCCTGCCTGCACCCAGGCGCTCATTAAAACAGCAGGTTGCTCCACACTGCCTCGTGTGTCTGTTGGC
ACACTCTCAAGAGTTTGAACGGATACAAGAATCTTTCATCTGGTGCCGAAACCCGGGAGGGGCTCCGGTCT
TCGTCCCCCGTGGACCTACCCCTCCGCCCCAGAAAGCAGGCCACAGCAGCCGGACAAAGGAAGCTCCTCAG
CCTCCAGTTGCTTCTCTGTGCATGCACATCAGTCACTGATCTCACCTACTGGGGCCCTGCAGGCCATGGGG
CCACAGCTCCACACAGAAGCCTCCTAGCAATCCACCTCCACCTGGTGCCTGCTTCAAGTGCGGCAATGAAG
GCCACTGGCCACACAATGCCCAAACCCAGGTAAACCCACGAGGCCATGCCCCCTCTGCGGAGGACCCAC
TGGAAGTTGGACTGTGAGCGGCCCTGCAAGGACCACCCCATCCCTTCTGAGCCAATCAAACCCCTCCTA
CTCGGATCTCGTCAGCCTTGCCGCTGAAGACTGATAGTGCCTTGGAACAGACACCCCAAGCAACTACCATCG
CTTCATCTGAGCCAAGGGTAAACCCCTGATGGTGGCAGGCCAGTCCCAAGGCGCAAGGCCACTTGTGCCAGC
AGTGTGAGTCAGCAAGATAGCAGAAGCAGGAAGAGAGCCGGCCAGAAGACACCTACTCTGACTGGGAGACA
CGTACCCCTGAAGATTGAGAAAGAGGCCATCCAGGTACCACATAGCAGTTACATCAGACTGGGACATTTCC
TGTTTACAGGAGACTATAAAACCCTGCCCCCTACTCATTGGGTGCTGACGCCATTTTAGGCCTCAGCCTG
CCTGCACCCAGGTACTCATTAAAACAGCGTGTGCTCCAAAA

LPRVVCWHTLKSNGYKNLSSGAETREGLRSSSPVDLPLRPRKQATAAGQRKLLSLQLLLCACTSVTDLTY
WGPAGHGATAPHRSLLAHLHLPASSAAMKATGPHNAQTQVNPRGHAPSAEDPTGSWTVSGPKDHPHPF
LSQSNPPTRISSALPLKTD SALEQTPQQLPSLHLSQG

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#12

NM_004364

Partial conservation of the non-AUG initiation in mammals but 7 of 17 mammalian orthologs examined have either broken frames or are missing the non-AUG codon including: *Monodelphis domestica*, *Macropus eugenii*, *Oryctolagus cuniculus*, *Loxodonta africana*, *Sus scrofa*, *Dasyus novemcinctus*, *Pteropus vampyrus*. As a result it did not pass our criteria for conserved non-AUG initiated candidates. Nevertheless, the non-AUG initiation is actually present in frogs and fish.

Cebpa CCAAT/enhancer binding protein (C/EBP), alpha

Synonyms: CEBP; C/EBP-alpha; CEBPA

CGGAGCTGCGCGGGCGCGGGCGAGCAGGGTCTCCGGGTGGGCGGGCGACGCCCGCGCAGGCTGGAGGC
CGCCGAGGCTCGCCATGCCGGGAGAACTCTAACTCCCCATGGAGTGGCCGACTTCTACGAGGCGGAGCC
GCGGCCCGGATGAGCAGCCACCTGCAGAGCCCCCGCACGCGCCAGCAGCGCCGCTTCCGGCTTTCCCC
GGGGCGGGCCCCCGCGCAGCCTCCCGCCCCACCTGCCGCCCGGAGCCGCTGGGCGGCATCTGCGAGCAC
GAGACGTCATCGACATCAGCGCCTACATCGACCCGGCCGCTTCAACGACGAGTTTCTGGCCGACTGTT
CCAGCACAGCCGGCAGCAGGAGAAGGCCAAGGCGGCCGTGGGCCCCACGGGCGGCGGGCGGCGGCGACT
TTGACTACCCGGGCGCGCCCGGGCCCCGGCGGCGCCGTCATGCCGGGGGAGCGCACGGGCCCGCC
GGCTACGGCTGCGCGGCCGCGGCTACCTGGACGGCAGGCTGGAGCCCTGTACGAGCGCGTGGGGCGCC
GGCGCTGCGGCCGCTGGTGATCAAGCAGGAGCCCCGCGAGGAGGATGAAGCCAAGCAGCTGGCGCTGGCCG
GCCTCTTCCCTTACCAGCCGCGCCGCGCCGCGCCCTCGCACCCGCACCCGCACCCGCGCCCGCGCAC
CTGGCCGCCCCGCACCTGCAGTTCAGATCGCGCACTGCGGCCAGACCACCATGCACCTGCAGCCCGGTCA
CCCCACGCCGCGCCACGCCCGTGCCAGCCCGCACCCCGCGCCCGGCTCGGTGCCGCGGCGCTGCCGG
GCCCTGGCAGCGCGCTCAAGGGGCTGGGCGCCGCGCACCCCGACCTCCGCGGAGTGGCGGCAGCGGCGG
GGCAAGGCCAAGAAGTGGTGGACAAGAACAGCAACGAGTACCGGGTGGCGCGGAGCGCAACAACATCGC
GGTGGCAAGAGCCGCGACAAGGCCAAGCAGCGCAACGTGGAGACGCAGCAGAAGGTGCTGGAGCTGACCA
GTGACAATGACCGCTGCGCAAGCGGGTGAACAGCTGAGCCGCGAACTGGACACGCTGCGGGGCATCTTC
CGCCAGCTGCCAGAGAGCTCCTTGGTCAAGGCCATGGGCAACTGCGCGTGAAGGCGCGGCTGTGGGACCG
CCCTGGGCCAGCCTCCGGCGGGGACCCAGGGAGTGGTTTGGGGTGGCCGATCTCGAGGCTTGGCCGAGCC
GTGCGAGCCAGGACTAGGAGATTCCGGTGCCTCCTGAAAGCCTGGCCTGCTCCGCGTGTCCCCTCCCTTCC

TCTGCGCCGGACTTGGTGCCTAAGATGAGGGGGCCAGGCGGTGGCTTCTCCCTGCGAGGAGGGGAGAAT
TCTTGGGGCTGAGCTGGGAGCCCGCAACTCTAGTATTTAGGATAACCTTGTGCCTTGGAAATGCAAACCTC
ACCGCTCCAATGCCTACTGAGTAGGGGGAGCAAATCGTGCCTTGTCAATTTATTTGGAGGTTTCCTGCCTC
CTTCCCGAGGCTACAGCAGACCCCATGAGAGAAGGAGGGGAGCAGGCCCGTGGCAGGAGGAGGGGCTCAGG
GAGCTGAGATCCCGACAAGCCCGCCAGCCCCAGCCGCTCCTCCACGCCTGTCCTTAGAAAAGGGGTGGAAAC
ATAGGGACTTGGGGCTTGGAACTAAGGTTGTTCCCTAGTTCTACATGAAGGTGGAGGGTCTCTAGTTCC
ACGCCTCTCCCACCTCCCTCCGCACACACCCCAACCCAGCCTGCTATAGGCTGGGCTTCCCTTGGGGCGG
AACTCACTGCGATGGGGGTACCAGGTGACCAGTGGGAGCCCCACCCCGAGTCACACCAGAAAGCTAGGT
CGTGGGTGAGCTCTGAGGATGTATACCCCTGGTGGGAGAGGGGAGACCTAGAGATCTGGCTGTGGGGCGGGC
ATGGGGGGTGAAGGGCCACTGGGACCCTCAGCCTTGTGTACTGTATGCCTTCAGCATTGCCTAGGAACA
CGAAGCACGATCAGTCCATCCAGAGGGACCGGAGTTATGACAAGCTTTCCAAATATTTTGCCTTTATCAGC
CGATATCAACACTTGTATCTGGCCTCTGTGCCCCAGCAGTGCCTTGTGCAATGTGAATGTGCGCGTCTCTG
CTAAACCACATTTTATTTGGTTTTTGTGTTTTGTTTTGGTTTTGCTCGGATACTTGCCAAAATGAGACTCTC
CGTCGGCAGCTGGGGGAAGGGTCTGAGACTCCCTTTCTTTTTGGTTTTGGGATTACTTTTATCCTGGGGG
ACCAATGAGGTGAGGGGGGTTCTCCTTTGCCCTCAGCTTTCCCAAGCCCTCCGGCCTGGGCTGCCACAA
GGCTTGTCCCCAGAGGCCCTGGCTCCTGGTCGGAAGGGAGGTGGCCTCCCGCCAACGCATCACTGGGGC
TGGGAGCAGGAAGGACGGCTTGGTTCTCTTTTGGGGAGAACGTAGAGTCTCACTCTAGATGTTTTAT
GTATTATATCTATAATATAAACATATCAAAGTCAA

VRGRGRAGSPGRRRRPAQAGRRGSPCRENSNSPMEADFYEAEP RPPMSSHLQSPPHAPSSAAF GFPRG
AGPAQPPAPPAPEPLGGICEHETSIDI SAYIDPAAFNDEF LADLFQHSRQQEKAKAAVGPTGGGGGGDFD
YPGAPAGPGGAVMPGGAHGPPPGYGCAAAGYLDGRLEPLYERVGAPALRPLVIKQEPREDEAKQLALAGL
FPYQPPPPPPSHPHPHPPAHLAAPHLQFQIAHCGQTTMHLQPGHPTPPPTPVPSHPAPALGAAGLPGP
GSALKGLGAAHPDLRASGGSGAGKAKKSVDKNSNEYRVR RERNNI AVRKSRDKAKQRNVETQKQVLELTS
NDRLRKRVEQLSRELDTLRGIFRQLPESSLVKAMGNCA