

Title	Identification of evolutionarily conserved non-AUG-initiated N-terminal extensions in human coding sequences
Authors	Ivanov, Ivaylo P.;Firth, Andrew E.;Michel, Audrey M.;Atkins, John F.;Baranov, Pavel V.
Publication date	2011
Original Citation	Ivanov, I. P., Firth, A. E., Michel, A. M., Atkins, J. F. and Baranov, P. V. (2011) 'Identification of evolutionarily conserved non-AUG-initiated N-terminal extensions in human coding sequences', Nucleic Acids Research, 39(10), pp. 4220-4234. doi: 10.1093/nar/gkr007
Type of publication	Article (peer-reviewed)
Link to publisher's version	https://academic.oup.com/nar/article-lookup/doi/10.1093/nar/gkr007 - 10.1093/nar/gkr007
Rights	© 2011, the Authors. Published by Oxford University Press. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by-nc/2.5), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited. - http://creativecommons.org/licenses/by-nc/2.5
Download date	2026-08-30 16:30:55
Item downloaded from	https://hdl.handle.net/10468/5024



UCC

University College Cork, Ireland
Coláiste na hOllscoile Corcaigh

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

CGACGTCAAGTCGAGGCCGCCGCCGCGGGCCTGGTTATCGCCGGTTCAGCGCAGCCCGGAGTCGCCAGG
CCTGA^{ACTCCTACCCAGCCTAGACTCAAGTCTGGGTTTCAGCTGCCGCCAGCCCTATTGCTGCTGTTGCTG}
TTCTCTGTCCTTGGCCCAGGGGCTGGAGGCCTTTTCCTGACTGATTACTCCACCTGCTCACCCGCAAGCT
GAGTCCTTTCCGCTCCTTTGCCAGCACCGAGCTCTTCCACTTCCATGTTCTGAGGACACATTCTGGCTG
TTTGAACCTCATCATCTTCAAGGAGCAAGGGGGAACCTTTGGGGACCACTGCCAGACCAAAGTGTGACT
GTGTATTTCCGGTCCGGGGCACCCCTGTCAATCCCCTGCATACACACTTCCAGGGGACACAGCTGT
GCCTGGGGTTTTCTCACTGACCCTCAGCTGGACACTGCCCAACCGCACCTCAGGCATCTTTAACGTGAGCA
GCCCCTTACCTGGGGACTGGTTCTTGGCTGCCACCTTCCCCAGGCCACAGCCACATCTCTGTCAAGGGT
CTCCAGGATGAGTGTGAGTACCTCCTTCAGCCGCAGCTGATTGTCCGGCGTTTGTGGACGTGCTGTGCT
GGTTCTGGCCGGCCCTCAGAGCAAACCTCTCCCCACACAATCGCTCAGCCCTGTACAAGGTCTTTGTGC
CCAGCTTCACTTACAGGGTTTCAGCACAGCTGGTGTGTGTGGGGGGCCGTGGGGTATCTGCCTGCCCCCTG
TCACTGCGTCTGCGTCCCAAAGCCCCACCCCTGCACAACCTCAAGCTCTGTGGCCTGTGGAGGTGCCTCAGG
ATGCCAGCTGGAGCTGGCACTGCCCCCTGGGGGCACTGGGTCTACGTGCGTGTGGAAACATCATCCCGG

GCCCTGGTAGGACCATCCGCTTCCAGCTGTGTGTGCGGTTGCAAGAGTGCCACAGCCCGGCTGCTCCGA
 GCCCTGGTCCCTGGAGCTGCCATGAACATGCCCCAGTCCCTGGGCAACCAGCCACTGCCCCAGAACCGCC
 ATCCCTTGGAACCCCTGCGGAGGGGCTGGGACCACGTCCCCACCCGAGCACTGCTGGCCAGTGCGCCCGA
 CTCTGCGCAACGAGCTGGACACCTTCTCTGTCCACTTCTACATCTTCTTTGGCCCAAGTGTGGCCCTTCCC
 CCTGAGCGCCCAGCCGTGTTGCCATGAGGCTGTTGCCAGTGTGGACAGTGGAGGCGTCTCAGCCTGGA
 GCTCCAGCTCAATGCGAGCTCCGTGCGCCAGGAAAACGTGACGGTGTGGATGCTTGACTCACGAGGTGC
 CCTTGAGCCTGGGGGATGCAGCAGTGACCTGTTCCAAAGAGTCCCTGGCCGGCTTCTCCTCTCTGTCACT
 GCCACCACCAGGGTTGCCAGGCTGCGAATCCCATTCGCCGACAGGGGACCTGGTTCTGGCCCTCCGCTC
 CCTGTGCGGGGTGGGGCCTCGGTTCTGTGCGGTGCCGCAACGCGACGGCCGAGGTGCGGATGCGCACCTTCC
 TGTCCCCATGCGTGGACGACTGCGGGCCCTACGGCCAGTGCAAGCTGCTGCGCACACACAATTATCTGTAC
 GCAGCCTGCGAGTGCAAGGCCGGGTGGAGAGGCTGGGGCTGCACCGACAGTGCAGATGCGCTCACCTATGG
 ATTCAGCTGCTGTCCACACTCTGCTCTGCCTGAGCAACCTCATGTTTCTGCCACCTGTGGTCTCTGGCCA
 TTCGGAGTCGATATGTGCTGGAAGCTGCAGTCTACACCTTACCATGTTCTTCTCCACGTTCTATCATGCC
 TGTGACCAGCCAGGCATCGTGGTTTTCTGCATCATGGACTACGATGTGCTGCAGTTCTGTGATTTCTGGG
 CTCCTTAATGTCCGTGTGGGTCACTGTCAATTGCCATGGCTCGTTTACAGCCCGTGGTCAAGCAGGTGCTGT
 ATTTGCTGGGAGCTATGCTGCTGTCCATGGCTCTGCAGCTTGACCGACATGGACTCTGGAACCTGCTTGA
 CCCAGTCTCTTCGCCCTGGGGATCTTGGCCACAGCCTGGACAGTACGCAGCGTCCGCCGCCGGCACTGCTA
 CCCACCCACGTGGCGCCGCTGGCTTTTTCTACTTGTGCCCTGGCAGCCTTATTGCAGGCAGTGCCGTCCTGC
 TTTATGCTTTTTGTGGAGACCCGGGACAACACTACTTCTACATTACAGCATTGGCATATGCTCATTGCGGGC
 AGTGTGGGCTTCTGCTGCCCCCTCGTGCCAAGACTGACCACGGGGTCCCATCTGGAGCCCCGGGGCCGGGG
 CTGTGGTTACCAGCTATGCATCAACGAGCAGGAGGAGCTGGGCCTCGTGGGCCAGGAGGGGCCACTGTCA
 GCAGCATCTGTGCCAGCTGAGAGGGGCTTTGGGCCTGGCCCTGAGGGGATATGAATGCTTCTAGAGTTCT
 TTCTGGGGGTGTGGAGCCCTCTTAGAAGGAGACAGGCTGTATTTCTTGAGGACATGGAGTCTTCTCAAGG
 ACACAAAACCTCTTCCAGGGACCTGGAGCCCTTCCCAGGACATGGAGAACTTCTGAGGGCCTGGAGTCCCC
 CTGCATCATGGAGTCCTTCTTAAGGACTGGAGCCTATGCAGGCACAGAGTCCCTCAGGACCAAGGAGTCCC
 TCCTGCAGGTGTGGAGCCTTCTTGGGATGCAGAGCCTTCCCAAGACATGGATTCTTCCCAGGGAGACAA
 AGCCCTGTGAGGAGCACAGCATCTTCCAGAGGAGGTGGAGTCTATCTTGGGGAACCAAAATTTCCAGATT
 TTCCCAGAGGCTCAGCAACTCTGGCCTCAGGCTTCTTCCCAGAGGCAGCGTCTGGGCTGTGCTGTGCTGT
 GGAGGAGGATTGAGGATGGATGGAGCTGGGACTGGGGCTGTCTGGGTGGTGGTATCTCGTTTGATAC
 AGGTGGAGTCTGTGTGTCTCCAGTGATTGATTGGTTGAGAATGGTTCTGTGATGCCTTTTTTCCCCCTGGG
 GTCAGGGGTGTGGGGAAGTGGGGAAGAGGGGCCCTCAGGGAATCAGCAGGGCTGATGGGAGCTACTGCCG
 GAGGCTTTTTGTACACCCTGTACACAGTCTGATCCCGCTCATCTGGGCCCTGCATTATTTCTAAACAGTT
 TCTAATGCCTATTTCCCAATTCCTATTGAGCCCGATTTGCAGTATCTGAGGGGTGTGTGTGTGTGTGTGTG
 TGTTTATGTATGTATACGTATGCTGAGATGATTTAAATCAGTGAGACAGACTTTCTTATGATGCCACAC
 CCAACACAGAAGGAAGCCGAGGTCCCAGGAAATTGGAATAGCAGGTACACGTCTCAGGTGTGCAAGAAATA
 TCACAAGAATGTAACCTTCTGTTTTGAGCCCCCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LLLFVSLGPGAGGLFLTDYSTCSPRKLSFPRFASTELFHFHVPEDTFLAVWNLIIFKEQGGTFGDHCPD
 QSVTVYFRSGAPPVINPLHTHFPGDTAVPGVFSLTLSWTLPNRTSGIFNVSSPLPGDWFLAAHLPQAHGHI
 SVKGLQDECQYLLQPQLIVRRLLDVAVLVPGRPSEQTLSPHNRSALYKVFVPSFTYRVSQALVCVGGRGVS
 ACPLSLRLRPKAPPLHNSSSVACGGASGCQLELALPPWGHVYVRVETSSRGPGRITRFQLCVRLQECQPQ
 GLLRALVPGAAMNMPQSLGNQLPPEPPSLGTPAEGPGTTSPEHCWPVRPTLRNELDTFSVHFYIFFGPS
 VALPPERPAVFAMRLLPVLDSSGVLSELEQLNASSVRQENVTVFGCLTHEVPLSLGDAAVTCSKESLAGFL
 LSVSATTRVARLRIPFPQTGTWFLALRSLCGVGPRFVRCRNATAEVRMRTFLSPCVDDCGPYGQCKLLRTH
 NYLYAACECKAGWRGWGCTDSADALTYGFQLLSTLLCLSNLMFLPPVLAIRSRYVLEAAVYFTFMFFST
 FYHACDQPGIVVFCIMDYDVLQCFDLGSLMSVWTVIAMARLQPVVKQVLYLLGAMLLSMALQLDRHGLW
 NLLGPSLFALGILATAWTVRSVRRRHCPPTWRRWLFYLCPSGLIAGSAVLLYAFVETRDNYFYIHSIWHM
 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
CAACAGTTCCAGTGGACTGCGTGGACCCGTGAGCTCAGGAGCCTCAGACGCCTCCCTGGAGAGCCAAGCTG
GTGTTCTGAGGTGGCGCCTCCAGGGTCCACCCTGCTGCCAACAGCCCCGCGGCCACCAGAGGGCCGTCCCT
GGCCCCGGCTGTGTGCCCTGGTGGACCTGTGTCTGGGCTGCTCCCGCTGCACCCAGCGGCTCAATGAAAGCA
CCTACGTCTCCGTAGGGTGGAGCATGACTGCTCCCGCGAGATCCTGCTGGCCCGCTTTAAGCAGGGCCACC
AAGAGCAAGGTCTGGCGCGTGGTGGGCTGCCGGCCACCTTCCCAAGGCCCTGTGCTACCAAGTCTGCCA
CTACTACAGCCCTGGGCTCGGCTGCCGGCGCCACCGAAACCGGTGCACCTTTGCCCGCAGTCGCGAGGAGG
CCCTGGTCTGGACCTTCGAGCGTCAGCACAACTCCAGCGCCTATGGCTGAAGGCGGAGGTGCAGGGCAGC
GGGGCCAGGGAGGGGAGGCCGGGCGGCCGACGCCATCCTTACGGAGTTTGGCGGCCGCTTCGAGCTGCT
TTGCTCCCTCTGCTTCAGGCGCTGTCCCCCATGCATCTGTGCGCTGGACCCCCAGGGGAGTGCCTGAGC
ACGGAGCCTGCCCTCCCTCCTGGCCACGTGAGCGCCGAGGGCCGCCGCAAGCAACAGTTTGTGGTGGTG
AGGCCGCGGGCCCCGGGCCGAGCCTCCTGCCTACTGCAGTTTGTGGGGCGTGGGAGCCGTGCTGGCG
TGGGGAGTCCCGCTGCCAGTTTGCACACAGCGCCGTGGAGATGGCTGTGTGGGAGGCCGAGCAGCTGGGTG
GCCTCCAGCGGGGGGACCTGCTCACACCCCTGCCCTGATGGCGACGGGCGCACGGCCCCCTTTGGCCAG
CCCCCTGGGGCCAGCTGTACTGCCCGGCTGCTTGGTCACTGCCACTCTCAGGAGGCCTTCGAGAACCA
CTGCGCATCCTCGGAGCACGCACAGATGGTGGCCTTCGACAGGCCCTGCCCTGGGAGCACCGTTCCCCAC
CCCCGGGACTCTCAAAGTTGAGCTCTGCCAAAGCCTGACCTCTGTGAGTATGGGAGCGCTGCACCAAG
GCACACTCAGCACAGGAGCTGCAGGAGTGGTCCGGCGCACAGCAGGCTGTGGAGCTGCGGGGGCAGGCGGC
CTGGCAGGACGGGCTGGTGGCCTACCAGGAGCGGCTGCTGGCCGAGTACCAGCGCAGCAGCAGTGAGGTCC
TTGTGCTGGCAGAGACCCTTGATGGAGTGCCTGTACCTGCAACCAGCCCCTGATGTACCAGGCCAGGAG
AGGAAGACCCAGTACAGCTGGACGTTTGGCGTCCACTCTGAGGAGCCCCTGCTACACGTGGCCCTGCTGAA
GCAGGAGCCAGGAGCCGACTTCTCTCTGGTGGCTCCCGGCTCCCGCCAGGCCGGCTCTACGCACGGGGTG
AGCGCTTCCGTGTGCCAGCTCCACTGCCGACTTCCAGGTGGGAGTGCCTGTGCAGGCTGCCTCGTTCCGGC
ACCTTTGAGCAATGGGTGGTCTTCGACTTTGGCCGCCGGCCGGTGTGCTGTACAAAAGCTGGGGCTGCAGCT
GGGCCAGGGGCGTCGCCAGGACCCTGCAGGAATCTGGCGCTCGGCCACCCTGAGGAGATGGAGCGCTGGC
ACACTGGCAACCGCCACGTGGTGCCTGGCGTGGAGCGGACGGCCGAGCAGACGGCCCTGATGGCCAAGTAC
AAGGGCCCTGCCCTGGCCCTGGAGTTCAACCGCAGCAGCGTGGCCTCGGGCCCCATCTCACCAACCAACTA
TCGGCAGAGGATGCACCAAGTTTCTCTATGAGGAGGAGGCGGGCTCAGCAGCAGCTGGTGGCCAAGCTGACCC
TGCGGGGGCAGGTGTTCTGAAGACGGCATTGCAGACGCCAGCGCTGAACATGCTCTTCGCGCCTCCGGGA
GCACTGTACGCAGAGGTCCCCGTCCCCTCCTCCCTGATGCCAGACACAGACCAGGGCTTCTGCTGGGCCG
GGCGGTACAGCACAGCCCTGGTGGCCCCGTGTACCTGCACCCGACAATACGGTGTTCGAGGTGCGGCTGGAGA
GGCGGGCCAGCTCAGAGCAGGCGCTGTGGCTGCTGCTTCCGGCCCCGTGCTGCTTGGCCCTGGGGCTGCAG
CCTGAGGCCCCGCTGGTCTGGAGGTGCAGTTCCAGATTGACCCGATGACCTTCCGCCTCTGGCACCAGGC
AGTGGACACACTGCCTGAGGAGCAGCTGGTGGTGGCCGACTTGGCCACCTGCGCCCTGCCAGACCTTGGT
CTGTCCCACCTTGGCGGTGGCAACCGCAAGCAGGAGCTGGCCGTGGCGCTCATCGGGCTGGGGCCCT
GGGGATGGGAGGCGTGTCCCCCGCTACTCATCTATGGCCCCCTTTGGCACCGGCAAGACCTACACGCTGGC
CATGGCCTCCCTGGAGGTTCATCCGGAGGCCTGAAACCAAGGTGCTCATCTGCACACACACCAACAGTGCCG
CCGACATCTACATCCGGGAGTATTTCCACAGCCACGTGAGCGGCGGCCACCCCGAGGGCCACTCCTCTCCGT
GTGATGTACACGACCGGCCGCTGAGCCAGACGGACCCAGTCACGCTGCAGTACTGTTGCCTGACCGACGA
CCGCCAGGCTTTCCGCCCGCCACACGGGCAGAGCTGGCGCGGCACCGCGTGGTGGTCACCAACACCTCCC
AGGCCCGTGAGCTCAGGGTGCCGGTCCGCTTCTTCTCCACATTCTCATCGATGAGGCGGCCAGATGCTG
GAGTGCAGAGGCCCTACCCCGCTGGCCTATGCCTCGCACGGCACCCGCTCGTGTGGCGGGCGACCAT
GCAGGTACACCCCGGCTGTTCAGTGTGGCCAGGGCCGGGCGGCCGAGCACACGCTGCTGCACCGCCTCT
TCCTGTGCTACCAGCAGGAGACTCACGAGGTGGCGCGGCAGAGCCGCTGGTCTTCCACGAGAATAACGC
TGCACGGACGCCATTGTGAGCTTCATCTCGCGGCACTTCTACGTGGCCAAGGGCAACCCCATCCACGCCAG
GGGCAAGGTTCCGCCCCACCCCGGCACTACCCGCTCATGTTCTGCCACGTGGCGGGCAGCCAGACCGGG
ACATGTCCATGGCGTCTCTGGCTGAATCTGGCTGAGATTGCGCAGGTGCTCGAGAAGGTGCAGGAGGCCTAC
AACACCTGGCCAGCTGCTGGGGCGGCCGCGAGCAGAGGTGCATCTGTGTGTTTTCCACGGTGCCAGGT
CAGTGCAGTGAAGCAGGAGCTGAGGAGGCGGGACCTAGGCCAGGTGTCTGTGCGCAGTTTTGAGATCCTGC
CAGGGCGGCAGTTCCGGGTCTGTGGTGTGCTCAGCACTGTGCACACCTGCCAGAGCCTGCTCAGCCCTGGGGCA

CTGGCCCCTGAGTTCTTCACCGACGCCCCGCGTGCTCAACACCGTCCTGACCCGCGCCCAGTCCCAGCTGGT
GGTAGTGGGGGACGCCGTGGCCCTCTGCTCCTTCGGGGCCTGCGGCAAGCTCTGGGAGAGCTTCATCCGTG
AGTGCGTGGAGCGGCACAGTGTCTGCCCCGAGGGCCTGTCCATGGAGCAGGTCGAGCAGGGTGTGGCGCAG
AGACGGCGCTGGCCTCCCCGAGGCACACAGGCTGGGGCAGCGGGGAACCTGGGAGGCTGCCCCAGAGCCAGT
AGGGGACCTGGCCGAGGAGCAGGCGGCTGTGGTGACGGCCATGGTGAAGGCAGAGCCGGGAGATGAGGCTC
TGAGCCCAGCATCCCCTGACATCACGGCAACCACAGCGCAGACGGAGGCTGCGGCAGCACCAGCAGGAGAC
GCAGTGAAGGAAGACGTGGTGCCCGGGGCCTGTGCGGCAGGAGCGGCTGCTGCAGCGGGCGTGGAGTCCAC
GGAGGCTGAGGATGCAGAGGCTGACTTCTGGCCGTGGGACGGGGAGCTCAACGCTGACGACGCCATCCTAC
GGGAGCTTCTGGACGAGAGCCAGAAGGTGATGGTGACCGTCGGGGAGGACGGGCTGCTGGACACTGTCGCC
AGGCCCCAGTCCCTGCAGCAGGCCCCGGCTGTACGAGAACCTGCCCCGGCTGCGCTACGGAAGCTGCTGCA
CGCGGAGCCCCGAGCGGTACCGCCACTGCTCTTTCTGTCAGAGACCTTCGAGCGGGCGTCAGCCATCCCCG
TGGACGATGCCCTCTCGGGCCCCATCCAGGTCAGGGGCCGCTGGACTGTGGGATGGCCTTCGCCGGGGAT
GAGGTGCTGGTGACGCTCCTTTTCGGGAGACAAGGCGCCCCGAGGGGCGGCTTCGGGGCCGCGTGCTGGGCGT
GCTGAAGAGGAAGAGGCACGAGCTGGCGTTTGTGTGCCGCATGGACACGTGGGACCCGCGCATCATGGTCC
CCATCAATGGCTCCGTGACCAAGATCTTCGTGGCCGAGCTGAAGGACCCATCGCAGGTCCCCATCTACAGC
CTCCGGAAGGGCCGGCTGCAGCGTGTGGGGCTTGAGAGGCTCACCGCCGAGGCCCCGGCACAGCCGGCTCTT
CTGGGTCCAAATTGTCTGTGGCGGCAAGGCTTCTACTACCCGCTGGGCATCGTCCGGGAGGTGCTGCCTG
AGGCCAGCACCTGGGAGCAGGGCCTCCGCATCCTCGGCCTGGAGTACAGCTTGAGGGTGCCCCCGTCCGAC
CAGGCCACCATCACCAGGTGCTGCAGAAATACCACACGGAGCTTGCCCGGGTTGCCGGCCGCCGAGAGGA
CTGCCGCGCCTTCTTGACCTTCACTGTGGACCCCCAGGGCGCTGCAACCTCGATGATGCCCTCAGTGTCC
GAGACCTGGGTCCCAGGTGCGAGGTGGCTGTGCACATCACTGATGTGGCCAGCTTCGTGCCAGGGACGGG
GTGCTGGACGTGGAGGCGCGAAGGCAGGGCGCTGCGTTCTATGCCCCGGCAGGGAGCCAGTGCCCATGCT
GCCGGCCAGCCTCTGCCAGGACGTCTCAGCCTCCTGCCTGGCCGGGACCGCCTGGCCATCTCCCTGTTCC
TCACCATGGAGAAGGCCAGTGGCCAGCTGAAGAGCCTGCGCTTTGCACCCTCCGTGGTCCAGTCTGACCGC
CAGCTGTCTACGAGGAGGCGGAGGAGGTGATCAGGCAGCACCCGGGTGCCGGCCGTGAGCTGCCGGCCCCG
CCTGGACTCCGTGGACGCTGCGTGTGGCCGCGTGCTACTTCTCTCGGCTGCTGCGCCGGCACCGCCTGC
GGTCCGACTGCTTCTATGAGCAGCCGGACGAGGACGGCACCCCTGGGCTTCCGCGCGGGCCACATCATGGTG
AAGGAGTACATGATTAGTTTAATAGGCTCGTGGCTGAGTTCCTGGTGGGCAGCGAGTGCACGCGGACGGT
CACGCTCTGCGGTGCGAGCCAGCACCCCGCAGCCAGCTCAAGGCCCTGTGTGAGAAGCATGGGACC
GGGTGCCCTGTCACTGCACCTCGGCCACCACCTGCACGGCGGGGGCAGTCCCCCGACACGCGGCTG
CACCTCCTGGCCTCCCTCTGGAAGCAGGTCCAGTTTGCTGCCCGCACCCAGGACTACGAACAGATGGTGGA
CTTGGTCAACACGGACGACATGCACCCATTCTGGCTCCTGCAGGCCGCGACCTCCGCAAGGCCCTGGAGC
GCTCGGCGTTTCGGCCGTGCGCCCCGGGGCCACCAGCAGCAGGGCGGCCACTACTCGCTGCAGGTGGACTGG
TACACGTGGGCCACCTCGCCCATCCGCAGGTACCTGGACGTGGTGTTCAGCGGCAGATCCTGCTGGCGCT
GGGCCATGGGGCTCTGCCTACTCTGCCAGGGACATCGATGGGCTCTGCCAGGCCCTTCAGCCTCCAGCACG
CACTTGCCCAGAGCTATCAGCGGCGGGCGCGCAGCCTGCACCTGGCCGTGCAGCTCAAGGCCACGCTCTG
GACAAGCTGGGCTTCGTGGTGGACGTGGAGGCGGGCTCCCGCTGCTTCCGGCTGCTCTTCCCCAGCAACCG
GGAGACGCTGCCTGACCCCTGCCCCGTCCCCTACGGCTCCCTGCAGCTGGCCGAGCACCCCCACGCCCTGG
CAGGCCGGCCGGGCTGCGGCTCCTGTGGCGGCGCCGTGTCTACTCAGCGCAGGGATCCAGCCCGCCCTG
CCACTGCCTGGCACTGTGCCGGACCCACACACCTGGCCGTGGAGACGGCCCTGTGGAAGCAGCTGCTGGA
GCTGGTGGAGCTGCAGCGCTGGCCGGAGGCGGCTGCTCTCATCCAGGAGAAGGGCGAGGCGTCCCAGCGGC
GGGAGCTGGTGCAGGTGCAGCGGAGCCACTGTGGCCATTTCTGGAGGTGGCCCGGGAGCTGGGCAGTGGG
GACACCCTGCAGGTGCAGCTCGGCACCAGCCTGCAGCACGGCTTCTGGTACCGAGCCCTCAGCTCTGGAC
GGTGGCACCGGGCTTCAGCCTCTGCCTGGAGCACGTGGAGCGGCCCGGAGACTGCTTCTCAGGCCGTGTGT
ACCGGGCCCCGAGGGACCGGTACCGCGACGTGGATGAGTACGCCTGCGTGTGGGAACCATCTGCGCCCTG
GAGTCGGCCACCGCGCGGTTGCCGAGAATGACTCCGTCACTTCAGCACCTGAGTGTCTCTCTGGGAGGC
GTACGGACGCCGAGGGGACGTGCAGGGCGCCTTCGCTGGAGGCCGCTTCTCGAGGAGAAGTGTG
CCGACATCAACTTCAGCTGCTGCTACCTCTGCATCCGGCTCGAGGGGCTGCCGGCTCCACGGCCAGCCCA
CGCCCTGGGCCCAGCAGCCTCGGCCCTGGCCTGAATGTTGACCCCGGCACGTATACCTGGGTGGCCACGG
GCAGACGCAGGACTGGGACCAGGAGCGCCGGGCAGACCGGCAGGAGGCTCCCAGACGGGTGCACCTCTTCG
TCCACCACATGGGCATGGAGAAGGTTCCGGAAGAGGTGCTGAGGCCGGGCACCCTGTTACCGTTGAGCTG
CTGCCCAAGCAGCTTCTGATCTCCGCAAGGAGGAAGCCGTGCGTGGACTAGAGGAGGCGTCCCCGCTGGT
CACCAGCATCGCACTGGGCCGGCCTGTCCCGCAGCCCTCTGCAGAGTGATCCCAGCAGGTTCTGGAGC
GGCAGACCTACAACATCCCCGGAGGCGGCCACAAGCTGAACCCAGCCAGAACGTGGCGGTGAGGGAGGCT
CTGGAGAAGCCTTTCACGGTCATTACGGGCCACCAGGTACAGGGAAGACGATCGTGGGCTCCACATCGT
ATTCTGGTTTCATAAATCAAACCAGGAGCAGGTGCAGCCGGAGGGCCCCCCCCGTGGGGAGAAGCGGCTGG
GGGGTCCCTGCATCTTGTACTGCGGCCCTCCAACAAGTCGGTGGATGTCCTGGCAGGACTGCTCCTGAGA

AGGATGGAGCTGAAGCCCCTCCGTGTGTACAGTGAGCAGGCTGAGGCCAGCGAGTTCCCAGTGCCGCGTGT
GGGCAGCAGGAAGCTGCTCAGGAAGAGCCCCGGGAGGGGAGGCCGAACCAGAGCCTCAGGAGCATCACCC
TGACCACCGGATCCGGCAGGCCCCCAACCTTACTCGTCGGAAATCAAGGCCTTTGACACCCGGCTGCAG
AGAGGGGAGCTCTTCTCCAGGGAGGACCTGGTCTGGTACAAGAAGGTCTTGTGGGAGGCTCGGAAGTTTCA
GCTGGACCGGCATGAGGTATCCTCTGCACCTGCTCCTGTGCAGCCTCTGCCAGCCTCAAAATCCTGGACG
TGAGGCAGATCCTTGTGACGAGGCAGGCATGGCCACGGAACCTGAAACCCTCATCCCCCTGGTGCAGTTT
CCACAGGCCGAGAAGGTGGTTCTTCTCGGAGACCACAAGCAGCTGCGGCCTGTGGTCAAGAATGAGCGGCT
GCAAAACCTGGGTCTGGACCGGTCTCTGTTTCGAGCGGTACCACGAGGACGCACATATGCTGGACACTCAGT
ACCGCATGCATGAGGGCATCTGTGCCTTCCCCTCTGTGGCGTTCTACAAGAGCAAGCTGAAGACGTGGCAG
GGCCTGAGGAGGCCGCCAGTGTCTGGGCCACGCTGGCAAGGAGAGCTGCCCTGTATCTTTGGCCACGT
GCAGGGCCACGAGCGGAGCCTGCTGGTGTCCACGGACGAAGGAATGAGAACTCCAAGGCCAACCTGGAGG
AGGTGGCTGAGGTGGTCCGTATCACCAAGCAGCTGACCTGGGGAGGACCGTAGAGCCCCAGGACATCGCC
GTCCTCACGCCCTACAACGCGCAGGCCTCTGAGATCAGCAAGGCCCTTCGGCGAGAGGGCATCGCCGGGGT
GGCCGTGTCTCCATCACCAAGAGCCAGGGGAGCGAGTGGCGCTATGTGCTGGTGAGCACCGTCCGCACCT
GTGCCAAGAGCGACCTGGACCAGCGGCCACCAAGAGCTGGCTCAAGAAGTTTCTGGGCTTCGTTGTGGAC
CCCAACCAAGTGAATGTGGCTGTACGCGGGGCCAGGAGGGGCTCTGCCTGATCGGAGACCACCTCCTTCT
GCGCTGTGCCCCCTCTGGCGTAGCCTCTGGACTTCTGCGAGGCTCAGCAGACCCTCGTGCCTGCCGGCC
AGGTGCGCGTCTGCAGGAGGCCAACTATGCCTTCTCTGAGAGCCCTCTCCACCTGCAAGGTGCCAGGACTG
GGAGGGAAAGTCCAGGGCCCCCCCCACCCTCCCCACCACCCTCCGCCATCAGCCTGCCTGGGCCAGCCTGCC
TCCTGGCCTCAGGATCTCCCTGGGGCAGGAAGTGGGTGGACTTGGAGGAGGAACGGCAAGGGCCGGTCCCC
ACACTCTTGCTCCTCCTGGGCATCTGGGGACAGGAACACCTCTCAGGGTGGCCAAGAGGGGCTTCTTGGG
ACAGTGCAAGGAAGTTCTGCTGTCCCTGGGAAGTCTCAGAACCAGGAAGGAAACCCTGTGGAGGCTGCCC
TTTGACCTTTGGACGCCACCTGTAATCACTCTGGATGGTGTCTGTGGAGTTTCAAGTTTATTTTCTATTTAA
ATGAACTAAAAGCCAGCATCCTGCCGGGCGTGGTGGCTCACGCCCATATCCAGCACTTTGGGAAGCCGAG
GCGGGCAGATCACCTGAGGTGAGGATTCGAGACCATCCTGGCCAACATGGTGAACCCCGTCTCCACTAA
AAATACAAAATTAGCTGGGCGTGGTGGCGGGCGCTGTAATCCCAGCTACTTGGGAGGCTGAGGCAGGAGA
ATCGCTTGACTCCAGGAGGCGCAGGCTGCAGTGAGCTCTGATGGTACCACTGCACTCCAGCCTGGGTGACA
GAGCGAGACCCTGTCTTAAAAAACAACAAACCAAGCATCTGTTACTGGAACAGAGACCTCAGCC
CAAGCTCAGGACAAGGAGGCTCCCTGGGAGAGGGGCTTTCTCCACCATCACCCTGTGTCTTCTCAG
GGGCTGTGGAGGGCAGGCCAAAGCCAGGGGCCACCCCGCCCCACCCACCCACCCACCCCTCTGAAAT
GTGAAAAGCCTGCACTCTTCTGTGGGCTGCGCAGTGGGCTCGGGGGTGGGGGGTGCCGGGGCGATGCTT
CCACCCTGGACTGAGTGTTCGGGGCAGCCTGCTCGGCTGTATGTTTCTCGCACGCTCACCCGCTTCAGTGC
GGCTCTGTCCCTGCTGCCGCTCCAGTCTGAGGGAGGGGCTTGCCCCACCTTCTACATTCCAATTTTTAT
ATCTTTGAATTATGTGATTAGATATTAATTTAATGATAAAACCACTCTGAAAGCTCTTCTCA

VAPPGSTLLPNSPAATRGPSLARLCLVDLCLGCSRCTQRLNESTYVLRVVEHDCSREILLARFKQATKSK
VWRVVGCRPTFPRPLCYQVCHYYSPGLGRRHRNRCTFARSREEALVWTFERQHNQLRLWLKAEVQSGAQ
GGAGRAADAILTEFGGRFELLCSLCFRRCPPICRVDPQGGCPEHGACPSLLAHVSAEGRRKQFVVRPR
PRAGQPPAYCRFVGRGQPCWRGESRCQFAHSAVEMAVWEAEQLGGLQRGDLTPPAPDGDGRTAPLGQPPG
AQLYCPACLVTCHSQEAFENHCASSEHAQMVAFDQALPWEHRSPPPGLSKFELCPKPDLCYGDCTKAHS
AQELQEWVRRQTAVELRGQAAWQDGLVPYQERLLAEYQRSSEVLVLAETLDGVRVTCNQPLMYQAQERKT
QYSWTFVAVHSEEP L LHVALLKQEPGADFSLVAPGLPPGRLYARGERFRVPSSTADFQVGVRVQAASFQTFE
QWVVFDFGRRPVLLQKLGLQLGQRRPGPCRNLALGHPEEMERWHTGNRHVVPVERTAEQTALMAKYKGP
ALALEFNRSSVASGPI SPTNYRQRMHQFLYEEEAQQQLVAKLTLRGQVFLKTALQTPALNMLFAPPGALY
AEVPVPSSLMPD TDQGFLLGRAVSTALVAPVPAPDNTVFVRLERRASSEQALWLLPARCCALGLQPEA
RLVLEVQFQIDPMTFRLWHQAVDTLPEEQLVVPDLPTCALPRWSVPPLRRGNRKQELAVALIAGWGP GDG
RRVPLLIIYGPFGTGKTYTLAMASLEVIRRPETKVLICTHTNSAADIYIREYFHSVSGGHPEATPLRVMY
TDRPLSQTD PVT LQYCCLTDDRQAFRPPTRAELARHRVVTTTSQARELRVPVGF FSHILIDEAAQMLECE
ALTPLAYASHGTRLVLAGDHMQVT PRLFSVARARAAEHTLLHRLFLCYQQETHEVARQSRLVFHENYRCTD
AIVSFISRHFYVAKGNPIHARGKVPPHPRHYPLMFCHVAGSPDRDMSMASWNLAEIAQVVEKVQEAYNTW
PSCWGGREQRCICVVS HGAQVSALRQELRRRDLGQVS VGSFEILPGRQFRVVVLSTVHTCQSLLSPGALAP
EFFTDARVLNTVLTRAQSQLVVVGDAVALCSFGACGLWESFIRECVERHSVCPEGLSMEQVEQGVQRRR
WPPRGTQAGAAGNWEAAPEPVGD LAEEQA AVVTAMVKAEPGDEALSPASRDITATTAQTEAAAAPAGDAVK
EDVVPGACAAGAAAAAGVESTEAEADAEADFWPDGELNADDAILRELLDESQKVMVTVGEDGLLDTVARPE
SLQQARLYENLP PAALRKL LHAEPERYRHCSFVPETFERASAIPLDDASSGPIQVRGRLCDGMAFAGDEV L
VQLLSGDKAPEGR LRGV LGLKRKRHELAFVCRMDTWDPRIMVPINGSVT KIFVAELKDPSQVPIYSLRK
GRLQVRGLERLTAEARHSRLFWVQIVLWRQGFYPLGIVREVLPEASTWEQGLRILGLEYS LRVPSPDQAT

ITKVLQKYHTELGRVAGRREDCRAFLTFTVDPQGACNLDDALSVRDLGPRCEVAVHITDVASFVPRDGVLD
VEARRQGAIFYAPGREPVPMPLPASLCQDVLSLLPGRDRLAISLFLTMEKASGQLKSLRFAPSVVQSDRQLS
YEEAEVIRQHHPGAGRELPARLDSVDACVVAACYFSRLLRRHRLRSDCFYEQPDEDGTLGFRAAHIMVKEY
MIQFNRLVAEFLVGSECTRTVTPLRWQPAPRSQQLKALCEKHGDRVPLSLHLGHHLHGSGGSPDTRLHLL
ASLWKQVQFAARTQDYEQMVDLVTTDDMHPFLAPAGRDLRKALERSAFGRCAARGHQQQGGHYSLQVDWYTW
ATSPIRRYLDVVLQRQILLALGHGGSAYSARDIDGLCQAFSLQHALAQSYQRRARSLHLAVQLKAQPLDKL
GFVVDVEAGSRCFRLLFPSNRETLDPDPCVPYGSLLAEHPHALAGRPGLRLWRRRVYSAQGSSPPLPLP
GTVDPDHTLAVETALWKQLLELVELQRWPEAAALIQEKGEASQRRELQVQRSHCGHFLEVARELGSGDTL
QVQLGTSLQHGFVLPSPQLWTVAPGFSLCLEHVERPGDCFSGRVYRAPRDYRDVDEYACVWEPFCALESA
TGAVAENDSVTLQHLSVSWEASRTPQGQLQGAFLRLEAAFLLENCADINFSCCYLCIRLEGLPAPTASPRPG
PSSLGPGLNVDPGTYTWVAHGQTQDWDQERRADRQEAPRRVHLFVHHMGMEKVPEEVLRPGLFTVELLPK
QLPDLRKEEAVRGLEEASPLVTSIALGRPVQPLCRVIPSRFLERQTYNIPGGRHKLNPSONVAVREALEK
PFTVIQGGPGTGKTIIVGLHIVFWFHKSNEQVQPGGPPRGEKRLGGPCILYCGPSNKSVDVLGALLRRME
LKPLRVYSEQAEESEFPVPRVGSRLLRKSPREGPNQSLRSITLHHRIRQAPNPYSSEIKAFDTRLQRGE
LFSREDLVWYKKVLWEARKFELDRHEVILCTCSAASASLKILDVRQILVDEAGMATEPETLIPLVQFPQA
EKVVLLGDHKQLRPVVKNERLQNLGLDRSLFERYHEDAHMLDTQYRMHEGICAFPSVAFYKSKLKTWQGLR
RPPSVLGHAGKESCPVIFGHVQGHESLLVSTDEGNENSKANLEEVAEVRITKQLTLGRTVEPDIAVLT
PYNAQASEISKALRREGIAGVAVSSITKSQGESEWRYVLVSTVRTCAKSDLDQRPTKSWLKKFLGFVDPNQ
VNVAVTRAQEGCLIGDHLRLCCPLWRSLLDFCEAQQLVPAGQVRVCRRTMPS

AUG initiation = 294.6 kDa
GUG initiation = 322.3 kDa

+++++

#3

NM_001010858

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

TCTAGCGAGGTGACAGCGTAGAACAGGTGCGCGTCCCCGGCGTTGGCGTCTTCGTCCTGTTGCTGGTCTC
CGTCCGGTCGCCGGCGTCTAGGTCTCCGGCCCTCCCCAGCCGCTCCTGCGCCCTTGCCGGCCCCGCCGCC
CGCAGCCCTGGCGCTCCCTGCGGGCCCCGCCAGGCGCGCTGCGCCCTGTGCCAGCGCGCCCCGGGAAC
CGGTGCGCGCCGACTGCGGCCACCGCTTCTGTGCGGCGTGCGTGCTGCGCTTCTGGGCCGAGGAGGACGGG
CCCTTCCCGTGCCCCGAGTGCGCCGACGACTGCTGGCAGCGCGCCGTGGAGCCCGGAGGCCCGGCTCAG
CCGCCGCTTCTGGCGCTCGAGGAGGCGGCCGCGCGCGCCGCGCGACGGCCCGGCGAGGAGGCGCGC
TGCAGCTGCTGTGCCGCGCCGACGCCGGCCGCTCTGCGCCGCTGCCGTATGGCTGCGGGCCCCGAGCCG
CCCGAGTGGGAACCGCGCTGGAGGAAGGCGCTGCGCGGCAAGGAGAACAAGGGGTCTGTGGAATCATGAG
AAAGGACTTGAATGACGCCCGGGACCTGCATGGCCAGGCAGAGTCAGCAGCTGCAGTGTGGAAGGGACACG
TGATGGACCGTAGGAAGAAGGCACTGACCGACTACAAGAAGCTGCGGGCCTTCTTTGTGGAGGAGGAGGAG
CATTTCTGCAGGAGGCTGAGAAGGAGGAGGGGCTCCCTGAGGACGAGCTGGCTGACCCCACTGAGCGGTT
CAGGTCACTGCTGCAGGCGGTCTCGGAGCTGGAGAAGAAGCATCGCAACCTGGGCCTCAGCATGCTGCTGC
AGTGAATGGCGCCAACCCGTGGCAGTCCCAGAGCTGGAGGCAGGAGGATGGATCCTCATCTCCATGGGAAGT
GTCAGCGTGTGGCTGCCAGGGAAGCGTGGCAGGCGCCTGGCCTTGGGTCCATCTACATAGTTGCGTGTTC
ACAATGTCCATTTATCCTTACCCCGAGGCGTGTTTTGGGGGCTGCAAACACCTCCCGGTAGAGGCTGGA
CCTGAGGACCCTTCCACCTGTGCGCGTCCCTTCTGAAGTCCTAGCCACAGCCCATCTCCATGAGTCCC
GGCAGCTCTGGGTGATGCCCTTCCCTGGTCACCCATCTGCCCTCACCTCGTCATCCAGGGACCCAGACCC
TGACCTTCCATGTGGGCCCCACAGATCCTTGGCAGGTACCTGAGGTGCACCATGAGTGTGGATTGGGG
TTAGCATCCAGAAAGAAGAATGCGCATGACGCTCTGTGAAGGCTGGAAGTCAAGTCTTCAAGGAGAGAAG
GAAGACTGGATTGACCTTGATGCCTCCTGAGGAGGCGGCCCCCTCTTGAGGTGGGCGTGGGCCCCGGCC
AGCCTTATCCAAGTCGCTCTGTCCACCTCCCCCTTCTGGCCCCCACCCTACTCTGTGCTCCAGGAGC

CCTCCCTGTGCTCCACCTGCCTCCGCAGAAGGAAGCCTCTTTCTCTGTTTCCCTGGGTGAGGGGGCTGGCA
GGTGGCTAACCCCATTTAGCATCTCCAGGCCCTGCCATCGTGTCTCATCTTGCTGTTATCTCTAGCTCTTT
CCCTCCTCCCATTTCTTTAGTAGTTGAATTTTGCAAAGCTTGAGCAGTAGCTCAGTTGCCTGCAGCATC
CTTGTGTGTAGATAAATTAGTCGACAGAACTCAGCACTGGGGACAGGATTGCAAAGTCGGGGACATAGAT
GCAGACAGTTGTTGAGATTTGGGGATAGCCGGGCTTGTGAGCGGTGCCCATTTCCAGATGAAGCCTTTCAG
CCCTTCTGAGTCCCCGGCCCTTGGTGCGATGTCTGTGAGTTTGACCTGCCAGCGTGTGGGCTGGCTCAAT
GCTGAATAAAGTGGGTTTGTGTGAGCTCGTTTGCTTCCGTGTGTCCACCTGGCCTCTTCCCCCTGC
CCTGGCCACCCTCCAGTGTCAAAGGAACTTCCTCGTGACACGTGCTAAAGCATGGTGAGGAGGACTTTGA
TTGGGACCATTGAGATGGGTGTGGGACCCTTTCCTTGGGGCCTGGGGGGAGATGGGGCTCCACCCGACGT
AGCAGGGCAGGGGTTGGAGGAGCGAGGAGCAGTATAGGGTCCATGGGTGGGAATGACTGTGAGGAGACATC
AGGGCTGAGGGGGCTCTGGCTAAACCCACCTCACAGAGTCCTTGCTGCAGGCAGGCAGGCATCAGACAT
TGGCTGCAAACGGTCAGAGAGGAACCCAGTCAGGTACCATTGAGGGTGGTCAGATATTATGGTTAACCAAA
TTAGGGTTCTTGCTAAAACTGGATTTTATAAGAAAGGGCAAAGAGGGCCCTAGGAGAAGATTCCAGAGCCT
GGCCAGAGTTTGGCCAAGTAGAGAATCTTTGTGACGACGCCAACACATCCCGACCCTGAGACCTCCAGTT
TGTCTTTCTCACTGTCTCCGCCTGCTGCAGTCTGCTGTATCCCTGAGCATCCCTGCCCTGCCCTGCACA
CCTGTGATGCTTGCCCGACAGGTCCTGATGGCAGAGTCTCCACAACATCAGTGTCTCCACATCACCAGG
TCCGACAGTGGCTTACCATCCTCACCTAACCTAGCTGACCAGCAACATCCACCCTGTCAATCACAACCT
CTTTCTATTTAAGAAAATTATATATTTATGGGGCACAGTG
CGTCTGTTGCTGGTCTCCGTCCGGTCGCCGGCCGTCTAGGTCTCCGGCCCTCCCCAGCC

LALPAGPAEAACALCQRAPREPVRADCGHRFCRACVVRFWAEEDGPFPCPECADDCWQRAVEPGRPLSRR
LLALEEAAAAPARDGPASEAALQLLCRADAGPLCAACRMAAGPEPPEWEPRWRKALRGKENKGSVEIMRKD
LNDARDLHGQAESAAAVWKGHVMDRRKKALTDYKKLRAFFVEEEHFLQEAKEEGLPEDELADPTERFRS
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

CTCGGGCGCGCTGGCCCTGGGGACGCCGAGGGCGGCTGCGACGCGCCGAGAGGCCGCGGCTCTCCACCT
GTCACCCTGGCCCTTCTCTGCTTGGATGGTGTCTTCTCTCCTCAGCCGAGAATGACTTCGTCCACCGGAT
CCAGGAGGAAGTGGACCGCTTTCTGCTGCAGAAGCAGCTGTCAAAGGTTCTTCTTTCCCCCACTCTCCA
GTCGCCTCCGGTACCTGATCCATAGAACAGCAGAGAATTTTGTCTCTTGAGCAGCTTCTCCGTTGGGGAG
GGCTGGAAGAGGAGGACGGTCATCTGTACCAGGACATCAGGGTACCCAGTTTCGGATGGCCTCTCTGGCCC
CTGCCGCGCTCCTGCCTCCTGCCCCAGCAGGTACCACGGTCCTCGGCCATCTCCAACCAAGGAGCAGCTG
CGGTTCCCCGAGGTGCCCGGGCTGGCCGGTGGTATCGTGACGCAAGCCTGACCAGCCTTTGTATGTGCC
CGGGTGTGCGCAGGCAGGAAGAATGGGGGCTGACCTCTACCTCGGTGCTCAAGAGAGAGGGCCCCAGCTGG
CAGGGACCCAGAAGAGCCTGGAGATGTTGGTGTGAGACCCCAACTCTGATCAGGGACTCCCTGTGCTGA
TGACTCAGGGAACAGAGGACCTAAAGGGCCCAGGACAAAGGTGTGAGAATGAGCCACTGCTGGACCCTGTT
GGCCCTGAGCCTCTGGGGCCTGAGAGTCAGTCAGGGAAGGGAGACATGGTGGAGATGGCCACACGGTTTGG
GTCCACCCTGCAGCTAGACCTGGAAAAGGGGAAGGAGAGTCTGTTGGAGAAGAGGCTGGTGGCAGAGGAGG
AAGAGGACGAAGAGGAGGTGGAAGAGGATGGCCCCAGCAGCTGCTCGGAGGACGATTACAGTGAGCTGCTG
CAGGAGATCACAGACAACCTGACGAAGAAGGAGATTAGATAGAGAAGATCCATTTGGACACATCTCCTT
CGTGGAGGAGCTGCTGGAGAGAAGGACCTTGCCACGTGGTAGAGATCTATGACTTTGAACACGCGCTCA
AGACGGAGGACCTGCTGGCAACGTTTTCTGAGTTCCAAGAGAAGGGGTTAGGATTAGTGGGTGGATGAT
ACTCACGCACTCGGCATCTTCCCTGCCTGGCCTCAGCTGCGGAAGCCCTGACCCGGGAGTTCTCGGTGCT

LALLCLDGVFLSSAENDFVHRIQEELDRFLLQKQLSKVLLFPPLSSRLRYLIHRTAENFDLLSSFSVSGEGW
 KRRTVICHQDIRVPSSDGLSGPCRAPASCPSPRYHGPRPISNQGAAVPRGARAGRWYRGRKPDQPLYVPRV
 LRRQEEWGLTSTSVLKREAPAGRDPEEPGDVGAGDPNSDQGLPVLMTQGTEDLKGPGQRCENEPLLDPVGP
 EPLGPESQSGKGMVEMATRFGSTLQLDLEKGKESLLEKRLVAEEEEDEEEVEEDGPSSCSEDDYSELLQE
 ITDNLTKKEIQIEKIHLDTSSFVEELPGEKDLAHVVEIYDFEPALKTEDLLATFSEFQEKGFRIQWVDDTH
 ALGIFPLASAAEALTREFSVLKIRPLTQGTKQSKLKAQRPKLLRLVKERPQTNATVARRLVARALGLQH
 KKKERPAVRGPLPP

+++++

NM_003760

Synonyms: eIF4GII; EIF4G3

[illegible]

TTAAATTCAAGAAGGAGCCCTGTCCCAGCTCAAATAGCTATAACTGTACCAAAGACATGGAAGAAACCAA
AGATCGGACCCGAACCACTGAAGAGATGTTAGAGGCAGAATTGGAGCTTAAAGCTGAAGAGGAGCTTTCCA
TTGACAAAAGTACTTGAATCTGAACAAGATAAAATGAGCCAGGGGTTTCATCCTGAAAGAGACCCCTCTGAC
CTAAAAAAGTGAAGCTGTGGAAGAAAATGGAGAAGAAGCTGAGCCAGTACGTAATGGTGCTGAGAGTGT
TTCTGAGGGTGAAGGAATAGATGCTAATTCAGGCTCCACAGATAGTTCTGGTGATGGGGTTACATTTCCAT
TTAAACCAGAATCCTGGAAGCCTACTGATACTGAAGGTAAGAAGCAGTATGACAGGGAGTTTCTGCTGGAC
TTCCAGTTCATGCCTGCCTGTATACAAAAACCAGAGGGCCTGCCTCCTATCAGTGATGTGGTTCTTGACAA
GATCAACCAACCCAAATTGCCAATGCGAACTCTGGATCCTCGAATTTTGCCTCGAGGACCAGACTTTACAC
CAGCCTTTGCTGATTTTGGAAAGGCAGACACCTGGTGGAAAGAGGCGTACCTTTGTTGAATGTTGGGTACGA
AGATCTCAACCTGGCCAAAGAAGAGAACCCAGAAAGATCATCACAGTTTCTGTAAAAGAAGATGTACACCT
GAAAAAGGCAGAAAAATGCCTGGAAGCCAAGCCAAAAACAGACAGCCAAGCCGATGATCCCCGAAACATTA
AAACCCAGGAGCTTTTTAGAAAAAGTTTGAAGTATCTTAAATAAATTGACACCACAGATGTTCAATCAACTG
ATGAAGCAAGTGTGAGGACTTACTGTTGACACAGAGGAGCGGCTGAAAGGAGTTATTGACCTGGTCTTTGA
GAAGGCTATTGATGAACCCAGTTTCTCTGTGGCTTACGCAAACATGTGTGATGTCTAGTAACGCTGAAAG
TACCCATGGCAGACAAGCCTGGTAACACAGTGAATTTCCGGAAGCTGCTACTGAACCGTTGCCAGAAGGAG
TTTGAAAAAGATAAAGCAGATGATGATGTCTTTGAGAAGAAGCAGAAAGAAGCTTGAGGCTGCCAGTGCTCC
AGAGGAGAGGACAAGGCTTCATGATGAAGTGAAGCAAGGACAAAGCCCGGCGGAGATCCATTGGCA
ACATCAAGTTTATTGGAGAAGTCTTTAACTCAAATGCTGACTGAAGCCATCATGCATGACTGTGTGGTG
AAGCTGCTAAAGAACCATGATGAAGAATCCCTGGAGTGCCTGTGTGCGCTGCTCACCACCATTGGCAAAGA
CTTGGACTTTGAAAAAGCAAAGCCACGTATGGACCAGTACTTTAATCAGATGGAGAAAATTGTGAAAGAAA
GAAAAACCTCATCTAGGATTTCGGTTCATGCTTCAAGATGTTATAGACCTAAGGCTGTGCAATTGGGTATCT
CGAAGAGCAGATCAAGGGCCTAAACTATCGAACAGATTACAAAGAGGCTAAAATAGAAGAACAAGAAGA
GCAAAGGAAGGTCCAGCAACTCATGACCAAAGAGAAGAGAAGACCAGGTGTCCAGAGAGTGGACGAAGGTG
GGTGGAACTGTACAAGGGGCCAAGAACAGTCGGGTACTGGACCCCTCAAAATTCCTAAAAATCACTAAG
CCTACAATTGATGAAAAAATTCAGCTGGTACCTAAAGCACAGCTAGGCAGCTGGGGAAAAGGCAGCAGTGG
TGGAGCAAAGGCAAGTGAGACTGATGCCTTACGGTCAAGTGCTTCCAGTTTAAACAGATTCTCTGCCCTGC
AACCTCCAGCACCTCAGGGTCCACGCCATCCACGCCTGTAGAGTTTGATTCCCGAAGGACCTTAAGTAGT
CGTGGAAAGTATGGGCAGGGAGAAGAATGACAAGCCCTTCCATCTGCAACAGCTCGGCCAAATCTTTTCA
GAGGGGTGGCAGCTAAGACCTGCTAGACAATCAGTCTCAAGAAGAGCAGCGGAGAGAGATGCTGGAGA
CCGTGAAGCAGCTCAGAGGAGGTGTGGATGTGGAGAGGAACAGCACTGAGGCTGAGCGAAAATAAAACAAGG
GAGTCAGCAAAACCAGAAATTTAGCAATGTGAGCTCATGACAAGGCTGCATTATCAGAAGAGGAAGTGA
GAGGAAGTCGAAATCTATCATTGATGAATTTCTACACATTAATGATTTTAAGGAAGCCATGCAGTGTGTGG
AAGAGCTGAATGCCAGGGCCTACTACATGTTTTTGTGAGAGTGGGAGTGGAGTCCACCCTGGAAAGGAGC
CAGATCACCAGGGATCAGATGGGCCAATTACTCTATCAGCTGGTACAGTCAGAAAAACTCAGCAAAACAGGA
CTTTTTCAAAGTTTTTTCAGAACTTTGGAATTGGCAGATGACATGGCCATTGATATTTCCCATATTTGGT
TGTACCTTGCTGAAGTGGTGACCCCATGTTAAAGAAGGTGGAATCTCCATGAGAGAAGTACCATAGAA
TTTAGCAAACCTTTACTTCTGTTGGAAGAGCTGGGGTCTTGCTATCTGAAATATTGCACCTACTATGCAA
ACAAATGAGCCATAAGAAAGTGGGAGCCTTATGGAGGGAGGCTGACCTCAGCTGGAAGGACTTTTTACCAG
AAGGAGAAGATGTACATAATTTTCTTTTGGAGCAGAAGTTGGACTTCATAGAGTCTGACAGTCCCTGTTCC
TCTGAAGCACTTTCAAAGAAAGAACTGTCTGCCGAAGAGCTGTATAAGCGACTCGAGAAACTCATTATTGA
GGACAAAGCGAATGATGAACAGATCTTTGACTGGGTAGAGGCTAATCTAGACGAAATCCAGATGAGTTCAC
CTACATTCCTTAGAGCTTTAATGACTGCTGTTTGTAAAGCAGCTATTATAGCCGACTCTTCTACCTTCAGA
GTGGACACTGCTGTTATCAAGCAGAGAGTGCCGATCTTACTCAAGTACCTAGACTCAGATACAGAGAAGGA
ACTGCAAGCACTTTATGCACTACAAGCATCGATAGTAAACTTGATCAACCTGCCAATTTGCTGCGGATGT
TTTTTGATTGTCTATATGACGAGGAGGTGATCTCCGAGGATGCCTTCTACAAATGGGAGAGCAGCAAGGAC
CCTGCAGAGCAGAAATGGGAAGGGCGTGGCTCTGAAATCTGTACGGCATTCTTCAGTGGCTGCGGGAAGC
AGAAGAGGAGTCTGAGGATAACTAAAACTTCAAATACACAAATGAAACAAAAGAAACAATTTAAGTATTT
TTTTAAAAAGTTTTACGTCTTCGCCAATCACAGTGACGCAAGGCCAATTCTCGCAGAAACCCCCACGTGTG
CACGAGTGGGAGAGGGGAAAGAGAAAAAAGGTGATCATGGAGGAAAAAGGTACTGGATAAAAGTAACTT
CAAACCTTAGGGCGGGAGCACTAAAACCAAATACATGTATTATTTATAGAAAATATTTTCTGTTTTAATC
TTTTCTTTTTAAACAAGGACTCATACTTAAAAAATGTTTAGCAAAAAAAAAAAAAAGTTGAGAAGTTTTAA
TTTATTTTAAGGACTGCAAATGCCAGTGAATTTTTTAATTTGAGTTTCTGTAAACAAGTGTATAATAG
AAAAGCAGAGAAATAAATTTCCCTCCCCTTCAAGATGCACCTCATGTTTGTGTTTTAAGGTATAGCATTTAGT
CCAGATTTGAGAAAGTTTGGGGTGAACAAGGTAAGAAAGATTTTTTTTTTTTTTGGCATCAAATCTTTCTGC
CTGCCTCTCAGCTTGCTTCAGAAAATTTAAAAAATCACAATAGTAATCAAAACATACATAACATTGAAACA
GAAGGAAATGCTGTGGACCACAGAAGTCCAAGAATTTGTTAAAAAAGAGTGTACCTGAGAAAAGT
ACTCTTAATACTCTTGAAATCTTTAGAGCAACTTTAAGGCTTGAAATACATAGAACAATATTTAAAAAA

ACAAAAAGAAATTGACTCAGTACTATTTCTTTTCACTTTGAAAATATAAAGAACAAAATAAAGACAAACAT
TGCAAGTTTTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

IHRHRLSPATEKGAASSGEGDKDPPPPAHEDIAVKGTATAAGTGPGTGAAAAAAAVPPHPAAAAAA
AAAAAAAVPPHPNIRALQTQAPQQIPRGVQQPLEDRIFTPAVSAVYSTVTQVARQPGTPTSPYSAHE
INKGHPNLAATPPGHASSPGLSQTYPYPSGQNAGPTTLVYPQTPQT
MNSQPQTRSPFFQRPQIQPPRATIPN
SSPSIRPGAQTPTAVYQANQHIMMVNHLMPYPVPQGPQYCIQYRHSPPYVGGPPQQYPVQPPGPGPFYP
GPGPGDFPNAYGTPFYPSQPVYQSAPIIVPTQQQPPPAKREKKTIRIRDPNQGGKDITEEIMSGGGSRNPT
PPIGRPTSTPTPPQQLPSQVPEHSPVYGTVESAHLAASTPVTAASDQKQEEKPKPDPVLKSPSPVLRVL
SGEKKEQEGQTSETTAIVSIAELPLPPSPTTVSSVARSTIAAPTSSALSSQPIFTTAIDDRCELSSPREDT
IPIPSLTSTCTETSDPLPTNENDDICKKPCSVAPNDIPLVSSTNLININGVSEKLSATESIVEIVKQEV
PLTLEILEILENPPEEMKLECIAPITPSTVPSFPPTPTPPASPPHTPVIVPAAATTVSSPSAAITVQVRL
EEDESIRTCLSEDAKEIQNKIEVEADGQTEEILDSQNLNSRRSPVPAQIAITVPKTWKKPKDRTRTTEEM
EAELKAEELSIDKVLSEQDKMSQGFHPERDPSDLKKVKAEEENGEEAEPVRNGAESVSEGEIDANS
GSTDSSGDGVTFFPKPESWKPTDTEGKKQYDREFLLDFQFMPACIQKPEGLPPISDVVLDKINQPKLPMRT
LDPRIIPRGPDFTPAFADFGRQTPGGRGVPLLNVGSRSPGQRRPRKIITVSVKEDVHLKKAENAWKPS
QKRDSQADDPENIKTQELFRKVRISILNKLTPQMFNQLMKQVSGLTVDTEERLKGVIDLVFEKAIDEPSFSV
AYANMCRCLVTLKVPMAKPGNTVNFRLLLNRCQKEFEKDKADDDVFEKKQKELEAASAPEERTRLHDEL
EEAKDKARRRSIGNIKFIGELFKLKMLTEAIMHDCVVKLLKNHDEESLECLCRLTTIGKDLDFEKAKPRM
DQYFNQMEKIVKERKTSSRIRFMLQDVIDLRLCNWVSRRADQGPKTIEQIHKEAKIEEQEQRKVQQLMTK
EKRRPGVQVRVDEGGWNTVQGAKNSRVLDPKFLKITKPTIDEKIQLVPAQLGSWKGSSGGAKASETDAL
RSSASSLNRFSALQPPAPSGSTPSTPVEFDSRRTLTSRSGSMGREKNDKPLPSATARPNTFMRGGSSKDLLD
NQSQEEQRREMLETVKQLTGGVDVERNSTEAERNKTRESAKPEISAMSAHDKAALSEEELERKSKSIIDEF
LHINDFKEAMQCVEELNAQGLLHVFRVGVESTLERSQITRDHMGQLLYQLVQSEKLSKQDFFKGFSETLE
LADDMAIDIPHIWLYLAELVTPMLKEGGISMRELTIEFSKPLLPVGRAGVLLSEILHLLCKQMSHKKVGAL
WREADLSWKDFLPEGEDVHNFLLEQKLDFIESDSPCSSEALSKKELSAEELYKRLEKLIIEDKANDEQIFD
WVEANLDEIQMSSPTFLRALMTAVCKAAIIADSSTFRVDTAVIKQRPILLKYLDSDTEKELQALYALQAS
IVKLDQPANLLRMFFDCLYDEEVIDEAFYKWESSKDPAEQNGKGVALKSVTAFFTWLREAEEESEDN

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
GAGAGTGGCGCGGCGTGGGGCGCCGCGAGGGCACTACGAGCCCAGGAAGTCCGCGCGCCGGCCGATTTC
GCGGCTGTATAAGGACTAGCGCTTCGGTAGCCGGGGAGCTGGAGGGAACCTGATT
TGA
GATCAATTCTTGG
AGAACACAAAGAAGTGTGATGGA
TTGA
ACCAGCTGCCCTTTGACCCTGCTAACAACAACGAGCCCCTGCAG
TTTGGTAGTGCCAGTGGCCCTCTGGTCACAGAAGGCCTCATTGAGAA
TGG
AGGGGAATCAAGCAAGAAAAAG
AAAGAGAACAATACTCCTTCAGCCGATAACAGTAGAACTCTGAACGTGGATTCCACTGCAAT
TGACACTAC
CTATGTCTGATCCAATGCATGGGCCACAGCAATGAATAATCTTGGAATGGCACCGCTGGGAATTGCCGGA
CAACCAATTTTACCTGACTTTGATCCTGCTCTTGGAATGATGACTGGAATTCACCAATAACTCCAATGAT
GCCTGGTTTGGGAATAGTACCTCCACCAATTCCTCCAGATATGCCAGTAGTAAAAGAGATCATACACTGTA
AAAGCTGCACGCTCTTCCCTCCAAATCCAAATCTCCACCTCCTGCAACCCGAGAAAGACCACCGAGTGC
AAAACAGATATTGTGGGTGGTCTGCCTGAAATGGGACAGACGAAATCATTGTGGAAGTTTTCGAGCAGTG
TGGAGAGATCATTGCCATTTCGCAAGAGCAAGAAGAACTCTGCCACATTTCGCTTTGCTGAGGAGTACATGG
TGGACAAAGCCCTGTATCTGTCTGGTTACCGCATTTCGCTGGGCTCTAGTACTGACAAGAAGGACACAGGC

AGACTCCACGTTGATTTTCGCACAGGCTCGAGATGACCTGTATGAGTGGGAGTGTAACAGCGTATGCTAGC
CAGAGAGGAGCGCCATCGTAGAAGAATGGAAGAAGAAAGATTGCGTCCACCATCTCCACCCCCAGTGGTCC
ACTATTTCAGATCATGAATGCAGCATTGTTGCTGAAAAATTAAAAGATGATTCCAAATTCTCAGAAGCTGTA
CAGACCTTGCTTACCTGGATAGAGCGAGGAGAGGTCAACCGTCGTAGCGCCAATAACTTCTACTCCATGAT
CCAGTCGGCCAACAGCCATGTCCGCCGCTGGTGAACGAGAAAGCTGCCCATGAGAAAGATATGGAAGAAG
CAAAGGAGAAGTTCAAGCAGGCCCTTTCTGGAATTCTCATTCAATTTGAGCAGATAGTGGCTGTGTACCAT
TCCGCCTCCAAGCAGAAGGCATGGGACCACTTCACAAAAGCCCAGCGGAAGAACATCAGCGTGTGGTGCAA
ACAAGCTGAGGAAATTCGCAACATTCTATAATGATGAATTAATGGGAATCAGGCGAGAAGAAGAAATGGAAA
TGTCTGATGATGAAATAGAAGAAATGACAGAAACAAAAGAACTGAGGAATCAGCCTTAGTATCACAGGCA
GAAGCTCTGAAGGAAGAAAATGACAGCCTCCGTTGGCAGCTCGATGCCTACCGGAATGAAGTAGAACTGCT
CAAGCAAGAACAAGGCAAGTCCACAGAGAAGATGACCCTAACAAAGAACAGCAGCTGAAACTCCTGCAAC
AAGCCCTGCAAGGAATGCAACAGCATCTACTCAAAGTCCAAGAGGAATACAAAAAGAAAAGCTGAACTT
GAAAAACTCAAAGATGACAAGTTACAGGTGGAaaaaatGTTGGAaaatCTTAAAGAAAAGGAAAGCTGTGC
TTCTAGGCTGTGTGCCTCAAACCAGGATAGCGAATACCCTCTTGAGAAGACCATGAACAGCAGTCCTATCA
AATCTGAACGTGAAGCACTGCTAGTGGGGATTATCTCCACATTCTTCATGTTACCCATTTGGAGCAAGC
ATTGAATACATCTGTTTCTACTTGCACCGTCTTGATAATAAGATCTGCACCAGCGATGTGGAGTGTCTCAT
GGGTAGACTCCAGCATACCTTCAAGCAGGAAATGACTGGAGTTGGAGCCAGCCTGGAAAAGAGATGGAAT
TCTGTGGCTTCGAGGGCTTGAAGCTGACCTAAATCTCTTTGCCTAACAACTTGGGATCCTGAAGATAAATA
TGTGTTGGACAAGCATAGAAAGTGATTTATATTTTTAATGGTTTTCAAGTGAAGTTCTTTGAATTTGTC
AGTTCATTCTGGAAAATCTTTTGAGTTAAAATAAGGATCCTAGGACAGCACCTCGAACTACAGGCCCTAA
AGAGAAATTGCCTCAAACCACAAGTGCTGTAACCTCTCCCTTTCTGTCAATTGGTTGTCTTTAAATATT
GCAAAAGTCCTGATGCTAAACAGTATTTGGAGTGTTTTAGTGCTGTACTACTGTTGTAGACCTTGGTAT
TTTTTTAAACACTGTTAACTGAAATGTTTTGATGATTTGTATGTGATTTGTGTTTCTAACTTCTCTTTAC
ATTAATGTTGTTACTGGTGAAAGGCATGAGAGCAGCACTAAGTCCTCTGTGTAACCTGCCATTGTCTTTCCA
ATCCCCAGTAGACCAGTAAATAAATAACACATCAGTGTCTTCTAGAAGGTGCCTGACCAGGTTACCTTTT
AAACGACAAAGCATGGTTTGTGGCTTTTTGCAAAATTACTATGAACCAAAAGTTGACAAATGTTCCAAAGT
TATTTTCTCTAACATATCACATTAAGATCTGTTTCAGAATTGTAAAAAGTACATCTAGATGTGTTTACAG
AAAGCAAGTATCCAGTATGACTGGCATGTGTTTATGCTATTTCAGAATCACTTGTAATAGTCTGCTTTTAA
AGGAGGGCATGTTTCAGTTTTCTGTGAATTAATAATATGCTCATGTGTGGGCACACAGCACAACACACACA
CGCACGCACACAGTGGCAGAAGGGATTTATATTAATATTCTTTCCCTCTGGCCTTCTTACAGTCTGTTGG
TCCCTTTGCTTCTGTTGTGAGTGTGTTGAATTGCAACCGAGTACTGCTGTAAATACTATGTTTACTTCAT
GCTGAATGTTTGCAAGACTTGATATAAGTATTAATAGTAATGAATCAATGAATAAATAATGAGCTAGGGT
TTGTGAGGCTTTCTACAAATAGGTGAGCTCCACCTGGAGTGCGAATTGCCAGAGACACCTTGGTAGTGCCC
ATCGGCAAAATCGCAATGGCAGCATGTGAGTGGACCATTAGAAAATCTGCTTGGTGGAAGTAACAGAG
AGGATGGAGGTTTGGGGCGAATGTCCTGAGGCAGAGATGGTCTTTATTGTGTGTGGTGGTGTGTTGTTAT
TTATAATAATGCAAGCATACCCTCCCTTGAGTCTCAATTGAAGATAAAAGAATGTACTGAGCAAGCAAAGC
CAATGGAGAGTATTTACAAAAATACTTTGTAATGAGATGCCAGTAGTGTTCAAAGTTGTATTTTTAAAA
GATAAATATTTCTTTTTTATACCTCAGTTTTGTGTCCTGTTTTTAATGACTTACGCTCTAAGTAATCCATTA
GTAGTTATCTCAGTTCCTTCTTTGGGTTACTAGAATGTTGGAAAAAGATGCCAAGTCTGTCTTGACAACCT
GGAAACAGGGTTCCACAGCAGCCCATTCGTGCTGAAAAGCTGGCTTCCCCCTGAAGCACCTGCTGTGGCAC
CAGCAGGAAGCTCAGGTTAATTTTACACTAGCTTGCTCACTGATGCATCTCTCATCAATGCTACGGAAGGC
TTTGATTTCATCAGTCTCGGGCTCTTGGAATACCTAATTTTAAATAATATCTATGAAATCAAGGGAACTTTC
CATTTACAGTTATTTCTTGTTTAAATAAACTAAATTAATTTTTAGGGGAGAGCAGTAGGAAAAAGAGCTAA
TGCATGCGGGGTTTAAATACCTAGGTGATGGGTTGAGGTGCAGCAAAACCACCATGGCACACGTTACCTAT
GTAACAAACCTGCACATCCTGCACATGTACCCCGGAACCTTACTTAAAA

LNQLPFDPANNEPLQFGSASGPLVTEGLIENGGESSKKRKRTNTPSADNSRTLNV DSTAMTLPMSDPTAW
ATAMNNLGMAPLGIAGQPILPDFDPALGMMTGIPPITPMMPGLGIVPPPIPPDMPVVKEIIHCKSCTLFPP
NPNLPPPATRERPPGKTVFVGGLPENGTEQIIIEVFQCEIIAIRKSKKNFCHIRFAEEYMDKALYLS
GYRIRLGSSTDKKDTGRLHVDFAQARDDLWECKQRMLAREERHRRRMEEERLRPPSPPPVVHYSDEHCS
IVAELKDDSKFSEAVQTLTWIERGEVNRRSANNFYSMIQSANSVRRVLNEKAAHEKDMEEAKEKFKQA
LSGILIQFEQIVAVYHSASKQKAWDHFTKAQRKNISVWCKQAEIIRNIHNDEL MGIRREEEMEMSDEIEE
MTETKETEESALVSQAEALKEENDSLRWQLDAYRNEVELLKQEQQKVHREDDPNKEQQLKLQQAQGMQQ
HLLKVQEYKKEAELEKLKDDKLQVEKMLENLKEKESCASRLCASNQDSEYPLEKTMNSSPIKSEREALL
VGIISTFLHVHPFGASIEYICSYLHRLDNKICTSDVECLMGR LQHTFKQEMTGVGASLEKRWKFCGFEGKL
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

CAGCCACCCAGCCCCGAAGCAGGGCCCCAGCGAGACAGGGCCCCAGCCCCAAGCGTGAACCCAGCTGCAGAGAA
GCTGAGACGGTGATTTCGGAAGTACTGGACTCTGGCCTCCAGGTGTCTGCACCTCACACTGGACCCACCTGG
AGACTCCACGGGCTCCCGGCAGCTCCGGCTGCTTGGGTGGATCCGGGTGCCCGCAGGGGCTGTGGGAGGGC
CCCGGGGCTGCACTGCTCCCCGATGGCCTGCTCTTCTCACGGCCGGGGCTGCACCCTGTGTCCACGTG
CTAGATCTGGAGGGACGCCCCATCTGCCTCCTGCCCTGCCGCACTCCGGGGAGCGGGGCTTCGTTCCAGA
GGACGTGGCTGTGACAGCGTCAGGGCTTGTGGTGGTCAGCGATCCCATCCATGGGGCTGTCCATGCACTCC
AGCACACAGCCCGGGACCCCGGGGGCCACTGGGTGACAGTGGGCACCTTCTGTCTCCCCGAGGGCTGGCT
GTGGATGCCCTCAACCGCTCCTGGTGACGGACTACTTGCTGGGGCTGTGCACAGCTTCTCGTTGGGTCC
TGCTTGGGAGCCCCCTGGCCCCAGCCTCCATGCTGGGTCTGGAGGGCCCCCTGCTGGGTGGGCCACGGGCTG
ATGGGGGCTTGTGTGAGTGAGGAGTTTGGGGATGTGAGGCTGTTTGGCAGTGCCCCGCAACCCCTGGGC
TCCCTGGGGGGCTGGACGGGGCACACTTTCGGCTGCCAGCGGGCATCTGCTCCAATCAGAGGGCAATGT
TATTGTGGCAGACGAGCAGAGGCCAGGTGACCCTGTTTCCCGGGCTGGGCCACCCATCTGCCTGGTGT
CAGAGGGGCTTGGGCAGCCCTTGGGAGTGGCCTGTGCACCCAGGGCCAGCTCCTGGTGGCTGATGCCAAG
GACAACCTCCATCAAGGTGTACCAGGGCCTCAAGGAGCTGGCCCTGAGGCTGGGTGGAGCAGCCCTC
CTGTGCCTGAGGCCAGCTCCCAGGCCCTTGGATCACCGCGGGAGGAACCCTCAGGATGGGTGGAGCCTCCA
GGCTATGGGCATTGCCTGCCTGATGCCAGCACCACTGGGCTGGGCCCTGGGCTTGGCTCGAGTTCTCCTG
CTGGTGAGGCTCCGGATCTCAGGAGCAGCCCTGAGTCTGCTTCCAGGCTGCCCTGCCAGGCCTGCAGCC
TCCCCAGCCAGGGCTGCTCTCTGCTGTCCCCATTAGTGCCCTGGCCCTGCATTATGCCCCCACACCC
CCTCAGGCCCTGTGCCTGGACTTTGGGGCTGGCAGCTGAAGCCTTGAGATCCTGGGCCAGCTGCCGGCACA
CAGCTAGGCAGACTCTCCACCAAGGTGCCCTGCCAGGCCTCCTAATCGGGGGCAGACAGGCAGGGAGGG
TGTGGCTGGGCTGGGCTGGGCGGGGCGGCCTGGGGCAGGGGTGTGGCCCCTAAATGTCCCCAACCTCAGAG
GGACCTAGAGTCTGAGCCTCCAGTAGCTTCTCTGGGCTGGCAGAGGTAAGGGGGAGGCAACCCTGGAGT
GTCTGGAGGCCCATGGCTGGCTGAACCCTGGATGCCTTTTCTTCCGCGTCCCCATGAATGAAAGCTGTCTG
GGCCTTCACTTCTGCAGACAGGGACAAACAGCTCCATGCTGTTTGTCTCCAGTGACGCCGTGCTGGGAGG
GTCTGGGGGAGCTTCTACAAGGAGAGACTCCTGCTGCTTTGGAAGAACTGAGAAAAAATAGGGGTCTAAC
CTCTCCTCCATTTTACAAGTGGGAAATGAGGCGTGAAAGGAGAGGCGTCTGGGTACTCCGTGGGTCTG
GGGTCCAGGGAAGGGCTGTATGGGGGAGGGAGCTGGGAGGGGACGGTGTCTGGCTCTACCCCTGTGGGGT
GGGGAGGTGGGGCTCCCCTGTATCACAGGACATCCCCCTGAGAGGTCCCTCATATGTCTGGGTCTGTGG
GTGGGGGACTAACTGCGCAATGTAGTTAGGTGCTCAATAAACGGAGTTGCCGCTGAAAAAAAAAAAAAAAA
AAAAAA

LDPPGDSTGSRQLRLLGWIRVPAGAVGGPRGLHCSPDGLLFLTAGAAPCVHVLDEGRPICLLPCRTPGSG
AFVPEDVAVTASGLVVVSDPIHGAVHALQHTARDPGGHWTVGTFLSPRGLAVDALNRLLVTDYLPGAVHS
FSLGPAWEPLAPASMLGLEGPCWVGPGPDGGLAVSEEFGDVRLFGSARQPLGSLGGWTGHTFGCPAGICSN
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

GCGGCCGCCGGCGCCGGAGCCGCGTCCCCCTGCGCCGCCCGGGCCTGCCGGCCGGAGGAGCCACCATAC
ACCCCGGGTCGCCGAGCGCCTGGCCGCCCGCGCCCGCGCTCCGCCTGTGGCTGGGCTGCGTCTGC
TTCGCGCTGGTGCAGGCGGACAGTCCCTCAGCCCCAGTGAACGTCACCGTCAGGCACCTCAAGGCCAACTC
TGCAGTGGTGAGCTGGGATGTTCTGGAGGATGAGGTTGTCATCGGATTTGCCATCTCCCAGCAGAAGAAGG
ATGTGCGGATGCTGCGCTTCATCCAGGAGGTGAACACCACCACCCGCTCATGTGCCCTCTGGGACCTGGAG
GAGGATACGGAGTACATAGTCCACGTGCAGGCCATCTCCATTAGGGCCAGAGCCCAGCCAGCGAGCCTGT
GCTCTTCAAGACCCCGCGTGAGGCTGAGAAGATGGCCTCCAAGAACAAGATGAGGTAACCATGAAAGAGA
TGGGGAGGAACCAACAGCTGCGGACAGGCGAGGTGCTGATCATCGTCGTGGTCCTGTTTCATGTGGGCAGGT
GTCATTGCCCTCTTCTGCCGCCAGTATGACATCATCAAGGACAATGAACCCAATAACAACAAGGAAAAAAC
CAAGAGTGCATCAGAAACCAGCACACCAGAGCACCAGGGCGGGGGGCTTCTCCGCAGCAAGATATGA
AAACCTTTTCAGTGCTTGCCCTCAGCAGCTAAGAAGACAGACAGTAGAGAATGTGAGAGGATCTCATGGTTCTGA
TGATGATTATCCAACAAACATCTGGCCCTCTCTACATCTCTTCCCTCCATCTCCTTGTACCCTCTGGCTTA
CTGTCTCTCTCTGGCGCACTTCTCTGAAGCCTCTTATTAACCTCCATCTCCAGAAGCACCTCAACAATGT
CAGTGGCTGAGGCTGCACTCAGAGGGATGACTGCTGGGGGTAGACTGGGTGCCAGGGGCCATGGGCCCAGG
ACCCAGTCTTGGCCATTAGTTGAGTGAGGCTGAAGGCTGGGTTTGAAAAGGCAAAAAGACAAGACATCCA
GGCAGGGCTTCTCTTTTCTTTCCACAAGGGACAAGAGCTTGGCTTATTTAGGCTACAGCCCTGCTGCTGCT
CCCTTCTTCTCTGTCTGCTGTTTCCAGCCTTGCAAGAAGGCTATTACAAATTAGGCCTGGCTGCTTCTCTC
ATTTTTTCTCTCCAGTTTCCAAACAAGCCCTCAGTGAACATCATTGAAGCGTGACTGCCTGTCTGCAGGG
AGAAGGATTCCATTTTTCTTCTCAGCTGGTCCCCAGGCCCACGGGCACAGGGAGAGGGACAACCTGCAGCAG
TGGGGAGGAGGCACAGCTAGCTGCACAGTTCTCTTCTCTTGTCTAGTCAGATGAAGGAGGCTGCACT
ACAAACCCAAATTCTGCAAAAAAATAAAAAATAAGCCACAAAACCTAAAAGGCCTGGCCCCATTCTGAAAAG
GCAAAGCTGCATGAGACACAGCCTTCTGCCTCTCGCCTCTCTGGACTGGCTTCTCTTTGAGAAAATGC
ACAAAGCCCTGGGAGATGACAAGCACAAGGACTGACTCAAGCTGTGTCTTTCAGACCAAGGAACATCAGAG
AAGCTGTGGGGCTGCCTGCCAGGCAGGATCATGGCTGCCATCAAGCCTTTTCTGGATCCAGCCATCAAGGA
CATGTTTGTGGTGTGATGCACACTTTTGAAGCGTGTAAGATGTTACCTGGTTTGTCTCTTTTGGAAAACA
AAAATCAGAAGGCTGCATTCTAGAGGGCAGAGAAATCCCCGAAGACTGAGCTGGTTGCCTGCATCCTCT
ATCTTCTTTGACCCTTATGACTGAAAGATCATCAGTTTGGAAGGTAAGTGGTCCAATTTATTTAGGAAGTAT
CTCTTGGAGTTTCAGAAATGCTAGCTTGGACAACCTGAAAAGTCACATCACAGCTGGCATTCTGGGGGCTAC
CAAAACACCCCTTCTGGAGTAGAAGCTGCTGGAAGGCAGGCCTGAGCCATTACCACGGACAGGAAGAGCA
GCTCTGGCTATCACCCTGGCCTCTGGGGTCTTCATATCTTGCCATCTCATCCAGGGTTCCATGAAAGTTA
CCCAGGGTCTCATGTCTTCTTCTAGAGCCTGAGTGGTGTGAGGTGACAGGTCTCTCTCTCCACTGCCCT
TTCTGGTTTAAAAAATGGTGCTTGATGAGGGAAGGTAGACTCTTCCCTAGGACTGACGAGTTACGGCTGC
CAGATGCCTGCATGGGAAGAGGTGGACATCTGCATCTTCCATTGGTGGTCAAGGATGGGTGTGGGAGAACC
ACACCTAGTGCAAGCCTGGTACTCAGTAAATATTTGTTGAAATGAATGATAAGAGCATTGGTCCCCAAGCC
AGAGAGCCAGAAGCCATCACCAATGACCGCCCTTCTTCCGGTCTACAAGAGCTCTCAAGGCTGGGTCT
GCCACCACTCTGCTTTGCCCAAGTGTGACAGCACTGGGGAGGAGAGACAGGATAAAGGGCAGATGTCAGCA
ATACTAAGGGCTTCTCATGGGAGGGCATGAGGCTCCACTATTGTCTTGTGACTTCCATCCCTGCTGAAT
GGGGCTGCAAGGCCAAGGCTCCTTAGGGGAGAGGTCTTACCTCTGATCCACTTAGAGCAATAACCACTTT
TTAAATGTAAATAAAAAAGACAAATGAAAAGGCAAAAAAAAAAAAAAAAAA

IHPGSPSAWPPRARAALRLWLGCVCFALVQADSPSAPVNVTVRHLKANSVVSVDVLEDEVVIGFAISQKQ
KDVRMLRFIQEVNTTTRSCALWDLEEDTEYIVHVQAIISIQQSPASEPVLFKTPREA EK MASKNKDEVTKM
EMGRNQQLRTGEVLIIVVLFMWAGVIALFCRQYDI IKDNEPNNNKEKTKSASETSTPEHQGGGLLRSKI

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

GCGAGGCAGGAGCCGGCGGCTGGGCTCCGCAGCGCAGCCAGCGCAGCGCGGGCGCCCCGGGCCCCGGCCCCAT
GCCCCGAGCCCCGCCGGACCGTCCTTGAGCGCGGGCGCCTAGCCCCGCGCCCCCTGCCCGCCGGCACCATTTG
CCCCGACGGCGCGGCCGGGGCGGCCCGGCGCTCCCCAGGCTCCGCGCGGGCCGAAAGACGCTGCTAGCGGGC
GCCGCGGGTGTGGTGATGCTGCTGGTGCTGGTGCTGCTCATCCCCGTGCTGGTGAGCTCGGGCGGGCCGGGA
AGGCCACTATGAGATGCTGGGCACCTGCCGCATGGTGCTGCGACCCCTACCCCGCGCGGGGCCCCGGCGCCG
GCGCGCGGACCGACGGCGGGCGACGCCCTGAGCGAGCAGAGCGGCGCGCCCCCGCCTTCCACGCTGGTGACG
GGCCCCCAGGGGAAGCCGGGGCCGCACCGGCAAGCCCGGCCCTCCGGGGCCTCCCGGGGACCCAGGTCCTCC
CGGCCCTGTGGGGCCGCCGGGGGAGAAGGGTGAGCCAGGCAAGCCGGGCCCTCCGGGGCTGCCGGGCGCGG
GGGGCAGCGGCCCATCAGCACTGCCACCTACACCAGGTGCCGCGCTGGCCTTCTACGCCGGCCTCAAG
AACCCCCACGAGGGTTACGAGGTACTCAAGTTTGACGACGTGGTCACCAACCTAGGCAACAACCTACGACGC
GGCCAGCGGCAAGTTTACGTGCAACATTCCCGGCACCTACTTTTTCACCTACCATGTCCTCATGCGCGGCG
GCGACGGCACAGTATGTGGGCAGACCTCTGCAAGAATGGCCAGGTGCGGGCCAGTGCTATTGCCAGGAC
GCGGACCAGAACTACGACTACGCCAGCAACAGCGTGATCCTGCACCTGGACGCCGGCGACGAGGTCTTCAT
CAAGCTGGATGGAGGCAAAGCACACGGCGGCAACAGCAACAAATACAGCACGTTCTCTGGCTTCATCATCT
ACTCCGACTGAGCTCCCCACGTCTCCCTCCACCCACGTCCCTACCCGCGGGGTCCCCTCCGGGCGGGGC
AGACGATGACTCGCCCCCTGCCCCACCCGCTCGCTGCCCGGCCCTCCCGGCTATGACGCCCCCGGCCGTG
CTCAACACCGCCTGGGCCACAGCTAGGCCCTCCACCGGCTCGCTGCAGAGCCGGGCCAGCGCGCCCTGT
CCCCGTGCCAGGGAACCGGGGTTGACCGCCCCCGCCAGCCGCGCTATATATTTGTACAATAGGACTGTT
TACTGCCACCTCCGCTGCCAGCCACCCAGCCTGGGGAGAGGTGCGGCGGCGGGTTTGCTTCCTGCG
CTCTGAGATGAGCTGCCCTCGGCTCCCTCCGGGGTGGCGCGCCCGGGGGAGGGGGGAGTTGGGGGCTGGAT
AGCTTCCCAGCACCTCAGAGCCCCCGCCGGCTGTGCCCGCTCTGACCAAAGTTATAATAAAAACATTTT
CACCCCGCAAAAAAAAAAAAAAAAAA

IAPTARPGGPALPRLRAGRKTLAAAAGVVMLLVLVVLIPVLVSSGGPEGHYEMLGTCRMVCDPYPARGPG
AGARTDGGDALSEQSGAPPPSTLVQGPQKPGRTGKPGPPGPPGDPGPPGPVGGPPGKGEKPGKPGPPGLPG
AGGSGAISTATYTTVPRVAFYAGLKNPHEGYEVLKFDDVVTNLGNNYDAASGKFTCNIPGTYYFTYHVLMR
GGDGTSMWADLCKNGQVRASIAQDADQNYDYASNSVILHLDAGDEVFIKLDGGKAHGGNSNKYSTFSGFI
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

AGTGTTATGATGAGTTCACAAACACACAGCCACATTACCCACAGACCGAGGTACAGAACGAGAGACAAC
CTCTGCCCCCAGCAGCTGGCCAGCTTTGACGCCCCAGTCTTGAGCCCCAACTACCTCCCCCACCCA
CCCCATCCCCTTCCCAATTGAAGGAGCGGAAAGAGAAGAGAAGAGTGAGCAGAGAGATTGAGAGATTG
AGAGAGAGAGAGAGATAGACGGAGATCTCTGGAGCAGACCTCAAGGTGACTTCTATTTCTATCTGGTTC
TCGTCTGGGGGGGCCCTGGCCGGGCAGCCCCCAACACTTCTCCTGCCCTGAAACACGGCTCTAGCCAACC
TGCTCCGCTGCTTACCTGCGACCGTCTCTGCGGGGGCTGCACGGCGCCAGCCCCTCCAGCCCACCAGGGC
ATTGTCCTCCAGCCCGTCAAGCCAGCTGTGACCCCGGTCCGGGCCCTGCCTGCCTCCCCACCAAGACTTT

CCGCAGCTATCTGCCCCGCTGTCACCGCACTTACAGCTGTGTCCACTGCCGTGCACACCTGGCCAAACACG
ATGAGCTTATTTCCAAGTCCTTCCAAGGGAGCCATGGCCGAGCCTACCTGTTTAACTCCGTGGTCAACGTG
GGTTGCGGGCCAGCTGAACAGCGCCTCTTGCTCACGGGGCTCCACTCGGTAGCTGACATTTTCTGTGAGAG
CTGCAAAACCACTGGGCTGGAAATATGAGCAAGCTTTTGAGACGAGCCAGAAGTACAAGGAAGGGAAAT
ACATCATTGAAATGTACACATGGTGAAGGACAACGGCTGGGACTGAGGGGCTCAGGCAGGGTGTGCCCTT
CCTCCGCATGCCCCCTCCCTCCCCACGGCCCTGCCAAGCAGTCTATACCAGCATGAGTACTGCCCCACCCCT
GGGGGAAACCTGGCTCCAACCAACCCCTCCCCTGCCTCCACCATATCCACTACCAGGCACCCCTTTAGAACA
GGGGTCTGGGGGTACCCAGGGGTGTTAAGGCTCAGGAGTGGGCAGCAGTCAGGGAGAGACAGAACTGGGG
GAAAGGGATGGTTGTGGGTCTTTCTGTTCCCAAGATCCTGAACATGGAAGCGATGGCAGGGCATAGACTCA
GGCAGAGAGGATTGTGGGAGGAATCCGTTTTTGTCTCCACCTCTTTTTGAGTGAACAGAGGACAAACCTTGG
GTCACAGGGCAAGTAGATCATGGACCACAGAACAGCAGATGAGAAAAGACTTGGGTTGGAGTGAAATTCTG
GTCTCAGACACCAGGAGACCAGAGTCTCTGAGGATGAAGTTTCTACCCCTATTTGTAGGGAAAAGGACTT
GAGTGCAGGGAAAACCTCAAATCCCAGGCCCTGGGAAATAGTAAAATAATCAAAGGGTTTTTCATTTCACTC
CACTTGTTAGTTTATCTTGGCACTGAAGAGGCACCTTCGAGTATCTAACTTTTGCCATTGGGTGGGGTGGG
GACAGCTGCTCGCGGAACAGCCCCTAGTCGGCTGCTTCCAGAGTAAGCAGTCTTTATGGGCTTTCTCTGAG
GCCAGTCACTGCTCCTGGGACCCAGTCCCCTGGAGGGGAGGTGGAAAATCAGTGCTACGGGGCCAGTCTT
TCCCGTGGCTGCCACCAGCGAATGAACTTTTGTATGATACATAAAGTGCTTGAGTCTATTTTTAATAAAA
AGGGAAAAAGCAACTTGAAAAA

TALANLLRCFTCDRLCGGCTAPAPPAHQGIVLQPVMPSCDPGPGPACLPKTFRSYLP RCHRTYSCVHCRA
HLAKHDELISKSFQSGHGRAYLFNSVNVVGCAPAEQRLLLTGLHSVADIFCESCKTTLGWKYEQAFETSQK
YKEGKYIIMSHMVKDNGWD

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

GCTGATGACATGAGGGCTCCGTCTCCCGAGTGATGGCAGCGCGCGCTGCTTCGCCGCCTCCGCCGCTCAGC
CCCGGACTCCTTACGTACAGGTAGCGGGGTCCCCCTCCGCGCGGGAGCCAGCGAACAGCGAGAGAGCACA
GCAGAGCGCGCCGCGGAGCCGGGGCGCCCTCACTGCGCTAGGAGCCCCACTAAACCCAGCGGAGCGGAGCC
TGGCGGGAGGCAGCGCCGCGGAGCCAGCGCCGAGCGCGCAAGCAGACTCCCGGCCAGCGCAAGCACTCC
CTGGCCGGCGCCGGACCCCTCGGGGCGCCGGATTCTGTTGTGTGCCCCACGTATGCGCGCGGGCGTCCGC
GGCTCTCCCGACCAAGCCCCAGCGCGGTGGGCCAGGCTCAGAGTCCCGGCGCCTCTCGCTGAAGTAGTTG
GGTAGCCGGGGCTGGGGGTGCGCACGTGCGGGGCGCGGCCAGGACCCGCGGAGCCGGTCCCCGAGCGCGGG
GAGCGGGGCCGCCGCGCCGCCACCATTACCTCCCCGGGCGGCAAGGAGGAGCTGGTGGCGGTGCGCTC
CCGGCTGTGGCAGCGGCGGCGGCTGCCTGCCTGGCGGCCGTGCGCGTACTCTTGCCATGGCGCTCGGGC
TGCTCATCGCCGTGCCGTGCTGCTGCAGGCGGCGCCCCGAGGCGCCGCGCACTATGAGATGATGGGCACC
TGCCGCATGATCTGCGACCCCTTACACTGCCGCGCCCGGCGGGGAGCCCCGGGTGCAAAGGCGCAGCCACC
CGGACCCAGCACCGCCGCCCTGGAAGTCATGCAGGACCTCAGCGCCAACCCTCCTCCTTTTATCCAGG
GACCCAAGGGCGACCCGGGGCGACCGGGCAAGCCAGGGCCGCGGGGGCCCCCTGGAGAGCCGGGCCCGCCT
GGACCCAGGGGGCCCTCCGGGAGAGAAGGGCGACTCGGGGCGGCCCGGGCTGCCAGGGCTGCAACTGACGGC
GGGCACGGCCAGCGGCGTGGGGTGGTGGGCGGCGGGGCCGGGGTAGGTGGCGATTCCGAGGGTGAAGTGA
CCAGTGCGCTGAGCGCCACCTTCAGCGGCCCAAGATCGCCTTCTATGTGGGTCTCAAGAGCCCCACGAA
GGCTATGAGGTGCTGAAGTTCGATGACGTGGTCACCAACCTCGGCAATCACTATGACCCACCACGGGCAA

GTTTCAGCTGCCAGGTACGCGGCATCTACTTCTTCACCTACCACATCCTCATGCGCGGGCGGGCAGGGCACCA
GCATGTGGGCGGACCTCTGCAAGAACGGGCAGGTCCGGGCCAGCGCCATTGCACAGGACGCCGACCAGAAC
TACGACTACGCCAGTAACAGCGTGGTGCTGCACTTGGATTACAGGGGACGAAGTGTATGTGAAGCTGGATGG
CGGGAAGGCTCACGGAGGCAATAATAACAAGTACAGCACGTTCTCGGGCTTTCTTCTGTACCCGGATTAGG
GGCGCGGGGGGTGCGAGGCGGGGTGGCTGCAGGCCGCCCGGTCTCCGCCCGGGCGCGGCTCCTTGCCAAAG
GCCACTCTCGATTATAACACTTCTGACATCTCCTTTGGAAAAGACAAATCCCTGCGTCTCCTGCCCC
GCTCCTGGCCTCAGTGCCTCTGCGACCCACCACGCTCAGGGCTGTGCTCCTGGTCTCCATCCCCATCCCGG
CAAGGGAGGAAGGGACGCCGAGCCCTTGAGGCGGCGGCACAGACTTTGCAAACCTGATTAGACTGGACAG
GCAGGGCCGGGAGCCTGCCCTCCTCAGACAGCCTCCTCCAGTGCCTAGAAGCGGAGGGCTCCGGGCCCTG
GCCAGGGAGGTAGGCCAGAGGGAGCGCGGGCTTCTGGGGCGTCTTCTTTGTGACCCGAAATACTTGTGC
AGATTTCCCTGTCCATCAGCCAAAACCCACCCACAGCAGAATTCAGCAAACAGAAAATTCACCTCTCCA
CACCGCATTCCCTCCTGACTCAGACTCACCGCATGCATTAAATTATGTTTTTAGACTATG

ITSPGGKEELVAVASRLWQRRRRACLAAGVLLAMALGLLLIAVPLLLQAAPRGAHYEMMGTCRMICDPYT
AAPGGEPPGAKAQQPPGPSTAALVEMQDLSANPPPPFIQGPKGDPGRPGKPGPRGPPGEPGPPGPRGPPGEK
GDSGRPLPLQLTAGTASGVGVVGGGAGVGGDSEGEVTSALSATFSGPKIAFYVGLKSPHEGYEVLKFDD
VVTNLGNHYDPTTGKFSQVRGIYFFTYHILMRGGDGTSMWADLCKNGQVRASIAQDADQNYDYASNSV
LHLDSDGEVYVKLDGGKAHGGNNNKYSTFSGFLLYPD

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

CCTCCCCTCGCCCGGCGCGGTCCCGTCCGCTCTCGCTCGCCTCCCGCTCCCCTCGGTCTTCCGAGGCGC
CCGGGCTCCCGGCGCGGCGGCGGAGGGGGCGGGCAGGCCGGCGGGCGGTGATGTGGCGGGACTCTTTATGC
GCTGCGGCAGGATACGCGCTCGGCGCTGGGACGCGACTGCGCTCAGTTCTCTCCTCTCGGAAGCTGCAGCC
ATGATGGAAGTTTGAGAGTTGAGCCGCTGTGAGGCGAGGCCGGGCTCAGGCGAGGGAGATGAGAGACGGCG
GCGGCGCGGCCCCGAGCCCTCTCAGCGCTCTGAGCAGCCGCGGGGGCAGCGCCCTCGGGAGCCGGCC
GGCCTGCGGCGGCGGCGGCGGCGGCGTTTCTCGCTCCTCTTCTGCTTTTTCTAACCGTGCAGCCTCTTCT
CGGCTTCTCCTGAAAGGGAAGGTGGAAGCCGTGGGCTCGGGCGGGAGCCGGCTGAGGCGGCGGCGGCGG
CGGCACCTCCGCTCTGAGCAGCGGGGGGAGAAGCGGCGGCGGCGGCGGCGGCGGCTGCAGCTCCAGG
GAGGGGGTCTGAGTCGCTGTACCATTTCAGGGCTGGGAACGCCGAGAGTTGGTCTCTCCCTTCTAC
TGCCTCCAACACGGCGGCGGCGGCGGCGGCACATCCAGGGACCCGGGCGGTTTTAAACCTCCCGTCCGCC
GCCGCCGACCCCCCGTGGCCCGGGCTCCGGAGGCCGCCGCGGAGGCAGCCGTTCCGAGGATTATTCGTC
TTCTCCCCATTCCGCTGCCGCCGCTGCCAGGCCTCTGGCTGCTGAGGAGAAGCAGGCCAGTCGCTGCAAC
CATCCAGCAGCCCGCGCAGCAGCCATTACCCGGCTGCGGTCCAGAGCCAAGCGGCGGCGAGAGCGAGGGGCA
TCAGCTACCGCCAAGTCCAGAGCCATTTCCATCCTGCAGAAGAAGCCCCGCCACCAGCAGCTTCTGCCATC
TCTCTCCTCTTTTTCTTCAGCCACAGGCTCCAGACATGACAGCCATCATCAAAGAGATCGTTAGCAGAA
ACAAAAGGAGATATCAAGAGGATGGATTGCACTTAGACTTGACCTATATTTATCCAAACATTATTGCTATG
GGATTTCTGAGAAAGACTTGAAGGCGTATACAGGAACAATATTGATGATGTAGTAAGGTTTTTGGATT
AAAGCATAAAAACCATTACAAGATATACAATCTTTGTGCTGAAAGACATTATGACACCGCCAAATTTAATT
GCAGAGTTGCACAATATCCTTTTGAAGACCATAACCCACCACAGCTAGAACTTATCAAACCTTTTGTGAA
GATCTTGACCAATGGCTAAGTGAAGATGACAATCATGTTGCAGCAATTCAGTGTAAAGCTGGAAAGGGACG
AACTGGTGTAAATGATATGTGCATATTTATTACATCGGGGCAAATTTTTAAAGGCACAAGAGGCCCTAGATT
TCTATGGGGAAGTAAGGACCAGAGACAAAAAGGGAGTAACATTTCCAGTCAGAGGCGCTATGTGTATTAT
TATAGCTACCTGTAAAGAATCATCTGGATTATAGACCAGTGGCACTGTTGTTTCAAGATGATGTTTGA

AACTATTCCAATGTTTCAGTGGCGGAACCTTGCAATCCTCAGTTTTGTGGTCTGCCAGCTAAAGGTGAAGATAT
ATTCCTCCAATTCAGGACCCACACGACGGGAAGACAAGTTTCATGTACTTTGAGTTCCCTCAGCCGTTACCT
GTGTGTGGTGATATCAAAGTAGAGTTCTTCCACAAACAGAACAAGATGCTAAAAAAGGACAAAATGTTTCA
CTTTTGGGTAAATACATTCTTCATACCAGGACCAGAGGAAACCTCAGAAAAAGTAGAAAATGGAAGTCTAT
GTGATCAAGAAATCGATAGCATTTCAGATATAGAGCGTGAGATAATGACAAGGAATATCTAGTACTTACT
TTAACAAAAAATGATCTTGACAAAGCAAATAAAGACAAAGCCAACCGATACTTTTTCTCCAAATTTTAAGGT
GAAGCTGTACTTCACAAAAACAGTAGAGGAGCCGTCAAATCCAGAGGCTAGCAGTTCAACTTCTGTAACAC
CAGATGTTAGTGACAATGAACCTGATCATTATAGATATTTGACACCACTGACTCTGATCCAGAGAATGAA
CCTTTTGATGAAGATCAGCATACACAAATTACAAAAGTCTGAATTTTTTTTTATCAAGAGGGATAAAACAC
CATGAAAAATAAACTTGAATAAACTGAAAATGGACCTTTTTTTTTTTAATGGCAATAGGACATTGTGTGAGA
TTACCAAGTTATAGGAACAATTCTCTTTTCTGACCAATCTTGTTTTACCCTATACATCCACAGGGTTTTGA
CACTTGTTGTCAGTTGAAAAAAGGTTGTGTAGCTGTGTATATACCTTTTTGTGTCAAAGGACAT
TTAAAATTCAATTAGGATTAATAAAGATGGCACTTTCCCGTTTTATTCCAGTTTTATAAAAAAGTGAGACA
GACTGATGTGTATACGTAGGAATTTTTCTTTTGTGTTCTGTACCAACTGAAGTGGCTAAAGAGCTTTG
TGATATACTGGTTCACATCCTACCCCTTTGCACTTGTGGCAACAGATAAGTTTGCAGTTGGCTAAGAGAGG
TTTCCGAAGGGTTTTGCTACATTCTAATGCATGTATTCGGGTAGGGGAATGGAGGGAATGCTCAGAAAGG
AAATAATTTTATGCTGGACTCTGGACCATATACCATCTCCAGCTATTTACACACACCTTTCTTTAGCATGC
TACAGTTATTAATCTGGACATTGAGGAATTGGCCGCTGTCACTGCTTGTGTTTGCACATTTTTTTTTAA
AGCATATTGGTGCTAGAAAAGGCAGCTAAAGGAAGTGAATCTGTATTGGGTACAGGAATGAACCTTCTGC
AACATCTTAAGATCCACAAATGAAGGGATATAAAAAATAATGTCATAGGTAAGAAACACAGCAACAATGACT
TAACCATATAAATGTGGAGGCTATCAACAAAGAATGGGCTTGAAACATTATAAAAAATTGACAATGATTTAT
TAAATATGTTTTCTCAATTGTAACGACTTCTCCATCTCCTGTGTAATCAAGGCCAGTGCTAAAATTCAGAT
GCTGTTAGTACCTACATCAGTCAACAACCTTACACTTATTTTACTAGTTTTCAATCATAATACCTGCTGTGG
ATGCTTCATGTGCTGCCTGCAAGCTTCTTTTTTCTCATTAAATATAAAATATTTTGTAAATGCTGCACAGAA
ATTTTCAATTTGAGATTCTACAGTAAGCGTTTTTTTTCTTTGAAGATTTATGATGCACTTATTCAATAGCT
GTCAGCCGTTCCACCCTTTGACCTTACACATTCTATTACAATGAATTTGCAGTTTTGCACATTTTTTAA
ATGTCATTAACCTGTTAGGGAATTTTACTTGAATACTGAATACATATAATGTTTATATTAAGGACATTT
GTGTTAAAAAGGAAATTAGAGTTGCAGTAACTTTCAATGCTGCACACAAAAAAGACATTTGATTTTTT
AGTAGAAATTGCTCCTACATGTGCTTTATTGATTTGCTATTGAAAGAATAGGGTTTTTTTTTTTTTTTT
TTTTTTTTTAAATGTGAGTGTGAATCATTTCTTCATAGTGCTCCCCGAGTTGGGACTAGGGCTCAA
TTTCACCTCTTAAAAAATCATCATATATTTGATATGCCAGACTGCATACGATTTTAAGCGGAGTACAA
CTACTATTGTAAAGCTAATGTGAAGATATTATTAAGGTTTTTTTTTCCAGAAATTTGGTGTCTTCAAA
TTATACCTTCACCTTGACATTTGAATATCCAGCCATTTTGTTCCTAATGGTATAAAATTCATTTTCAAT
AACTTATTGGTGCTGAAATTGTTCACTAGCTGTGGTCTGACCTAGTTAATTTACAAATACAGATTGAATAG
GACCTACTAGAGCAGCATTTATAGAGTTTGATGGCAAATAGATTAGGCAGAACTTCATCTAAAATATTCTT
AGTAAATAATGTTGACACGTTTTCCATACCTTGTGAGTTTCATTCAACAATTTTTAAATTTTTAACAAAGC
TCTTAGGATTTACACATTTATATTTAAACATTGATATATAGAGTATTGATTGATTGCTCATAAGTTAAATT
GGTAAAGTTAGAGACAACCTATTCTAACACCTCACCATTGAAATTTATATGCCACCTTGTCTTTTATAAAAG
CTGAAAATTGTTACCTAAAATGAAAATCAACTTCATGTTTTGAAGATAGTTATAAATATTGTTCTTTGTTA
CAATTTCCGGCACCGCATATTAACCGTAACCTTTATTGTTCCAATATGTAACATGGAGGGCCAGGTCATAA
ATAATGACATTATAATGGGCTTTTGCAGTGTATTATTTTTCTTTGGAATGTGAAGGTCTGAATGAGGGT
TTTGATTTTGAATGTTTCAATGTTTTTGAGAAGCCTTGCTTACATTTTATGGTGTAGTCATTGGAATGGA
AAAATGGCATTATATATATTATATATAAATATATATTATACATACTCTCCTTACTTTATTTTCAGTTACC
ATCCCCATAGAATTTGACAAGAATTGCTATGACTGAAAGGTTTTCGAGTCCTAATTAACCTTTATTTATG
GCAGTATTCATAATTAGCCTGAAATGCATTCTGTAGGTAATCTCTGAGTTTCTGGAATATTTTCTTAGACT
TTTTGGATGTGCAGCAGCTTACATGTCTGAAGTTACTTGAAGGCATCACTTTTAAGAAAGCTTACAGTTGG
GCTGTACCATCCCAAGTCCTTTGTAGCTCCTCTTGAACATGTTTGCATACCTTTTAAAGGGTAGTTGA
ATAAATAGCATCACCATTCTTTGCTGTGGCAGGTTATAAACTTAAGTGGAGTTTACCGGCAGCATCAAA
TGTTTTCAGCTTTAAAAAATAAAGTAGGGTACAAGTTAATGTTTAGTTCTAGAAATTTTGTGCAATATGT
TCATAACGATGGCTGTGGTTGCCACAAAGTGCTCGTTTACCTTTAAATACTGTTAATGTGTATGCATGC
AGATGGAAGGGGTGGAAGTGTGCACTAAAGTGGGGGCTTTAACTGTAGTATTTGGCAGAGTTGCCTTCTAC
CTGCCAGTTCAAAGTTCAACCTGTTTTCATATAGAATATATACTAAAAATTTTCACTGTGTTAAACAG
CCTTACTCTGATTGAGCCTCTTCAGATACTCTTGTGCTGTGCAGCAGTGGCTCTGTGTGTAATGCTATGC
ACTGAGGATACACAAAAATACCAATATGATGTGTACAGGATAATGCCTCATCCCAATCAGATGTCCATTTG
TTATTGTGTTTTGTTAACAACCTTTATCTCTTAGTGTATAAACTCCACTTAAACTGATTAAGTCTCAT
TCTTGTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LERGGEEAAAAAAAAAAPGRGSESPVTISRAGNAGELVSPLLLPPTRRRRRRHIQGGPVLNLPSAAAAPP
VARAPEAAGGGSRSSEYSSSPHSAAAAARPLAAEEKQAQSLQPSSRRSSHYPAAVQSQAAAERGASATAK
SRAISILQKKPRHQQLPSLSSFFFSHRLPDMTAIIKEIVSRNKRRYQEDGFDLDTYIYPNIIAMGFPAE
RLEGVYRNNIDDVRFLLDSKHKNHYKIYNLCAERHYDTAKFNCRVAQYPFEDHNPPQLELIKPFCELDLDQW
LSEDDNHVAAIHCKAGKGRTGVMICAYLLHRGKFLKAQEALDFYGEVTRDCKGVTIPSQRRYVYYSYLL
KNHLDYRPVALLFHKMMFETIPMFSGGTCNPQFVVCQLKVKIYSSNSGPTRREDKFMFYFEPQPLPVCEDI
KVEFFHKQNKMLKKDKMFHFWNTFFIPGPEETSEKVENGSLCDQEIDSICSIERADNDKEYLVLTLTKNL
LDKANKDKANRYFSPNFKVKLYFTKTVEEPSNPEASSSTSVTPDVSDNEPDHYRSDTTDSDPENEPFDED
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

TTCCGCGGAGCGCGACCCGGGGACTCCCAGGCCTGTGGGCGGGCCCTGCCAGGACTGGGCGGTGCCATAA
CCCCTAGTTTAAAACTCGCGGGTACCGGACCCAAGATCGGGGACCCGGCGGGCTCCGCGGGGGAAACA
GCGAGGCTGGCGCAGCGCCGAGGCCGCGGCCCTGGGGGCCCGCAATCCACGCCACGGAATCCCCGAGTGAG
CAGGGGTGAGCGCAGCCACTGCCAACGCAACCGTGAAGAAGCTTCTGGAAGAGCAGAGGCGCCGCCAGC
AGCAGCAGCCCGACGCTGGCGGGGTGCAGGGACAATTTCTCCCTCCCCAGAGCAGCCCTGACCCATCT
GTGAATGAGGCTGTGACTGGCCACCCTCCCTCCCAGCACACTCGGAGACTGTGGGTTCTGGACCTAGCAG
CCTGGGCTTTCCAGACTGGGACCCCAACACGCAATGCTGCCTACACTGACAGCCCTACTCTTGCCCTGCTT
CTGCTGCCGAAATTTCTGCTCCTGACTTCTACCCACCCTCGGACCCAGGGCAGCCGTGCCATTTC
CAGGGCATGGAGGCTGGACCCTGGAGAGTTTCTGCACCCCTTCAGGACCCCAAGTTCCCCGCTGTGGT
CCCTGGACCATCGCTGGAGGTGGCCCGAGCTCACATGCTGGCTTTGGGGCCACAGCAGCTGCTGGCCAGG
ATGAGGAGGGGGACACGCTCCTTCACCTGTTTGC GGCTCGGGGGCTGCGCTGGGCGGCATATGCTGCGGCT
GAGGTGCTCCAGGTGTACCGGCGTCTTGACATTCTGTGAGCATAAGGGCAAGACCCCTCTCTGCTGGCGGC
TGCTGCCAACCCAGCCCTGATTGTGGAGGATCTGTTGAACCTGGGAGCAGAGCCCAATGCCGCTGACCATC
AGGGACGTTCCGGTCTTGACGCTGGCCGCTACCTACGGGCTCCCAGGAGTTCTCTTGCTGTGCTTAACCTCT
GGGGTCCAGGTTGACCTGGAAGCCAGAGACTTCGAGGGCCTCACCCCGCTCCACACGGCCATCCTGGCCCT
TAACGTTGCTATGCGCCCTTCCGACCTCTGTCCCCGGGTGCTGAGCACACAGGCCCGAGACAGGCTGGATT
GTGTCCACATGTTGCTGCAAATGGGTGCTAATCACACCAGCCAGGAGATCAAGAGCAACAAGACAGTTCTG
CACTTGGCCGTGCAGGCTGCCAACCCCACTCTGGTTACAGCTGCTGCTGGAGCTGCCCCGGGGAGACCTGCG
GACCTTTGTCAACATGAAGGCCACGGGAACACAGCCCTCCACATGGCGGCTGCCCTGCCCTGGGCCGG
CCCAGGAGGCCATCGTGCGGCACCTGTTGGCAGCTGGGGCGGACCCCACTGCGCAACCTGGAGAATGAG
CAGCCCGTTACCTGCTGCGGCCCGGGCCGGGCCCTGAGGGGCTCCGGCAGCTGTTGAAGAGGAGCCGTGT
GGCGCCGCCAGGCTGTCTCTTAGGACTCAAACCCAGACCCTGGACTGATTTCCAGTCCCCACCGTCCT
GCGGGACAGCCAGCGTATGCTAATGTTGCAAACCCATGATAATGTATGTGAATATCCTGCCATTGGGGTT
TTACATTAACCCAGAAATGGCTGCAGAGGGGTGAACAGGCCCAATATTTGGGGTGTGTGATACCCCT
CTTCTACCCACAAGGAGCCCTCTTGATGATTTCTGTGAAATCGAGGCCCTTGATTGTTTCTGTGAAACAC
CCTGCACCCCTAGTCCTTTCCCACTGAGATCTTCGGGTTCTCTCCCTAACTCAGCT

LAQRRGRGPGGPQSTPRNPRVSRGERSHCPTQTVKKLLEEQRRRQQQPDAGGVQGGFLPPPEQPLTPSVN
EAVTGHPFPAHSETVSGPSSLGFPDWDPNTHAAYTDSYSCPASAAENFLPPDFYPPSDPGQPCFPQG
MEAGPWRVSAPPSGPPQFPAVVPGPSLEVARAHMLALGPQQLAQDEEGDTLLHLFAARGLRWAAYAAAEV
LQVYRRDLIREHKGTPLLVAAAANQPLIVEDLLNLGAEPNAADHQGRSVLHVAATYGLPGVLLAVLNSGV
QVDLEARDFEGLTPLHTAILALNVAMRPSDLCPRVLSTQARDRLDCVHMLLQMGANHTSQEIKSNKTVLHL

AVQAANPTLVQLLLELPRGDLRTFVNMKAHGNTALHMAAALPPGPAQEAIVRHLLAAGADPTLRNLENEQP
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

AGCATTGTGGGAGCTCCTCGGTGCGTGCCGGTGGCTGCCTATTGCGGCCTGCGGTGATCAACGAGGC
CCGGGAGCGCGTCCCAAGTCTGCGCGCCGGTCTGCGGCAGCTGGCCCAAGACCCGGAGCCGAAAGGAAG
TGTTGGAGCCTGAGGTGCTCCGCGCCGCTAGGAGGACGCTGTGCCTGGCTGGGACCTCCGCTCCCGCCC
ACCGCCCTGGAGCCGCTGAGGGACGTCCACGTGGGCTGTCCCCGCCGAGCCGCGGCCCTGTCCGCTGGC
GCTGCTCTCGGGCCACTACCTCTACTACCACTACGGCTGCGACGGCCTGGACGACCGCGGCTGGGGCTGCG
GCTACCGCACTCTGCAGACGCTGTGCTCGTGGCCAGAGGGCCAGCCCGCGGGCGTACCTGGACTGGCCGCC
GTACAGGCGGCCCTGGAGGACATGGGCGACAAGCCCCCGGCTTCCGGGGCTCCCGGGACTGGATCGGCTG
CGTGGAGGGCCAGCCTCTGCCTCGCTCACTTCGGAGGGCCCCAGGGACGCCTCTGCCACGTACCCCGGGGAG
TGGGGCTGCACGGGGAGCTGGAGAGGCTTTACTCGCACTTCGCAGGGGGTGGGGGCCAGTCATGGTTGGG
GGGACGCAGATGCCAGGTCCAAGGCCTTGTGGGAGTCTGCGTAGGGTCAGGCACGGAAGCCTATGTCCT
GGTATTGGACCCTCACTACTGGGGCACTCCAAAAAGCCCCAGTGAAGTACAGGCTGCTGGGTGGGTGGGCT
GGCAAGAGGTGAGTGCAGCCTTTGACCCCAACTCCTTCTACAACCTGTGCTTGACCAGCCTTAGCTCCCAA
CAGCAGCAGCGCACCTTGGACTGAGGACGAAGTTACAGAAGTGAAGTCTCGGGTCCAGACACGCACCTA
TGTACCTCCCACTGGTGTCCCTGCAAAGCCTGGCGCTTTTGACATCAATAATAAAAGTGGCAGGGCTGAGC
AAAAAAAAAAAAAAAAAAAAA

LEPLRDVHVGLSPPSRGPVRLALLSGHYLYHYGCDGLDDRWGCGYRTLQTLCSWPEGQPAGVPGLAAVQ
AALEDMDGDKPPGFRGSRDWIGCVASLCLAHFGGPQGRLCHVPRGVGLHGELERLYSHFAGGGGPVMVGGD
ADARSKALLGVCVGSGETAYVLVLDPHYWGTPKSPSELQAAGWVGWQEVSAAFDPNSFYNLCLTSLSSQQQ
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
GAGTGGAAGCAACTCTCGCGAATTTTAAAATTTATCTTTTTGCCTAGCGACTGACAACAGGCTGGTTGCTT
GGCGTGGAATCCTAAAGTGGCCTGGCTTTGAGACTGGAGTGAGACCCAGCCCTAGGCTGGGGTTCTTTCC
ATTATAGAGGAGACGGATTGAGAAGGGCTACAGACCAAGGTTGTTGAAAACCAACATATGATGAGCGTCT
AGAGATTAACGACTCCGAAGAGGTTGCAAGTATTTATACTCCAACCCCAAGACACCAAGGACTTCCTCGTT
CTGCCCATCTTCTAACAAGGCTATGGCTGATAACAGCAGTGATGAGTATGAAGAGGAAAAATAGCAAGGTC
CTAAGGGAGGGCATGCCACAGGCTCCAGGCCACAGAGGCCAAAGACATGGACCCTGTTCCACCTGCCCTGC
AAGTCTCAAGTGCCACCAGACCCCTTCTCATGTACTTGAGAGGGTGGGATGGTACAGAGAGAGCCAGAAGC
ACAGAAAGGAGAAGAAGGAGACCTCACAGTTGACACCTCAACGGGGCTTTAGTGAAAATGAGGATGACGAT
GATGATGATGATGATTGATCTGAAACTGATTCTGATTCTGATGATGATGATGAAGAGCATGGAGCCCCTCT
GGAAGGGGCCTATGACCCTGCAGACTATGAGCATTGCGAGTTTCTGCTGAAATTAAGGAACCTCTCCAGT
ACATCAGTAGGTACACACCTCAGTTGATTGACCTGGACCACAACTGAAGCCTTTTATTCTGATTTTATC
CCAGCTGTCGGGGATATTGATGCATTCTTAAAGTCCCACGTCCTGATGGAAAGCCTGACAACCTTGGCCT
ATTGGTATTGGATGAACCTTCTACAAAGCAGTCAGACCTACGGTGCTCTCACTCTGGTTAACAGAGAAT
CTAAGCAGCACAAACATCACACAACATATGAAAGTAAAAAGCCTAGAAGATGCAGAAAAGAATCCCAAAGCC
ATTGACACGTGGATTGAGAGCATCTCTGAATTACACCGTTCTAAGCCCCCTGCGACTGTGCACTACACCAG
GCCCATGCCCCGACATTGACACGCTGATGCAGGAATGGTCCCCGGAGTTTGAAGAGCTTTTGGGCAAGGTAA
GCCTGCCCCACGGCAGAGATTGATTGCAGCCTGGCAGAGTACATTGACATGATCTGTGCCATTCTAGACATC
CCTGTCTACAAGAGTCGGATCCAGTCCCTCCATCTGCTCTTTTCCCTCTACTCAGAATTCAAGAACTCACA
GCATTTTAAAGCTCTCGCTGAAGGCAAGAAAGCATTCACTCCTTCATCCAATTCCACCTCCCAAGCTGGAG
ACATGGAGACATTAACCTTCAGCTGAGACTTCCCAAGCTGCTGTTTCAAGGCTGAGCTGGCCCCCTCTGC
CCCAGCTGAGATGGACAGATCGTTGTCAGCTACTTGATGTCCTTGCCCATGCCACAGCTTGGCTCAGGGGC
AGTGCATGTCCTGCTGCCCTCTCTGCCAGAGGGCACAGAACATGTTTGTGTTAATGAACCTGCCTGCCTCAG
ATTGCTGTCCCCGGGGAGTTAATGCATCTACACCACTGTGGGGATTTGAGTTATAAGAATTGGAATTTCTG
AGATCCCATGGAGGTTAGATTGGGAGGAAAGCTTAAAAGATGTCCTTTTTGTGAGAGGGATGGAATTTGTT
TCTTTCATTTCGTAAAGTTAGTGAGTAAAGATTTTATAAATCAAAAAAAAAAAAAAAAAAAAA

TEETDSEGLQTKVVENQTYDERLEINDSEEVASIYTPTRHQGLPRSAHLPNKAMADNSSDEYEEENSKVL
REGMPQAPGHRGKMDPVPAPASLKCHQTPSHVLERVGWYRESQKHRKEKKETSQLTQPRGFSENEDDDD
DDDDSSSETSDSDDDDEEHGAPLEGAYDPADYELPVSAEIKELFYISRYTPQLIDLHKLKPFIPDFIP
AVGDIDAFLLKVPDPGKPDNLGLLVLEPSTKQSDPTVLSLWLTENSKQHNTQHMVKLSLEDAEKNPKAI
DTWIESISELHRSKPATVHYTRPMPDIDTLMQEWSPFEELLGKVSLLPTAEIDCSLAEYIDMICAILDIP
VYKSRIQSLHLLFSLYSEFKNSQHFKALEGGKAFTPSSNSTSQAGDMETLTFS

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

GCCGCGGCGGTGGCGGAGACTGTGGCTTTAAGAGCGTGCCGGGAGCCCGAGCCCCAGCCGGGCCGCGCTTC
GCCGCTGCGCACCCAGCGGAGCCAAGCCCCACGCTGGCCGGACAGGGCCGCTGTGCGCGGGCTGCTGAG
AACTAGCCCTAGACCTCTGCGTAGGGTTCTTCTGCCGAAGACATCACCAGTGTGTGGAGCCTGCCACACC
CACCCGCTGCCAAACCACGGCCTTTACCTGTGTCTTCCGGTGTTTCCCGTGCGACCCATCTGTGGGAGTG
CCTCGTGGGCTGCCCCAGAGTTACCCACACTCAGCAGCACCAATGGTGAAGATGACAAGATCGAAGACT
TTCCAGGCATATCTGCCCTCCTGCCACCGGACCTACAGCTGCATTCACTGCAGAGCTCACTTGCCCAATCA
TGATGAACTAATTTCCAAGTCATTCCAAGGAAGTCAAGGACGAGCATACCTCTTTAACTCAGTAGTTAATG
TGGGCTGTGGGCTGCAGAAGAGCGAGTGTGCTAACAGGACTGCATGCAGTCGCAGACATTTACTGTGAA
AACTGCAAAACCACTCTGGGCTGGAAATACGAACATGCTTTTGAAAGCAGCCAGAAATATAAAGAAGGCAA

ATACATCATTGAACTAGCACACATGATCAAGGACAATGGCTGGGACTGATTGGACAGCATCTACCCAACCC
AGTGTCCACGTGAACGCCATTCAACCGAACATTCTTCCCAAGCGTGAGAGAGTGACTGACACTTTGGTTCCA
TCCATTTAGGGGCCTTGCCATCCGGGGCATCCTCCACCCTGACGCCATCTTTCTGGTGACCGGCCTCTAA
ATCGCTGTCTCTGTCTCTTTGCTTTGTATCTGTTTGTGAGTTGATCCTGGCTTCTCTCTCTGTTCTAGT
TTTGGCTGAAAACAAAACAACAAAGGAACAGATCCTTGACCGCATGGCGGCAGCCCACCTTGGTAAGGGC
CCCAGGGCCCATGCGAGAGCTGCCTGATGGCCTCTTGTGAGGAGAGCAGTGGCACGGGGGCGTGAGGAAGA
GGGAAAGGGGAACTCTAAGGGTCTTGGCGCGGGGAAGGGGTGGAAGGGTGGAGGTAGGAACAAAATTGCG
CCGCTCCTGGAGACCTGATAACTTAGGCTTGAAATAATTGACTTGTCTAAAAGGACAAAGAGAAAAA
ATACCTCATGACTGCATTCTCTGACTAGAAGCTTCTGTTCTGACACCAAATGTGCCAGGTTAGCAAAT
GAGCACAAGATGTGGCCCTGATTCTAGTTGGTGGGGCAAGGGCTGGTTCTCTGGGCTGAGTGGGGGAGT
GTCCTGGCAGCAGCGAGTGACCTGGGCAGTGGCCAGGTGGGTGCGATGACTCTGATGCCTCACTCAGTCTC
TGGGCAATCATCATCTTTGCCTCTAGCCACCGTAGATAAGGTGTGAAGGGACTGCTGTTTGCAATGGGCTT
ACCATCCAAATATCCCAAAGGCTTTGACCAGCAACCAAGTAAAATCAGTAATTGAGGAGAGCAGGGCACAA
AGGGGCTGCAGTTTGGGAGCTCCTGAAGAAATGGCTCAGATATTGAGTCAGAGAAATAAAAAGTAGGATCA
GTTAGCAATTCTAACTGCCCTTCTTCTGACCCCTCATAAGAGGAGTGTGGTGAGGGAGGGGACTGGGTAG
GGGTATCCCAGGAGGAGGGGTTTACATTGGAACAGTTTCAAGTTTCGGTGCATCTTTCTCTTCGGTTTTA
CAGTGGCTTCCGTGGGATCGTCAATTTCTTGTCTTAGAGTTTTCGGGTGTTTTTCTCCAGTCTTGTACTG
TAGACTGTAGAAAGCACGGGCCCCAGGCTCTGAGCTTAGTAATAACCTGGCTGGTAGATTCTCATGCCCC
TAATTGTCCCACTTAGGCCTGAATGTCTTGCATGGAGAGAAATCTCTGTGAGTGTGGTCCAGCAGCAGGG
AGGAGTTCTGCCCAAATTCGATATCACCCCTTCCCCATCCAAGCATCCTTCGATTAGGGAAGTGGAGAG
CACATCCCTGTAAGGCCCATAGAGAAAGAGGAGTTTGTACATTTAATCAACACTGTGAAGTCTGTTCTA
CAGCAATTCAGCCATTACACAGTATATGACTGAAACTCATTTAACTGGGTAAATTTCAATTTCTTAGACTGA
ATATATTATTGTTAAGATACGTGTGCGTGTTAGGTAATTCTCAGCATCTCCTCCAAGTAGGCCGACCTTCT
CGGAAAATTCACCCTAAAAGTCTCACAAAAGAATGAGTTCATGGGGAGATTCTGTAAAGTGATGAAGTGA
ATGAAAGCAGCCAACAGCCCAGGAGCTTTTTCAGAATAGCGTCTGCAGCAGAACAGTTTCCATTAGAGCG
CGTCTTGGTGGAATGCTTTTTTGTGTGTCTCCACGCGCTGATGGTGGAATGGGAGCCCCAAGACGTGTG
GGCTTAGAAATCACTTTTTGTTCCCAAGGCTTCTTGTCCAGATCTTTCCAGTGCTTTTCATAGCCCTGGGA
GATCAAGTTGTTCTCCCCACTTTACTGCAAGGTAGACTGAAGTTTCAGAAGAAATACTGAATTTCTGCTCCC
AGAAGAATAGTTTTCTTGCTCACAGGCCAAGTTCTCAATGAAATCGTTTTTTAACTTTACATTTCTTAA
GCTGGCTTCCCGGCACAGAAGCCATGGATTTCCCTCTCTCCCTTCCCCCTCCTCAAGGAAATAGTCTTCC
TTTATGGATTTTCATTGGACTCTTCTCAGCGATTGTCTGGCTGTTTATTGATAGTCTTCCCATAAGA
AAATGGGGTTAAACATGGGGTAGGTATTTTGTCTTCAAACATAAAATGGAATGTGGTGACATAAACTAGA
CATGGGGTGCCCTCAAGTTTCCAAGGGGACCAATGTGCCACTGTTCTTCTTGGGGATGAGGCCTTTGACT
GTTGGATGGATCAGAGCAGGCTCCAGTCAGACCCTGGTTCTGAATGTTTTTTTTTTCGGTGACTATCCAGT
GAGCCTTCAGTGGGTGCAAGGCGCCATACTTGTGTGAGAGAGCTGAGTAGAGTGTGGTTTTTTCATAAC
TACAGGGGGAAAAAAGTCATTAGGCTTTCCCTTTGTGTGAGTGAACCAAAAGTGCTTCTTACAACGTTT
GCTCTGTTTCATGGGTTGTCTATCTAACATTGAGCAGCATTGGAGAGGCCACAGCTGAGCTATGGAGATGCT
AAATTAACCTCATGGCCTCAGTCAGTTTCATTCTTTAATTTCTCACCAAATTATTGACTTAGAGCATAACCA
AAGACCTCATTATTACCCAGGTGGGTTGGGGTAATTGGAGTTTGTGGTGAAGTTTGGGGGCGGGGTG
TTGGGAGTAGAGACAGGGTAAGGGGACGTGAGAAAGGAAAAGGCATGAAGTTCTATACCTCAGCCAGCAGC
TGCCTTCGTTTGGAAGTGAAGTCCAGCCAGCAGACTCTCTAGCTCCATCTCCCCTGTGCCACCCTAGGTCA
TATGACCTTGGCCACCTTGGAGTAGACCCAGACCCCTCGGGACCCGGGACATTAGTCTCAGGCTGCTGATG
GATTGATTTGACATGAACCAAACACAGCCAACTCGATACCCACAAGCTGTCAGCTGAACCTGACTGAGTG
TTCTTCTGAGTTCACGAGGATAGGCTAGAGTGCATTTTTACTGGTGGATCAGTGTGTGCGAAAGAGATGA
CCCTTTATAAAGAGATTTTCAAGTGGATATATATAAAGAAACAGTTGCTTGTAAAATATACTTTTGAAA
TAATATTTAATTTTTTAAATAATATATTTGGTGCTTTTCTCAGATCCCCTGAGAGCACTTTTTATTTTCT
CTTTTAAATTTCTATGGTTTTCTTTGCATTTCTGAAGTATATTTTAAAGGAAACAGTGATCACCAATACAT
GTTTTTCAGTTTTTTTTTTTTTAAAGTCTCTATCACTTTAATCTGGATCAAGGCTTTGAAGCAATGCCTCT
CTGCATTTTTTCCCAGTGGAACAGACTCTGCAGTACATTAATCAGGTTGAGAATTGAAATATTTTCTTGC
ATCAGTATTGGCTAGAAAAGAAAATAAATAAAACCAAGTTAATTTAGTAGTAACAACCTTACAGTGATTCTT
CCTGTTGGAAGAATTTCCAACAAATCAGAATCACGTTTTTAGTTGTGCGTGTGCGCGCACACGTGTGTA
AAGCACTTTCGATTGTGCTCCTGTTTTCTCGAGTGGGGACACTTTAACTACAGTTTACACCTCGGGCGCA
TAAAGTTTTTCTTCTCTTCTCTGTTGTTTCTGTTTCTGAGTGGACCAACAGCAGAACCCACGAGGAT
TTGTTTTGAGTATGGAGCTGTTGCGGGTTTGTCTTTTTCTTGTCTTTCGTTGCTCAGTTTTTACAGACTG
TAAAGGAGATGTGTTGTTTGTGAAGATGGAGCAGAGTCAAATCTGTGCTTCTAACTGAGATGAGAGTGTAT
TAATCACGTATCGCAGGGCTCCAGCTGTTTTAGAAGCCACATCATGTTAAACATTAAGTGGTTTGGATTAA
AGAACATTAATATTATAATACACATATCTTAGTGGTAAACAGCTTTTTTTTTTTTAAAGTTCAGATTGCCTC

AGGTTTAGAAAGAGGCTGAGAAATCAAATCTTGAACACAATCAACTTACATATTTTAAAGGAATCTGCCTC
AAATGAGAAAATATGCTAGTTATCTAGATAGAGGAAAGAGATATTTACTTTTTTAAAAATTAAATAGTTA
TGAAATCTGGCAGAAAAGGTAAAGCCTAGAAGAACTATGAAAGCTATTCTCATGTTACCAAATCTATCT
GCGCATATGTTTTGTATAACATTTGCGGTGACAGTGGGAGTCGGTTCCTTTCCCAACCTGCAGAGACTAT
CTTCCAATACAGAATCTGTCTATTTATGCTTGTGTTTACAACTGTATTTGTTGGGTTTGGGTTTTTGT
TCTTTGGTGGCATTTTTCAGGTCACTTTGCTTCTATAACAAAGGTAATTGTTTTCAAATAATTTGTCTTCA
CCTTTTCTGTATTTGTACATAGTGATTAGTATTAGAGAAAAGTGCATTGTTTCTGTATATTTCCAATC
TGTGTTGGTGCTCATTTGAGAAAATAAAAGTTTTCAAATATTAACCTCTTAAAAAAAAA

TAFTCVFRFCPCDPSCGSASWAAPEFTPHSAAPMVKMTRSKTFQAYLPSCHRTYSCIHCRAHLANHDELIS
KSFQGSQGRAYLFNSVNVVVGCGPAEERVLLTGLHAVADIYCENCKTTLGWKYEHAFAESSQKYKEGKYIEL
AHMIKDNGWD

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

GGATCCCAGTCTGATTCTGATCCTTGATTCTTGATCCTTGGTCCCGCCATGGGAGCCTGAGCGCCCCCT
ATTCCCCCTGGCCCCCAGCCCCGGGGCCTTGAGGGGGAAGAGGCAGCGGTCTGGGACGGAGCAGGGGGT
GACCACTCAAGAACCCCCCTCAACATCCCCATCGCGCGCTGCCTGTCCAGGAGCGCGAGTTCCG
GAGCGACCCGGAGCGCTGCGGATACAAAGGCAGCGGGCCGAGCGGGGCGCCCGCGGAGCCACCCGGCAGT
TCGAGCGGGGGAGCGTGCCTGATTTCTCTGAGACAAGCCACCCGTCCAGCAAAATAGAGTCCCTCA
GGGTGACAGTTGACTTCTGAAGGTGCCTCTTGGCCTAAAGAAGCCGGTGCTGAAGGAGGTGGCTGTGGGG
CCCCCAAGAGGCCCGAGCCTGCGGCCCTGGAGCGCTACAAGGCGCGCGTTCAGACGCCATGGACACCGA
GTCCAGTACTCGGGCTATTCTACAAGTCGGGGCACTCCCGCAGCTCCCGCAAGCACAGGGACCGCGGG
ACCGACACCGCTCTAAGAGTCGAGATGGGGGCGAGGGGACAAGTCGGTGACAATCCAGGCTCCCGGGGAG
CCCCTGCTGGACAATGAGTCCACACGAGGGGATGAGCGGGATGACAAGTGGGGGAAACGACGACAGTAGT
AACGGGCACCTCAGAGCACAGCATCTCCATGATGACCTCACACGCATCGCCAAGGACATGGAGGACAGTG
TCCCTCTGGACTGCTCCCGTACCTGGGTGTGGCAGCGGGGGCCACCCTGGCACTGCTGTCTTTCTCACG
CCTCTGGCCTTCTGCTGCTGCCCCACTGCTGTGGCGGGAGGAGCTGGAGCCTTGCGGGACGGCCTGCGA
GGGCCTCTTCATCTCTGTCGCCTTCAAGCTGCTCATCCTGCTACTGGGCAGCTGGGCTCTGTTCTCCGCC
GGCCCAAGGCCTCGCTGCCCGCGCTTTTGTGCTGCGTGCCCTGCTTATGGTGCTGGTTTTCTGCTCGTG
GTCTCCTACTGGCTCTTCTATGGTGTCGCATCCTGGATGCTCGGGAGCGCAGCTACCAGGGCGTGGTGCA
GTTGCGCGTGTGCTGGTGGACGCCCTTCTTTTCGTGCACTACCTGGCCGTGGTCTGCTGGAGCTGCGCC
AGCTCCAGCCTCAGTTCACGCTCAAGGTGCTGCGCTCCACCGACGGCGCCAGCCGCTTCTACAACGTTGGC
CATCTCAGCATCCAGCGCGTGGCAGTGTGGATCCTGGAGAAGTATTACCATGACTTCCCTGTCTACAACCC
TGCCCTCCTCAACCTGCCCAAGTCCGTCTTGCCCAAGAAAGTGTCTGGCTTCAAGGTGTATTCCCTCGGAG
AGGAAAACAGCACCAACAACCTCCACTGGCCAGTCTCGGGCTGTGATTGCAGCGGCAGCTCGGAGCGGGAC
AACAGTCACAATGAGTACTACTATGAGGAGGTGAGCATGAGCGAAGGGTGCGCAAGAGGAGGGCCAGGCT
TGATGTGGCGGTGGAGGAGGCCTTCACTCACATTAAGCGGCTGCAGGAAGAGGAGCAGAAAAACCCAGGG
AGGTGATGGACCCCGGGAGGCAGCCCAAGCCATCTTGCATCCATGGCCCGTGCCATGCAGAAGTACCTT
CGGACCACCAAGCAGCAGCCCTACCACACCATGGAGAGCATCCTGCAGCACCTTGAATTCTGCATCACGCA

TGCATGACGCCCAAGGCTTCTTTGGAGCGATACTTGGCGGCTGGACCTACCATCCAGTACCAACAAGGAAC
 GCTGGCTGGCCAAACAGTGGACATTGGTGAGCGAGGAGCCGGTGACCAACGGCCTCAAGGATGGCATCGTT
 TTCTCTCTAAAACGCCAGGACTTCAGCCTGGTGGTCAGCACCAAGAAGGTCCCATTCTTCAAACCTCCGCA
 GGAATTTGTGGATCCCAAGTCACACAAGTTTGTATGAGGCTGCAGTCTGAGACCTCAGTGTAAGTGTGCA
 ACAGCAGGGGGAGTGGGAAACTCTGGGGGGTCTTGAGGGGGTGGGAGGGGGCTTGGTTCTCAGGCCACGCC
 ACATTCCTGCCACCCTTCTTCTTCTTGTCTTTTTTTTTTACTTGAATTAACGCACCCCCACCTTCTCTCC
 TCGCTTCTTCTTATTTTACCCCATGTGAACCTGGAGAGACCATCCTGCTGTCAACAGTACCTGGGAAGGA
 CTCCACCTCACCAACAACTTTTGTATTACTCTAGGCCCTGCAGGAATCAGTGCCTCTCTCCCTCTTCTTT
 CCCTAGTCTTTTCCAGATTACAGTCTCTCCTGAAAGGGCACAGGGCCCTGCTGATTGTACTTTCCCTCC
 TGAGCCCCGACTCACAAATCCAAGTTCTTAAACATTTCTCTCAGTGGCCCAACAGGGTTTCTCTGGGG
 ACATGGACATGACTCCAGAGGCCACAGTGGCAAACTCTCCAGGGCAGCAACTGGCCCTCTGTCCCTCA
 CCCCAGCCACAACAAACCTGGGTTCTAGGGCAGGGATACTCCTGCCACAGCCCGAGTTAGAAATCTCC
 TTGCTAGGAGCATTGTCTTCCACATATATTTAGAGCAAAGAAGGATCCCATCCTTTTCCAGAAATCTCCA
 CCTAATGTTTTTGGTTTGTATGGTCACGTGACCATAGGCAACCACGTGGAAACCTCTGTGACCACTTTTTC
 CAGGGACTTAGGGGAAGGTACCTTTCTTCCAATGTGTCTTCTTAGGCAGCCCCGAGGAGGAGGGCTGAAT
 AGATCCCTGAGGTTTTGGAGAGACCCCCATCACTGACTCCTGCTCCCTAACCCCTACCCCTCACTTTCTGTCCT
 CGCTCTTCCAGTGAAGGATGGTATGTAGACTCCTGTACAGACATAGTGGCTTGACAGACCCTGACCCAGCC
 CCTGTGGTCTTAGACAAATGTTTTTATTTTTGTACCAGCCACCCCTGTCTGCCGCCTTCTCTCGACTCC
 AGAGACCTGTTGCCTCATCTCTTTTGGGGAAGAGCCGGCAGCTCCTCCTCATCCCCTGCCTTAAGTCCAGT
 TCTTTGCCCTCAGGGGTCTCGTTTTCTTGGCCTTCCAGGGTCCCCACCCCTTTTTCTCCCTGCCTGATTCTCT
 GAGCTCTGGGCTCCGTCTGTATTGGGTTGAGGGGCAAGGATTACTGCCTTTTGTAGGTACTTCACCCCTCA
 CCCCATTTTAGCTTCCATAGTCTTTGCACCAAATCCAAATTCCTGATAATTTAGATCTCATTTTGGACAAA
 ATTTGCTGGCCCTTAATAAAATATTTTCAATATAAATCTGAGCCTTTGACTCAGACATTTTGGCAAGGAG
 AGTAGAATTAGGAAGTACCCATATACATCCAGCCAGGATCCACATGGAGGACCTTTCTGATGGCTGCAATG
 ACTAGGCCATTCTCTGATTAACCTACAGTGTCTTTTGTAGGCCCTCTTTTCCCTGAAAGACTGGTTGG
 TACTTACCTTGCAGAGCATACCTGGGATAAGATCCCCAGTGTCTCCCTGGGAGGCTCCCCCTCTGTGTA
 GCACCAGCCCTGGGAATGATGGAGCCTAGTGATCGGGGTTTTCTCCTGCTGTCTTTTCTGCAAAAGTTCACT
 TGTTTACCACCCGCATGCTAGAGAGGAGCTCATTGGCCAATGCTTACCTTGTCCCCAAAGGGGTGGGTTGT
 GGAGCTCACTTAGGCAGGGCCTCTGGCTGGGGCCAGGGTTATGAGATAGGCCTGTATGAAATATGCTCTGT
 TCTGGGGGTCTGTCTCTTTTCTTCTTCAAAAACCTTTGTGTGAGAGAGTCCCTTCTGAGTCACATAAATA
 CCTCACTATCCTGGAAAACAGGGCCTGGATGGTGAAGTGGGGTCAATTGCCTTTGTGGACAGGATGGAGTGTG
 GTGTGGTCTGAGGAGCAGGTTGGGGTGGGGGAGAGGGAAGGATTTGGGATCTTAGTGTGCTGCCCTAGGTT
 AGGGGCTGGGGAGTGTATTTTAAAGATCCTGCCATGTTTTTAATCACTGTGATTTTTTTTTTTCATTCCCCT
 TTCTTAAAAAAATTTTTTTTCTCCTCAACTCTCTAAGCACTAAGGGCTGTGCCTGAGAATGGTAGCATTTTG
 GTCTTTTGCTTCAAACTGTGGTATCTTTGTCTTTTTTTCATTATTATTATTATTATTATTATTATTATTAC
 TATTGTTTTTTAAAAATGTCAGGATGAATTGTGACACATATGGCCATGTGTTTGTCCCTGCTTCTCCCCTG
 TGGGAAGTTGTCTCCATGCTGTGAACGCTGTGGGGTGTGCAGCTGACTCAGTCCCTCTGAGCAGTTTCCC
 CACTGTGTCTGTCCCATCATGCGCTGGATCTGCTCATTCTCCTGCTGTGGGGGTATGCCACCTCTTACCC
 TCTTGACACCATAGGGCTAGCTGTGGCTGGGCCACACGACCTGTCTTTTGTGTGACTCATGGCATCCCTCG
 TTCTATCCCCACCGTGCCTAGCAGGCCCTTCCCTTTTACCACACTCGGAACCTGTGCCTTTCTCCTCCACAA
 CAGGACGCTGTGCCTCAGTCCCTTACCTACCTCGCCACTCTGCCACTGTCCCCATTGGTCCCTTCTCCTAA
 ACTGGTCTTTGTGCTCTCTTTGTTTTTCTTATTTCCCTCTTGTCTCTCATTTTTTCTTCCCATTTCCCCTC
 CCATTTTCAAGCCCTTAACTTTTCTCTTTCCCATCTCCACTCAGTATTCCAATGGCAAACCTGATGATGTAA
 CACCTGCGATGAGACATCGGACTCTCCGGAACCTTCTCATCTGACACGCTTTTTTCCAGGGTTCGTACTT
 CTCTCCATTGGTCCCAGGCTAACTCCCCTGTTCTCTGTGGTGTCTGTGAGTCCGTCTGTCTTCTCTTTTCT
 CTCTGCCCTTCCACAGGGCAGTATCTGCTGATGGATTGAGTCCCTGGTGTGTGATTGTTGTGATTGTTCT
 TCCGTGCGCAAAAGGAAGAGGGCTTTTTGAGTCCCTTCCAAGTGAGATTGTAATGTAGAATTTTCCACTG
 TTGGATCTAGATTTTTTTTTTCTTTTTTTTTGGGGGGGTGGGGTTACAGAGCTGAGACCTTGTGCATGCATGT
 AGAAAATTGTAAATGTAAATTTTTTTTTAATATATAAAAAGCTTGTCTTACAGTTTGCAGTGGATCTAA
 CATTACGGCAATTTTAGGATTTTTTTCTTAAACATAGGAACTAAAACGTACAAATTTTTTTTTATATAAA
 TAAAGACATTTGACTTTTTGTGGGAAAAAAAAAAAAAAAAAAAA
 TESLRVTVDFLKVPLGLKKPVLKEVAVGPPKRPQPAALERYKARRSDAMDTESQYSYGYSYKSGHSRSSSRKH
 RDRRDRHRSKSRDGGGDKSVTIQAPGEPLLDNSTRGDERDDNWGETTTVTGTSEHSISHHDLTRIAKD
 MEDSVRLDCSRHLGVAAGATLALLSFLTPLALLLPLLLWREELEPCGTACEGLFISVAFKLLILLGWSVA
 LFFRRPKASLPRVEFLRALLMVLVFLLVVSYWLFYGVRLDARERSYQGVVQFAVSLVDALLFVHYLAVVL
 LELRQLQPQFTLKVVRSTDGASRFYNVGHLSIQRVAVWILEKYYHDFPVYNPALLNLPKSVLAKKVSFGKV
 YSLGEENSTNNSTGQSRVIAAAAARRRDNSHNEYYYEEAEHERRVRKRRARLVVAVEEAFTHIKRLQEEEE

KNPREVMDPREAAQAIFASMARAMQKYLRTTKQQPYHTMESILQHLEFCITHDMTPKAFLERYLAAGPTIQ
YHKERWLAKQWTLVSEEPVTNGLKDGIVFLLKRQDFSLVSTKKVPFFKLSEEFVDPKSHKFMRLQSETS
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

ATACCTACACCGGCTTTTTGTACGACTGTTGGCCCTGGAGAACGATCCTTTGGTGGCGAGGGCGGGGAGGA
CGAAAGCGCCCACTGTGGATTGGACAGTGTCAAAAAGAGGGGCGGTCCCTACTGAAGGGGCGGTTGGGCGA
CGAAGGGAAGAGTCTTTTCAGCGCTGAGGACTGGCGCTGAGGAGGCGGCGGTGGCTCCCGGGGCGTTTGAG
CGGGCTCACCCGAGCCCGCGGGGCCAACGCGGATCCAGGCCCGACTGGCGGGACCGCCCCGGATTCCCCGCG
GGCCTTCTAGCCGCCATGAGGAGCGGCGTCTATGAACCCCCAGACCTGACTCCGGAGGAGCGGATGGAGC
TGGAGAACATCCGGCGGCGGAAGCAGGAGCTGCTGGTGGAGATTACGCGCCTGCGGGAGGAGCTCAGTGAA
GCCATGAGCGAGGTGGAGGGGCTGGAGGCCAATGAGGGCAGTAAGACCTTGCAACGGAACCGGAAGATGGC
AATGGGCAGGAAGAAGTTCAACATGGACCCCAAGAAGGGGATCCAGTTCTTGGTGGAGAATGAACTGCTGC
AGAACACACCCGAGGAGATCGCCCGCTTCTGTACAAGGGCGAGGGGCTGAACAAGACAGCCATCGGGGAC
TACCTGGGGGAGAGGGAAGAAGTGAACCTGGCAGTCTCCATGCTTTTGTGGATCTGCATGATTTACCGA
CTCTCAATCTGGTGCAGGCCCTCAGGCAGTTTCTATGGAGCTTTTCGCTACCCGGAGAGGCCAGAAAATTG
ACCGGATGATGGAGGCCTTCGCCAGCGATACTGCCTGTGCAACCCTGGGGTTTTCCAGTCCACAGACACG
TGCTATGTGCTGTCTTCGCCGTATCATGCTCAACACCAGTCTCCACAATCCCAATGTCCGGGACAAGCC
GGGCCTGGAGCGCTTTGTGGCCATGAACCGGGGCATCAACGAGGGCGGGGACCTGCCTGAGGAGCTGCTCA
GGAACCTGTACGACAGCATCCGAAATGAGCCCTTCAAGATTCTTGAGGATGACGGGAATGACCTGACCCAC
ACCTTCTTCAACCCGGACCGGGAGGGCTGGCTCCTGAAGCTGGGAGGGGGCCGGGTGAAGACGTGGAAGCG
GCGCTGGTTTATCCTCACAGACAAGTGCCTCTACTACTTTGAGTACACCACGGACAAGGAGCCCCGAGGAA
TCATCCCCCTGGAGAATCTGAGCATCCGAGAGGTGGACGACCCCCGGAACCGAAGTCTTTGAACTTTAC
ATCCCCAACAACAAGGGGCAGCTCATCAAAGCCTGCAAACTGAGGCGGACGGCCGAGTGGTGGAGGGAAA
CCACATGGTGTACCGGATCTCGGCCCCACGCAGGAGGAGAAGGACGAGTGGATCAAGTCCATCCAGGCGG
CTGTGAGTGTGGACCCCTTCTATGAGATGCTGGCAGCGAGAAAGAAGCGGATTTAGTCAAGAAGAAGCAG
GAGCAGCCCTGACCCCTGCCCCCAACTCCATTATTTATTACGGAGCTGCCCGCCTGGGTGGCCGGACCC
CTGGGCCTTGGGGCTGTGGATCCTGGTTCCCTGTTTGGAAAATTACACACCTCTAGCTCCTCACTGTTCTT
TGTAATTAACACGCTGTTGGTAATCTTATTAATTATTTAACCATTGGCCTGCTGACCCCTCATTCTTG
GGGTTGACAGAGTCGAGGTGCTCCGTGGAGCCAGCCTGTTTCCCTGGACAGGGGCTGGACCCGCCTGTCT
CTGGGTGCTGCCTGGGCTGTCCCGGTGGGTCTGTTCTGGTTTACCCCGAGCCAGCAGGAGTGGAGTAAA
GGGAGAAGGTTAATATGGTGGGAGTCTGGAGTTGGAATTGGCCGGGGACAGAGTTTAGAATGCAGGGATT
AGGGTCAAGGTCTAGCATTATTCTAGAAGTTACTTGACAGCCATCAGCCAGTTACGCTACAGCCATCAGC
TAGTTCCCATCGTTGCTTTTCATGGGGCTTGAGGTCTTTGAGGGGACGAGATGAAGTGGTGGAGTTGTGA
GCTGGGCCAGGGCTTTGAGGACAACCTGGAGCTGGAAGAACATGCGACCACCTCAGGGAGGGTCAGGGAAG
GATGAGTGGGGAGGTGGCCCATGTCCTGCAAGGGCCTTGCTGATGGGATGTCCTGAAGGGCTGGGCAGCCT
TAGATCGGGCTAAGAGGGCAGGACTGTGGGCCAGTGCCAGAGCCAGGCTTGCTGTTCTCAAAGGATCAGC
CTCCTTTGGAGGACATTTTGTGTCAAGGATAGGGCTGAGGACCTGCGTTCTGAACGTCTTTCTGGGATTC
TTGACAGCCAAAGAAATTCGAGGATCGCCTCTATGAAGGTGAAGTCTTGGCATGTGGGTACCCCTGAATC
CTGGGCTAAGGTCTGTGACCTTTTGCCTCCAGTTGGGGTATGTGTGGTGTCCCCAAGAACAAGGGCTCG
TGGATCCCGAGCAGGGTGCATGGCGGATTGGGAGGTCCCATGTCACTCTCCCATGCCCGCCTTTGAAGCT
GAGGCGCTCTTTAGTTAACAAGTACAAGTCCAGCAGGGACCGGGACGCGGGTGGGAGAGGGCGCCTGTGG
CCCCGAGGCGTGCCGCGAGTTGTAGTCCCTCCTGCCCGCTGTGTTGCTTTGAGCTCTCCGATGGGATGC
GGCGCTTCGGAATTTGGGGCTTTGATCCCTGTCCCGCCCTTGGCCACAGGCACCTGCCGGCCTGAAGGCC

CCGCGGTGGGGGTACCCTGCGCCCCTCCGCGGGAAGGTGGACTACAGTTATCGGCAGGCTGTGCGGCGCCA
AAGCCACGGTGACCCAGACCCGAGGTTTTTCCGGGCGTCGCAGTTTCCCGAGACTCCGTGGCGGCGTTTTGT
CTTCTTTTTCTTAGTCAGATCCCGTACTTTTTGTGGAGGGTAGAGGAGGCTTTGACCGCCGCGGCCCCGGGG
GCTGGTGGGAAATGGAGTTCCAAATGAGAAAATAGAATTCCTCCACTTCTCTTTCCACAGGTGCCAGGGAA
ACGGAGTCATCGACCCAAGAAGGTCTGTTGGGAGATGAGGTCCCAGGGTAAACAGCGGGTCCCGCCACTATGT
CACCTTTTCTGCGCCTCCCCGGATGAAGTGCATGCAGGGCGGCGGCTCCGTGGCAGGCAGAGGCAGGA
AGAGGCGCGGAGCCCGCTGGTGGCGAAGAGGGGAGTGCGGCGGGAGGGGAGGGCAGAGGCAGGCGGCCGGT
CGCGTGGGGCCTGGGCGGCCCCAGGAGGGCCTCTGGCTGGATTCTTAGCAGATGGAAGCCGTGCAAGGGCA
GGAGGCAGGGGCTGACGTGTTTGGATTGAGGTTGCAGGAGGGGCCCTGGCTGCTTCAGGGAGAATAATT
TGGAGGCGAGCGGGGAGGTGAGAGGAAGCTGTGCGGTGCAGGATGGCGTGGCTGTGGAGGTGGAGAACGTT
GGGCCACGCTAGGAGTCTTGAAAGAGGAGCCAAAAGGACTTGCTGAGAGCCGCGCAGCTGGTGAATGACG
GTGCCATGACTGAGGTGGTCGAAAGGGAGTATTTAAGGGGAAATCAGGCATTCCGTTTTTGACCAAATTAAG
CTGGAGATGCCTGTGGAACATTCCAGCCAGGCTGCATCACGTCACTGACCTTCAGCATTGCCACAGTC
CATCTTCCCCCAGGACCTGAGGATTTTGCCTCGGCTCCCTCCTCGCCAGGACCCCCAAGCTCCCAGCAC
GCTTCTGATTTTTTTTGTAGGTTTTTTTTTTGTTTTTGTGTTTTGTTTTGTTTTGTTTTGAGAGGGAGTC
TCACTTTGTGCCCTAGACTGGAGTGCAATGGCGCCATCTCGGCTTACTGCAACCTCCACCTCCCAGGTGCA
AGCGATTCCCCTGCCTCAGCTTCCCGAGTAGCTGGGATTACAGATGTGAGCCACCGTACCCAGCTAATTTT
TGTATTTTTAGTAGAGACGGGGTTTTACCATATTGGCCAAGCTGGTCTCGAACTCCTGACCTCAGGCGATC
CATCTGTCTCAGCCTCCCAAAGTGTGGGATTACAGGTGTGAGCCACCGCGCCAGGCCTCAGCCCACTTCT
TTTGGGTGGCAATGGTTTGGATATCGTTTGTCTCACTAAAATTCATGTTGAGATTGAGCCCCAGTGTGG
CAGGTGTTGGGATGTGGGGCCTCATAAGGAGCTGTGTGGTCTTGGAGGTGGAGTCCTCATGGATAGATTAA
TGCCTGCCTTAAGGGGTGAGTGAGTGCTCACCTTGGGAATTTGGGAATTTGGTTTTCTCTCCCTTGCTTC
CTTCAGCACCATGTGATCTCTGTGCACACAGCTGCATCCTTCTGCCCTCCCCCAGAAGCAGCAGCAGCCTC
AGGGATGAGGGAGGTCTCAGTGAGTGACCTGCCAGTCTTGAACCTTCCAGCCATCAGAATCTGAGCCA
AATCAACCTCTTCTTTATAAAGACCCAGCCTCAGGTCTTCTGTGAGAGCAACACAAAATGGACTCAGCAC
GGATCAAATTGTGTCTCCCCACCCCCACAAAAAATTTATATTAAATCCTAACCCCCAGCA

LRTGAEEAAVAPGAFAHERAHPSPRANADPGTGGTAPDSPRAFLAAMEDGVYEPPDLTPEERMELENIRRRK
QELLVEIQRLREELSEAMSEVEGLEANEKSKTLQRNRKMAMGRKKFNMDPKKGIQFLVENELLQNTPEEIA
RFLYKGEGLNKTAIGDYLGEREELNLAVLHAFVDLHEFTDLNLVQALRQFLWSFRLPGEAQKIDRMMEAF
QRYCLCNPGVFQSTDTCYVLSFAVIMLNTSLHNPVNRDKPGLERFVAMNRRGINEGGDLPEELLRNLYDSIR
NEPFKIPEDDGNLTHTFNPDREGWLLKLGGRVKTWKRRWFILTDNCLYFFEYTTDKPRGIIPLENLS
IREVDDPRKPNCFELYIPNNKGQLIKACKTEADGRVVEGNHMYRISAPTQEEKDEWIKSIQAAVSVDPFY
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

TCAGAGTAATGCCAACTCTCTGAGTGGGATGAGCAGAGCAGATGCTGCAATGAGATGCCAAAGCGGCT
CCCCTTCTCTGTGCCTTGGGTGCCTATAAATTGCTCCGGCGCGCTTTGTGAGCCTCCTCTTCTCCTGGC
AGGTGGTACCCAGGCAGAATTCTGCCTTCAGTCTCTCTCTCGCTCCGCTCCCGCCGTGAGGCGCTCGCCG
CTGCTCGCTCGCTCCTCCGCCCCAGCTCTGAGCCTCGCCGTGCCGACCGTGCCCGCCGCCGCCGCGCTGG
GCGCACCCGGGGGACGCCCGGGCCACGCGGGGCTTTGGGGTGCAGCTCTATTGAGTTGTGGTGGTGGCA
AAGGAGGAAGAGAGAAAGGAGGCAATAAAAAAAAAAAGGCAGCGGACGGGCGAACTGAGCGAGCGAAAGAAG
AGGAGGAGGAGGCAGAAAAAGGCAACTTCAGACGGAAAGTTGGTGCGAACAGGCGCAGTCTGCAAAAACGG
AAAAGTCGATCGCAGGCGGCGGCGGCATAAAAGTGTGAGCTGCCCGGGCGAGCTCAGGAGGCGGCGGCTGG
CTCTGCCCTCCCGGTGGCCGCGCCGCGCGGCTGCAGCCACAGGTGCGAAGGAGCTCGCGGGGGCGAGG

GCGCCCCGCGCACCCCTCCCCGGCCCCCACCCGGGCTCGGGACTTCGGCTCAAGTCACTGGGCGCCCCG
GCTCCCTCCCCAGCCGACGCTCCGCGGGGGGAGCAGGAGTCGGCAGCAGCGGCCGGCGCACGCACGCCCA
GGGGAGTTGGGGTTCGACAGGGGGTGTTCCTCGGCTCTGAAGAGGTCCCCGCCAACCTTCAAAATTCTGTC
CAAAAGCAGACAAGAGGATCGCCCCGCGCTGAGCCGGCTGGTGGGCAGCAGGAGGCGCCTGATCGCCGCCG
GGGCGCTGGGGGTGGTGAATGGTGCTGCTGCTGGTGATCCTCATCCCGGTGCTGGTGAGCTCGGCCGGCAG
TCGGCGCACTACGAGATGCTGGGCACCTGCCGCATGGTCTGCGACCCCTACGGGGGCACCAAGGCGCCCAAG
CACCGCTGCCACGCCCCGACCGCGGCCTCATGCAGTCCCTGCCACCTTCATCCAGGGCCCCAAAGGCGAGG
CCGGCAGGCCCGGGAAGGCGGGTCCGCGCGGGCCCCCGGAGAGCCCGGGCCACCCGGCCCCATGGGGCCC
CCGGGCGAGAAGGGCGAGCCGGGCGGCCAAGGCCTGCCGGGCCCCGCCGGGGCGCCCCGGCCTGAACGCGGC
CGGGGCCATCAGCGCCGCCACCTACAGCACGGTGCCCAAGATCGCCTTCTACGCCGGCCTCAAGCGGCAGC
ATGAAGGCTACGAGGTGCTCAAGTTCGACGACGTGGTCACCAACCTCGGAAACCACTACGACCCACCACC
GGCAAGTTCACCTGCTCCATCCCGGCATCTACTTCTTCACCTACCACGTCCTGATGCGCGGAGGGGACGG
CACCAGCATGTGGGCTGATCTCTGCAAAAACAACCAGGTGCGTGCTAGTGCAATTGCCCAAGATGCTGATC
AGAATTACGACTATGCCAGTAACAGTGTGGTTCTTCATTTGGAGCCGGGAGATGAAGTCTATATCAAATTA
GATGGCGGGAAAGCCCATGGAGGAAACAACAACAATACAGCACGTTTTCTGGATTTATTATTTATGCTGA
CTGAATAATGCAGAACTAAGCTTATTATTCTGAGTTTGAACACTGGATTTCGTATGGCTAACGTCAGTGAAT
CAAGGATCCAGGGGATGCCAATGGCAGGGCACCTCAGTTGTGTATATGTGGGGAAATCAAATGCTACCTG
ACTCACATCTGTATCACTCAGAAACATTATGTAAAAAATATCAAAGCAAGATAAGCAGATGTGTGATCCAC
TACCGCCAAAGCAAATACTCCTTATCGTTAGTGTCATGTGAATGAAGTCCTATATAGATCACAAATTTTT
ATAGACAAATCTAAGACATTGAATTATTTCTTCTATATATATGATACTTTGGTGTACTGTGATCTTGCTGC
TTTTATCCATATGTCAGCTTTGGTTCTTGAGTTTACCTGCTTATTATGATACTTGGAGTCCATTCATAG
TGTGGGGAAGAATGATTTTTGCCCTGCAGGAGAAGGTCTAATTGAAATAATGCTGCTTGCCCCAAAGAAA
TTGTTTGCCTTGTACTCTTGTTAACCTTAGAGCTAGACCTGGGAATGATTCAACTTCAAGCCTTAACCTGG
AATTTTCTGGATTTGAGGGAATCCCAAGCCTATGATCTTTTTTACATTTTCTTTTCTTATATGAATTTT
CTTTTCTCTTTTTCTGGTGATAGTCTTTAAAAATAGAGATTGACAGTGTATCATAGGATTACCCTCTAAG
TGTGAAAATGTGTAATTATGTACGGTATTTAGAAAAAGCCCTTATGTGTCCATTTTGTCAACTGAATACAT
TTAGATTC

ILSKSRQEDRPALSRLVGSRRRLIAAGALGVVMVLLLLVILIPVLVSSAGTSAHYEMLGTCRMVCDPYGGTK
APSTAATPDRGLMQSLPTFIQGPKEAGRPGKAGRPPGEPGPPGPMGPPGEKGEPRQGLPGPPGAPGL
NAAGAISAATYSTVPKIAFYAGLKRQHEGYEVLKFDDVVTNLGNHYDPTTGKFTCSIPGIYFFTYHVLMRG
GDGTSMWADLCKNNQVRASIAIQDADQNYDYASNSVVLHLEPGDEVYIKLDGGKAHGGNNNKYSTFSGFII
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

ATACACCCGCGCCCCGGGAGGGAGGGGAGGAAGGTTAGGGAGGCGGAGAGGGACCGCGCCCCGAGGAGAGA
GGCGCGGGCCAGGGCTCTAGCAGGGACTGGGGCCGCGGCAGGGGTAGCAAGGTGAGTCGGTGCTTGCCAAG
AGGCAGAGCGCAAAACCTACTAGGAGATCGCGCCCGGTGAGCAGCACCCGCAGCTCAGAGCCCGGGACGTC
CGGAGCGCGGGGAGCAGTCCCCTCTCCATCAGGGAGTGGTCTATCTGGGCAGTCTGGGACCCAGGCACCGC
GCCATCCCTGAGAGAGCAGCAGTCTGGAGAGCAGGCATCTCAGATCCCTAAGAAACCAGCCGTCCGAGAAG
CCGCGGATCTCAGGTGCCAGGATCGTTAGGACTGAACGGGAGGGTACTAGAGGACCACTGGCTCTGGACC
GTCGGGAGCTGCCCTGACGTAACCCACGAGGGGCCTCCCCTTGACGGACGGCTTGGGGAGCGGCACCGCC
GCGGCTGGAGCCCGCAGAGGCAGGGTAAGGGGAGCGGGGGGAGCCGTCGGGGGAGTGCAGACCCAGGCC
AAGGCGGGTCACCGCCTCCTGGCCGCGGAGAGCCCCGGCCCCGGCAGCCATTGCGCCCAAGAGTGAGGAA
GATTTGCTGGCCCTGGCAGCGTCGCGGCTGAGCCGCCGCAAGAGGGTGGCGGGCGCGGCCGTGCGAGTGGC

CATGGTGCTGCTGCTGCTGGTGGCCATCCCGCTGCTGGTGCACAGCTCCCGCGGGGCCAGCGCACTACGAGA
TGCTGGGTGCTGCTGCCGCATGGTGTGCGACCCGCATGGGCCCGTGGCCCTGGTCCCGACGGCGCGCCTGCT
TCCGTGCCCCCTTCCCGCCAGGCGCCAAGGGAGAGGTGGGCCGGCGCGGGAAAGCAGGCCTGCGGGGGCC
CCCTGGACCACCAGGTCCAAGAGGGGCCCCAGGAGAACCCGGCAGGCCAGGCCCCCCGGGCCCTCCCGGTG
CAGGTCCGGGCGGGGTGGCGCCCCGCTGCCGGCTACGTGCCTCGCATTGCTTTCTACGCGGGCCTGCGGCGG
CCCCACGAGGGTTACGAGGTGCTGCGCTTCGACGACGTGGTGACCAACGTGGGCAACGCCTACGAGGCAGC
CAGCGGCAAGTTTACTTGCCCCATGCCAGGCGTCTACTTCTTCGCTTACCACGTGCTCATGCGCGGCGGGC
ACGGCACCAGCATGTGGGCCGACCTCATGAAGAACGGACAGGTCCGGGCCAGCGCCATTGCTCAGGACGCG
GACCAGAACTACGACTACGCCAGCAACAGCGTCATTCTGCACCTGGACGTGGGCGACGAGGTCTTCATCAA
GCTGGACGGCGGGAAAGTGACGGCGGCAACACCAACAAGTACAGCACCTTCTCCGGCTTCATCATCTACC
CCGACTGAGCCGGCCCCCGCCCGTGGCCCCGCTCGCCCCCTTCTCTCCCGTCTCACCCACCTCCTGCCCGC
CCCACCCGAGGCGCCACCCACCTTTGAGAGCCTGGCGGTGGGGTGACCCCTCCGTTCCCGGAGGCGGC
CTAAATGGGCGAACTCTTGGTGCTCAAGGGTATAAGTGGCCGGGAAGAGGAGGAGACCCGGCCAGAGGAGC
AGAGCGACTTCCGGAGGGATCACCCGCACCCAAGTGCAGCGCTGGACCCCATAGGGGCAGAGGTGCTGGCTT
TCTCTTTTGTACAGAGATGGGGAGCAGTTTTAATAGCGGGACTCAGAGGCCAGAAAGCCGGAGGGAAGCC
CCCGCAGCTTGCGAGGGAAATAACAGAAACAGGAGGAGCCATTTAGGCAAGAGAAGACATTAAACAGGG
TAGTGAGGTTCTCCGTCACAACTTTCTCTGCCACCCTCTCGTCCCCTCGTCTCCACTTTAGGCTCAGG
CTCCAGCCTTGGCAGCCTTCTGTGAAGTGGAGGAACCAAGTGAATTCTTTCTGGCATTTAAACGCATTC
TGTACAGTCCCCATTCCCCCTATCCGGAAGTGGCCCTGGGGCTACAGCTGCTGCTGCTCTTCTAATAAA
GTGAGG

IAPKSEEDLLALAASRLSRRKRVAGAAVGVAMVLLLLVAIPLLVHSSRGPAPHYEMLGRCRMVCDPHGPRGP
GPDGAPASVPPFPFPGAKGEVGRGKAGLRGPPGPPGPRGPPGEPGRPGPPGPPGPGPVAPAAGYVPRIA
FYAGLRRPHEGYEVLRFDDVVTNVGNAYEAASGKFTCPMPGVYFFAYHVLMRGGDGTSMWADLMKNGQVRA
SAIAQDADQNYDYASNSVILHLDVGDEVFIKLDGGKVHGGNTNKYSTFSGFIIYPD

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

ATTAGAGGCTCCAGCCCCGCCGACTTGACAGCGTGAGATCGGGCACACCTGAGCGGCGGGCGGGCGGTGCT
GGCCACATCCGGGGCGACGTGCCTGAGTACCCCGTCCCGCCAGCGTCTGCCAGTCCAGCCAGTCCGCCCA
GTCTCTCGCGTCCGAGACTCGCCTCCAGCCTCCACCTCCGCCCCGGGCCGCGCGAGCCTCGCGGGGGCGGG
GGCGGGGCGCCAAGGGGCGGGGCTGTCTTTAAAGGGCCCCGGGCCGCTGCCCTTAGGCCACTTCTGGGG
GCGGAGAGGACCTCAGCGGCTGCGGCGACACCCAGGGAAGGCGGCGCGGCCGGGTCCCGAAACTCCTGGCT
GTTTCCATCAGAGCCCTCGGACACTCCAGCCCCGGGCTGAGCACGCATCGTCTGCTCCCCGGCGGATACAAG
GGGGCTCCGCCATCCGCTCCCGTCAGTTCGGCCTCCATCTCTGGGACCCGCGCCGGCAGCCAGGCCAGGC
CTCTGAGTGGCCCCAGAGCCCTGGCTGGACTCGTCCACGGCGGCAGCGATCTGCCGGGGTCTCGGAGGCC
ATCCCTTCAGAGTCGGCCCTGTGCTCGCCACCGTCACCTGCTGGTTGGATTCCGGAAACCCACTGTCTGAA
GACCACAGAGGGGTGTGCTGACACACCCAAATCGGATACGTCCAGACCTCAAGCTCCCTTCCCTCTCTG
GCTGCCCTCTGCTCTTTTCTCTCTCTCAACCTTTTGGGGATTTCTGTGCTCTGACACCACCTCCCCA
TCCACCACCAAAGTAGCCGGGGTGAGCCCCAAACCTTACTGGGTGTGCTCCACCTGTGCCTCCAACCCAGC
GAATCTGACAGCTTCGACCAATTCTGCACACACCCAGGAAGTTCTGCCTTTTCTTTTCTTTCTGGTGTCTC
CTGTACTTCCCAAATTCTCTCTCTCTCTGTGCCCTCTTCGCCCCCTCCTTTGGGGGCCCGTGACCCTG
AATGTGGGGGGCACACTATATTCCACCACTTTGGAGACCCTGACCCGCTTCCAGACTCTATGCTGGGGGC
CATGTTTAGGGCCGGCACCCCATGCCCCCAACCTCAATTCCAAGGAGGCGGCCACTACTTCATCGACC
GGGATGGCAAGGCCTTCCGGCACATCTCAATTTCTGAGGCTGGGCCGCTGGACCTGCCCGTGGGTAC
GGAGAGACAGCGCTGCTCAGGGCAGAGGCTGACTTCTACCAGATCCGGCCCCCTCTGGACGCGCTGCGGGA

TSPPPVPSSPPSFGGPVTLNVGGTLYSTTLETLTRFPDSMLGAMFRAGTMPPPNLNSQGGGHYFIDRDGKAFRHIILNFLRLGRLLDPRGYGETALLRAEADFYQIRPLLDALREASQGTAPATAALLHADVDVSPRLVHFSARRGPHHYELSSVQVDTFRANLCTDSECLGALRARFGVASGDRAEGSPHFHLEWAPRPVELPEVEYGRLLGLOPLWTGGPGERREVVGTPSFLEEVLRLVALEHGFRLDSVFPDPEDLLNSRSLRFVRH

+++++

NM_025160

ACG and CUG extensions conserved from human to fish

Synonyms: CDW2; MIP2; FLJ21016; WDR26

[illegible]

ACCAGACTGTTGATCTCCTCATGCAAGAGTCAGGATGTCGTTTAGAACATCCTTCTGCTACCAAATTCGGA
AATCATGTCATGGAAGGAGACTGGGATAAGGCAGAAAATGACCTGAATGAACTAAAGCCTTTAGTGCATTCT
TCCTCATGCTATTGTGGTAAGAGGCGCACTTGAAATCTCTCAAACGTTGTTGGGAATAATTGTGAGGATGA
AGTTTTTGTCTGCTGCAGCAGAAGTACCTAGAATACCTGGAGGATGGCAAGGTCCTGGAGGCACTTCAAGTT
CTACGCTGTGAATTGACGCCGCTGAAATACAATACAGAGCGCATTGTTCTTAGTGGGTATCTGATGTG
TAGCCATGCAGAAGACCTACGTGCAAAAGCAGAATGGGAAGGCAAAGGGACAGCTTCCCGATCTAAACTAT
TGGATAAACTTCAGACCTATTTACCACCATCAGTGATGCTTCCCCACGGCGTTTACAGACTCTCCTGCGG
CAGGCGGTGGAACACAAAGGGATCGGTGCCTATATCACAATACCAAACCTTGATAATAATCTAGATTCTGT
GTCTCTGCTTATAGACCATGTTTGTAGTAGGAGGCACTTCCCATGTTATACGCAGCAGATACTTACGGAGC
ATTGTAATGAAGTGTGGTTCTGTAAATCTCTAATGATGGCACTAACTAGCAACAGGATCAAAAGATACA
ACAGTTATCATATGGCAAGTTGATCCGGATACACACCTGCTAAAACCTGCTTAAAACATTAGAAGGACATGC
TTATGGCGTTTTCTTATATTGCATGGAGTCCAGATGACAACTATCTTGTGCTTGTGGCCAGATGACTGCT
CTGAGCTTTGGCTTTGGAATGTACAAACAGGAGAATAAGGACAAAAATGAGCCAGTCTCATGAAGACAGT
TTGACAAGTGTGGCTTGAATCCAGATGGGAAGCGCTTTGTGACTGGAGGTGAGCGTGGGCAGTTCTATCA
GTGTGACTTAGATGGTAATCTCCTTGACTCCTGGGAAGGGGTAAAGAGTGCAATGCCTTTGGTGCTTGAGTG
ATGGAAAGACTGTTCTGGCATCAGATACACACCAGCGAATTCGGGGCTATAACTTCGAGGACCTTACAGAT
AGGAACATAGTACAAGAAGATCATCCTATTATGTCTTTTACTATTTCAAAAAATGGCCGATTAGCTTTGTT
AAATGTAGCAACTCAGGGAGTTTCATTTATGGGACTTGCAAGACAGAGTTTTAGTAAGAAAGTATCAAGGTG
TTACACAAGGGTTTTATACAATTCATTCATGTTTTGGAGGCCATAATGAAGACTTCATCGCTAGTGGCAGT
GAAGATCACAAGGTTTACATCTGGCACAACGTAGTGAAGTCCAATTGCGGAGCTGACAGGGCACACACG
TACAGTAACTGTGTGAGCTGGAACCCACAGATTCCATCCATGATGGCCAGCGCCTCAGATGATGGCACTG
TTAGAATATGGGGACCAGCACCTTTTATAGACCACCAGAATATTGAAGAGGAATGCAGTAGCATGGATAGT
TGA

TGGTGAATTTGGAGCAGACGACTTCTGTTTAACTTAAAATTAGTCGATTTTAAATGGCTTGGGATTTG
GTGCAACAAACATGATTGATAGCTGGACAGACATGCTCGTCATGAAAAAGAACCATTTCTGAAGCCCGA
TTGGGGCCAAACATTTACACCTTGCTTCATAGTAACCAGTTGAGATGAAGCACGTCGTTAGAACGTTGTTG
GACACCATGTTGAATTATCCCCCATCGGTTGTGAAGAACTGTGCTACATTCAGGCTTACCCATTGAAGT
AGTATATATATTTTTTCTTCTGTCTTTTGTCTGGCAGGATACCATTCTTGTGCTCTTCTGTGTAATG
AAGTTTAAATGCTTGTGTTGGAAAACCTTTATTTAACAGTTTGAAGGCTTGATAGAAAGAGTGCATTAGTCT
GAAGAGTATACATGGATAGGAAGAATTTCTTCTTTTCTTCTTCCAAATCTTTCCGCTTATTTAGCTT
GAGATCTTTGCAGCTTGTTTCATGGATTCTAGCCTTGCCCGTTGCGCAGTATATACTGATCCAGATGATAA
ACCAGTGAAGTATGTCAAAGCACTCTCAATATTACATTTGACAAAAAGTTTTGTACTTTTACATAGCTT
GTTGCCCCGTAAAAGGGTTAACAGCACAATTTTTTAAAAATAAATTAAGAAGTATTTATAGGATTAAGTG
ACTTCATTTGTATACATTTGGAATCTAAACCAGCTTAAAAACAGTTTCTCAATGACTTAGATACACAGTA
TAAGTATGCTCTTCTGGAATACCACATGAGACATGGTCAGAAACAGTGCTTGAAGGACATTACACAAGA
AATTCAGAGTAATGCTTTGAAGATTTCCCCCTTTTGTGTTTATTCTGAAGGAACATCAGTACCCGATCTT
GAAGAAATTCAGATTCAAAAAGAATTTTAAATACACCAACATGAGACATCAGTAGTCAGTTGGTTTTTCAG
TAAAGCTTGTTCAGATTGTTCTCAACTTAGGAAGTAATTTTGGTGTGATCTAGCAAAAGAGTAGGAATCA
GCGATACAACCACTTTGGAAGTTTATAGTATAATTGAAATTATTAGAAGAATTCAGCAGGTTACAGACATA
CTTAAACTGGGATTAAAACCTCATAGTCATTTTTCTTAATTGCCCTTAATATTTTGACATATAGGGATACA
TAAATTTAAGAATATTTTTTCTCAGTTTTTTCAGATATTGCCATACTGAACCTCATTCTAAACTGGTGCT
GTGGATAGTCTTTCCCTCTCCCTCCTGTTTTAGTTTAAAGGAAAGGTTTCTTTCATGGAAAAGCACTTTTA
ATTTTGAGAATTTACATTTAAAATAAGCCAAAAGCCTGATGTTTACATTGTGCTTTTAAACTCCGTAACA
GCTGAATACAACATAACATAGTCTCCCTTGAAATTCCTTCCCTTTTTTCAGTAGAGGATAAATAGGGTGACT
CCAGCTGTTGGAATGAGAATGGGGATACCCCCAAAATAAGATTCTGGTGAAGAAAAAGTCTTGTAAGT
TCCCTTTTAGGTGTAGCCAAGTCTATAATATAATTATGATCATGAATAGACTCCAGAATCCACAAAGAGAA
GAGGGCTTGGATGTCAAAAATTTCTTCATTGTGGGTAGGTGGTCGGGGATGGGAGAAAGGGAAAAGTCAG
GGAAGGGGAGAAGAAAGAAAAACACATTTGGCCTTAAATAGCATGCATTCTCCAGAAAGCCCATAGTAAA
GAAAATGACAGATCGTGGTCAGCAGACTCTTATCAAATTTGGTATGTAAAAGATTTCTTCAAGCTCCATTTT
GCAGAGACCACCCTTAGAGAATCAAAAAATTCCTGTTTTGATACTTCTAAGTTAAAATATATGTTACAGT
TTATCTGGTACTTCATTTTTCTTAACTAAAATTACTTTTTACTTTAAGCTTGAATAAAAATCTTCATTGGT
AACTGTATGTAATTAAGTGGAACCTTCTTTTACCTCAGTATAGTTAAAAACCATTTCATTTTTAAGTGAT
TCATGTATACCCTGAAGCCGTTAATACCCCCAGTCTCTATGGTAACATCACTAAATGTGGGCATAGAAAC
TCCACAGCTGTTTACAAATTTGGTTACAGTGTGCTACGGTGCATTTGTAACACTCAGATTTGTGCCCATTC
AGGGGCAATTTGGCACTCAGATTCTACTCTACTTCACCTAACCAACCCTAGATCTGAGTTTTTCAGAGTGCT
TCTGAAGTACAGTTTTAAAACACTTTTTTAAAAAGTGGAGTAAAAGTGAGGCACATTTTACAAGAACATAAC
TCCTATTTAAACGGAGTAACAACATATGCAAAGGTTTCTATAGCAGCTAGGTGAGTTTTGTTTTCCGGGTCTG
TCTTAACTGGCAGCTTCTGTACATACTGGTACTTATTTGCTGTAAACGTCTGTTTCATACATTTGCCATG

CAGTGACTGTGCTCGAAAGGTGAAATCAATGGTAAAGAAGCCTAGGATTTTATGGTATGAGAACTGATCG
CAGGATTTTCTGATCCATAGCTATTAATTGAAAACCTTCTGATAGTGCTGTAGGCTCTATAGTAGGCTTAAG
AGTGAGTCTTATACTATGAAGCCAGCCACAAGATACTAACAAATGTATAAATTGAAAAGTACCAATACTTT
TTGCACATAGATCAAAATAGAGTGGAGAATTTGGGCTCCAAAAATCAGGTTAGTAGGCTCATTTCCATGTG
CTTAAAAATGTTTTGTTGTTATGCATTGATTAAGGGCTAGAGCAAATATAAAATTAATGTCTTTTTCT
CCAAATAATTGGTTATTAATGGTAAATGTTGGACTTGGGGATTACTGAGATTAGTATGTGGGTAGTAAAG
AATTGGAGTGGGAGTTAGTGGGGAGGGATGACAAAGCTTCAGCTTTGGTTTTGTATTTTTTAGTCTTCA
TAACAGCTACATTTCTGTTGCTCTTATTGGCCAGATAAATGTGTTATATTAAACCAGGTAAGTATTTTAAA
CAGAGAACATTTTATTTGCATATATCCCTACAAATTGGCCCATTTTATTGGGTGGGGGGATAAAAAAGGGA
TTCCCTAACTTTAAATAATCAGAATATCCTGCAATTGAAAGGAGAAAAAAATCCAATTTTGTGAGTATTTT
CTTAGTCTGAAAAAACAGCAGTAGTAATCTGGTGAATGTTATTATTAGGAGTGTTCTGCCTCTACAGTGG
CATATTTCCATGACATTAATAGAAAACCTTTCTTTCCACCCCTCCCATCTTGACATTTTCTTTTTTAGGA
TGTTGGTTCTGCAAACAAGAACTGACCCTATCACCTCTGCCTCACAGTGGGTAAATATATCATACATCTC
TTGAAAGGGAAAAATATCCATGTGAGTTTCTTTACAGTAGAAGAATGGCTGCTTTTGAATGGGGAGGAAAG
AAGACATTTTCTTAATATCCTTTTTGTCCCATCTCTAAATGTATAAATATTTTGATTTGGTTTTACTTT
AATTTCTCATTCAATAATTTGCAACTGTCCTTTGGGTTGCCCTCCAACACATTACTTCCATTTCAGAAAC
CATATCTGATTTAATATAAACTGCTAACTTAAGAAGAGGTGAATTTGCATTTACACTTAGACACTTTCTAA
AAACAGGGTGAACCTTAATTGAAATTTTTAGTGTGTTAAGCTATTGTTATAGTAGCTGCCCTATAGTTAC
AAAAATAAAAACTATAAAAAACCCATCCCTATCTACTTAATCCAGATAGCCTGGATTTAACAAAACCAATA
GTATAAAATGTGTGTGTGTGTTCTGTGTGTGTGTGAGAGAGAGAGTACTTGATTCATTAAGTCTCTGG
AAACAGCTGTTCTAGGATCTTGTCATTTTTACTGAAAGTCTCGTGCACATGTGAAGTGCCCTCTGAGTTTA
AGGTTTGGTTAATACTGGTATATTTTTATAAGATTGAAATTGTGTCCCATCTTTAACTTAAACATTTTCA
TTATCAGGGTCAATGTGCTAGAACTGAATTGTAACATTTTTAGGCACAGATGGAAAAAATGTTATTGGCT
CCTTGAAATGTGTGTGTGTGGCGAGGGGAATAGATCCACAAAAGCATGTATGTACTTACAAACCAAGCTG
TAGAGATCAAGAAAAGAACTTAAGTGTGATCTCAAGATTTCTAAATTGTCAAGATTTACATGGCATTGTG
GTGGAAGTAGTTAACACTTAGAGCTTTTGGTATGTAATAACTATTTGCTATGGACTGATTAAATGTTTCAA
AAGATTGTGTTCTTCAATTTTGGTGGGTTTTGATTTTTGTTTTTTAACTGCCTCTCAGATTATATTTACT
TAGTTTTAAATTTCTTTGCTTTATTCATTAAGTATAAAAACTTCAGGTCTCTGATATTTATTTTCACTTGT
TTACTAATTATTTACAAAACACCCTTTGTTGACTTTTATTTTATAAATGTGTAATGTATTAAACGCTTTTA
AATTTTGTTCAACTGAAACTACATTAACCTTTGATTTGCTTTACTGGGATTTTTTTTTAAAGACACTTTTT
CCATGTGAGTGCAGCACTTAACAGTCGTTTGTATTCCCTTTCTTTCAATCCAATAAACAGAATGAATA
CCTAAATAA

TASLGEETLASASSSSSDTGASPPPRKKPRASAAEGVGEPEGASAGRAGLSPPSSSSSSSSSSSSSVVVV
VGLPPAAAPPAAAAVPHRSSGHSLVSGSI MQANGAGGGGGGGGGGGGGGGGGGGGGGGGGGGGGTPELACLSAQNGES
SPSSSSSAGDLAHANGLLPSAPSAASNNNSLNVNNGVPGGAAAASSATVAAASATTAASSSLATPELGSS
LKKKKRLSQSDEDVIRLIGQHLNGLGLNQTVDLL MQESGCRLEHPSATKFRNHVMEGDWDKAENDLNELKP
LVHSPHAIVVRGALEISQTLGLIIVRMKFLLLQQKYLEYLEDGKVLEALQVLRCELTPCLKYNTERIHVLSG
YLMCSHAEDLRKAWEWGKGTASRSKLLDKLQTYLPPSVMLPPRRLQTLRQAVELQRDRCLYHNTKLDNN
LDSVSLLLIDHVCRRQFPCYTQQILTEHCNEVWFCKFSNDGTKLATGSKDTTVIWQVDPDTHLLKLLKTL
EGHAYGVSYIAWSPDDNYLVACGPDDCSELWLWNVQTGELRTKMSQSHEDSLTSVAWNPDGKRFVTGGQRG
QFYQCDLDGNLLDSWEGVRVQCLWCLSDGKTVLASDTHQIRIRGYNFEDLTDNRIVQEDHPIMSFTISKNGR
LALLNVATQGVHLWDLQDRVLVRKYQGVTVQGFYTIHSCFGGHNEFDIASGSEDHKVYIWHKRSELP IAELT
GHTRTVNCVSWNPQIPSMMASASDDGTVRIWGPAPFIDHQNIEECSSMDS

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

AGTCCCTATTTGGAACCTCTCTCGCGGCAGTTTACAGACCTCGTGCTCGTCCCTTCGCCTGTCTGTGTGTGT
TATCCGTAGGTCGGGGGCACTTTTTTTTTTTGGTGTGTGTGTGTGTGCGTGCGCGCGTGTGTGTGTGTGGG
TGTGTGTGTTTTGGGGTTTGGCGGGGCGCGGAGAGGAGAGCCGGGCCGAGGGGAAGGAAGGAAGCCGTAG
AGCTCCCCGGTCTCGGGCTGCGTCTCCCTCCAGCGCTCTCCTGCCTGTGCGCTCCGACGCGGCAGCGGCG
GTGGCGCTGAGCGCTCCTCGGTGGGGACGCGGTGCTCAAGCTGGGAGCAGCGAGAACCCTTTGCGGAGGCT
TCCCGTGCCCCGCTGGACTTAGGATGCCAGGGCGTTTTGATTTGCACCTACTGAGCCCGAGTTTCTCCCCGG
CCCTGGGAAGGGCTTGACAGCGGCGGCGGCGGCGGCGGCGGCGAGCGGCAGTAGCAGACGGAACAGCAGGCTCTCC
TCTCCGAGGGGGGGCGTCAAGCGCCCGCGCCGGGCTCCCGCCCTACCCCTCCGGCGCTCCTGCGGCCCA
AGCCACCACCTCGTAGCCCGCTCCTTCTCTTCTCGCCGCGAGCCCCAGGCCCGGACGCCCTTAGGATCC
GACCCGCGCGCCCCGGATGCTTGGGGCTGCCCCGGCGCGCCCCCTACAGGCGCGACCCGCTGAGTGACC
GGAGGGGGCCCGAGCTCGCCCCAGGAGGGGCCCCGGCCTCGGGACCCCGCGCCGGACCTGCTGGGGAGCG
GACGATGTCGCGCAGTCCCAGGCATTGACGCGCTCGACGACGCCAGGGAAGGCGCGCCGGCCGCTGCCG
CCGAGCTCTAGGCGACAAAGCCCGCGCCGCCCGCCCCGCGCCGAGCCGCGGACGACTTTGCCGCTGCTGC
TCCGCGGCTCTTTGTCTCACTTTGGGGCGGCGCGCCGACTCTGGGATTTCGTGCGAGAACGAGCTGGGGG
GGCCGGGGGCGAGCTCTCGGTTTCCCGGCGCGCCCCCGCTCGGGCTCGGCTCCCCCTCCCCCGCACCTCC
CCGGCCCCGGGCTCTCGGCGCTTCCACGCTCTCGGAATCACGACCCCTCCCTGCCATGTATCCGCGAGGGCAG
ACATCCGGCTCCCCATCAACCCGGGCGAGCCGGGATTTAAATTACGGTGGCTGAGTCTTGTGACAGGATCA
AAGACGAATTCCAGTTCTTGCAAGCTCAGTATCACAGCCTCAAAGTGGAGTACGACAAGCTGGCAAACGAG
AAGACGGAGATGCAGCGCCATTATGTGATGTACTATGAGATGTCCTATGGCTTGAACATTGAAATGCACAA
GCAGACAGAGATTGCGAAGAGACTGAACACAATTTTAGCACAGATCATGCCTTTCTGTACAAAGAGCACC
AGCAGCAGGTGGCGCAGGCGAGTGGAGCGCGCCAAGCAGGTACCATGACGGAGCTGAACGCCATCATCGGG
CAGCAGCAGCTCCAGGCGCAGCACCTCTCCCATGCCACACACGGCCCCCGGTCCAGTTGCCACCCACCC
GTCAGGTCTCCAGCCTCCAGGAATCCCCCAGTGACAGGGAGCAGCTCCGGGCTGCTGGCACTGGGCGCCC
TGGGCGAGCCAGGCCCATCTGACGGTGAAAGGATGAGAAGAACCCACCATGAACTCGATCACAGAGAGAGAGAA
TCCAGTGCGAATAAATCTGTGTCAACCTCGGAAAAGCCTCCGGGGCAGTGAGAAGCACCGGGGCTCTGCGGA
CTACAGCATGGAAGCCAAGAAGCGGAAGGCGGAGGAGAAGGACAGCTTGAGCCGATACGACAGTGATGGAG
ACAAGAGTGATGATCTGGTGGTGGATGTTTCCAATGAGGACCCCGCAACGCCCGGGTACAGCCCGGCACAC
TCCCCTCCTGAAAAATGGGCTGGACAAGGCCCGTAGCCTGAAAAAAGATGCCCCACAGCCCTGCCCTCGGT
GGCTCTTCCAGTAGCACACCTTCTTCCAAGACCAAAGACCTTGGTCATAACGACAAAATCCTCCACCCCTG
GGCTCAAGTCCAACACACCAACCCCAAGGAACGACGCCCAAATCCAGGCACCAGCACGACCCACAGGGCTC
AGGTCGATGCCGGGTAAACCTCCGGGCATGGACCCGATAGGTATAATGGCTCGGCTCTGCGCACGCCCAT
GTCCTACCCAGCTCCTATGCGCGGCCCTTCCGCTATGATGAGCCACCATGAGATGAACGGCTCCTCCACCA
GTCTCTGGCGCCTACGCTGGCCTCCACCAACTCCCAACCCAGATGAGCGCCGCCGCTGCTGCGAGCCGCT
GCCTATGGCCGATCGCCAATGGTGAGCTTTGGAGCTGTTGGTTTTGACCCCTACCCCCCGATGCGGGCCAC
AGGCCTCCCCCTCAAGCCTGGCCTCCATTCTTGAGGAGAAAACACGCGTACTCATTCCATGTGAGTGCTGATG
GGCAGATGCAGCCCGTGCCCTTCCCCACGACGCCCTGGCAGGCCCCGGCATCCCGAGGCACGCCCGGCAG
ATCAACACACTCAGCCACGGGGAGGTGGTGTGTGCCGTGACCATCAGCAACCCACGAGGCACGTCTACAC
AGGTGGCAAGGGCTGCGTGAAGATCTGGGACATCAGCCAGCCAGGCAGCAAGAGCCCCATCTCCAGCTGG
ACTGCCTGAACAGGGACAATTACATCCGCTCCTGCAAGCTGCTCCCTGATGGGCGCACGCTCATCGTGGGC
GGCGAGGCCAGCACGCTCACCATCTGGGACCTGGCTCGCCACGCCCCGCATCAAGGCCGAGCTGACGTC
CTCGGCTCCGCGCTGTTATGCCCTGGCCATTAGCCCTGACGCCAAAGTCTGCTTCTCCTGCTGCAGCGATG
GGAACATTGCTGTCTGGGACCTGCACAACCAGACCCCTGGTCAGGCAGTTCCAGGGCCACACAGATGGGGCC
AGCTGCATAGACATCTCCCATGATGGCAACCAAATGTGGACAGGGGGCTGGACAACACGGTGCGCTCCTG
GGACCTGCGGGGAGGGCCGACAGCTACAGCAGCATGACTTCACTTCCAGATCTTCTCGCTGGGCTACTGCC
CACTGGGGGAGTGCTGGCTGTGGGCATGGAGAGCAGCAACGTGGAGGTGCTGCACCACACCAAGCCTGAC
AAGTACCAGCTGCACCTGCACGAGAGCTGCGTGCTCTCCCTCAAGTTCGCCCTACTGCGGCAAGTGTTTCTG
GAGCACTGGGAAAAGATAACCTTCTCAACGCCCTGGAGGACGCCCTTATGGAGCCAGCATATCCAGTCTAAAG
AATCCTCGTCTGCTTGTGAGTTGTGACATTTGACGGATGACAAAATACATTGTAACAGGCTCTGGTGACAA
AAGGCCACAGTTTATGAGGTCATCTACTAAACAAGAACTCCAGCAGGGCTGTCAAATCTGGGAGAAAACCG
ACTCGGCTCTGACAGGGGAGACCCCCAGGCGAGGGGCCCCGAGGATGGCGGAGGATGGGCCGAGGCGAGCCG
AGCGTTACAGGCTCGCTCCGGCGGCTGAGAGGGCAGCTGCCCGCTCAGACTCTGGAATCTTGGGCTGG
ATTGATGTGTCTCACAGACTCGGAAGGGTTCTGCTCCTCCTCCTCCCCCTGAACAAATGCTGGCAGTTGCTA
CAAATAGATTTTATTGGAGGCTTATGGCTCCGGTTCCCCCACAGACCCGCTCATGAGTCTCTGTTTGTCTT
CCCTTTTCTTTTGGCCTGTCCCTCACCTTGGGTGCGGGGTGCTGGAGTGGACCACAATGTTGTGCTGGGGG
ATGGGGGGGTCTCTCTTTGCCGATTGTGCAAGTGTGCAAGATTTGTGAAAAATGTAAATAACAGACTCCTAT

TGCGGACTGATCAGTGGGAGAGGAGGCCCTTCCCACCGGAACTCTGAGTGTGTATTTTCGCTGCTGTAT
TTGTAATCCACTCGTGGTGGTGGCTTTTTTTTTTTTTTTTTTTTTTAAATAAACAGATGCTCTCACCTGGGAA
GAGGAGACAGGGAGGGGAACCAATTGAAGAAAGAGGAGAAAAGTCTTAGAGTGTGGAAAAGGCAACCAGGT
TGGCCGTAAGGTGCCTGCTGGAATGCGTGTGCCTCCACACGGGTCTGGGCATCCGGACTGATAACCAGCCG
GCCAGACTGAGGGATGGAAGGCACTGAGATGGGGGCCCCGTCCAGGCGGACACCCGAGAAATGGAGCTTTC
TGTGGTCTCTTGCACTCTGGCTGCCTCTTGCCCTCTCTGTGTCTCTCTTTCTTGGTCTCTCCCTCTCTCCT
CCTCAGCCTGGTCTTTCTCTTTGGTGCACACTTAGTTATTGTTGTGAGCAATGGAAGTTCAAAGGAACTCC
CTCTCCAGCTCTTCTGAATCTTGGGACACAGCCTAAAAAGGACAAAAAGTTAGAAGACAGCATAGCAACTC
AGCTCAGGGAGCTACCAGAGAAAAATAGCAACTGATGTGGGTGCTTTTTTTTTTTTTTTAATTTGAATAAA
AAGAATTAGAAGTGATGTCCTTTTATAAAATGCCTTCTCCCCCTTCCCGCTACAGTCTCTTCTCTCCCC
TTAGAGGGGGGAAAGTGTATAAACCTACAGGGTTGTGAGTCTGAAAAGAGGATCCCCCTCACCCCCACCCT
GGGCAGAGCAGTGGGGGTTGGGGGGTGGGAGAGGGGGACACAGATCCTGGCACACTGTGGATATTTCTTGC
AGATTGCAGTCTCTTGTGGCCCAAACAGGTTAGGTAGACTATCGCCTCTGGCAGGTGCCACCTTTTGGTAC
CAACATGTTCTGAGGTGTTAGGATTTGGGTTGGGTTTTTTTTTGTGTTGTTTTTTTTTCTTTTGGTCTTTT
TTTTTTCTCTTTTAAAGAAAAGCTAAAGGCCGCTGTGAGTCTGGTGGCAGGCTCTCCATGGATGTAGC
ATATCGAAGATAATTTTTTATACTGCATTTTTATGGATTATTTTGTAAATGTGTGATTCCGTCTGCTGAGGAG
GTGGGAGGGGCTCCAGGGAAAGCCACCCACCTTCAGTGAGGTTGCTCCCCAGCTGAGCGCACCGGGCATGG
GATGTGGAGGCTGGCGACACACCCTGTGCCTCTCCAAGGCTGGGCGCGTGGGGCGTCCAGAGTCTCTCTGG
GTCTCAGATGTCCATCTGCCACCTCTTGTAAAGGCTCTAGCCAGAAGGGAGGGTGAGGGTAGAAGAAAGTT
ATCCCCGAAGAAAAAAGAATGAAAAGTCATTGTACTGAAGTGTGTTTTATATTTTTTAAAGTTACTATTTA
AAGGTTAAAAA

LGFRCELGPGASSRFPGRPPLGLGSPLPRTSPARALGASTLSESRLPAMYYPQGRHPAPHQPGQPGFK
FTVAESCRIKDEFQFLQAQYHSLKVEYDKLANEKTQMQRHYVMYYEMSYGLNIEMHKQTEIAKRLNTILA
QIMPFLSQEHQQQVAQAVERAQVMTLNAIIGQQQLQAQHLSHATHGPPVQLPPHPSGLQPPGIPPVTG
SSSGLLALGALGSQAHLTVKDEKNHHELDHRERESSANNSVSPSESLRASEKHRGSADYSMEAKKRKAEEK
DSLSDSDGDKSDDLVDVSNEDPATPRVSPAHSPPENGLDKARSLKKDAPTSPASVASSSSTPSSKTKD
LGHNDKSSTPGLKSNTPTPRNDAPTPTGTTTGLRSMGKPPGMDPIGIMASALRTPISITSSYAAPFAMM
SHHEMNGSLTSPGAYAGLHNIPPQMSAAAAAAYGRSPMVSFAGVGFDPHPMPRATGLPSSLASIPGGK
PAYSFHVSADGQMGPVFPFDALAGPGIPRHARQINTLSHGEVVCAVTISNPNRHHVYTGKGKCVKIWDISQ
PGSKSPISQLDCLNRDNYIRSKLLPDGRTLIVGGEASTLTIWDLASPTPRIKAELTSSAPACYALAI SPD
AKVCFSCCSDGNIADVWDLHNQTLVRQFQGHDTGASCIDISHDGTKLWTGGLDNTVRSWDLREGRQLQQHDF
TSQIFSLGYCPTGEWLAVGMESNNVEVLHHTKPDKYQLHLHESCVLSLKFAYCGKWFVSTGKDNLLNAWRT
PYGASIFQSKESSVLSCDISADDKYIVTSGDGKKATVYEVY

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

GTCCTTCGGTGTCTGGGTGTGGTGTGAGTAGAGGTGTGTGTGCACAAAGTACAGACCATTGTGTGTGACAAAGC
CCATCGTGTGTCTGTGTGTGTCTTTATCCACGTGGATGGACGTCTCTTTCTTGTCTGTCCCCAAGACACAC
CCTAGCCCCCTCCTTATTCTCAAAGGGGGAGCTGGGGAGCCTCCCCCTACCCTGGGGCCTCCCCTGCCCT
CCCCGCCCTGCCTGGCCGTCACTCCTCCAGAGGGACAGGGCTCTGCTGTGCCTCAGAGCAAAAGTCCC
AGAGCCAGCAGAGCAGGCTGACGACCTGCAAGCCACA GTGGCTGCCCTGTGCGTGTGCGAGGTGGGGGAC
CCTGGGCAGGAAGCTGGCTGAGCCCCAAGACCCCGGGGGCCATGGGCGGGGATCTGGTGTGCTGGCCTGGGG
GCCTTGAGACGCCGAAAGCGCTTGCTGGAGCAGGAGAAGTCTCTGGCCGGCTGGGCACTGGTGTGTCAGG

AACTGGCATTGGACTCATGGTGTGTCATGCAGAGATGCTGTGGTTTCGGGGGGTGCTCGTGGGCGCTCTACC
TGTTTCCTGGTTAAATGCACGATCAGCATTTCCACCTTCTTACTCCTCTGCCTCATCGTGGCCTTTTCATGCC
AAAGAGGTCCAGCTGTTTCATGACCGACAACGGGCTGCGGGACTGGCGCGTGGCGCTGACCGGGCGGCAGGC
GGCGCAGATCGTGTGGAGCTGGTGGTGTGTGGGCTGCACCCGGCGCCCCGTGCGGGGGCCCGCGTGCCTGC
AGGATTTAGGGGCGCCGCTGACCTCCCCGAGCCCTGGCCGGGATTCTGGGCCAAGGGGAAGCGCTGCTG
TCCCTGGCCATGCTGCTGCGTCTCTACCTGGTGGCCCGCGCCGTGCTCCTGCGCAGCGGCGTCTGCTCAA
CGCTTCCTACCGCAGCATCGGCGCTCTCAATCAAGTCCGCTTCCGCCACTGGTTTCGTGGCCAAGCTTTACA
TGAACACGCACCCTGGCCGCTGCTGCTCGGCCTCACGCTTGGCCTCTGGCTGACCAACGCGCTGGGTGCTG
TCCGTGGCCGAGAGGCAGGCTGTTAATGCCACTGGGCACCTTTCAGACACACTTTGGCTGATCCCCATCAC
ATTCTGACCATCGGCTATGGTGACGTGGTGGCGGCAACCATGTGGGGCAAGATCGTCTGCCTGTGCACTG
GAGTCATGGGTGTCTGCTGCACAGCCCTGCTGGTGGCCGTGGTGGCCCGGAAGCTGGAGTTTAAACAAGGCA
GAGAAGCACGTGCACAACCTTCATGATGGATATCCAGTATACCAAAGAGATGAAGGAGTCCGCTGCCCGAGT
GCTACAAGAAGCCTGGATGTTCTACAAACATACTCGCAGGAAGGAGTCTCATGCTGCCCGCAGGCATCAGC
GCAAGCTGCTGGCCGCCATCAACGCGTTCCGCCAGGTGCGGCTGAAACACCGGAAGCTCCGGGAACAAGTG
AACTCCATGGTGGACATCTCCAAGATGCACATGATCCTGTATGACCTGCAGCAGAATCTGAGCAGCTCACA
CCGGGCCCTGGAGAAACAGATTGACACGCTGGCGGGGAAGCTGGATGCCCTGACTGAGCTGCTTAGCACTG
CCCTGGGGCCGAGGCAGCTTCCAGAACCCAGCCAGCAGTCCAAGTAGCTGGACCCACGAGGAGGAACCAAG
CTACTTTCCCCAGTACTGAGGTGGTGGACATCGTCTCTGCCACTCCTGACCCAGCCCTGAACAAAGCACCT
CAAGTGCAAGGACCAAGGGGGCCCTGGCTTGGAGTGGGTTGGCTTGGCTGATGGCTGCTGGAGGGGACGCT
GGCTAAAGTGGGTAGGCCTTGGCCACCTGAGGCCCCAGGTGGGAACATGGTCACCCCCACTCTGCATACC
CTCATCAAAAACACTCTCACTATGCTGCTATGGACGACCTCCAGCTCTCAGTTACAAGTGCAGGCGACTGG
AGGCAGGACTCCTGGGTCCCTGGGAAAGAGGGTACTAGGGGGCCCGGATCCAGGATTCTGGGAGGCTTCAGT
TACCGCTGGCCGAGCTGAAGAACTGGGTATGAGGCTGGGGCGGGGCTGGAGGTGGCGCCCCCTGGTGGGAC
AACAAAGAGGACACCATTTTTCCAGAGCTGCAGAGAGCACCTGGTGGGGAGGAAGAAGTGTAACCTACCAG
CCTCTGCTCTTATCTTTGTAATAAATGTAAAGCCAGAA

VAALCVLRGGGPWAGSWLSPKTPGAMGGDLVLGLGALRRRKRLLEQEKSLAGWALVLAGTGIGLMVLHAEM
LWFGGCSWALYLFVLVKCTISISTFLLLCLIVAFHAKEVQLFMTDNLDRDWRVALTGRQAAQIVLELVVCGL
HPAPVRGPPCVQDLGAPLTSPQPWPGLGQGEALLSLAMLLRLYLVPRAVLLRSGVLLNASYRSIGALNQV
RFRHWFVAKLYMNTHPGRLLLGLTLGLWLTAWVLSVAERQAVNATGHLSDTLWLIPITFLTIGYGDVVP
TMWGKIVCLCTGVMGVCCTALLVAVVARKLEFNKAKEHVHNFMMDIQYTKEMKESAAARVLQEAWMFYKHTR
RKESHAARRHQKRLAALNAFRQVRLKHKRLREQVNSMVDISKMHMILYDLQNLSSSHRALEKQIDTLG
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
AATTTCAAACACAAACAACTGCACGAGCGCGCACCCACCGCGCCGAGCCTTGCCCCGATCCGCGCCCGCC
CCGTCCGTGCGGCGCGCGGGCGGAGACGCCGTGGCCGCGCCGGAGCTCGGGCCGGGGGCCACCATCGAGGC
GGGGCCGCGCGAGGGCCGGAGCGGAGCGCGCCGCCACCGCCGACGCGCAAACTTGGGCTCGCGCTTCC
CGGGCCGCGCGAGCGCGGGCGCCGGAGCCCGCCATGTCGCGATCCAACCGGCAGAAGGAGTACAAA
TGCGGGGACCTGGTGTTCGCCAAGATGAAGGGCTACCCACACTGGCCGGCCCGGATTGACGAGATGCCTGA
GGCTGCCGTGAAATCAACAGCCAACAAATACCAAGTCTTTTTTTTCGGGACCCACGAGACGGCATTCTGG
GCCCCAAAGACCTCTTCCCTTACGAGGAATCCAAGGAGAAGTTTGGAAGCCCAACAAGAGGAAAGGGTTC

AGCGAGGGGCTGTGGGAGATCGAGAACAACCCTACTGTCAAGGCTTCCGGCTATCAGTCCTCCCAGAAAAA
GAGCTGTGTGGAAGAGCCTGAACCAGAGCCCGAAGCTGCAGAGGGTGACGGTGATAAGAAGGGGAATGCAG
AGGGCAGCAGCGACGAGGAAGGGAAGCTGGTCATTGATGAGCCAGCCAAGGAGAAGAACGAGAAAGGAGCG
TTGAAGAGGAGAGCAGGGGACTTGCTGGAGGACTCTCCTAAACGTCCCAAGGAGGCAGAAAACCTGAAGG
AGAGGAGAAGGAGGCAGCCACCTTGAGAGTTGAGAGGCCCTTCTATGGAGGTGGAAAAGAATAGCACCC
CCTCTGAGCCCGGCTCTGGCCGGGGGCTCCCCAAGAGGAAGAAGAAGAGGAGGATGAAGAGGAAGAGGCT
ACCAAGGAAGATGCTGAGGCCCCAGGCATCAGAGATCATGAGAGCCTGTAGCCACCAATGTTTCAAGAGGA
GCCCCACCCTGTTTCTGCTGCTGTCTGGGTGCTACTGGGGAAGCTGGCCATGGCCTGCAAACCTGGGAACC
CCTTTCCACCCCAACCTGCTCTCCTCTTCTACTCACTTTTCCCACTCCAAGCCCAGCCCATGGAGATTGA
CCTGGATGGGGCAGGCCACCTGGCTCTCACCTCTAGGTCCCCATACTCCTATGATCTGAGTCAGAGCCATG
TCTTCTCCCTGGAATGAGTTGAGGCCACTGTGTTCTTCCGCTTGGAGCTATTTTCCAGGCTTCTGCTGGG
GCCTGGGACAACTGCTCCACCTCTGACACCCTTCTCCCACTCTCCTAGGCATTCTGGACCTCTGGGTTG
GGATCAGGGGTAGGAATGGAAGGATGGAGCATCAACAGCAGGGTGGGCTTGTGGGGCTGGGAGGGGCAA
TCCTCAAATGCGGGGTGGGGGCAGCACAGGAGGGCGGCTCCTTCTGAGCTCCTGTCCCCTGCTACACCTA
TTATCCCAGCTGCCTAGATTACAGGAAAGTGGGACAGCTTGTAGGGGAGGGGCTCCTTTCCATAAATCCTT
GATGATTGACAACACCCATTTTCTTTTGGCGACCCCAAGAGTTTGGGAGTTGTAGTTAATCATCAAGA
GAATTTGGGGCTTCCAAGTTGTTGGGCCAAGGACCTGAGACCTGAAGGGTTGACTTTACCCATTTGGGTG
GGAGTGTGAGCATCTGTCCCCCTTTAGATCTCTGAAGCCACAAATAGGATGCTTGGGAAGACTCCTAGCT
GTCCTTTTTCTCTCCACACAGTGTCAAGGCCAGCTTATAGTCATATATATCACCCAGACATAAAGGAAA
AGACACATTTTTTAGGAAATGTTTTTAATAAAAGAAAATTACAAAAAAATTTTAAAGACCCCTAACCTT
TTGTGTGCTCTCCATTCTGCTCCTTCCCATCGTTGCCCCATTTCTGAGGTGCACTGGGAGGCTCCCCTT
CTATTTGGGGCTTGATGACTTTCTTTTGTAGCTGGGGCTTTGATGTTCTTCCAGTGTCATTTCTCATCC
ACATACCCTGACCTGGCCCCCTCAGTGTTGTACCAGATCTGATTTGTAACCCACTGAGAGGACAGAGAGA
AATAAGTGCCCTCTCCACCCCTCTTCTACTGGTCTCTCTATGCCTCTCTACAGTCTCGTCTCTTTTACCC
TGGCCCTCTCCCTTGGGCTCTGATGAAAAATTGCTGACTGTAGCTTTGGAAGTTTAGCTCTGAGAACCGT
AGATGATTTTCAGTTCTAGGAAAATAAAACCGTTGATTACTATAAAAAAAAAA

REEEEWPGGGWRKRPRAEEGAIEFQTQTTARARTHAGALPRSAPAPSVRRAGGDAVAPELGPATIEA
GAARGPERSGAATAARANLGSRFARRGARGARSPAMSRNRQKEYKCGDLVFAKMKGYPHWPARIDEMPE
AAVKSTANKYQVFFFGTHETAFLGPKDLFPYEESEKEKFGKPNKRKGFSEGLWEIENNPVKASGYQSSQKK
SCVEEPEPEPEAAEGDGDKKGNAEGSSDEEGKLVIDEPAKEKNEKGALKRRAGDLLDSPKRPKEAENPEG
EEKEAATLEVERPLPMEVEKNSTPSEPGSGRGPPEEEEEEEDEEEATKEDAEAPGIRDHESL

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: FKSG3; MGC64992; YPEL1

CAGGCGGCGCGCGGGGCGGCGGGGAGGATGCCTCGCGCCCTGCCTAGGCGTTAACGGCCTCAGCGCGTC
CCGGGCGCGCGCGGGAACGCCTGAGAGCCGAGCCGCGCTGACCGGGGCGGGCCGGATGGGCGCTGCGG
GCCGGGCGCGGACCGCGGAGCGGCCGTTACGTTTTTCTCTCGTCCCAGCTGTGTGGACAGTGCCACACGC
CCTCCTGGACAACGACGGCTCTTGCCTGCAATTTCCAGTGTTGCTTTTGTGTCAGAGAGGCCAGCAGAGCCAC
GGTTCTTCCAGAACCAGCCCTGAGCTGAGTGAGGAGTGCCAGGAGAGATGGTGAAAATGACAAAGTCCAA
AACTTTCCAAGCGTATCTGCCGAAGTGTACCGAAGTACAGCTGTATCCACTGCAGAGACACACCTGGCCA
ATCATGACGAGCTCATCTCCAAGTCTTTGAGGGAGCCAGGACGCGCCTACCTCTTCAATTCGGTGTG
AACGTGGGCTGCGGCCCTGCAGAGGAGAGGGTCTTCTCACCGGGCTGCATGCGGTTGCCGACATCTACTG
CGAGAACTGCAAGACCACGCTCGGGTGAAATACGAGCATGCCTTTGAGAGCAGTCAGAAATATAAGGAAG

GAAAAATTCATCATTGAGCTTGCTCATATGATCAAAGACAATGGCTGGGAGTAA GTGCGAACTTTCCCTTC
TCCTTTGAATGCTGTTTTGTGAAAGAACTGTGAATGTAATGGAAACGTAGGAGCATCTGGTGACAGCCTT
TCTTGCCCTCTGACCTCAAAGGCTAGCTGCGCATAGCTCTTGACACTCTCGGCCATCTCTGTGGGTAAGGT
GTCCCTCGGATCTGTCTCTTCGTGTACACAGTTGTTTCTGAAAATTTTCAATGAGCTTTTTCTAACTTCT
CAAGTTCTAGAGAAAGAATTAACCAACTGATGACTTACCTGCCTAGTTAATATCTTCTTTTACCTTTGTC
TTCAATATAGTTGGGCTCTGCTTTTTTAAGGTTTCAGTTGAAAACCAAACCTGGGGCCGGGTGCGGTGGCTCA
CGCCTGTAATCCCAGCACTTTGGGAGGCCAAGATGGGTGGATCACCTGAGGTGAGGAGTTCTAGATCAGCC
TGGCCAACATGGTGAAACCCCATCTCTACTAAAAATACGAAAATTAGCCGGGCATGGTGGCGAGTGCCTGT
AATCTTAGCTACTCAGGAGGCTAAGGCAGGAGAATCACTTGAACCTGGGACACGGAGGTTGCAGTGAGCTA
AGATCATGCCATCGCACTCCAGCCTGGGGGACAAAAGTGAGACATCGTCTCAAAAAAAAAAAAAAAAAAGTG
GGTATGGTGGCGCATGCCTTTAATCCAGCTACTCGGGAGGCTGAGGCACGAGAATCACTTGAACCCAGGA
GGCGGAGGTTGCAGTGAGCCAAGATCGCGCCACTGCACCTCCAGCCTGGCAATAGGGCGAGACTCCGTCTCA
ATTTAAACAAAAGAGAACCAGACTGAGTCTCTGAAGACCACAGGGACAGGGTCTCTTTAGATAGCAAGTC
TCACCATTCCCTTTTTTAGAGAAAAGGTATTGTAGCCACCCTCCACCCGCTGTTTTTCTTAAATTTGCA
GAACTTCAAATTGGCTATTCTCTTGCAAATGAACCCTTAAAGTACAGTGTTATTTAAGAATCTTCCAGAG
GCAGTCAACAGACTTATACACTAAGGGCATTTTTGGTTTTTAGCTTGTTCAAAAACAGAGGCCAGCACAGA
TGACATTTTAGATACACTCTAAATTGAGAATGGTGTCTAGTGGAACATGTTTATTTAAGCCAGTAGATTCC
TTATCTAGAAAGCAGGTGAGCTAGCCCTTAGAGAAGGCTGTCCCGGGGCCCGCAGAGGTGCCCTTACTGAG
GTGACAGCCTCACAGGGTCTGGTACCAGGGGTTGTGCCCTCAGCAGTGACAGCAGCTTAGGTGTCAGGCAG
TTGCTGAGTGGCTGGTCCATGTCTATAGAGTAACACACTGGACCGAGGAAAAGTCAGATTTTCATTTTCTAC
CCTGGATGTACTTGAAGAAAAAGAATTATTTTTGCATATGAAAGAGGCCAGAACCACAGGAAAAACTTCA
AAACTTGACATTTGCCAGAATGTTTAAAAATTTGTTGAGAAAAGGTTAAAGCAACAAGTTTAGCCTTTGTGC
ATGAAGACGCCTGGCCTGCTAGACGCGTTGCCCGTCCCTGCGTGGTGCTGTCCCATGTCACTTGAAGTAT
AGAGGGGCTGTGCAATCTCCTAAGGCCTGTGTTTCTGCCATATATTTTATTATAAATTACAATCCACTCA
TCCACCTGCCCTCCACCAGGAGTGGGCACCCCATAGGGTTTAGGCCACTTTGCAGAGGATGGAGGTCAA
AACCCTCCAGATAAGTTTGGTTTTCAACATTTAGTAACCTGTCTCAGGGCAGAGGGCAGGCAGGGGGAC
CGAGGGGCAGCAGATAGGAGAGCACTGAGCCCGGATAGTTCTCAGCCTGGCAAGTGGCTCTGAAGCTGCCT
TCAGACAAGGCTAGTCTAGGGGCAAGAGTGCAGCTGGCTGACAATAAGAACGTGGCCACCTGCCAGCTT
CACACCTCCCCGACTTCAGCCCTTCTAAACCCAGACCTGCGGTCCAGGCAGGCACTGGGCTGTGCCAC
TCGAGCTCACTGCCACACACAGCATGCCTTTGGGTGCCATCTCTTTGCCCAAGCCTGGAAGCCTTGGCAG
GTGGGAAATGCCGCTGCCCTGGTGGGCATGGCACTGAGATGCATCCACTCAGCAGGAGTGACAGAGGCAGA
AGTTCTTTTAAAGCACATCTTCCACTTAGGAAAGGAAGGAAATCTTTGTACTGTCTTGGAAGCCTCCACAT
CCGGCTATGGCCCTGCAAGCTGCTTTATCCCTGCGCTAGTCTCCCCCGAGGGTTTAGGCTGGCCCAGCACA
TCCTGTCTCTGAGCTCGCGTGACGCCACCCAGAGCGCAGGGGTCACTGCACGCTGCAGGGCTCTTGCTG
CCATGGTCTCAAGCCTGAAGAGGCTCCGCCACAAGCTGGCCCATGAAGTTAGCAATGCCTGTGGCTTCAG
TCAATTGTCTTGAGACTGTGAAGAGGCTGAAAGACACCTTCCCGGGTGGAAGAAGGAGTTCACTGAAACT
TATCTTAAACTGACCCTTCCCTTTGAGTGAGTCTTCATTCTCTCCCATGTGGGAACCCAGCCTCCGATGC
CCCGGGGACTAGGGGAAACAGTTGGAGGTTCTGTCCGTCCCCAGCCTGCCACGGGTGCGAGGACAGCCAAG
TCCTGAGTGACTCAAGATGCTTCACTTACATGGAAGAACTTCTAAAACCTTACCGAGTGGTTTTTGTATA
TACTAAAGTTCTATTTAGAGCTTTTTCTGTTTTGGGCAAGTTCGCTGCTCCTTCTATTTGGGCACTTTGGTT
TTTGTACTGTCTTTTGTGACGGCATTGATTGAACATTTTTTACTAGTAGTCTTATGACTTTTGTATTTTTT
TTTTTTTTTTGTAATTTATACCAACAACACTTTTATCACTTTTTTTTTTGTGGGCTTCTGCAAAATACAAGC
TCATTTTTTAAACCAAATGAACAGACCATGAGCTGGCTTCAGGGGAAGTGCTATTCACAGGACCATATCCAC
CACCCTCTTAAATTCCTAAACAATATCATCTAGGACTTCTATTTAAGTTATTTAAAATAAATCTTCTTGA
GAGCCTTGGGAGGTGATGTGAGGTTATAAATGGCACAGTGCAATTTGCTGTAGGAATGTGGTTTGGCATTG
TTTTATACACACAGATTTTTTTATACCTTAATGCTTATTCTTGATGGCATCTGTCAGATATTAGAATTGAA
AATAAGAATCTTCCCAAAATCCTTTAATTTACCTGATGCCCTCATCAGGTCGTTAAAAATTTCAAATGGTTT
TAATAGCTAAAAAACTACAAATTAAGCTCTAAAACAAACAACTACAGAAATGTAACCTTCAATTTGCCAA
AGGTCTTTGGTGGCCTGTCCCCTGCCCTGGGAGCAGATGGCCCTGAAGCCCTTCCCTCACTGTGCAGGCCA
CCGGGTGAGGCTGGACGGTCACCCATGGTGGCTTCACTGCAAGGAGCAGGACTGCCGAGCTCAAGCACGGG
GCCTTCAGCTTCCCCTGTCTCTGGCCACACCGCCAGCCCTTGGTCCTTATCTGTGTGAGGTTTACAAATA
AAGCTTCTGATGTCAAATGTTTAAAAAAAAAAAAAAAAAAAA

TALACIFQCCFCQRGQSHGSSRTSPELSEECPGEMVKMTKSKTFQAYLPNCHRTYSCIHCRAHLANHDEL
ISKSFQGSQGRAYLFNSVVNVGCGPAEERVLLTGLHAVADIYCENCKTTLGWKYEHAFAESSQKYKEGKFII
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
CCGGGCGTCCCCGCGCGGGCGCCGGAGAGGAAGGAAGGCTGGCAGCCTCGTCACGTGTCCGCTGCAGTCGC
GAAACAGTTCGGTGGTGAGGAGACCTTTCCAATATAAGAGGAATAAAGAAGTCACCTCCCCAGCTGTCA
TCATCTTCCAGCAGATTGAGCAAGAATATTTTGAGCACTACAGGAAAGACAGTCCATCAAACCCGAGATGA
TGATCAGCCACGTGATTTTTCAAGAAGAGGAATAGGGTGAATGAATCTCATCAGAAAAGCAGCAATATGA
ATGCTGGCCCATCTTGGAATAAAGTGCAACATTCAAAGAATTCTTCAGGAAAAAGGCAGAGTAAATCCCAA
GTACCCACGCTTCTTCCAGCCGAGAAGCAGCCTCACAGCTGTCACCCAGCCTACTGAAGAAAACTTAA
AGAAAGCATTTCGCCGAAGCAAGACGCAAAAGGAATCCACTCGGTTCCAGGTGTCAGGGGGCCTCAGGGA
ATAAACTGTTTCTTGATTTTCAGTCAATGAAAATTATTAAGAGAATGCTGATGAGGACAGTGCAAGTGAT
CTCTCTGATTCGGAAGAATTCCCATTCCTCCTTCTCCCCTCACACCTCCAGATCTCAATCTTCGAGCTGA
AGAAATTGATCCAGTTTACTTTGATCTTACCCTGGTCAGGGCCATACAAAACCTGAATACTATTATCCTA
ATTTCTTCCATCCCCTTTTCAGCTCCTGGGACCTACGAGATATGGCCCTGCTTCTGAACGCAGAGAACAAA
ACGGAAGCCGTGCCCCGAGTGGGAGGACTTCTTGGGAAGTATATCGATAGACTTATTCAGCTTGAGTGGCT
GCAAGTCCAGACTGTACAGTGTGAAAAAGCAAAGGGGGGCAAAGCAAGGCCCCCACTGCCCTGGGACCT
CAGGGGCACTGAAAAGCCCTGGGAGAAGTAAGCTAATTGCTAGTGCTCTGTCCAAGCCACTACCTCACCAG
GAAGGGGCTTCAAAGTCAGGCCCTTCCCGAAAGAAAGCTTTTACCATGAAGAAATCCACCCATCACATTA
TGCATTTGAGACTTCCCCTAGACCCATTGATGTGCTTGGTGGTACCAGGTTTTGTTCTCAGAGGCAAACCC
TTGAAATGAGGACAGAAGAAAAGAAAAGAAATCAAGTAAGAGTACGAAGCTGCAGCGCTGGGATCTGTCC
GGCAGTGGAAGCAGCTCTAAGGTGGAACCAGCGGTACATTTCGAGTTCCCAAACAGGCAGCTGTGATTCT
GGACTCAGCAGATTCTGTAAAGCCCTCCAAAACACAAGCACATGCACATCCTAGGAAAAAGGGAAAGGCAG
AGAGCTGTGGTCATGCCACTGTATCGAGTGAGAAAAAACTGAAAACAAACGGAGTAAAGCAAAACACATAT
AAACTAAAAATAATCTATAAATGCTGAATTTGCAAGACCTGCAGGTACCTCAATGTTAGAGCGCTTCCAA
AAGTCAAAATCTGTGAATTTTAAGGAATTTTACAATACTGACATTTAAGTAGTTGACTGGCATTTTTGT
CCACCTTTATTTCTACCCTGAGTGGGGTATTTTCAAAGGGAAGTGTCTTTCAATAAGCCTTTCTTTGTAT
TGTCAGTCTTAGGCAAATGAGAGCCCTTTAGATAAAAATTATGTAAAATATGTGCCATATAAAGGAATAAA
ATGGCACCTCTCCAGGGAAGTGTGAGTGAACCTCAGCTACAGTAGCCGGTCTGTGTAGAGCAGCTAGTG
GTGTTACCTCCCCATTTTACATGCACGTAAGTATATGAAATAGTGCAGACTGTTTCAAATGGTGTGGAAT
CCTAAATGTTTAAATAAGGTCTTCTTGCCCACTCCCTCGCTTACTTTTTTATAAACTCCTCAAGCAAAA
TTTCTGTTTCAATTTACCCTTAGGAGAAGCTTTAGTTCTTCTCAAGTCAGGGAGTAGTGAGTTTGTATTTT
GAGTAGTCATTTCTACTAAGCTGGTTGCTTTCTAGAGAGACAGTGGAATCTAGTACTTTAATACATTTTC
TCTGACATGGTTTTTTTTTTCTTTTTTGAGGGGCATTTTAACTTAGAGGTGGTGGTAAACCTACTTTTG
AGTTCTCCGAAGTGAAGTTAAATAACTTGCAGAATTTTCAAAGTCAATGGGCTTAGCATGATTACTGCT
GTTTGGTGGGGCTGAGAATGAAATATTTGACATTCTGGAATTGCTGGCATGTAAAGCTTCTCCAGAGAGGC
ACCCAGGGAAATCACTCTTTACAATTTGTAAAGGAAGGGCCTGTAAAGGATCAAAACACATGGACCTAC
ATTCAGTGTAATAGTTACAAAGTTACTGATTTGGGTTCCACACCCTGTGGTCCTTAGTCAAAAATAATGAT
CTGTTTCAGTTTGCAAGAGCAGGATTTTATTATTTTGCTTGGGGTGAGGGGCGGGAGAGTGGAATATGAGT
AAGGTTGCTGAATGAATTCTAACTCGCTTATCTGGTCTTCAGGCTTCCCAACTCTCTCCAAGCCTTCTTA
TTTCACTGCAGTTAAATAACATCTTCTGTTCTATAGTTGTGCTGTGAGTTTTCTGTTTCAATTTGCGCA
GTGATTTTAAACGGCCCATGTCATTATAGTTGATTTTATCCCTTTAAACAATTACTGTATTTGTTTTTG
ACGTAGAGGTTTCAATTTTTTACCTTGGGGGCAAATGAAAACTTGGCATTTTTTCATTTGGGAACATATA

ATAGCTTGTAACCTTTTCAGACAGCAGTAAATGTCTGAAAAAATATCAAAAACAGCATAAAGACAAGATTA
TGTAGCTCTAATTATACGTATATAATTATAAAAAACAATGTGCAAGGGTTATATTTTAAAGGTCTTTTAAAA
TCTGATTTTGATCATACCAATGACATAATATTTTTTATGGTAGCCTTTTACTTTCAAGACTTAATTTTCA
GACTTGTACAAGTTCTTTCTTACATTCTTTCCCTCTCACACCATCCTACTGGAGAAAGCATACTTTTATGC
TAAGATCTTACTTTAAGCTTTTTATGTGAACAAAAGATGTACATATAGTAAGTATTACTTCCGTAGTCCTC
AAATTTACTATAACTTTTGTACTTAGTATATGTTTTATATTTGGAAAACAGCACTACGCTTAGTTTTCTG
TAGTTCCTGAGTGATGTCTGTGTGTTCTTGCCTGCCCTTTTTTGAGCACAGATTAGTCTGTTATCCAT
GGCTGGCACTTCACTTATGATCCTTTCTCTGCTAGATTTTTATGCAGCTCTCTATGAAGTTTCATGGCCCA
TAGATATTCAAAAGCAAGATATTCTATACATATGTGTATATGTATATATACTCCTTATGTTAATACTAAAG
TGTTTTATGCTGAGTTGCTGCCTTTCCCGTCATGTATCCATGTGCATGCTCTTAGAGACCTTGAATGGTTG
AGGGTAAAGTGATTTATTAGTAATTCTACTTGCCTTGTGTATGTCTGAGCTGAAAACAATCGTGATTAAGA
AATTTAGAGGTGGCTGGGCGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCCGAGGCAGGCGGA
TCACCTGAGGTCGGGAGTTCAAGACCAGCCTGACCAACATGGAGAAACCCTGTCTCCACTAAAAATACAAA
ATTAGCCGGGTGTGGTGGTGCATGCCTGTAATCCCAGCTACTCGGAAGTTTGAGACGAGAATCTCTTGAAC
CCGGGAGGCGGAGGTTGTGGTGAAGCAAGATCGTGCCATTGCACTCCAGCCTGGGCAACAAGAGGGAAACT
CCGTTTCAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

IRGIKKSPQLSSSSRLSKNILSTTGKTVHQTRDDQPRDFFKKRNRVNESHQSSNMNAGPSWNKVQHS
KNSSGKRQSKSQVPHASSQPRSSLTAVTQPTTEKLKESISPEARRKRNPLGSRQCGASGNKFLDFQSMKI
IKENADEDSASDLSDSERIPIPPSPLTPPDLNLRAGEIDPVYFDLHPGQGHTKPEYYYPNFLPSPFSSWDL
RDMALLLNAENKTEAVPRVGGLLGKYIDRLIQLEWLQVQTVQCEKAKGGKARPPTAPGTSGALKSPGRSKL
IASALSKPLPHQEGASKSGPSRKKAFFHHEEIHPSHYAFETSPRPIDVLGGTRFCSQRQTLEMRTEKKKKKS
SKSTKLQRWDLSGSGSSSKVETSGHIRVPKQAAVILDSADSKASKTQAHAPRKKGKAESCGHATVSSKE
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
ACGGCTCCGAATCTGCCCCAGCGGCCGCTGCGAGACCTCGGCGCCGACATCGCGACAGCGAAGCGCTTTGC
ACGCCAGGAAGGTCCCCTCTATGTGCTGCTGAGCCGCTCTGGACGCGACGAGCCCGCCCTCGGTCTTCGG
AGCAGAAATCGCAAAAACGGAAGGACTGGAAATGGCAGACCATATGATGGCCATGAACCACGGGCGCTTCC
CCGACGGCACCAATGGGCTGCACCATCACCTGCCACCGCATGGGCATGGGGCAGTTCCCGAGCCCCCAT
CACCACCAGCAGCAGCAGCCCCAGCACGCCTTCAACGCCCTAATGGGCGAGCACATACACTACGGCGCGGG
CAACATGAATGCCACGAGCGGCATCAGGCATGCGATGGGGCCGGGACTGTGAACGGAGGGCACCCCCGA
GCGCGCTGGCCCCCGCGGCCAGGTTTAACTCCAGTTTCATGGGTCCCCCGGTGGCCAGCCAGGGAGGC
TCCCTGCCGGCCAGCATGCAGCTGCAGAAGCTCAACAACCAAGTATTTCAACCATCACCCCTACCCCCACAA
CCACTACATGCCGATTTGCACCTGCTGCAGGCCACAGATGAACGGGACAAACCAGCACTTCCGAGATT
GCAACCCCAAGCAGCGCGGCCGAGCAGCAGCCCCGGCGGCTCGGGCGGCAGCAGCAGCCCCGGCGGCTCT
GGCAGCAGCTCGGGCGGCCGCGGCCGAGCAGCAACAGCGCGCGGCAGCGGCAGCGGCAACATGCCCGC
CTCCGTGGCCACGTCCCCGCTGCAATGCTGCCGCCAATGTCATAGACACTGATTTTCATCGACGAGGAAG
TTCTTATGTCCTTGGTGATAGAAATGGGTTTGGACCGCATCAAGGAGCTGCCGAACCTCTGGCTGGGGCAA
AACGAGTTTGATTTTATGACGGACTTCGTGTGCAAACAGCAGCCCAGCAGAGTGAGCTGTGACTCGATCG
AAACCCCGGCGAAAGAAATCAAACCCCCAAGTCTTTCGGCGTGAATTAAGAAACATTCCCTTAGACACA
GTATCTCACTTTTCAGATCTTGAAAGGTTTGAGAACTTGAAACAAAGTAACTATAAAGTTGTACAAATT
GGTTTTAAAAAAATTGCTGCCACTTTTTTTTCTGTTTTTGTTCGTTTTTGTAGCCTTGACATTCACCC

ACCTCCCTTATGTAGTTGAAATATCTAGCTAACTTGGTCTTTTTCGTTGTTTGTGTTTTACTCCTTCCCTC
ACTTTCTCCAGTGCTCAACTGTTAGATATTAATCTTGGCAAAGTCTTAATCTTGTGGATTTTGTAGATGG
TTTCAAATGACTGAACTGCATTACAGATTTACGAGTGAAAGGAAAAATTGCATTAGTTGGTTGCATGAACTT
CGAAGGGCAGATATTACTGCACAACTGCCATCTCGCTTCATTTTTTAACTATGCATTTGAGTACAGACT
AATTTTTAAATATGCTAACTGGAAGATTAAACAGATGTGGGCCAACTGTTCTGGATCAGGAAAGTCAT
ACTGTTCACTTTCAAGTTGGCTGTCCCCCCCCGCCGCCGCCCATATGTACAGATGATAATAGGG
TGTGGAATGTCGTAGTGGCAAACATTTACAGATTTTATTTTGTGTTCTGTCTTCAACATTTTGACACT
GTGCTAATAGTTATATTCAGTACATGAAAAGATACTACTGTGTTGAAAGCTTTTAGGAAATTTTGACAGT
ATTTTGTACAAAACATTTTTTTGAAAAAATACTTGTTAATTTATTCTATTTTAATTTGCCAATGTCAATA
AAAAGTTAAGAAA

LDATSPPSVFGAEIAKTEGLEMADHMMAMNHGRFPDGTNGLHHHPAHRMGMGQFSPPHHQQQPQHAFNA
LMGEHIHYGAGNMNATSGIRHAMGPGTVNGGHPPSALAPAARFNNSQFMGPPVASQGGSLPASMQLQKLNN
QYFNHHPYPHNHYMPDLHPAAGHQMNQTNQHFRDCNPKHSGGSSTPGGSGGSSTPGGSGSSSGGGAGSSNS
GGGSGSGNMPASVAHVPAAMLPPNVIDTDFIDEVLMSLVIEMGLDRIKELPELWLGQNEFDFMTDFVCKQ
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

GCGACGGCCCTGCTGCCTCTCCAGCCAAGTGGCTGGAGTCGGGAGGCTGGAAGAGACTCCGAGAAAGTAC
CAGCGGAAGGCGGCCGCGCTACGGCGATTTCGACGGGAGTAGCAGACGAAGACGGTGGCCGCCGCACTAGC
CACCACGTGTGGAGGATAAACGGTCTACACGGCCATTCCGGCGCCGAGTCTAGGGAAGAGTTAGCGACGA
CGGGGAAAGAAAATGTGAAGAGAGCGACCGCCGCTCCAGGGTCGCTGCAGGAAGCCTAAGTGCAGACGCCG
GCTTCTCCCGCAGTGACTTGAGAAGGGTCAGTGAAGAACTCGGCCACTGCCGACGCTCTCTAGGGAGAGA
GTTAGGGGAGATAGTGGCCACAGTCACAGCTGCTCTTGGGAGAGAGTTAGGGGAGACAGCACCTTCTGCAG
CAGCGACGTGAATTTTGTGAAGTTGGAGGCCACCAAACCTACCGACTCCAGGGGAACAGCCAGAGAAGACC
GAGGCCTCCGCCTCAGTGGTCCTTGGGAGGGAGTCACTGACATTCCGGACCCGCGAAGTGTGACTTCGGG
GATAGAGTCACTGACGATCGCAGTCGCCGCTTCACTGGCTCCTGGGAGGGAGGGAGTGTGGAAGGCGGCCA
CAGCGTTGGTAGTTCTTGGGAGGAAGTAAGTGGAGACCGCGCTACGCAGCCAGCGACTCCTCTGGTGTGA
GCGGCAGTGAAGACGCCAGCTACCGCTTCACTGGCTTTTGGGAGAGAGAAAGTGAAGACGAAGTTTCCGC
TGCAGCTTCTGGGAGAGAGCAAGAGAGGACCTTGGGCCCGTCCTAGTGACGACGGAGAAGAGGGGCCGCTG
CCGCTGCAGTGGCTCGTGGGTGAGAGCAAGTGAAGACCGCCGACGATCAGGGGCCTGGACTCAACTCCTC
CCCAGAGTCGGAGGTGTTGCGCCATGCCCCGGGTGGCCAATTCAAGGCCCTCACTTCTCTAGGGAGACT
GCAAACCCCTGTTCCAGGAAGAAGGTGCATTTTGGCAGCATACATGATGCAGTACGAGCTGGAGATGTAAA
GCAGCTTTCAGAAATAGTGTGTCTTCATTGGCTGCTCTGGCATGGAGCTGATATCACACACGTAACAACGA
GAGGTTGGACAGCATCTCACATAGCTGCAATCAGGGGTGAGGATGCTTGTGTACAGGCTCTTATAATGAAT
GGAGCAAATCTGACAGCCCAGGATGACCGGGGATGCACTCCTTTACATCTTGTGCAACTCATGGACATTC
TTTCACTTTACAAATAATGCTCCGAAGTGGAGTGGATCCCAGTGTGACTGATAAGAGAGAATGGAGACCTG
TGCATTATGCAGCTTTTTCATGGGCGGCTTGGCTGCTTGAACCTTCTTGTAAATGGGGTTGTAGCATAGAA
GATGTGGACTACAATGGAACCTTCCAGTTCACTTAGCAGCCATGGAAGGCCACCTTCACTGTTTCAAATT
CCTAGTCAGTAGAATGAGCAGTGCAGCGCAAGTTTTAAAGCTTTCAATGATAATGGAGAAAATGTACTGG
ATTTGGCCCAGAGGTTCTTCAAGCAGAACATTTTACAGTTTATCCAGGGGGCTGAGTATGAAGGAAAAGAC
CTAGAGGATCAGGAAACTTTAGCATTTCCAGGTCATGTGGCTGCCTTTAAGGGTGATTTGGGGATGCTTAA
GAAATTAGTGAAGATGGAGTAATCAATATTAATGAGCGTGCTGATAATGGATCAACTCCTATGCATAAAG

CTGCTGGACAAGGCCACATAGAGTGTTCGAGTGGTTAATTAAAATGGGAGCAGACAGTAATATTACCAAC
AAAGCAGGGGAGAGACCCAGTGATGTGGCAAAGAGGTTTGGCCATTTGGCAGCAGTGAAGCTGTTAGAGGA
GCTACAGAAATATGATATAGATGACGAAAATGAAATTGATGAAAATGATGTGAAATATTTTATAAGACATG
GTGTTGAGGGAAGCACTGATGCCAAGGATGATTTATGTCTGAGTGAAGTGGATAAAACAGATGCCAGAAGA
CCATCAAAGAACTGCAGGGCCAGCTGGAGTATGAACGACTACGTAGAGAAAAATTAGAATGTCAGCTTGAT
GAATATCGAGCAGAAGTTGATCAACTCAGGGAAACACTGGAAAAAATTCAAGTCCCAAACCTTTGTGGCTAT
GGTTGGTGTCTTTTTTAATACATTTATTTTTCTCAAGAAGTATATACAAGAGTGGCCAAGAGTACAAGCTT
TGGGCTGGGGCTCTTTGGACTTGAATCCTGGCTATAGTCTTTTTTGATTTGGGCTACTCATTTAACCTTTT
TGTGCCTCAACTATAAACTGGAGATGATAACTTATACTTTCTAGAGCTGATGACAGGATTAAGGAATACA
CACACACACACACACACACACACACACACACACTCTATATGTAACATAACTTTCTAGATACATACA
CACATCTGTCTATCTATCTTCAAACAGCAGCCTAGTTCATAAGTATTATTGTTAACATTGTACCATAGAAG
GAGAAAATGTTTTTATAAGTAATCAATCAGAATTCTAAGACAGCTAGAGGATATGTATATTTTAAATATTCT
AAATAACCAAAATAAAGTGCTTTGAATGGAATCCATATTTTCTTTCCATAGGGAAGTTTCTTCATCAATCA
TCATGGATGAATTAATTCTGTTTGAGGCTTGTGTACCTCAAATCTGATCTATTAATATTATAGAATCTTC
CTGGCTTCTTTTTATTTTGCACAACTAGTCATTGGTCTCTTTAATAACCACTTTAAAAATATTAAATAA
TAAACATGTTTGTGTATAGTGTTAAAAACAAGATAGATGTTCTTCTGACACTAAGTTCCACTCTCCAG
AGGAAGCTATTGTTAACAATTTAGTACATACCATATTAGACAAAATTCTATTTATCTGCAAACATGTATGT
GTATTTCTATGCATATGCAATATAACCACTTCTCAGTTTCTCTGGGTTTTGGTGTCTCACCAGTGGTTG
ATTTTCCAAGAAATATAATTAACATAATAATT

LERDSEKVPAGGRRYGDSQGVADDEGGRRRTSHHVWRINGLHGHSGAESRERVSDDERKCEESDRRSRVA
AGSLSADAGFSRDLRRVSENLGHRVSRRERVSGDSGHSHSCSWERVRGDSTFCSSDVNFSEVGGHQTDD
SRGTAREDRGLRLSGPWEVSDIRDPRTSDFGDRVSDDRSRRFSGSWEGGSVEGGHSGVSSWEEVSGDRGY
AASDSSGVSGSEDASYRFSGFWERESEDEGFRCSFWERAREDLGPRPSDDGEEGRCSRCSGSWVRASEDRRS
IRGLDSTPPQSRRCAMPGVANS GPSTSSRETANPCSRKKVHFGSIHDAVRAGDVKQLSEIVCLHWLLWHG
ADITHVTTTRGWTASHIAAIRGQDACVQALIMNGANLTAQDDRGCTPLHLAATHGHSFTLQIMLRSGVDPSV
TDKREWRPVHYAAFHGRGLGCLQLLVKWGCSIEDVDYNGNLPVHLAAMEGHLHCFKFLVSRMSSATQVLKAF
NDNGENVLDLAQRFFKQNILQFIQGAIEYEGKLEDQETLAFPGHVAAFKGDGLMKLKLVEDGVININERAD
NGSTPMHKAAGQGHI ECLQWLIKMGADSNITNKAGERPSDVAKRFAHLAAVKLLEELQKYDIDDENEIDEN
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

TAGGAGCTGCTCCTTCATCACTGGAGTCGCCCCTACCTCTCTGCCCCAGCCCCAGAGCCCCAGGCGGGGA
CCCCCGGATCGGACGTCCCAAGCCTCCGGGCACCTGGCTCAGCAGGAGGCCCGGCTCGGGGCAGGGCA
GGGCGGGCGGGCGGCGAGCCGGAGCCCGCCCCCTGCCCGGGCCCCGCGAGCCCTCGGAGCCACCCATGGG
GCACCTGCCCTTGCCTCCTTGCCTGGCGCGGCCAGCCGCGGTCCCGAGCAGCGCAGGGGAGGATCC
CCGCGCAGTGACCCGGGAGCCACACAGACTCTGGGAGGCTCGGCGGTGGAGCAGCAGGCGAGCTCCCCGC
AGCTCCCGGCGCTTCCAGGCAGCTCTCTGAGCGTGCCAGAGGCCCGGCCGCCATTCCAGCCCCGAGCC
ATGATGAAGACTTTGTCCAGCGGGAAGTGCACGCTCAGTGTGCCCGCCAAAACTCATACCGCATGGTGGT
GCTGGGTGCCTCTCGGGTGGGCAAGAGCTCCATCGTGTCTCGTTCCTCAATGGCCGCTTTGAGGACCACT
ACACACCCACCATCGAGGACTTCCACCGTAAGGTATACAACATCCGCGGCGACATGTACCAGCTCGACATC
CTGGATACCTCTGGCAACCACCCCTTCCCCGCCATGCGCAGGCTGTCCATCCTCACAGGGGATGTCTTCAT
CCTGGTGTTCAGCCTGGATAACCGGGAGTCTTCGATGAGGTCAAGCGCCTTCAGAAGCAGATCCTGGAGG
TCAAGTCTGCCTGAAGAACAAGACCAAGGAGGCGGCGGAGCTGCCATGGTCATCTGTGGCAACAAGAAC
GACCACGGCGAGCTGTGCCGCCAGGTGCCACCACCGAGGCCGAGCTGCTGGTGTGCGGCGACGAGAAGT

CGCCTACTTCGAGGTGTGCGCCAAGAAGAACACCAACGTGGACGAGATGTTCTACGTGCTCTTCAGCATGG
 CCAAGCTGCCACACGAGATGAGCCCCGCCCTGCATCGCAAGATCTCCGTGCAGTACGGTGACGCCTTCCAC
 CCCAGGCCCTTCTGCATGCGCCGCGTCAAGGAGATGGACGCCTATGGCATGGTCTCGCCCTTCGCCCCCGG
 CCCAGCGTCAACAGTGACCTCAAGTACATCAAGGCCAAGGTCCTTCGGGAAGGCCAGGCCCGTGAGAGGG
 ACAAGTGCACCATCCAGTGAAGCGAGGGATGCTGGGGCGGGGCTTGGCCAGTGCCTTCAGGGAGGTGGCCCC
 AGATGCCCCTGTGCGCATCTCCCCACCGAGGCCCGGCAGCAGTCTTGTTACAGACCTTAGGCACCAGA
 CTGGAGGCCCCCGGGCGCTGGCCTCCGCACATTCTGTCTGCCTTCTCACAGCTTTCCTGAGTCCGCTTGTCC
 ACAGCTCCTTGGTGGTTTCATCTCCTCTGTGGGAGGACACATCTCTGCAGCCTCAAGAGTTAGGCAGAGAC
 TCAAGTTACACCTTCTCTCCTGGGGTTGGAAGAAATGTTGATGCCAGAGGGGTGAGGATTGCTGCGTCAT
 ATGGAGCCTCCTGGGACAAGCCTCAGGATGAAAAGGACACAGAAGGCCAGATGAGAAAGTCTCCTCTCTC
 CTGGCATAACACCCAGCTTGGTTTGGGTGGCAGCTGGGAGAAGTCTCTCCAGCCCTGCAACTCTTACGC
 TCTGGTTTCAGTGCCTCTGCACCCCTCCACCCCGAGCACACACACAAGTTGGCCCCAGCTGCGCCTGA
 CATTGAGCCAGTGGACTCTGTGTCTGAAGGGGGCGTGGCCACACCTCCTAGACCACGCCCACCACTTAGAC
 CACGCCCACCTCCTGACCGCGTTCCTCAGCCTCCTCTCCTAGGTCCCTCCGCCCCGACAGTTGTGCTTTGTT
 GTGGTTGCAGCTGTTTTCTGTGTATGTATAGTAGTAAATGGAATCATTGTACTGTAAAAGCCTAGTGA
 CTCCCTCCTTGGCCAGGCCCTCACCCAGTTCAGATCCACGGCCTCCACCCGGGACGCCTTCTCCTCTGCT
 CCCAAACAGGGTTTCCGTGGCCTGTTTGCAGCTAGACATTGACCTCCGCCATTGAGCTCCACGTTTACAG
 ACAATTGCACAAGCGTGGGGTGGGCAGGCCAGGACTGCTTTTTTTAATGCTCCCATTTACAGAGGATAC
 CACCGAGACTCGGAGGGGACACGATGAGCACCAGGCCCCACCTTTGTCCCTAGCAAATTCAGGGTACAGC
 TCCACCTAGAACCAGGCTGCCCTCTACTGTGCTCGTTCCTCAAGCATTTATTAAGCACCTACTGGGTGCTG
 GGTTCACTGTGTCTAGGAAACCAAGAGGGTCCCAAGTCTGGCCTCTGCCCGCCCTGCTGCCCCACCAC
 CTTCTGCACACACAGCGGTGGGGAGGCGGGGAGGAGCAGCTGGGACCCAGAAGTGAAGCCTGGGAGGGATCC
 GACAGAAAAGCTCAGGGCGGGTCTTCTCCTTGTGCCCGGGATTGGGCTATGCTGGGTACCACCATGTACTC
 AGGCATGGTGGGTTTTGAACCCATAAACCAAAGGCCCTTGTCTATCAGCTCTTAACAAGTATATTTTGTATT
 TTAATCTCTCTAAACATATTGAAGTTTTAGGGCCCTAAGGAACCTTAGTGATCTTCTATTGGGTCTTTCTG
 AGGTTTCAGAGAGGGTAAGTAACTTCTCCAGGTACACAGCAAGTCTGTGGGTGGCAGAAGCAAGCTAGCG
 CTGGGCATTTCAGTACATACCACGATGTGCTCCCTCTCTTGATGCTTGGCCCCTGGGGCCTTCAGGGCTTTG
 GGACATCTTGTCTCAACCTCTCCCTAGATCAGTCTGTGAGGGTCCCTGTAGATATTGTGTACACCATGC
 CCATGTATATAAAGTACACACAGATGTACACAGATGTACACATGCTCCAGCCCCAGCTCTGCATACCT
 GCACCTGCACCCAGCCTTGGCCCCTGCCTGCGTCTGTGCTCAAAGCAGCAGCTCCAACCTGCCTCTGTG
 CCCTTCCCCACCCACTGCCTGAGCCTTCTGAGCAGACCAGGTACCTTGGCTGCACCGGTGTGTGGCCCGCT
 CTCACCCAGGCACAGCCCCGCCACCATGGATCTCCGTGTACACTATCAATAAAAGTGGGTTTGTACAAAA
 AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LAQQEAPGSGQGRAGGGEPEPAPCPGPAEPSEPTHGAPAPCASLPGRAQPGVPSSAGEDPRAVTPREPPQTL
 GGSAAAGAAGSSPQLPALPGSSLRARGPARHSQPRAMMKTLSSGNCTLSVPAKNSYRMVVLGASRVGKSSI
 VSRFLNGRFEDQYTPTIEDFHRKVYNIRGDMYQLDILDTSGNHPFPAMRRLSILTDGVFILVFSLDNRESF
 DEVKRLQKQILEVKSCLKNKTKEAAELPMVICGNKNDHGELCRQVPTTEAELLVSGDENCAIFYEVSARKNT
 NVDEM FYVLF SMAKL PHEMSPALHRKISVQYGA FHP RPF CMRRVKEMDAYGMVSPFARRPSVNSDLKYIK
 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

CGGACGCGTGGGCGCTGGGAGCCGGAGGGGAGCGCAGCGAGTTTGGCCAGTGGTCTGTCAGTCCAAGGGG
 CTGGATGGCATGCTGGACCCAAGCTCAGCTCAGCGTCCGGACCCAATAACAGTTTTACCAAGGGAGCAGCT
 TTCTATCCTGGCCACACTGAGGTGCATAGCGTAATGTCCATGTTGTTCTACACTCTGATCACAGCTTTTCT

GATCGGCATACAGGCGGAACCACTCAGAGAGCAATGTCCCTGCAGGACACACCATCCCCAAGTCCACT
GGACTAAACTTTCAGCATTCCCTTGACACTGCCCTTCGCAGAGCCCCGAGCGCCCCGGCAGCGGCGATAGCT
GCACGCGTGGCGGGGCAGACCCGCAACATTACTGTGGACCCAGGCTGTTTAAAAAGCGGCGACTCCGTTT
ACCCCGTGTGCTGTTTAGCACCCAGCCTCCCCGTGAAGCTGCAGACACTCAGGATCTGGACTTCGAGGTCTG
GTGGTGTGCCCCCTTCAACAGGACTCACAGGAGCAAGCGGTATCATCCCATCCCATCTTCCACAGGGGC
GAATTCTCGGTGTGTGACAGTGTGACGCTGTGGGTTGGGGATAAGACCACCGCCACAGACATCAAGGGCAA
GGAGGTGATGGTGGTTGGGAGAAGTGAACATTAACAACAGTGTATTCAAACAGTACTTTTTTGAGACCAAG
TGGCGGGGACCCAAATCCCGTTGACAGCGGGTGCCGGGGCATTGACTCAAAGCACTGGAACATCATATTGTA
CCACGACTCACACCTTTGTCAAGGCGCTTTACCATGGGATGGCAAGCAGGGATACCCTGGCCGGGTTATCC
CGGATGAGATACGGGCCGGGGAAAAGTGGGGCTCAACAAGGGAGGATGAAGAGAAGGAGGCTAAAGGCTGG
CGGAAGGACATCCCCTTCCCCCTGGGGCCATTCAAAAACCTTCTGCGGGGGGCCCTCCCTTAACCGGGAAC
CTGGTAAAATGGATTTTTTAAGGGTGGTAA

LASGRAVQGAGWHAGPKLSSASGPNNSTKGAIFYPGHTEVHSVMSMLFYTLITAFLLIGIQAEPHSESNVP
AGHTIPQVHWTKLQHSLDTALRRARSAPAAAIAARVAGQTRNITVDPRLFKKRRLRSPRVLFSTQPPREAA
DTQDLDFEVGGAAPFNRTHRSKRSSSHPIFHRGEFSVCDSDSVVWVGDKTTATDIKGKEVMVVGRSEH

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

GTGAGTGATGATGATAAGCTCCCGCTGCAGGTGTGAATAGAGACCCCGAGGCGCGTCTAGCCCTCATCT
GGGGAAGCGCACCTGCATACAGACGGGTGCACCGGGGAGGAGGCGATCTGCCGCGTGTTCTGCAAGCAGA
AAAGGAGTAACTAGTGTACATTTGAAGACGAGCACTGAGGATGAGGAACCACTGAAGAATATGAAAAT
GTTGGAAATGCAGCATCTAAGTGGCCAAAAGTGGAGGATCTATCCCTGAATCTAAGGTTGGTGACACATG
TGTTTGGGATAGCAAGGTAGAGAATCAACAGAAAAAGCCTGTGGAAAACAGGATGAAGGAGGACAAAAGCA
GCATCAGGGAAGCAATCAGCAAAGCCAAGAGTACAGCAAATATAAAGACAGAACAGGAAGGTGAGGCATCT
GAGAAGAGCTTGATCTGAGCCACAGCATATCACACACCAGACTATGCCTATAGGACAGAGAGGCAAGTGA
GCAAGGCAAACGTGTGGAGAACATTAATGGAACCTCTACCCTAGTCTACAGCAGAAAACCAATGCTGTTA
AGAAATTACATAAATGTGATGAATGTGGGAAATCCTTCAAATATAATTCCGCGCTTGTTCAACATAAAATT
ATGCACACTGGGGAAGCGCTATGAATGTGATGACTGTGGAGGGACTTTCCGGAGCAGCTCGAGCCTTCG
GGTCCACAAACGGATCCACACTGGGGAGAAGCCGTACAAGTGTGAGGAATGTGGGAAAGCCTACATGTCCT
ACTCCAGCCTTATAAACCACAAAAGCACCCATTCTGGGGAGAAGAAGTGTAAATGTGATGAATGTGGAAAA
TCCTTCAATTATAGCTCTGTTCTGGACCAGCATAAAAGGATCCACACTGGGGAGAAGCCCTATGAATGTGG
TGAGTGTGGGAAGGCCTTCAGGAACAGCTCTGGGCTCAGAGTCCACAAAAGGATCCACACGGGGGAGAAGC
CCTATGAATGCGACATCTGTGGGAAAACCTTCAGTAACAGCTCTGGCCTTAGGGTCCATAAAAGGATCCAC
ACAGGTGAGAAACCTTACGAATGTGATGAGTGTGGGAAGGCCTTCATTACTTGAGAACACTTCTCAACCA
TAAAGCATCCACTTTGGAGATAAACCTTATAAATGTGATGAGTGTGAGAAATCTTTAATTATAGCTCTC
TTCTCATTACGCATAAAGTCATCCACACTGGAGAGAAACCTTATGAATGTGATGAATGTGGGAAGGCTTTC
AGGAACAGCTCAGGCCTCATAGTGCATAAAAGGATCCACACAGGAGAGAAACCTTACAAGTGTGATGTCTG
TGGCAAAGCATTACAGCTATAGCTCAGGCCTCGCAGTCCATAAAAGCATTACCCCTGGGAAGAAAGCCCATG
AATGTAAGGAGTGTGGGAAATCCTTTAGTTATAACTCACTACTTCTTCAACACAGAACTATTACACCGGA
GAGAGACCTTATGTATGTGATGTGTGTGGGAAAACGTTTCAAGAACAAATGCAGGCCTCAAAGTCCACAGGAG

GCTCCATACTGGGGAAAAACCATATAAGTGTGATGTGTGTGGGAAAGCCTATATCTCACGCTCTAGCCTTA
AAAATCACAAAGGAATCCACCTTGGGGAGAAGCCCTATAAATGTAGCTATTGTGAGAAATCCTTCAACTAC
AGCTCTGCCCTTGAACAGCATAAAAGGATTACATACCAGGGAAAAACCCCTTTGGGTGTGATGAGTGTGGTAA
AGCTTTCAGAAATAATTCTGGCCTTAAAGTACATAAACGAATCCACACTGGGGAACGACCTTACAAATGTG
AAGAATGTGGGAAAGCATACATCTCTCTCGAGCCTTATAAATCATAAAAGTGTACACCCTGGGGAGAAG
CCCTTTAAGTGTGACGAGTGTGAGAAGGCCTTCATCACATACCGAACCCCTTACAAACCACAAAAAAGTTCA
TCTTGGGGAGAAGCCCTACAAATGTGATGTGTGTGAGAAATCTTTAATTACACATCGCTCCTTTCTCAGC
ACAGAAGGGTCCACACTAGAGAGAAAACCCCTATGAATGTGACAGGTGTGAGAAGGTCTTCAGAAACAACTCA
AGCCTTAAAGTTACATAAAGAATCCATACTGGGGAGAGGCCCTATGAATGTGATGTGTGTGGAAAAGCCTA
CATCTCACACTCAAGCCTTATTAACCATAAGAGTACCCACCCTGGCAAGACACCCCATACATGTGATGAAT
GTGGAAAAGCTTTTTCTCAAGCAGAACTCTTATAAGCCATAAAAGAGTCCATCTTGGGGAGAAACCCCTTC
AAGTGTGTTGAGTGTGGGAAATCTTTCAGTTACAGCTCTCTCCTTTCTCAGCACAAAGAGGATCCACACAGG
GGAGAAACCCCTATGTGTGTGATAGGTGTGGGAAGGCCTTCAGGAACAGCTCAGGCCTCACAGTGCATAAAA
GGATCCACACAGGTGAGAAACCCCTATGAATGTGATGAGTGTGGGAAGGCATACATCTCACACTCAAGTCTT
ATCAATCATAAAAGTGTCCACCAGGGGAAGCAGCCCTATAATTGTGAGTGTGGGAAATCCTTCAATTATAG
ATCAGTCCTTGACCAGCACAAAAGGATCCACACTGGAAAGAAGCCATACCGATGTAATGAGTGTGGTAAGG
CTTTTAATATCAGATCAAATCTCACCAGCATAAAAGAACCCTACTGGAGAGGAATCTTTAAATGTGATA
TATGTGGGAAGTTATAGTGGCACATCCAGAAGAGAACCTATGAGGGAGGGAATGCCCTGGATGGGGGCAG
GATGAGGATGCCTCTGTAGCAGGCAGAGCTTACCAAGTCTCTCCGAACCTCAAATGGAAGAAATACCTTATG
AATGTAAGAATGTAGGGGGTTCATGGCTTGAATTTACACAGTGTAAATGAAACCATCCTAGAGGATTATGA
GGAATCCTTTCTATGTGATTTTCAATCATAGCAAGCAAGAAAGGCTCCAGTGTCAAGGTAGTTCAGCTCTT
ACAGGATATAAAACAGTCCATACTTGAGAGAAAAAAGCTTAGATCTGAGTGTGGAATGTGAAGCAAATCTTC
AAAATCAGTAGACATTTCTGGACATAAAACACAGATGAGGAAAGGGCTTCAATTAGAAGTTACGTAATCAC
CATCAGAAAGTTCATGTTTGGTAAATTCTGTTACTAGAAATGTAGGAAATTCAGGTATAGCTTTGAATCCC
AATTACACATTGGTCAGTGGGAAAACTAAGGGCCTCCAACAGGCAAATTCAGGGAGGATAGGTTTCAGGGA
ATATAAATTTATTTAATATTAGTGGTCTTTAAGTATAAACTTGATGTAATTGGTTTGGGAGGGGGCAGTGA
TGATGACTTCTGAAACAAAATTTGGATTTCTTTTAGGAAAAGTAGAAAGCATAGACTTACAAGTCTAACA
GGAGATAGGAGAGAGTCACTCATAAAAAATGCAATTGATGAACGTACTATTGTGATACATTAGTTGAATG
GATGAAACTTTTTTAAAGTTTCAGATGAATCCCATATGAATGATGAATTTGTGATGAGGGATAACCTGG
AAGTGGTATTCACACATTATGCTACAATAAAAGGTTCTACCGTGGAGAGGATTTTGACACATTAGTAAGT
AATGGAACACACCGTCAACATGAATTTCGCACCTTACATGACAGAAGTGATTTCAGGGATTCTATGAATAGA
AATGCTGAGAAGGAACGCATTTTATTGCAGAAGCTAAAAAGCTAAAGTACCAGTCATCTAGAGAGAAGGAA
ATTAATGTTTCTTAATAATCCTGTTAAATGTTTGATTGTTTTTGAATGTGTTATTGTAAAGATGTCATGC
AGGACATGTATATGTTGTCTGTTGTAAATGTTAACGAATACTTTGTTTCAGGGCTCACTCTCTCTTTGTCA
TGAAAGCCAGCTCCTTGTGGCGAGGTAAAGTGAATTCCAATAAAGAAATTCCTTAAATCAAAA

VSHLKTSTEDEEPTEEYENVGNAASKWPKVEDPIPESKVGDTCVWDSKVENQQKKPVENRMKEDKSSIREA
ISKAKSTANIKTEQEGEASEKSLHLSPQHITHQTMPIGQRGSEQGKRVENINGTSYPSLQKKTNAVKKLHK
CDECGKSFKYNSRLVQHKIMHTGEKRYECDDCGGTFRSSSLRVHKRIHTGEKPYKCEECGKAYMSYSSLI
NHKSTHSGEKNCKCDECGKSFNYSSVLDQHKRIHTGEKPYECGECGKAFRNSSGLRVHKRIHTGEKPYECD
ICGKTFSNSSLRVHKRIHTGEKPYECDECGKAFITCRTLLNHKSIHFGDKPYKCDECEKSFNYSSLLIQH
KVIHTGEKPYECDECGKAFRNSSGLIVHKRIHTGEKPYKCDVCGKAFSYSSGLAVHKSIIHPGKKAHECKEC
GKSFSYNSLLLQHRTIHTGERPYVCDVCGKTFRNNAGLKVHRRLLHTGEKPYKCDVCGKAYISRSSLKNHKG
IHLGEKPYKCSYCEKSFNYSSALEQHKRIHTREKPFPGCDECGKAFRNNSGLKVHKRIHTGERPYKCEECGK
AYISLSSLINHKSVHPGEKPFKCDECEKAFITYRTLNNHKKVHLGEKPYKCDVCEKSFNYTSLLSQHRRVH
TREKPYECDRCEKVFRNNSGLKVHKRIHTGERPYECDVCGKAYISHSSLINHKSTHPGKTPHTCDECGKAF
FSSRTLISHKRVHLGEKPFKCECGKSFYSSLLSQHKRIHTGEKPYVCDRCGKAFRNSSGLTVHKRIHTG
EKPYECDECGKAYISHSSLINHKSVHQGKQPYNCECGKSFNYRSVLDQHKRIHTGKKPYRCNECGKAFNIR
SNLTKHKRHTTGEESLNVIIYVGSYSGTSQKRTYEGGNALDGGRMRMPL

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

AGTTGAAGCTCCTCTCCCTTCCGAACAGCTCCGCGCACCGCCCCGCGACGCAGCCCGGCGCAACTACTTTTC
TTCTCTCTCCTTTCTTTCTTCTCTCCTTTTTCCCCTGCTGGGTAGTGGCTGCGGCGGGGTGGGGGAGACT
TTGAATGACCGAGCTCGCGTCCACCTTTCTCTTCATGTCGACGTCCCTGGAAACGGCCACACGGATGCCAT
GGTTACTTTTGCCACGATCTTACAGGTGAACAAGGTGATGTCCATCTTGTTTTATGTGATATTTCTCGCTT
ATCTCCGTGGCATCCAAGGTAACAACATGGATCAAAGGAGTTTGCCAGAAGACTCGCTCAATTCCTCATT
ATTAAGCTGATCCAGGCAGATATTTGAAAAACAAGCTCTCCAAGCAGATGGTGGACGTTAAGGAAAATTA
CCAGAGCACCCCTGCCCAAAGCTGAGGCTCCCCGAGAGCCGGAGCGGGAGGGCCCCGCCAAGTCAGCATTCC
AGCCGGTGATTGCAATGGACACCGAACTGCTGCGACAACAGAGACGCTACAACACACCGCGGGTCTGCTG
AGCGACAGACACCCCTTGGAGCCCCGCCCTTGTATCTCATGGAGGATTACGTGGGCAGCCCCGTGGTGGC
GAACAGAACATCACGGCGGAAACGGTACGCGGAGCATAAGAGTCACCGAGGGGAGTACTCGGTATGTGACA
GTGAGAGTCTGTGGGTGACCGACAAGTCATCGGCCATCGACATTGCGGGACACCAGGTACGGTGCTGGGG
GAGATCAAAACGGGCAACTCTCCCGTCAAACAATATTTTTATGAAACGCGATGTAAGGAAGCCAGGCCGGT
CAAAACGGTTGCAGGGGTATTGATGATAAACACTGGAACCTCTCAGTGCAAAACATCCCAAACCTACGTCC
GAGCACTGACTTCAGAGAACAATAAACTCGTGGGCTGGCGGTGGATACGGATAGACACGTCCTGTGTGTGT
GCCTTGTCGAGAAAAATCGGAAGAACA TGAATTGGCATCTCTCCCATATATAAATTATTACTTTAAATTA
TATGATATGCATGTAGCATATAAATGTTTATATTGTTTTATATATTATAAGTTGACCTTTATTTATTTAAA
CTTCAGCAACCCTACAGTATATAAGCTTTTTTCTCAATAAAATCAGTGTGCTTGCCTTCCCTCAGGCCTCT
CCCATCTGTAAAACCTTGTGTTTGTGATCCGGCTCTCAGGAGTCACTCTGTAAAATCTGTGTACACCAGTAT
TTTGCATTCAGTATTGTCAAGGCCATGACTGTTGTTTTAGTAAACTTGTTAAAAATCAAAAAAAAAAAAAA
LNDRARVHLSLHVDVPGNGHTDAMVTFATILQVNKVMISILFYVIFLAYLRGIQGNMMDQRSLPEDSLNSLI
IKLIQADILKNKLSKQMV DVKENYQSTLPKAEAPREPERGGPAKSAFQPVIAMDELLRQRRYNSPRVLL
SDSTPLEPPPLYLMEDYVGSPV VANRTSRRKRYAEHKSHRGEYSVCDSESLWVTDKSSAIDIRGHQVTVLG
EIKTGNSPVKQFYFETRCKE ARPVKNGCRGIDDKHWSQCKTSQTYVRALTSENNKLVGWRWIRIDTSCVC
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
GTGCTTCCCTCTCTCATTTCCAGGACCACAATTCCAGAGACTTCGGCTTCACGACGTTTCTCTTTTTGCC
CGATCTCTCCCGAGCTGGCTGGGCTTCGGCCGGCCAGAGGCCACAGCGACGACGTGATCCGTCTGTGAGC
GGGTCCCAGGGTTTCTCGGCGGCCCTTTTTTCTCTCCCCTCGGTCTGTCCTCCCTTGCAGGCTGTGCGGGCT
GGCC TGA GCGGTGACCTGGCGGGTGC GCGCTGCGCTCTGCCCTGTTTCTGCTGGCTGGTGGCGGCGGCC
ATTTTGTTTCATCTCCTCCTCCTCCTGCTCCTCCTGGTTGGAGCGCAGTGTCCGGAGCGGGCTGGGGGGAG
AGAGCCCAGAGCAGGGTTCGGTGCCTTTTCTCTGTCCCCAGCCGGTGCCAGAGCCCCCTCCCCTTCC
TCCCCACCCCTCCCCTCCCCAACCTGCCCTCCCCCTTGTCCCGGGATCGCTCCGTGCGACCCACC ATGA
TGGAAGACGACGGGCAGCCCCGGACTCTATACGTAGGTAACCTTTCCAGAGATGTGACAGAAGTCCTTATA
CTTCAGTTGTTTCAGTCAGATTGGACCCTGTAAAAGCTGTAAAATGATAACAGAGCATACAAGCAATGACCC
ATATTGCTTTGTGGAATTTTATGAACACAGAGATGCAAGCTGCTGCAATTAGCTGCTATGAATGGGAGAAAAA
TTTTGGGAAAGGAGGTCAAAGTAACTGGGCAACCACACCAAGTAGCCAGAAAAAAGATACTTCCAATCAC

TTCCATGTGTTTGTGGGGATTTGAGTCCAGAAATTACAACAGAAGATATCAAATCAGCATTGCCCCCTT
TGGTAAAATATCGGATGCCCGGGTAGTTAAAGACATGGCAACTGGAAAATCCAAAGGCTATGGTTTTGTAT
CTTTTTATAACAACTGGATGCAGAAAATGCGATTGTGCATATGGGCGGTCACTGGTTGGGTGGTCGTCAA
ATCCGAACCAATTGGGCCACTCGTAAACCACCTGCACCTAAAAGTACACAAGAAAACAACACTAAGCAGTT
GAGATTTGAAGATGTAGTAAACCAGTCAAGTCCAAAAAATTGTACTGTGTACTGTGGAGGAATTGCGTCTG
GGTTAACAGATCAGCTTATGAGACAGACATTCTCACCATTGGACAAATTATGGAAATAAGAGTTTTCCCA
GAAAAGGGCTATTCATTTGTCAGATTTTCAACCCATGAAAGTGCAGCCCATGCCATTGTTTCGGTGAACGG
TACTACGATTGAAGGACATGTGGTTAAATGCTATTGGGGTAAAGAATCTCCTGATATGACTAAAACTTCC
AACAGTTGACTATAGTCAATGGGGCCAATGGAGCCAAGTGTATGGAAACCCACAACAGTATGGACAGTAT
ATGGCAAATGGGTGGCAAGTACCGCCTTATGGAGTATACGGGCAACCATGGAATCAACAAGGATTTGGAGT
AGATCAATCACCTTCTGCTGCTTGGATGGGTGGATTTGGTGCTCAGCCTCCCCAAGGACAAGCTCCTCCCC
CTGTAATACCTCCTCCTAACCAAGCCGGATATGGTATGGCAAGTTACCAAAACACAGTGAAGCCGGACTCTA
AAAAAAATTGTAATTCATGATAGGCTTCGATTTCTGTGACACTCTGAAGACATGAAAGTAGACATCGGA
AAATGAAAATATTTATTTTAAAAATTGAAATGTTTGGAACTTTAGCACAGATTTGCTTTGGTGAAGGACA
CGTGTCTTCTAGTTCTGCCTTTTTAAGTTTTTGTTCATGATGGATATGAACATGATTTTTCTTTATGTACA
AAAATAAAATAAAGTCAATAAAGACAATTCTGACTACAAATTTTGATATAATAGGAAAAATGGCTAATAC
ATTTTGATTCTTAGATACTATTCCATTTTTATCTTGCTGTTCACTATTTAACTCACTGTGTTTTTAAAG
AGCAAAAAAGGGAGGATCGTGAACCTGGGAATCACATATAAGTTCATCCTGAATCCTGATACTCCCTC
CCCTTCCCTGAGGTGGACCACATTTGAAGTCAGCAGAGAAAAAGTGTGATATTCAGAAGAAATGCGTGATT
TTGGAGTCGCTTTGGAGGAAATATTTTCTTCTCTATGCCTAAAGAACTGAAGCCAGACTGAAGTTTTGC
ACCCTAAAAAGGAACAGCATTGTTTGAGTTACTTGAGCAAATGTTGGTGGTCCACGTTAAGACATATTTT
TAAACTTCCAAAAGTGTGCGATTATTAATTTGTAGTATTTACATTTTATTTTGGGGGGAAATCCAAGTA
TGGTGTGTTGATTGAAGTCAGACAGTCATACTTGTGCTTTTACATGAAGTTTAAATGATACATATTGAAA
TATTCAATAACTACAGTGTTTAAAAAGCATGCTTCAACATAGAAGTAGCAGCAATGTAATTATTTGAAGTA
ACACTTAACACACTCCGCTGCATTGAATGCAGTGGATTGATCAGAATGTTAAGACTGACATTTCCAAGGT
GGCTACTATGTAAATTAATTAACACAAATTGTGCAGAAAAAGCCTTAATTTAATTTATACAACTTT
GATGCATTAGTATGTTCTAAATGTCATTGGGAATTAGTTTTTGTGTTTTTTTTTTTTTTTTTTTTTT
TGCTTTACATTACTTGGTATGTAAATACCTTGATTAACCTTGTAACCAATTTCAAGTTACTATAAGT
TGTATAGTACAAGTGTTTTTAAAAATCTTGGGGTGTGTTTTAAAAATTAAGATATATTTTGCCCAAGAATT
TTTTTAACAAGATTGCTAAAAACATCTTATTTAGACACTTCAATGTACCAATTTATAATTGGATATTCAGT
TTAAATAGTACACAGAGTTGTGGCTTTTATTTTCAATTAATTTTTTCTTGTGGGCAGTGTGCATGGTAT
AATAAGCCTGAGCAGAGGCTTAAGTTGTATGTGTGCAGAGTTTGTAAAGGAATCAATTGGAAGATGCAGAA
GACCGAGGTTTGTCTTCAAGGTATTTTTCAGGCTGTGTGGGTAAAATTTGCCTCAAATTTCTATCAAACAG
GAATGTAAATAGATAAAATCCTATGTATTTGAATTGTCAGAGCTAGGGAGTGCAATGTTTTGGCAATGT
ATTCAAAATGCTGGCCTGGGCACCAAGAGAAAAATAGCCTTTTACAGTTACATAGTAAGATGCGATTAGTA
CCCACAAATTACTGTTTTCTAAACATTTGAAGTTTTACGATTAGCTTTAAATAATGATTTTATAAATTGG
TGGTCACAATAATTTTGGTATTACTTTCTCCTTTTCCCACTTAGCAATATAGCCAAATGTATTCAACATA
AAAATTCATAGGCTCTGAAATTCATAGCTGGGCCAAATTTTTTATGGCACCTTAGTTTTACCATAATGGTC
ATCTATTACACTCTTCTGTTATAAAATATACCCTTATTTCTTTTGTGTTATAGTATCTTTGAGGAATGTTTT
TGGAAAAGTTAATTTATATTTTATAGGGAGAACACTCAATAAATTATGTTAACTGTGCCCCGAGTTAAAA
ATTTTATGAGTATATGTGAACTTGAACAACCTGAAGACTTTTTTTAATTGATAAAAATGCTTAGTATGCCT
GTTTTGGTCTGCCAGTAAATTAAGTAGCTTATTGAGATACTAACAGCTAAATATAGCTGTAGTGTTCCT
GACTGTATATTCTATGATTTAATAAAATTATCCAGACTAGTTATATTGCCACAGTAAAAA

VTWRVAPALCPVSCLAGGGGHFVHPPPPAPPGWSAVSGAGWGERAREQGSVPFPLSPAGAQSPPPLPPHP
LPSPTLPSPLSRDRSVAPTMEDDGQPRTLVGNLSRDVTEVLILQLFSQIGPCKSCKMITEHTSNDPYCF
VEFYEHRDAAAALAAMNGRKILGKEVKVNWATTPSSQKSDTNSHFHVFGDLSPFITTEDIKSAFAPFGKI
SDARVVKDMATGKSKGYGFVSFYNKLEAENAIIVHMGQWLGGRRQIRTNWATRKPPAPKSTQENNTKQLRFE
DVVNQSSPKNCTVYCGGIASGLTDQLMRQTFSPFGQIMEIRVFPEKGYSFVRFSTHESAHAIVSVNGTTI
EGHVVKCYWGKESPDMTKNFQQVDYSQWQWSQVYGNPQQYQGYMANGWQVPPYGVYQGPWNQQGFVDQS
PSAAWMGGFGAQPPQGQAPPPVIPPPNQAGYGMASYQTQ

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
CGCGCCAGGTGTTTACCTGGCACTCAGGTGAGTGGTGCGCTCTGGCTGTTTTCTGTGCGAGCCGCCGCC
TCTTCCTTCAGCGCGTCCACAAATCCCGACGGCACGGAGGGGGCCCCAGGCCAAGGGCGATGGGCCCTGA
GCCCTGACACCGCTTCGCCCGCTGCTGCAGGTGCCCTGGCCGGCAGCGCCGCCGTGGTCCCGGAGCGCGGC
GACATGCCGGAGCTGGTGGTGACCGCGCTGCTGGCGCCGTGCGCGCTGTCGCTGAAGCTGCTGCGCGCCTT
CATGTGGAGCCTGGTGTTCCTCGGTGGCGCTGGTGGCCGCGGGCGGTCTACGGCTGCATAGCGCTCACGCACG
TGCTGTGCCGGCCCCGGCGCGGCTGCTGCGGGCGCCGTGCGAGCGCGTCCCCCGCCTGCCTGAGCGACCCC
TCGCTGGGTGAGCACGGTTTCTGAACCTCAAGAGCTCGGGCCTGCGTCTGCACTATGTCTCGGCTGGACG
AGGTAACGGACCCCTCATGCTGTTTCTGCACGGCTTCCCTGAGAACTGGTTCTCCTGGCGTTACCAGCTCC
GGGAGTTCCAGAGCCGCTTCCATGTTGTGGCTGTGGACTTGCAGAGCTATGGCCCCCTCGGATGCACCTCGG
GATGTGGACTGCTACACAATCGACCTGCTGCTGGTGGACATCAAAGATGTCATCCTAGGCCTGGGTTACTC
GAAGTGCATCCTTGTGGCCATGACTGGGGTGCCCTCCTTGCCTGGCATTCTCCATCTACTACCCATCCC
TGGTCGAGCGGATGGTTGTGGTCAGTGGTGCCCCCATGTGCGGTGTACCAAGACTATTCCCTGCACCACATC
AGCCAGTTCTTCCGTTCCCACTACATGTTCTGTTCCAGCTGCCCTGGCTGCCCGAGAAGCTGCTGTCTAT
GTCTGACTTTCAGATTCTGAAGACCACCCTCACCCACCGCAAGACAGGCATCCCATGCTTGACCCCCAGCG
AGCTCGAGGCCTTCTTTATACTTCTCACAGCCTGGTGGCCTCACTGGGCCCCCTCAACTACTACCGAAAC
CTCTTCAGGAACCTTCCCCCTGGAACCCAGGAGCTGACCACACCCACATTGCTGCTGTGGGGGAGAAGGA
CACTTACTTGGAGCTGGGGCTGGTGGAAAGCCATCGGCAGCCGCTTGTGCCGGGCCGCTTGGAGGCCACA
TCCTGCCAGGCATAGGGCATTGGATCCACAGAGCAACCCCCAGGAGATGCACCAGTACATGTGGGCCTTC
TTGCAAGACCTGCTGGACTAGTGGTCTTGTGTCCTGCCAGGAGGCATGGATACTCAGGAAGGAACACA
CACCCATTATCTGTGTGTGCCTGGGAGTCCATACAATGTCCATACATGGGTGAACCTTTGAATCGCTCATA
GGCATGGGACTCCTGGATCCACACAAGCGCACCTATGGGTGCCTCGGGACACACCAACCCCTATACTCAC
ACACAGGCATGGATGCATGTGTGTGTAACAAACACTTTGACCCTGGGAAGTGGGTATACCTCTCTTCCAGT
GGAGCCAGATGCCGAGACCGAGTGTCCACCTCCTCCCTTCTGGGGCCTCACTCTGCGCTTTGCCAAAGT
CGCTTCTCTGCCATAGCTGCACAGACCTTAAACCCTGACCTTCTGTCCCTGCCTTCGACCTCCTGCCTGG
GTCTTCAGCTCAGTGCTACTCTGAATACAATACTGCTGACCACATTTGGCTACTTCAGCTTAAATGTATGT
TAATTGAAATGAAATACAATGAAAATGCAGTGCTCAGTCCCA

TEGPQAKGDGPLSPDTASPLLQVPLAGSAAVVPERGDMPELVVTTALLAPSRLSLKLLRAFMWSLVFSVALV
AAAVYGCIALTHVLCRPRRGCCGRRRSASPACLSDPSLGEHGFLNLKSSGLRLHYVSAGRNGPLMLFLHG
FPENWFSWRYQLREFQSRFHVAVDLRGYGPSDAPRDVCYTIDLLVDIKDVILGLGYSKCILVAHDWGA
LLAWHFSIYYPSLVERMVVSGAPMSVYQDYSLHHISQFFRSHYMFLFQLPWLPEKLLSMSDFQILKTTLT
HRKTGIPCLTPSELEAFLYNFSQPGGLTGPLNYYRNLFRNFPLEPQELTTPPTLLLWGEKDTYLELGLVEAI
GSRFVPGRLEAHILPGIGHWIPQSNPQEMHQYMWAFQLDLLD

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

AGAGTCCTGGCTGGCTCTGCCAAGTGTAACTACAGCCCTCTCCAACTGGCTGGGGCTGCTGGGAG
ACTCCAAGGAAGTCTGTCAGGAAGGCAGGAGACAGGAGACGGGACCTCTACAGGGAGACGGTGGGCCGGCC
CTTGGGGGGCTGATGTGGCCCCAAGGCTGAGTCCCGTCAGGGTCTGGCCTCGGCCTCAGGCCCCCAAGGA
GCCGGCCCTACACCCCATGGGTTTGTCACTGCCAAGGAGAAAGGGCTAATTCTCTGCCTATGGAGCAAGT
TCTGCAGATGGTTCCAGAGACGGGAGTCTGGGCCAGAGCCGAGATGAGCAGAACCTGCTGCAGCAGAAG
AGGATCTGGGAGTCTCCTCTCCTTCTAGCTGCCAAAGATAATGATGTCCAGGCCCTGAACAAGTTGCTCAA
GTATGAGGATTGCAAGGTGCACCAGAGAGGAGCCATGGGGGAAACAGCGCTACACATAGCAGCCCTCTATG
ACAACCTGGAGGCCGCCATGGTGTCTGATGGAGGCTGCCCCGGAGCTGGTCTTTGAGCCCATGACATCTGAG
CTCTATGAGGGTCACTGCACTGCACATCGCTGTTGTGAACCAGAACATGAACCTGGTGCAGGCCCTGCT
TGCCCGCAGGGCCAGTGTCTCTGCCAGAGCCACAGGCACTGCCTTCCGCCGTAGTCCCTGCAACCTCATCT
ACTTTGGGGAGCACCTTTGTCTTTGCTGCCTGTGTGAACAGTGAGGAGATCGTGCGGCTGCTCATTGAG
CATGGAGCTGACATCCGGGCCAGGACTCCCTGGGAAACACAGTGTTACACATCCTCATCTCCAGCCCAA
CAAAACCTTTGCCTGCCAGATGTACAACCTGTTGCTGTCTACGACAGACATGGGGACCACCTGCAGCCCC
TGGACCTCGTGCCCAATCACCAGGGTCTCACCCCTTTCAAGCTGGCTGGAGTGGAGGGTAACACTGTGATG
TTTCAGCACCTGATGCAGAAGCGGAAGCACACCCAGTGGACGTATGGACCACTGACCTCGACTCTCTATGA
CCTCACAGAGATCGACTCCTCAGGGGATGAGCAGTCCCTGCTGGAACCTATCATCACCACCAAGAAGCGGG
AGGCTCGCCAGATCCTGGACCAGACGCCGGTGAAGGAGCTGGTGAACCTCAAGTGGAAAGCGGTACGGGCGG
CCGTACTTCTGCATGCTGGGTGCCATATATCTGCTGTACATCATCTGCTTCACCATGTGCTGCATCTACCG
CCCCCTCAAGCCCAGGACCAATAACCGCACGAGCCCCGGGACAACACCTCTTACAGCAGAAGCTACTTC
AGGAAGCCTACATGACCCCTAAGGACGATATCCGGCTGGTGGGGAGCTGGTGACTGTATTGGGGCTATC
ATCATCTGCTGGTAGAGGTTCCAGACATCTTCAAGATGGGGGTCACTCGCTTCTTTGGACAGACCATCCT
TGGGGGCCCATTCATGTCTCATCATCACCTATGCCTTCATGGTGTGGTGACCATGGTGATGCGGCTCA
TCAGTGCCAGCGGGGAGGTGGTACCCATGTCTTTGCACTCGTGCTGGGCTGGTGCAACGTGATGACTTC
GCCCCAGGATTCCAGATGCTAGGCCCTTACCATCATGATTGAGAAGATGATTTTGGCGACCTGATGCG
ATTCTGCTGGCTGATGGCTGTGGTCATCTGGGCTTTGCTTCAGCCTTCTATATCATCTTCCAGACAGAGG
ACCCCGAGGAGCTAGGCCACTTCTACGACTACCCCATGGCCCTGTTGAGCACCTTCGAGCTGTTCTTACC
ATCATCGATGGCCAGCCAACTACAACGTGGACCTGCCCTTCATGTACAGCATCACCTATGCTGCCTTTGC
CATCATCGCCACACTGCTCATGCTCAACCTCCTCATTGCCATGATGGGCGACACTCACTGGCGAGTGGCCC
ATGAGCGGGATGAGCTGTGGAGGGGCCAGATTGTGGCCACCACGGTGATGCTGGAGCGGAAGCTGCCTCGC
TGCCTGTGGCCTCGCTCCGGGATCTGCGGACGGGAGTATGGCCTGGGAGACCGCTGGTTCTGCGGGTGGA
AGACAGGCAAGATCTCAACCGGCAGCGGATCCAACGCTACGCACAGGCCTTCCACACCCGGGGCTCTGAGG
ATTTGGACAAAGACTCAGTGGAAAACTAGAGCTGGGCTGTCCCTTCAGCCCCACCTGTCCCTTCTATG
CCCTCAGTGTCTCGAAGTACCTCCCGCAGCAGTGCCAATTGGGAAAGGCTTCGGCAAGGGACCTGAGGAG
AGACCTGCGTGGGATAATCAACAGGGGTCTGGAGGACGGGGAGAGCTGGGAATATCAGATCTGACTGCGTG
TTCTCACTTCGCTTCTGGAACCTGCTCTCATTTTCTGGGTGCATCAAAACAAAACAAAACCAACACCC
AGAGGTCTCATCTCCAGGCCCCAGGGGAGAAAGAGGAGTAGCATGAACGCCAAGGAATGTACGTTGAGAA
TCACTGCTCCAGGCCTGCATTACTCCTTCAGCTCTGGGGCAGAGGAAGCCAGCCCAAGCACGGGGCTGGC
AGGGCGTGAGGAACCTCCTGTGGCCTGCTCATCACCTTCCGACAGGAGCACTGCATGTCAGAGCACTTT
AAAAACAGGCCAGCCTGCTTGGGCGCTCGGTCTCACCCAGGGTCATAAGTGGGGAGAGAGCCCTTCCCA
GGGCACCCAGGCAGGTGCAGGGAAGTGCAGAGCTTGTGGAAGCGTGTGAGTGAGGGAGACAGGAACGGCT
CTGGGGGTGGGAAGTGGGGCTAGGTCTTGCCAACTCCATCTTCAATAAAGTCGTTTTTCGGATCCCTGAAAA
AAAAAAAAAAAAAAAAAAAA

TGPLQGDGGPALGGADVAPRLSPVRVWPRQAPKEPALHPMGLSLPKEKGLILCLWSKFCRWFQRRESWAQ
SRDEQNLLQQKRIWESPLLLAAKDNDVQALNKLKYEDCKVHQRGAMGETALHIAALYDNL EAMVLM EAA
PELVFEPMTSELYEGQTALHIAVVNQNMNLVRLALLARRASVSARATGTAFRRSPCNLIYFGEHPLSFAACV
NSEEIVRLLLIEHGADIRAQDSLGNLVLHILILQPNKTFACQMYNLLLSYDRHGDHLQPLDLVPNHQGLTPF
KLAGVEGNTVMFQHLMQKRKHTQWTYGPLTSTLYDLTEIDSSGDEQSLELEIITTKREARQILDQTPVKE
LVSLKWKRYGRPYFCMLGAIYLLYIICFTMCCIYRPLKPRNTNRTSPRDNTLLQQLLQEAYMTPKDDIRL
VGELVTVIGAIILLVEVPDIFRMGVTRFFGQITLGGPFHVLIITYAFMVLVTMVMRLISASGEVVPMSFA
LVLGWCNVMYFARGFQMLGPFTIMI QKMI FGDLMRF CWLMAVVILGFASAFYIIFQTEDPEELGHFYDYPM
ALFSTFELFLTIIIDGPANYNVDLPFMYSITYAFAIIATLLMLNLLIAMMGDTHWRVAHERDELWRAQIVA

TTVMLERKLPRLWPRSGICGREYGLGDRWFLRVEDRQDLNRQRIQRYAQAFHTRGSEDLDKDSVEKLELG
CPFSPHLSLPMPSVSRSTSRSANWERLRQGTLLRDLRGIINRGLEDGESWEYQI

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

GCGCTCCGGAGGGAGAGCTGGGGCTGGAGGTTCTACCCCTCGGCGGCCCGCATCTGCCCCGCGCGCCC
GCCC**TGA**CCCCGCCCCGACTGGGCAGGCGGGGGAGCCCTACTTCTCTCCCCCGGGCGGGGAGCCGGGG
GGCAGCGCCGGAGCCCGGGGGAGCTCAGCCCCGCCGACCGCCGGCCAGGGCAGGGGGCAGCTAGGACGG
CCCCGGTCCAGGTGGAGGCCGAGAGGGGCCAGGGCAAGCAGAGGCAGCAATGG**TTGGTCTGACGGTGGC**
TGAGCCCCCAGCCCTGGAATATGCAGCCCGGGGGAGCCCCAGACAGCGGCAAGGACGAGGTGGCGGAGTG
GGGCGGGAGGCATGGTCTCCACCTACCGGGTGGCCGTGCTGGGGGCGCGAGGTGTGGGCAAGAGTGCCATC
GTGCGCCAGTTCTTGTACAACGAGTTTCAGCGAGGTCTGCGTCCCCACCACCGCCCCGCCGCTTTACCTGCC
TGCTGTGTCATGAACGGCCACGTGCACGACCTCCAGATCCTCGACTTTCCACCCATCAGCGCCTTCCCTG
TCAATACGCTCCAGGAGTGGGCAGACACCTGCTGCAGGGGACTCCGGAGTGTCCACGCCTACATCCTGGTC
TACGACATCTGCTGCTTTGACAGCTTTGAGTACGTCAAGACCATCCGCCAGCAGATCCTGGAGACGAGGGT
GATCGGAACCTCAGAGACGCCCATCATCATCGTGGGCAACAAGCGGGACCTGCAGCGCGGACGCGTGATCC
CGCGCTGGAACGTGTGCGACCTGGTACGCAAGACCTGGAAGTGCGGCTACGTGGAATGCTCGGCCAAGTAC
AACTGACACATCCTGCTGCTCTTCAGCGAGCTGCTCAAGAGCGTCGGCTGCGCCCGTTGCAAGCACGTGCA
CGCTGCCCTGCGCTTCCAGGGCGCGCTGCGCCGCAACCGCTGCGCCATCATGTGA**CGCCTGCGCGCCCTC**
GGGCTGCACCGGCACTGGCCGAGCGGAGGGCGGGGCGTACTGCGGGGCTGGGGCGGGGAGCGGGCGGGAA
ATGGAAGTGTGACGGTCCCGGCCTGAGGCCCTGCAGCCACGCACCTCCCGGTGAGAAGCAGAGCGCGAGA
GGGAGCCCTCCGTAAGTGGCCAGCCCTGCCCCCTGCCCCGTGGCTTCTGGGACAGCCGCCTTCAGTGCT
GTATTTAGTGCAGTGCCCGGCCGACCCGCGGGGTGCCACAGCCTTTTGGGATGGGGGTGAGCGTGCAAT
GGAGGCTGGGGGTGGCGAGGTGCCGCTTGGCCGGGCCCCACGTGTCTTCTCCAGAATGTGTCTGTCTTT
GCCTGGTGTCTTCTTTCCCGTGTCCGCCACCCAGCGTCTGTTGGTACTTACCTGTCTCACCTACCTC
CAGTCCCCTCCAGCTCCGCTCACAGGGCTCTCATTTTGTCCATCCCCTTGTGCGAGATCCTGGCAGCTTC
TTTGTGAGGCCAGGCCTTCTGACTGTGAGCACACCGGCACAGGGCAGAGATGCGGGTGGCCCAAGGACCA
CGATCAAGGGGTCCGGGGGACCGAGGTCCAGATCAGTGAGGGGAGAAGGTTGAGCTCTCCGGCTTCCAGG
GAGACCTCCCCGCCAGCAGCCCCCAGAGACACAACAACCTACCTTCCAGCCTTAAGTGCATGGTCCGTCC
CTGCCAGGTGCCCCCTCACTCTTCTGACCCCAAAGCCAGATCACCCCTGGGTTAAACTTTTTTTCTTTT
TTTTTTTTGGACAGAGTGTGGAAAGGGAGCCCCCAAAGGATAGCTTCTTTTTTCATGATGCCAGGCTCCAG
TCCTTTATTCCTTCTGCATACTGCAATCTGATCTGTGAGACTGGGGAATGTTGGGTTCTGGGGTCTGGTC
GTGGGCAGGATGGTGCCAGAAGGGGGTTAGGTTGTCCAGTGAATTTCTGTTGCCCGTCTCAACCCCA
TCTGACTACCCAGACTCTGCCTGCCTCAGATCTCAGACTATCCTGATTAATCTGGGGAAGAACAGAGCCA
GGGAAAGAATGGTGGGGACCCCTGTACTTGGGGGAGACACACCTGCATCTTCTCTGCCACAGATGGAGG
CCCTCAGGATCTGACACCTCTTGTCCCAACACAGTCAAGCCCTATACCCTAACTCACTCCACCCATTTT
CTCCGGCTGCTGCGGGGTTTCTACCTCTCGTCACCGGAGCTGATCACTGTGAGTTTTGTACCGATTTAG
AAATAACAATAATAATGAAGATTCTAGGAATGGCATGAGGGATTGATGGGGGACTTGGAGGGAGGGACAAG
TGGTGCCCTGTCCCTGCTCCCTGGCCAAAGAAAGCTGTCTTGAGGCTGAGCCCTCAGCCCTGGCCTGG
TGGGGGGACAGCAAGGTCCCTTGTATAAGAGGGGAGAGAGGACAACCTCCGCTTTGGCCAACCTAGCCAA
GGCTGCAGCATATAGACCAGGAAATCAGGTAGCCAGACTGGTGATGGAGCAGAGTCTGGGGGAAGGGTCG
TGGGTGGGGAATTTATACCAACATCCATTGTAGGGGGAATCTATGATTCTGCTTCCCCAGCGGATTCCCA
CTCTGTCCACCAAGTGGGGGGTAGCACAGCCTCACAGCAACCGCCCTGACCTTGGGCAGTCTAGTGTTCT
GCATTCTAGTCCCTGCTGTGCTGCAGGACTTTGGGCAAGTGACCTGCCCTCTGTGAGCCTCCCTCTGACAC
AGAGGAGGTGGCTCCCCTTCCCCACACCTTAGAGTGGCTGGGAGGGTAACAAAGAGGGCCTGCCCTTTAG
TCTCTGCACCCCTGCCCCCTGGTTACCAGAGGGAGCGGATGAAGGATGGCAGCATCTCACATGCCCCAT

CACCAACTCTGAGGCACCTGGGGTGGGGGGGCGGAGCCCAGGCCTCTGGCTGCTCCCCTGTGGGAGCCATT
GGAATGTATCCCCTGACAGGCCCCCTTCCGCCTCCACCTCAACCCAGGTCTTGGATTTTCAGGTCCCTCCAC
CCCCATTCTGAGTCTCTGTCTTCTCCTTCCACCCGCTCCCAGGGTTTCCCACCACAGGGTCTGGAAGTGT
GTGTGACGCCCATTGAGCTGTTACCCGAAGTCAGATTAATAATCAGGGAGTGTTCCTCGTTTCTGTAA
AAAAAAAAAAAAAAAAAAAA

LVLTVAEPPAPGICSPGEPQTAARTRWRSGAGGMVSTYRVAVLGARGVGKSAIVRQFLYNEFSEVCPPTTA
RRLYLPAVVMNGHVHDLQILDFFPISAFVNTLQEWADTCCRGLRSVHAYILVYDICCDFSFEYVKIRQQ
ILETRVIGTSETPIIIVGNKRDQLQGRVIPRWNVSHLVRKTKWCGYVECSAKYNWHILLFSELLKSVGCA
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

AGTTCTGCGCGTGTGAGTCTCTTTCGCCTTGCTCCGGGCTTTCTTCGCTCGCAGCGCGGCAGGGTTATCAC
CAGATCTGGGCTTTCCCTTCTTGCCGTACAGGTGCTACGGCCACGTGGCCCGCGGCTTCCCGCTCGCGCAG
TCTGGCAGCCCGGAGCCTTCCGCGGTCCCCACCCGCCCGGGGCCCAACGACGCCCTACTGGGCGAGCACG
ATTTCCGAGGACAGGGGGTCCGGGCCACGCTTTTCGATTCTCGGAGGAGCCGGGTCCGGGGGCCGACGGG
GCTGTCTCGGAGGTCCACGTCCCGCAGGTCTGCATCTCCAGTATGGAATGTATGTTTGGCCCTGTGCTGT
GGTCTGCCCCAGTACCTTTGGTTTACAGAAGATCTCTGCCAGGCAAGGCCATCTTAGAGATTGGAGCTG
GAGTGAGCCTTCCAGGAATTTGGCTGCCAAATGTGGTGCAAGTAATACTGTGACACAGCTCAGAACTG
CCTCACTGTCTGGAAGTCTGTGCGCAAAGCTGCCAAATGAATAACCTGCCACATCTGCAGGTGGTAGGACT
AACATGGGGTCATATATCTTGGGATCTTCTGGCTCTACCACCACAAGATATTATCCTTGCATCTGATGTGT
TCTTTGAACCAGAAGATTTGAAGACATTTTGGCTACAATATATTTTTTGTATGCACAAGAATCCCAAGGTC
CAATTGTGGTCTACTTATCAAGTTAGGAGTGCTGGCTGGTCACTTGAAGCTTTACTCTACAAATGGGATAT
GAAATGTGTCCACATTCTTCTGAGTCTTTTGTATGCAGACAAAGAAGATATAGCAGAATCTACCCTTCCAG
GAAGACATACAGTTGAAATGCTGGTCATTTCTTTGCAAAGGACAGTCTCTGAATTATACCTACAACCTGT
TCTGGGACAGTATCAATACTGATGAGCAACCTGGCACACAACTATGAGCAGACCACTTCAGCTTGAGAAT
GCAGTGGGTCTGAAGATGGTCAAGTCTGTTTGCCTTAGATTTTGTATGTACCTAGACAACACTTAACTCA
TATGAAACAAAAATTAATAACGTATTACAAGTAAAAAAAAAAAAAAAAAAAA

LAARSLPRSPTRPGPNDAALLGEHDFRQGQVRAQRFRFSEEPGPGADGAVLEVHVPQVLHLQYGMVYVWPCAV
VLAQYLWFHRRSLPGKAILEIGAGVSLPGILAACKGAEVILSDSSELPHCLEVCRQSCQMNNLPHLQVVGL
TWGHISWDLALPPQDIILASDVFFEPEDFEDILATIYFLMHKNPKVQLWSTYQVRSAGWSLEALLYKWD
KCVHIPLESFDADKEDIAESTLPRHTVEMLVISFAKDSL

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
CCCCCTCCCCGTCTTTGGGGCCGCGGCTGGGGAACACAAAGGCCAGCAGGCAGCTGCAGGGGGCGGAGG
CGGAGGAGGGACCAGCGCGGGTGGGAGTGAGAGAGCGAGCCCTCGCGCCCCGCGGCGCATAGCGCTCGGA
GCGCTCTTGCGCCACAGGCGCGGCTCTCGGCGGCGGGCGGCAGCTAGCGGGAGCCGGGACGCCGGTGC
AGCCGCAGCGCGCGGAGGAACCCGGGTGTGCCGGGAGCTGGGCGGCCACGTCCGGACGGGACCGAGACCCC
TCGTAGCGCATTGCGGCGACCTCGCCTTCCCCGGCCGCGAGCGCGCCGCTGCTTGAAGGCCGCGGAACCC
AAGGACTTTTCTCCGGTCCGAGCTCGGGGCGCCCCGAGGGCGCACGGTACCCGTGCTGCAGTCGGGCACG
CCGCGGCGCCGGGGCCTCCGCAGGGCGATGGAGCCCGGTCTGCAAGGAAAGTGAGGCGCCGCGCTGCGTT
CTGGAGGAGGGGGGCACAAGGTCTGGAGACCCCGGGTGGCGGACGGGAGCCCTCCCCCGCCCCGCTCCG
GGGACACAGCTCCGGCTCCATTGTTCCCGCCGGGCTGGAGGCGCCGAGCACCGAGCGCCGCGGGAGTCG
AGCGCCGCGCGCGGAGCTCTTGCGACCCCGCCAGGACCCGAACAGAGCCCGGGGCGGCGGGCCGGAGCCG
GGGACGCGGGCACACGCCCGCTCGCACAAAGCCACGGCGGACTCTCCCGAGGCGGAACCTCCACGCCGAGCG
AGGGTCAGTTTGAAGAGGAGGATCGAGCTCACTGTGGAGTATCCATGGAGATGTGGAGCCTTGTACCAAC
CTCTAAGTCAGAACTGGGATGTGGAGCTGGAAGTGCCTCCTCTTCTGGGCTGTGCTGGTCACAGCCACAC
TCTGCACCGCTAGGCCGTCCCCGACCTTGCTGAACAAGCCAGCCCTGGGGAGCCCTGTGGAAGTGGAG
TCCTTCTGTTCCACCCGGTGACCTGCTGCAGCTTCGCTGTGCGCTGCGGGACGATGTGCAGAGCATCAA
CTGGCTGCGGGACGGGGTGAGCTGGCGGAAAGCAACCGCACCCGCATCACAGGGGAGGAGGTGGAGGTGC
AGGACTCCGTGCCCCGAGACTCCGGCCTCTATGCTTGCCTAACCAGCAGCCCTCGGGCAGTGACACCACC
TACTTCTCCGTCAATGTTTCAGATGCTCTCCCTCCTCGGAGGATGATGATGATGATGATGACTCCTCTTC
AGAGGAGAAAGAAACAGATAACACCAAACCAAACCGTATGCCCGTAGCTCCATATTGGACATCCCCAGAAA
AGATGGAAAAGAAATTGCATGCAGTGCCGGCTGCCAAGACAGTGAAGTTCAAATGCCCTTCCAGTGGGACC
CCAAACCCACACTGCGCTGGTTGAAAAATGGCAAAGAATTCAAACCTGACCACAGAATTGGAGGCTACAA
GGTCCGTTATGCCACCTGGAGCATCATAATGGACTCTGTGGTGCCTCTGACAAGGGCAACTACACCTGCA
TTGTGGAGAATGAGTACGGCAGCATCAACCACACATACCAGCTGGATGTCGTGGAGCGGTCCCCTCACCGG
CCCATCCTGCAAGCAGGGTTGCCCGCAAACAAACAGTGGCCCTGGGTAGCAACGTGGAGTTCATGTGTAA
GGTGTACAGTGACCCGCAGCCGCACATCCAGTGGCTAAAGCACATCGAGGTGAATGGGAGCAAGATTGGCC
CAGACAACCTGCCTTATGTCCAGATCTTGAAGACTGCTGGAGTTAATACCACCGACAAAGAGATGGAGGTG
CTTCACTTAAGAAATGTCTCCTTTGAGGACGCAGGGGAGTATACGTGCTTGGCGGGTAACCTCTATCGGACT
CTCCCATCACTCTGCATGGTTGACCGTTCTGGAAGCCCTGGAAGAGAGGCCGGCAGTGATGACCTCGCCCC
TGTACCTGGAGATCATCATCTATTGCACAGGGGCCCTTCTCATCTCCTGCATGGTGGGGTCGGTCATCGTC
TACAAGATGAAGAGTGGTACCAAGAAGAGTGACTTCCACAGCCAGATGGCTGTGCACAAGCTGGCCAAGAG
CATCCCTCTGCGCAGACAGGTAACAGTGTCTGCTGACTCCAGTGCATCCATGAACCTCTGGGGTTCTTCTGG
TTCCGGCCATCACGGCTCTCCTCCAGTGGGACTCCCATGTAGCAGGGGTCTCTGAGTATGAGCTTCCCGAA
GACCCCTCGCTGGGAGCTGCCTCGGGACAGACTGGTCTTAGGCAAACCCCTGGGAGAGGGCTGCTTTGGGCA
GGTGGTGTGGCAGAGGCTATCGGGCTGGACAAGGACAAACCCAACCGTGTGACCAAAGTGGCTGTGAAGA
TGTTGAAGTCGGACGCAACAGAGAAAGACTTGTGAGACCTGATCTCAGAAATGGAGATGATGAAGATGATC
GGGAAGCATAAGAATATCATCAACCTGCTGGGGGCTGCACGCAGGATGGTCCCTTGTATGTCATCGTGGA
GTATGCCTCCAAGGGCAACCTGCGGGAGTACCTGCAGGCCCGGAGGCCCCAGGGCTGGAATACTGCTACA
ACCCAGCCACAACCCAGAGGAGCAGCTCTCCTCAAGGACCTGGTGTCTGCGCCTACCAGGTGGCCCGA
GGCATGGAGTATCTGGCCTCCAAGAAGTGATACACCGAGACCTGGCAGCCAGGAATGTCCTGGTGACAGA
GGACAATGTGATGAAGATAGCAGACTTTGGCCTCGCACGGGACATTACCACATCGACTACTATAAAAGA
CAACCAACGGCCGACTGCCTGTGAAGTGGATGGCACCCGAGGCATTATTTGACCGGATCTACACCCACCAG
AGTGATGTGTGGTCTTTGGGGTGTCTGTGGGAGATCTTCACTCTGGGCGGCTCCCATACCCGGTGT
GCCTGTGGAGGAACCTTTCAAGCTGCTGAAGGAGGGTCACCGCATGGACAAGCCCAGTAAGTGCACCAACG

AGCTGTACATGATGATGCGGGACTGCTGGCATGCAGTGCCCTCACAGAGACCCACCTTCAAGCAGCTGGTG
GAAGACCTGGACCGCATCGTGGCCTTGACCTCCAACCAGGAGTACCTGGACCTGTCCATGCCCCTGGACCA
GTACTCCCCCAGCTTTCCCGACACCCGGAGCTCTACGTGCTCCTCAGGGGAGGATTCCGTCTTCTCTCATG
AGCCGCTGCCCCGAGGAGCCCTGCCTGCCCCGACACCCAGCCAGCTTGCCAATGGCGGACTCAAACGCCGC
TGA CTGCCACCCACACGCCCTCCCCAGACTCCACCGTCAGCTGTAACCCTCACCCACAGCCCCTGCTGGGC
CCACCACCTGTCCGTCCCTGTCCCCTTTCTGCTGGCAGGAGCCGGCTGCCTACCAGGGGCCTTCTGTGT
GGCCTGCCTTACCCCACTCAGCTCACCTCTCCCTCCACCTCCTCTCCACCTGCTGGTGAGAGGTGCAAAG
AGGCAGATCTTTGCTGCCAGCCACTTCATCCCCTCCCAGATGTTGGACCAACACCCCTCCCTGCCACCAGG
CACTGCCTGGAGGGCAGGGAGTGGGAGCCAATGAACAGGCATGCAAGTGAGAGCTTCTGAGCTTTCTCCT
GTCGGTTTGGTCTGTTTTGCCTTACCCATAAGCCCTCGCACTCTGGTGGCAGGTGCCTTGTCTCAGGG
CTACAGCAGTAGGGAGGTGAGTCTCGTCCCTGATTGAAGGTGACCTCTGCCCCAGATAGGTGGTGCCA
GTGGCTTATTAATTCCGATACTAGTTTGCTTTGCTGACCAAATGCCTGGTACCAGAGGATGGTGAGGCGAA
GGCCAGGTTGGGGCAGTGTGTGGCCCTGGGGCCAGCCCCAACTGGGGGCTCTGTATATAGCTATGAA
GAAACACAAAGTGTATAAATCTGAGTATATATTTACATGTCTTTTTAAAGGGTCGTTACCAGAGATTTA
CCCATCGGGTAAGATGCTCCTGGTGGCTGGGAGGCATCAGTTGCTATATATTAACAAAAAGAAAAA
AAGGAAAATGTTTTTAAAAAGGTCATATATTTTTTGTACTTTTGTGTTTTATTTTTTAAATTATGTTT
TAAACCTATTTTCAAGTTTAGGTCCCTCAATAAAAAATTGCTGCTGCTTCATTTATCTATGGGCTGTATGAAA
AGGGTGGGAATGTCCACTGGAAAGAAGGGACACCCACGGGCCCTGGGGCTAGGTCTGTCCCAGGGGCACCG
CATGCTCCCGGCGCAGGTTCTTGTAACTCTTCTTCTAGGTCTGCACCCAGACCTCACGACGCACCTC
CTGCCTCTCCGCTGCTTTTGGAAAGTCAGAAAAAGAAGATGTCTGCTTCGAGGGCAGGAACCCCATCCATG
CAGTAGAGGCGCTGGGCAGAGAGTCAAGGCCAGCAGCCATCGACCATGGATGGTTTTCTCCAAGGAAACC
GGTGGGGTTGGGCTGGGGAGGGGGCACCTACCTAGGAATAGCCACGGGGTAGAGCTACAGTGATTAAGAGG
AAAGCAAGGGCGCGGTTGCTCACGCCTGTAATCCCAGCACTTTGGGACACCGAGGTGGGCAGATCACTTCA
GGTCAGGAGTTTGAGACCAGCCTGGCCAACCTAGTGAAACCCCATCTCTACTAAAAATGCAAAAATTATCC
AGGCATGGTGGCACACGCCTGTAATCCCAGCTCCACAGGAGGCTGAGGCAGAATCCCTTGAAGCTGGGAGG
CGGAGGTTGCAGTGAGCCGAGATTGCGCCATTGCACTCCAGCCTGGGCAACAGAGAAAAACAAAAAGGAAAA
CAAATGATGAAGGTCTGCAGAACTGAAACCCAGACATGTGTCTGCCCCCTCTATGTGGGCATGGTTTTGC
CAGTGCTTCTAAGTGACAGGAGAACATGTCACCTGAGGCTAGTTTTGCATTACAGTCCCTGGCTTCGTTTTCT
TGTTGGTATGCCTCCCCAGATCGTCTTCTGTATCCATGTGACCAGACTGTATTTGTTGGGACTGTCGCA
GATCTTGGCTTCTTACAGTTCTTCTGTCCAACTCCATCTGTCCCTCAGGAACGGGGGAAAAATTCTCC
GAATGTTTTTGGTTTTTGGCTGCTTGAATTTACTTCTGCCACCTGCTGGTCATCACTGTCCTACTAAG
TGGATTCTGGCTCCCCCGTACCTCATGGCTCAAACCTACCACTCCTCAGTCGCTATATTAAGCTTATATTT
TGCTGGATTACTGCTAAATACAAAAGAAAGTTCAATATGTTTTCATTTCTGTAGGGAAAATGGGATTGCTG
CTTTAAATTTCTGAGCTAGGGATTTTTTGGCAGCTGCAGTGTTGGCGACTATTGTAAATTTCTCTTTGTTT
CTCTCTGTAAATAGCACCTGCTAACATTACAATTTGTATTTATGTTTAAAGAAGGCATCATTTGGTGAACA
GAAGTGGAAATGAATTTTTAGCTCTTAAAGCATTTGCTTTGAGACCGCACAGGAGTGTCTTTCTTTGTA
AAACAGTGATGATAATTTCTGCCTTGGCCCTACCTTGAAGCAATGTTGTGTGAAGGGATGAAGAATCTAAA
AGTCTTCATAAGTCTTTGGGAGAGGTGCTAGAAAAATATAAGGCACTATCATAATTACAGTGATGTCCTTG
CTGTTACTACTCAAATCACCCACAAATTTCCCCAAAGACTGCGCTAGCTGTCAAATAAAAGACAGTGAAT
TGACCTGAAAAAAAAAAAAAAAAA

TADSPEAEPRRARVSLKRRIELTVEYPWRCGALSPTSNCRTGMWSWKCLLFWAVLVLTATLCTARPSPTLP
EQAQPWGAPEVESFLVHPGDLQLRCRLRDDVQSINWLRDGVQLAESNRTRITGEEVEVQDSVPADSGLY
ACVTSSPSGSDTTYFSVNVSDALPSSDDDDDDSSSEEKETDNTKPNRMPVAPYWTSPEKMEKKLHAVPA
AKTVKFKCPSSGTPNPTLRWLKNGKEFKPDHRIGGYKVRYATWSIIMDSVVP SDKGNYTCIVENEYGSINH
TYQLDVVERSPHRPILQAGLPANKTVALGSNVEFMCKVYSDPQPHIQWLKHIEVNGSKI GPDNL PYVQILK
TAGVNTTDKEMEVLHLRNVSFEDAGEYTCLAGNSIGLSHHSALTVLEALEERPAVMTSPLYLEIIIIYCTG
AFLISCMVGSVIVYKMKSGTKKSDFHQSMAVHKLAKSIPLRRQVTVSADSSASMNSGVLLVRPSRLSSSGT
PMLAGVSEYELPEDPRWELPRDRLVLGKPLGEGCFGQVVLAEAIGLDKDKPNRVTKVAVKMLKSDATEKDL
SDLISEMEMMMKIMIGHKNIINLLGACTQDGPLYVIVEYASKGNLREYLQARRPPGLECYNPSHNPEEQLS
SKDLVSCAYQVARGMEYLASKKCIHRDLAARNVLVTDNVMKIADFLARDIHHIDYKKTNGRLPVKWM
APEALFDRIYTHQSDVWSFGVLLWEIFTLGGSYPGPVVEELFKLLKEGHRMDKPSNCTNELYMMMRDCWH
AVPSQRPTFKQLVEDLDRIVALTSNQEYLDLSMPLDQYSPSPDTRSTCSSGEDSVFSHEPLPEEPCLPR
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
GTCTTTTGCCACGAACACCTGCGGCGTGCCGAAGTTCCTCTTCTGCCCCGGTTCCGGGCGGTCCGCTGG
GAGGTGGCGCCCGGAGGGACACCCGTGCCTGGGGTCGGGGCCAGTGCTCTTCTCGGAGCTCCAGAAGTTCT
GCTGAGAAGCGCGGCGGCAGCAAGACGACTTCTCCGGAGCCGCCGAGCTGGAGTTAGAGGTGGAGCTCCGT
GGGGCCGGGCCCCGGCTGCGGGGACGCGGCTCCTGCAGGCGGAGGCCCGGCGGAGAATGAGCCGGAGCC
GGAGGTGGTGGTGGTCTCCTGGCAGAGCGGTGGGACCGGGAGCAAGCTGCGGTGGTTCAACACCTTGATGC
TGTGTGCCTCCTTCTGGGGCTGGGATTGAGTGTTGCTATAGTGGGACCCACGTTTCAAGATTTGGCAACA
AACGTGAACCGAAATATCAGTAGTCTGTCTTTTCAATTTTGTGGGTCGTGCCTTGGGATATTTGAGTGGCTC
TGTGATTGGTGGATTTCTTGTGATGTGATGAATTATTTTTACTTTTGGGAATCTCAATGTCGGCTACCA
CCGTTGGTCTTTATCTTGTTCCTTTTGAAGACAGCAATATTACTCACTGTCATGATGTCTATCTTCGGT
GTTTCAATTGGCATTCTGGATACAGGTGGTAACGTCTTATCTTGGCTATTTGGGGGGACAAAGGAGCCCC
ACATATGCAGGCCCTTACACTTCTCTTTTGCCTTGGGTGCCTTTTGGCTCCACTGCTAGCTAAACTGGCTT
TGGGTCCGACAGCGTCTGCTGAAAACACACAGAGTCTGACTTCCATCCTGCACTCAACCAATCATCTGAT
GCTGACTCAGAAGCTCTGTTTGGAGTACCTAATGATAAGAATTTACTGTGGGCTTATGCTGTTATCGGTAC
TTACATGTTCTTAGTTTTCTGTCAATTTTTTTTTGTCTGTTTTTAAAGAATAGCTCAAAGCAAGAAAAAGCAA
GAGCATCTGCTGAGACATTTTGAAGAGCAAAATATCACAACGCCCTTCTTTGTCTCCTTTTTCTGTTCTTC
TTTTTTTATGTTGGAGCTGAGGTAACATATGGCTCTTATGTTTTCTCATTTGCAACCACCCATGCTGGCAT
GAAAGAAAGTGAAGCTGCTGGGTGAACTCCATCTTCTGGGGGACATTTGCAGCCTGCAGGGGCTGGCAA
TCTTTTTTGTACCTGTTTACAGCCTGGAACCATGATTGTGTTGAGCAACATTGGCAGCCTGACTTCATCT
TTATTTCTGGTGCTTTTTGACAAGAACCAATTTGTCTCTGGATAGCAACTTCAGTGTATGGGGCTTCAAT
GGCAACCAATTTCCGAGTGGTGTCTTGGATTGAGCAGTACACGACCATCCATGGGAATTTGACAGCAT
TTTTTGTAAATGGTGCTTCCCTGGGAGAAATGGCTATTCCTGCAGTCATTGGAATTTTCAAGGAAAATAC
CCTGATTTGCCTGTAGTTCTGTATACCTCTTTGGGAGCATCAATAGCTACTGGTATTTTATTTCTGTGCT
ATATAAATTAGCCACTTCACCTCTTGATCGCCAGCGAAAAGAAGACAGAAAGAGTGAGGACCAGAAAGCTC
TGCTCTCTAGCTCCGGGCTAAATGAATATGAGGAAGAGAATGAAGAGGAGGATGCAGAAAAATGGAATGAA
ATGGATTTTGAATGATTGAAACGAATGATACAATGAGGCATTCTATAATAGAGACATCTAGAAGTAGTCT
GACGGAGCCACAGCTGAAGTCTATAATCAATACCCATCAAATGCACTGGTGTGTTGAGTCTTCTCCTTTTA
ATACTGGCAGTGCCCATGTGAAGCACTTGCCAGAAACCAGGACAAAAGGGACTAACGTTAGAGAAGATGG
ATTACTCACTGACATCTTTGAATAACTGCCACTTCTAAGGACGCCATTGAGAGCAGAGCATTAGCAGAATT
TCACCATGCTTTGGGGATTAATAATTTTGGTCCATATTATAGCAAATGCTAAAAATTTTGAATGTTCT
GTAATTTCCAGAGTCTTCCATAAATAACCAAATGGTCTCATACACGTACAATAGGATCTTGTTATAACGCT
ATCATTTGACATGTGACTGATTAGGAAATATTTATGGTCTCCACCCCTCAGAGCACCCAAAGAAGGCATT
GTTTTTGAGAAGGGGGGTATTCTCAGAATGAGACCATGTAGGAGTTGAATTGATTGGTTGAACAAATTATC
AGGTATCAATATTTTTCCAGGAAAGTTGAGGAGAATAGTTTCATAAAAGAGAAATGGGCCGGGTGCAGTGG
CTAAAGCCTGTAATCCCAGCACTTTGGGAGGCCGAGACGGGCAGATCACGAGGTCAGGAGATCGAGACCAT
CCTGGCTAACACAGTGAAACCCTGTCTCTACTAAAAATACAAAAAATTAGCCAGGCGTGGTGGCAGGCACC
TGATGTCACAGCTACTTGGGAGGCTGAGGCAGGAGAATGGCGTGAACCCGGGAGGTGGAGCTTGCAGTGAG
CCGAGATCATGCCACACCGTACTCCAGCCTGGGCGACATCTAGACTCCGTCTCAAAAAAGAAATGGAGAGG
TATTTTATTAATTGCTTTACCTTATCTGTAGGTTGGATCAAAGAATGTAATGACTCATTTGATTTCTAA
TTTCAATGAAGAAACACAGAACAGGGGCCAAGGGGTCGGGCTTCAAGCCTTGACTTCTTCTAGCCCTGCA
CTCTGTCACTTAACGTAGGCCTTGTATCTCGCCTCCTGATCTGTGATTCTAGAAATGAAATGAGATGA
TTTCAAATTGGGAATCTGTAAGTTTTAAAGTTTGTGCAAAATGTCTGCTAGAAATTAGTACAAGTGACAG

CATGTTCTTCATTTCAAATGAGAAGTGAAACCAAAATGATAAATAGCTTTAAGAATGTGCTAATGATAAAT
GATTACATGTCAATTTAATGTACTTAATGTTTAATACCTTATTTGAATAATTACCTGAAGAATATATTTTT
TAGTACTGCATTTTCATTGATTCTAAGTTGCACCTTTTACCCCATACTGTTAACATATCTGAAATCAGAAT
GTGTCTTACAATCAGTGATCGTTTAACATTGTGACAAAGTTTAATGGACAGTTTTTCCCATATGTATATA
TAAATAATGTGTTTTACAATCAGTGGCTTAGATTCAGTGAAATACAGTAATTCATTCAATTATGATAGTA
TCTTTACAGACATTTTAAAAATAAGTTATTTTTATATGCTAATATTCTATGTTCAAGTGGAAATTTGGAGAC
ACTATGTTCTAATTTAAGAACTGTTTCAGTGTTATTAGATTAGTAGTAGGGCTGTAGATGGGGTCTTTTCG
AGGTCCTTTGCCTACCTCAGTAACAGAGGCTGGGTCTGAGCCTTGCTCGAGATTAGCTCTTCACCAGGTCT
GTGTGGTAATCATATCGTAGTTACCGTAGGTACGCTGCAAGTGTAATTTACAGTGAGGCATAGTCTTTTC
CAGTGATTGGAATACTTGTGTACCGATCCAGGGTTTCTCTTTCTGAGTCTGAAATACCTGGGAAACCAG
TTAGAAGGTGACTGGGTAGCCTAGGAGTCAAGGATCAGAAAGGGTACTTCATATATATGTGGCAGAATTGG
TGCAGGTGATCCTTTGAAAAATGACAAGAATTGATGAAATTTTGTACTTCTCCAATTTTTGCTGAAT
AACATCTCCTTTCTACCTGATTGGAGTAGGCTTGCTTTCTTACTTAATTTCTATAAATTTGCCATTGTT
TTGTCTCAAGTAAAAAAAAAAAAA

LELEVELRGAGPPAAGQRLLQAEAPAENEPEPEVVVSWQSGGTGSKLRWFTTLMLCASFLGLGLSVAIVG
PTFQDLATNVNRNISSLSFIFVGRALGYLSGVSIGGFLVDVMNYFLLGISMSATTVGLYLVPFCKTAILL
TVMMSIFGVSIGILDTGGNVILAIWGDKGAPHMQALHFSFALGAFLAPLLAKLALGPTASAENHTESDFH
PALNQSSDADSEALFGVPNDKNLLWAYAVIGTYMFLVSVIFFCLFLKNSSKQEKARASAETFRRAKYHNAL
LCLLFLFFFFYVGAEVTYGSYVFSFATTHAGMKESAAAGLNSIFWGTFAACRGLAIFATCLQPGTMIVLS
NIGSLTSSLFLVLFDKNPICLWIATSVYGASMATTFPSGVSWIEQYTTIHGKSAFFVIGASLGEMAIPAV
IGILQGKYPDLPVVLYTSLGASIATGILFPVLYKLATSPLDRQRKEDRKSEDQKALLSSSGLNEYEEENEE
EDA EKWNEMDFEMIETNDTMRHSIIETSRSSLTEPTAEVYNQYPSNALVFESSPFNTGSAHVKHLPETRTK
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

AGAAGGGGCACCGCTGAGCTGCCGAGAGGAAGCTCGCTCTGCCCGGCTGCCCTCTTGAGTCCGCCGGCGA
GGGGCAGTTCTCGGTGAGGAGGAAGAGAGCAGCGGACGGCACAGCACCCGCGCGGGCCCTCCCAACAGC
TCCAGCTGGCAGCATCACTTCCCGCCAATTTATCCAATTTCTGCCAAGGCTCTGAAATGCCAACACGTCG
AGGCCTGCACTTGATGTCAAGGGTGGCACCTCACCTGCGAAGGAGGATGCCAACCAAGAGATGAGCTCCGT
GGCCTACTCCAACCTTGCGGTGAAAGATCGCAAAGCAGTGGCCATTCTGCACTACCCTGGGGTAGCCTCAA
ATGGAACCAAGGCCAGTGGGGCTCCCACTAGTTCTCGGGATCTCCAATAGGCTCTCCTACAACCACCCCT
CCCACTAAACCCCATCCTTCAACCTGCACCCCGCCCCTCACTTGCTGGCTAGTATGCACCTGCAGAACT
TAATAGCCAGTATCAGGGGATGGCTGCTGCCACTCCAGGCCAACCCGGGGAGGCAGGACCCCTGCAAACT
GGGACTTTGGGGCCCAGGCGGGAGGGGCAGAATCACTCTCTCTTCTGCTGGTGCCAGAGCCCTGCTATC
ATCGATTCCGACCCAGTGGATGAGGAAGTGCTGATGTCGCTGGTGGTGGAAGTGGGGTTGGACCGAGCCAA
TGCAAGTCCGGAGCTGTGGCTGGGGCAGAATGAGTTTGACTTCACTGCGGACTTTCCATCTAGCTGCTAAAT
GCCAAGTGTCCTTAAAGATGGAGGAATAAAGCCACCAATTCTGTTGTAATAAAAAATAAAGTTACTTACAA
AGAGACGGGCCAAAAA

LAASLPANLSNFCQGSEMPPTTSRPALDVKGGTSPAKEDANQEMSSVAYSNLAVKDRKAVAILHYPGVASNG
TKASGAPTSSSGSPIGSPTTTPPTKPPSFNLHPAPHLASMHLQKLNSQYQGMAAATPGQPGEAGPLQNWD
FGAQAGGAESLSPSAGAQSPAIIDSDPVDEEVLMSLVVELGLDRANELPELWLQNEFDFTADFPSSC

AUG initiation = 19.9 kDa
CUG initiation = 21.6 kDa

+++++

#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
CGGTCCAGTCATCGTTCTGTGGTCTTTCTTTTATGATTACAAGGAATGACCCTCTTCATCGCCTCTCCT
AATTCAGTCCTCACAACAGTCCTTTTACAAATGGGACAACAGGTTAGAGGAAGTCAGGCAGATTTCCAGCA
TCATAGAGAGTAAAGGACCAGGGAAGGATCAGGATTCAAGGACTGCACCCAGGCTCTGCTTCCAGCTTGCT
GTGTGACTTTGGGTAATTTGTTCCCTTAGGGAACTGAGCTTTCTCATTTGTAAATGCAAACAGGCTGTTG
GGAGGATCAAATGAGATCCAGGGGTGAAAACAGCTTAGTTTACTTTACAGGAATTTACCCACGCGGTATATA
AAGGCAAAATATTATTATAGTCAGGTGATTGTAGATTGAGGAACCCATTTCTCATTCTGCAAATTGCAAA
CCTGAGGGGCCAAAGAGGGACAGGGGCTTGCCCCAGGTCTCAGCAGGCTGTGAGCAAGAGCTAAAGCCTAA
TCCTCCTGCCTTTGGGCCTGGAGCCCTTCCTTGATACCCAGGGGTCAAGTGTCTTTGTTGGATACAGGCTTA
GATTGACTGACTGTACCTGAGAACCTAGGGGAGTCCCTGTTCCCAATTCTTCTCCTACCCACCTTGCC
CTGATGGAGGAAGACCCTGCTGTGTTGAGATGAGCACCAGAGCCAAGAAGCTGAGGAGGATCTGGAGAATT
CTGGAGGAAGAGGAGAGTGTTGCTGGAGCTGTACAGACCCTGCTTCTCAGGTCCCAGGAAGGTGGCGTCAG
CATCTGCAGCCGCGTCGACGTTGTGCGGAGCCTCCGCGGAGGACCCAGGAGAGCCGGACTAGGACCAGGGCC
CTGGGCCTCCCCACACTCCCCATGGAGAAGCTGGCGGCCTCTACAGAGCCCCAAGGGCCTCGGCCGGTCCT
GGGCCGTGAGAGTGTCCAGGTGCCCGATGACCAAGACTTTTCGACGCTTCCGGTCAGAGTGTGAGGCTGAGG
TGGGCTGGAACCTGACCTATAGCAGGGCTGGGGTGTCTGTCTGGGTGCAGGCTGTGGAGATGGATCGGACG
CTGCACAAGATCAAGTGCCGGATGGAGTGTCTGTGATGTGCCAGCCGAGACACTCTACGACGTCCTACACGA
CATTGAGTACCGCAAGAAATGGGACAGCAACGTCAATTGAGACTTTTGACATCGCCCGCTTGACAGTCAACG
CTGACGTGGGCTATTACTCCTGGAGGTGTCCCAAGCCCTGAAGAACCGTGATGTCATCACCCTCCGCTCC
TGGCTCCCCATGGGCGCTGATTACATCATTATGAACTACTCAGTCAAACATCCCAAATACCCACCTCGGAA
AGACTTGGTCCGAGCTGTGTCCATCCAGACGGGCTACCTCATCCAGAGCACAGGGCCCAAGAGCTGCGTCA
TCACCTACCTGGCCCAGGTGGACCCCAAAGGCTCCTTACCCAAGTGGGTGGTGAATAAATCTTCTCAGTTC
CTGGCTCCCAAGGCCATGAAGAAGATGTACAAGGCGTGCCTCAAGTACCCCGAGTGGAACAGAAAGCACCT
GCCTCACTTCAAGCCGTGGCTGCACCCGGAGCAGAGCCCCTTGCCGAGCCTGGCGCTGTGCGAGCTGTGCG
TGCAGCATGCGGACTCACTGGAGAACATCGACGAGAGCGCGGTGGCCGAGAGCAGAGAGGAGCGGATGGGC
GGCGCGGGCGGGCAGGGCAGCGACGACGACACCTCGCTCACCCTGAGCGCCGCACCGCTTCAGGGACGGAGA
CAGGACCGGGCGAGCCCTGGGGCGGGCGGCGCTCCTGCACCTTCTCCCCTCCCCACCCGGCACCTGGTGG
CACCGGGCCAGGCCAGGCGGGTGTGTCAGCCTGGCTGGACAGAGCCCCAATAAACGATCCCACAGCCTCA

VASASAAASTLSEPPRRTQESRTRTRALGLPTLPMKLAASTEPPQGRPVLGRESVQVPDDQDFRSFRSEC
EAEVGNLTYSRAGVSVWVQAVEMDRTLHKIKRMECCDVPAETLYDVLHDIEYRKKWDSNVIETFDIARL
TVNADVGYYSWRCPKPLKNRDVITLRSWLPMGADYIIMNYSVKHPKYPPRKDLVRAVSIQTGYLIQSTGPK
SCVITYLAQVDPKGSLLPKWVVKSSQFLAPKAMKKMYKACLKYPEWKQKHLPHFKPWLHPEQSPLPSLALS
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

TGCGCGATCTCCGGAGC**ATG**CGCAGCAGCGGCGCCGACGCGGGGCGGTGCCTGGTGACCGCGCGCGCTCC
CGGAAGTGTGCCGGCGTCGCGCAAGGTTTCAGCAGGGAGCCGTGGGCCGGGCGCGCCGGTTCCCGGCACGT
GTCTCGGCACGTGGCAGCGCGCCTGGCCCTGGGCTTGAGAGCGCCGGCGCC**CTGG**ATCCGCGGCCGTGGT
CGCCGAGTCGGTGTCTCTTACCATCGCCGACGCGTTTCATTGCAGCCGGCGAGAGCTCAGCTCCGACCC
CGCCGCGCCCCGCGCTTCCAGGAGGTTTCATCTGCTCCTTCCCTGACTGCAGCGCCAATTACAGCAAAGCC
TGGAAGCTTGACGCGCACCTGTGCAAGCACACGGGGGAGAGACCATTGTTTGTGACT**ATGA**AGGGTGTGG
CAAGGCCTTCATCAGGGACTACCATCTGAGCCGCCACATTCTGACTCACACAGGAGAAAAGCGTTTGT
GTGCAGCCA**ATGG**CTGTGATCAAAAATTCAACACAAAATCAAACCTGAAGAAACATTTTGAACGCA**AAACAT**
GAAAATCAACAAAAACAATATAT**ATG**CAGTTTTGAAGACTGTAAGAAGACCTTTAAGAAACATCAGCAGCT
GAAAATCCATCAGTGCCAGCATACCA**ATGA**ACCTCTATTCAAGTGTACCCAGGAAGG**ATGT**GGGAAACACT
TTGCATCACCCAGCAAGCTGAAACGAC**ATG**CCAAGGCCACGAGGGCT**ATGTATGT**CAAAAAGG**ATGT**TCC
TTTGTGGCAAAAAC**ATGG**ACGGAACCTTCTGAAAC**ATGT**GAGAGAAACCCATAAAGAGGAAATACT**ATGTGA**
AGT**ATG**CCGGAACATTTAAACGCAAAGATTACCTTAAGCAACAC**ATG**AAAACCTCATGCCCCAGAAAGGG
ATGTATGTCTGTCCAAGAGAAGGCTGTGGAAGAACCTATACAACCTGTGTTTAATCTCAAAGCCATATC
CTCTCCTTCCATGAGGAAAGCCGCCCTTTTGTGTGTGAACATGCTGGCTGTGGCAAAACATTTGCAATGAA
ACAAAGTCTCACTAGGCATGCTGTTGTACATGATCCTGACAAGAAGAAAATGAAGCTCAAAGTCAAAAAAT
CTCGTGAAAAACGGAGTTTGGCCTCTCATCTCAGTGGATATATCCCTCCCAAAGGAAACAAGGGCAAGGC
TTATCTTTGTGTCAAAACGGAGAGTCACCCAACCTGTGTGGAAGACAAGATGCTCTCGACAGTTGCAGTACT
TACCCTTGGCT**TA**GAACTGCACTGCTTTGTTTAAAGGACTGCAGACCAAGGAGCGAGCTTTCTCTCAGAGC
ATGCTTTTCTTTATTAATAATTACTGATGCAGAACATTTGATTCTTATCATTTTC

LDPPAVVAESVSLTIADAFIAAGESSAPTPRPALPRRFICSPDPCSANYSKAWKLD AHLCKHTGERPFV
CDYEGCGKAFIRDYHLSRHILTHTGEKPFVCAANGCDQKFNTKSNLKKHFERKHENQQKQYICSFEDCKKT
FKKHQQLKIHQCQHTNEPLFKCTQEGCGKHFA SP SKLKRHAKAHEGYVCQKGC SFVAKTWTELLKHVRETH
KEEILCEVCRKTFKRKDYLKQHMKTHAPERDVCRCPREGCGRTYTTVFNLSHILSFHEESRPFVCEHAGC
GKTFAMKQSLTRHAVVHDPDKKKMKLVKKSREKRSLASHLSGYIPPKRKQGQGLSLCQNGESPNCVEDKM
LSTVAVLTLG

+++++

#2

NM_001418

Region conserved from insects to human.

EIF4G2 eukaryotic translation initiation factor 4 gamma

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

GCAGACGGCAACCGGGCCGCTGATTGGGCGGCGAAGGAGCCATTGAGGAGACTCTGGTGGGTTCCGGCTGC
CCCAAGAGTGATAAGTTCGGCTTCAGACACGCCTTAGCGCCAGCAGTGAGTCGGAGCTCT**ATG**GAGGTGGC
AGCGGGTACCGAGTGGCGGCTGCAGCAGCGACTCCTCTGAGCTGAGTTTGAGGCCGTCCCCGACTCCTTCC
TCCCCCTTCCCTCCCCCTTTTTTTTGTTCGTTCCCTTTCCCTCCCTTCCCTATCCCCGACGACCGG
ATCCTGAGGAGGCAGCTGCGGTGGCAGCTGCTGAGTTCTCGGTGAAGGTATTTCAATTTCTCCTGTCCCTC

CCCTCCCCACCCCATCTATTAATATTATTCTTTTGAAGATTCTTCGTTGTCAAGCCGCCAAAAGTGGAGAGT
GCGATTGCAGAAGGGGGTGCTTCTCGTTTCAGTGCTTCTTCGGGCGGAGGAGGAAGTAGGGGTGCACCTCA
GCACTATCCCAAGACTGCTGGCAACAGCGAGTTCCTGGGGAAAACCCAGGGCAAAACGCTCAGAAATGGA
TTCCTGCACGAAGCACTAGACGAGATGACAACCTCCGCAGCAAACTCCGCAAAACGAAAAAGAACGACAT
GATGCAATCTTCAGGAAAGTAAGAGGCATACTAAATAAGCTTACTCCTGAAAAGTTTGACAAGCTATGCCT
TGAGCTCCTCAATGTGGGTGTAGAGTCTAAACTCATCCTTAAAGGGGTGCTACTGCTGATTGTGGACAAAG
CCCTAGAAGAGCCAAAGTATAGCTCACTGTATGCTCAGCTATGCTCTGCGATTGGCAGAAGATGCACCAAAC
TTTGATGGCCCAGCAGCAGAGGGTCAACCAGGACAGAAGCAAAGCACCACATTTCAGACGCCTCCTAATTTT
CAAATTACAAGATGAATTTGAAAACCGAACTAGAAATGTTGATGCTCTATGATAAGCGTGAAAATCCCCTCC
TCCCCGAGGAGGAGGAACAGAGAGCCATTGCTAAGATCAAGATGTTGGGAAACATCAAATTCATTGGAGAG
CTTGGCAAGCTTGATCTTATTCACGAATCTATCCTTCATAAGTGCATCAAAACACTTTTGGAAAAGAAGAA
GAGAGTCCAACCTCAAAGATATGGGAGAGGATTTGGAGTGCCTCTGTGAGATAATGAGGACAGTGGGACCTA
GATTAGACCATGAACGAGCCAAGTCCTTAATGGATCAGTACTTTGCCCGAATGTGCTCCTTGATGTTAAGT
AAGGAATTGCCAGCAAGGATTCGTTTCCTGCTGCAGGATACCGTAGAGTTGCGAGAACACCATTGGGTTC
TCGCAAGGCTTTTCTTGACAATGGACCAAAGACGATCAATCAAATTCGTCAAGATGCAGTAAAAGATCTAG
GGGTGTTTATTCTGCTCCTATGGCTCAAGGGATGAGAAGTGACTTCTTCTGGAGGGACCGTTTCATGCCA
CCCAGGATGAAAATGGATAGGGACCCACTTGGAGGACTTGTGATATGTTTGGACAAATGCCAGGTAGCGG
AATTGGTACTGGTCCAGGAGTTATCCAGGATAGATTTTACCCACCATGGGACGTCATCGTTCAAATCAAC
TCTTCAATGGCCATGGGGGACACATCATGCCTCCACACAATCGCAGTTTGGAGAGATGGGAGGCAAGTTT
ATGAAAAGCCAGATTAGCCTGAGGCCTGCTCAGTCGTTCTTAATGAATAAAAATCAAGTGCCAAAGCTTCA
GCCCCAGATAACTATGATTCTCCTAGTGCACAACCACCACGCACTCAAACACCACCTCTGGGACAGACAC
CTCAGCTTGGTCTCAAACTAATCCACCGCTTATCCAGGAAAAGCCTGCCAAGACCAGCAAAAAGCCACCA
CCGTCAAAGGAAGAAGCTCCTTAACTAAGTAACTGTTGTGACTGAATATCTAAATAGTGGAATGCAAA
TGAGGCTGTCAATGGTGTAAAGAGAAATGAGGGCTCCTAAACACTTTCTTCTGAGATGTTAAGCAAAGTAA
TCATCCTGTCACTAGATAGAAGCGATGAAGATAAAGAAAAAGCAAGTTCTTTGATCAGTTTACTCAAACAG
GAAGGGATAGCCACAAGTGACAACCTTCATGCAGGCTTTCTGAAATGTATTGGACCAGTGTCCCAAAGTGA
GGTTGACATCCCTTTGGTGAAATCCTATTTAGCACAGTTTGCAGCTCGTGCCATCATTTTCAGAGCTGGTGA
GCATTTGAGAATAGCTCAACCACTAGAAAGTGGCACCCTTTTCTCTCTTCTACTTTGTCTTCAGCAG
TTAGCTAAATTACAAGATCGAGAATGGTTAACAGAATTTTTCAACAAAGCAAGGTCAATATGCGAAAAAT
GCTCCAGAAATTGATCAGAATAAGGACCGCATGTTGGAGATTTTGAAGGAAAGGGACTGAGTTTCTTAT
TCCCACTCCTCAAATTGGAGAAGGAAGTGTGAAGCAAATAAAGTTGGATCCATCCCCTCAAACCATATAT
AAATGGATTAAAGATAACATCTCTCCCAAAGTTCATGTAGATAAAGGATTTGTGAACATCTTAATGACTAG
CTTCTTACAGTACATTTCTAGTGAAGTAAACCCCCCAGCGATGAAACAGATTTCATCCTCTGCTCCTTCCA
AAGAACAGTTAGAGCAGGAAAAACAATACTACTATCTTTCAAGCCAGTAATGCAGAAATTTCTTCATGAT
CACGTTGATCTACAAGTCAGTGCCCTGTATGCTCTCCAGGTGCACTGCTATAACAGCAACTTCCCAAAGG
CATGTTACTTCGCTTTTTTGTGCACTTCTATGACATGGAAATTATTGAAGAAGAAGCTTTCTTGGCTTGA
AAGAAGATATAACCCAAGAGTTTCCGGGAAAAGGCAAGGCTTTGTTCCAGGTGAATCAGTGGCTAACCTGG
TTAGAAACTGCTGAAGAAGAAGAATCAGAGGAAGAAGCTGACTAAAGAACCAGCCAAAGCCTTAAATTGTG
CAAAACATACTGTTGCTATGATGTAAGTGCATTTGACCTAACCACTGCGAAAATTCATTCCGCTGTAATGT
TTTCACAATATTTAAAGCAGAAGCACGTCAGTTAGGATTTCTTCTGCATAAGGTTTTTTTGTAGTGTAAT
GTCTTAATCATAGTCTACCATCAAATATTTTAGGAGTATCTTTAATGTTTAGATAGTATATTAGCAGCATG
CAATAATTACATCATAAGTTCTCAAGCAGAGGCAGTCTATTGCAAGGACCTTCTTTGCTGCCAGTTATCAT
AGGCTGTTTTAAGTTAGAAAAGTGAATAGCAACACTGAATACTGTAGAAATGCACTTTGCTCAGTAATACT
TGAGTTGTTGCAATATTTGATTATCCATTTGGTTGTTACAGAAAAATCTTAAGTGAATTGATGGTTGTT
GCCGTAATAGTATATTGCCTGTATTTCTACCTCTAGTAATGGGCTTTATGTGCTAGATTTTAAATATCCTTG
AGCCTGGGCAAGTGCACAAGTCTTTTTAAAGAAACATGGTTTACTTGCACAAAAGTATCAGTGTGTTGAGA
GATCGTTAATGCCCTTGAAGTGGTTTTTGGGTGTGAAACAAATGGTGAGAATTTGAATTGGTCCCTCCT
ATTATAGTATTGAAATTAAGTCTACTTAATTTATCAAGTCATGTTTCATGCCCTGATTTTATATACTTGTAT
CTATCAATAAACATTGTGATACTTGATGTAGTGA

VESIAIEGGASRFSASSGGGSRGAPQHYPKTAGNSEFLGKTPGQNAQKWIPARSTRDDNSAANNANEK
ERHDAIFRKVRGILNKLTPKFDKLCLELLNVGVESKLILKGVILLIVDKALEEPKYSSLYAQLCLRLEAD
APNFDGPAAEGQPQKQSTTFRRLISKQLQDEFENRTRNVVDVYDKRENPLLPEEEEEQRAIAKIKMLGNIKF
IGELGKLDLIHESILHKCIKTLLEKKKRVQLKDMGEDLECLCQIMRTVGPRLDHERAKSLMDQYFARMCSL
MLSKELPARIRFLLQDTVELREHHWVPRKAFLDNPKTINQIRQDAVKDLGVFIPAPMAQGMRSDFFLGEP
FMPPRMKMDRDPLGGLADMFGQMPGSGIGTGPVGIQDRFSPTMGRHRSNQLFNGHGGHIMPPTQSQFEGEM

KGFMKSQISLRPAQSFLMNKNQVPKLQPQITMIPPSAQPPRTQTPPLGQTPQLGLKTNPPLIQEKPAKTSK
KPPPSKEELLKLTETVVTEYLNsgnANEAVNGVREMRAPKHFLPEMLSKVIIISLDRSDEDKEKASSLISL
LKQEGIAATSDNFMQAFNLVLDQCPKLEVDIPLVKSILAQFAARAIISELVSISELAQPLESGTHFPLFLLC
LQQLAKLQDREWLTELFQQSKVNMQKMLPEIDQNKDRMLEILEGKLSFLFPLLKLEKELLKQIKLDPSQ
TIYKWIKNISPKLHVDKGFVNILMTSFLQYISSEVNPPSDETDSSSAPSKEQLEQEKQLLLSFKPVMQKF
LHDHVDLQVSALYALQVHCYNSNFPKGMLLRFFVFHYDMEIIIEEEAFLAWKEDITQEFPGKGKALFQVNQW
LTWLETAEEEEEESEED

+++++

#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

CCTCGCCCGCCTGCCGCCTTTTTGTGCGCGTGTGAGTGTGGGCCCCAGCGTGCCCTCCCGGGGGTGGGTTC
CGGGCGGAAGGCGGAGGCCCGGCGCGCAGCCCGCCGCCGCCTGCCCGCGGACCGGGGAGCCGGGGTGCTT
GGAGCGGGGGACGCCAGGCGTGGGCTGGCGGGCGGGACCAGGAGGAGGAGGAGGAGGAGGAGGAGAGCGCGG
GCTGGCGCTTGCCCGGGCGCAGTCGGCGGGGACCGAGTCGTACTTCTGTGCGAAAGGCGGCCCGACCTA
ACCGCCACCCCTCCCTGTCTCCCTCTGAACCCGCCATTGGGGTAGGACACTCAGCCGTCACCGC
TCGCTCTGCTGGCCGCTACCTGCAGCAAGATAGGGCGCCATCGCCGGGCGACGACGAGGAGGAGGCGGCC
GCCGACGCCGGGGCCCCCGCCGCCCGGAGCGACAGGTGATTTGGCTTCTGCACAGTTAGGAGGAGCACC
AAACCGATGGGAGGTTTTGTGAGCCACACCTACAACATAAAAGATGAAGCTGGTAATCTAGTCAGATTC
CAAGTGTCTACTTCAAGTGGGCGAGTATGTTCTTCCCCTTCAGAATTTGCAGAATCAACAAATATTTTCC
GTTGCACAGGATCAGATTCATCAAATGGTACAGTGTCCAGTGTTCAATATCAAGTGATACCACAGATCCA
GTCAGCAGATGGTTCAGCAGGTTCAAATGGTTTTACAGGCTCTTCAGATAATGGGGGTATAAATCAAGAAA
GCAGTCAAATTCAGATCATTCTGGCTCTAATCAAACCTTACTTGCCTCTGGAACACCTTCTGCTAACATC
CAGAATCTCATACCACAGACTGGTCAAGTCCAGGTTACAGGAGTTGCAATTGGTGGTTTCATTTTTCTGG
TCAAACCCAAGTAGTTGCTAATGTGCTCTTGGTCTGCCAGGAAATATTACGTTTGTACCAATCAATAGTG
TCGATCTAGATTCTTTGGGACTCTCGGGCAGTTCTCAGACAATGACTGCAGGCATTAATGCCGACGGACAT
TTGATAAACACAGGACAAGCTATGGATAGTTAGACAATTCAGAAAGGACTGGTGAGCGGGTTTCTCCTGA
TATTAATGAAACTAATACTGATACAGATTTATTTGTGCCAACATCCTCTTCATCACAGTTGCCTGTTACGA
TAGATAGTACAGGTATATTACAACAAAACACAAATAGCTTGACTACATCTAGTGGGCAGGTTTCATTCTTCA
GATCTTCAGGGAAATTATATCCAGTCGCCTGTTTCTGAAGAGACACAGGCACAGAATATTCAGGTTTCTAC
AGCACAGCCTGTTGTACAGCATCTACAACCTCAAGAGTCTCAGCAGCCAACAGTCAAGCCCAAATTGTGC
AAGGTATTACACCACAGACAATCCATGGTGTGCAAGCCAGTGGTCAAAATATATCACAACAGGCTTTGCAA
AATCTTCAGTTGCAGCTGAATCCTGGAACCTTTTTAATTCAGGCACAGACAGTGACCCCTTCTGGACAGGT
AACTTGGCAAACGTTTCAAGTACAAGGGGTCCAGAACTTGCAAGATTTGCAAATACAGAATACTGCTGCC
AACAAATAACTTTGACGCCTGTTCAAACCTCACAATTGGTCAAGTTGCGGCAGGTGGAGCCTTCACTTCA
ACTCCAGTTAGTCTAAGCACTGGTCAAGTTGCCAAATCTACAAACAGTTACAGTGAACCTCTATAGATTCTGC
TGGTATACAGCTACATCCAGGAGAGAATGCTGACAGTCTGCAGATATTAGGATCAAGGAAGAAGAACCTG
ATCCTGAAGAGTGGCAGCTCAGTGGTGATTCTACCTTGAATACCAATGACCTAACACACTTAAGAGTACAG
GTGGTAGATGAAGAAGGGGACCAACAACATCAAGAAGGAAAAAGACTTCGGAGGGTAGCTTGCACCTGTCC
CAACTGTAAAGAAGGTGGTGGAAAGAGGTACCAATCTTGGGAAAAAGAAGCAACACATTTGTATATACCAG
GATGTGGTAAAGTCTATGGGAAGACCTCACATCTGAGAGCTCATCTGCGTTGGCATTCTGGAGAACGCCCT
TTTGTGTTGTAAGTGGATGTACTGTGGTAAAGATTTACTCGAAGTGATGAATTACAGAGGCACAGAAGAAC
ACATACAGGTGAGAAGAAATTTGTTGTCCAGAATGTTCAAAACGCTTTATGAGAAGTGACCACCTTGCCA
AACATATTAACACACCAGAATAAAAAAGGTATTCACTCTAGCAGTACAGTGCTGGCATCTGTGGAAGCT
GCGCGAGATGATACTTTGATTACTGCAGGAGGAACAACGCTTATCCTTGCAAATATTCACAAGGTTCTGT
TTCAGGGATAGGAAGTGTAACTTCCGCCACCAGCAATCAAGATATCCTTACCAACACTGAAATACCTT
TACAGCTTGTACAGTTTCTGGAAATGAGACAATGGAGTAAATATTACACAAATACTTATTTCATTGTGGTT
ATTTTTATACAGTAGTGAGAAGAATATTGTTCTAAGTCTTAGATATCTTTTTATTGATGTGCAAAATT

IGPPSPGDDEEEAAAAAGAPAAAGATGDLASAQLGGAPNRWEVLSATPTTIKDEAGNLVQIPSAATSSGQY
VLPLQNLQNNQIFSVAPGSDSSNGTVSSVQYQVIPQIQSADGQQVQIGFTGSSDNGGINQESSQIQIIPGS
NQTLASGTPSANIQNLIPQTGGVQVQVQGAIGGSSFPQGQTQVVANVPLGLPGNITFVPINSVDLDSLGLSG
SSQTMTAGINADGHLINTGQAMDSSDNSERTGERVSPDINETNTDIDLFPVPTSSSSQLPVTIDSTGILQQN
TNSLTTSSGQVHSSDLQGNYYIQSPVSEETQAQNIQVSTAQPVVQHLQLQESQQPTSQAQIVQGITPQTIHG
VQASGQNISQQALQNLQLQLNPGTFLIQAQTVTPSGQVTWQTFQVQGVQNLQNLQIQNTAAQQITLTPVQT
LTLGQVAAGGAFTSTPVSLSSTGQLPNLQTVTVNSIDSAQIQLHPGENADSPADIRIKEEPPDPEEWQLSGD
STLNTNDLTHLRVQVDEEDGQQHQEGKRLRRVACTCPNCKEKGGRGNLNGKKKQHICHIPGCGKVKYGKTS
HLRAHLRWHSGERPFVCNWMYCGKRFTRSDQLQRHRRTHTEGKKFVCPECSKRFMRSDHLAKHIKTHQNKK
GIHSSSTVLASVEAARDTLITAGGTTLILANIQQGSVSGIGTVNTSATSNDILTNTEIPLQLVTVVSNGNE
TME

#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
GTTGGCCAAGACGCCGAATATCAAAATCTTCAGCGGCAGCTCCCACCAGGACTTATCCCAGAAAATTGCT
ACCGCCTGGGCGCTGGAGCTAGGCAAGGTGGTGACTAAGAAATTCAGCAACCAGGAGACCTGCGTGGAATTT
GATGAGAGTGTGCGTGGAGAGGATGCTCTACATCGTTTCAGAGTGGTTGTGGCGAAATCAACGACAGTCTAAT
GGAGCTTTTGATCATGATTAATGCCTGCAAGATTGCTTCAGCTAGCCGAGTTACTGCAGTCAATCCCATGCT
TCCCTTATGCCCCACAGGATAAGAAGGATAAGAGCCGGTCCCCAATCTCTGCCAAGCTTGTGTGAAATATG
CTCTCTATAGCAGGTGCGGATCATATCATCACCATGGACCTACATGCTTCTCAAATTCAGGGCTTTTTTTGA
TATCCCAGTAGACAACTTGTATGCAGAGCCAACTGTCTGAAGTGGATAAGGGAGAATATCCCTGAGTGGAA
AGAACTGCATTATTGTCTCGCCAGATGCTGGTGGAGCTAAAAGAGTGACCTCCATTGCAGACCAGTTGAAT

GTGGACTTTGCTTTGATTTCATAAAGAACGGAAGAAGGCCAATGAAGTGGACTGCATAGTGCTAGTGGGAGA
TGTGAATGATCGTGTGGCTATCCTTGTAGATGACATGGCAGACACTTGTGTTACAATCTGCCTCGCAGCTG
ACAAACTTCTCTCAGCTGGAGCAACCAGAGTTTATGCTATCTTGACTCATGGAATCTTTTCTGGCCCAGCC
ATTTCTCGCATCAACACTGCATGCTTTGAAGCAGTGGTAGTCACCAATACCATACCTCAAGATGAGAAGAT
GAAGCATTGCTCCAAAATACGAGTAATTGACATCTCCATGATCCTTGAGAAGCCATAAGGAGAACTCATA
ATGGGGAATCTGTTTCTACCTGTTTCAGCCATGTTCTTTA TAA CAGAATAACTTCTAGGTTATGCTATT
TAAATAAAATAAGATTAATAAAAAA

TPNIKIFSGSSHQDLSQKIADRLGLELGKVVTKKFSNQETCVEIDESVRGEDVYIVQSGCGEINDSLMELL
IMINACKIASASRVTAVIPCFPYARQDKKDKSRSPISAKLVANMLSIAGADHIITMDLHASQIQGFFDIPV
DNLYAEPTVLKWIENIPEWKNCIIVSPDAGGAKRVTSIADQLNVDFALIHKKERKKANEVDCIVLVGDVND
RVAILVDDMADTCVTICLAADKLLSAGATRVYAILTHGIFSGPAISRINTACFEAVVVTNTIPQDEKMKHC
SKIRVIDISMILAEAIRRTHNGESVSYLFSHVPL

+++++

#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

GTGGCCCCGCCGCGCACTCCCTCCGGCTCCCTCCCTCCCGCCGCGGCGCGCATCTCATTCCAGCCCTCATT
CGCGCATTCCAGCGTCTCTCGCACACTCGAGGCCAGGGGGCGGGAGGGCCGCGAGCTCCGGCGCCGCGCG
GTCCCGCCAGAACGATCGCCGCGGCCGGAAGAGTTGGCGCTCGGGGCGGACTCCTTGGAAGTGGCTTAGCG
CACCCATCCACCTTCCCGCACCTGGGACCGGTCCAACGAGCGCTCCTCCAAGCGGAGCCTTGGAGGGCA
CGGCCGGCACCATTACCTCCAACGAGTGGAGCTCTCCACCTCCCCTGAGGGGAGCACCGCCTCTGGGGGC
AGTCAGGCACTGGACAAGCCCATCGACAATGACGCGAGAGGGCGTGTGGAGCCCGGATATTGAGCAGAGTTT
CCAGGAGGCCCTCGCCATCTACCCGCCCTGTGGCAGGCGCAAAATCATCCTGTGCGACGAGGGCAAGATGT
ATGGTCGGAACGAGCTGATTGCCCGCTACATCAAGCTCCGGACAGGGAAGACCCGCAACAGGAAGCAGGTC
TCCAGCCACATCCAGGTGCTGGCTCGTCGCAAAGCTCGCGAGATCCAGGCCAAGCTAAAGGACCAGGCAGC
TAAGGACAAGGCCCTGCAGAGCATGGCTGCCATGTCGTCTGCACAGATCATCTCCGCCACGGCCTTCCACA
GTAGCATGGCCCTCGCCCGGGGCCCCGGCCGCCAGCAGTCTCAGGGTTTTGGCAAGGAGCTTTGCCAGGC
CAAGCCGGAACGTCCCATGATGTGAAGCCTTTCTCTCAGCAAACCTATGCTGTCCAGCCTCCGCTGCCTCT
GCCAGGGTTTGAGTCTCCTGCAGGGCCCCGCCATCGCCCTCTGCGCCCCGGGCACCCCATGGCAGGGCC
GCAGCGTGGCCAGCTCCAAGCTCTGGATGTTGGAGTTCTCTGCCTTCTGGAGCAGCAGGAGACCCGGAC
ACGTACAACAAGCACCTGTTCTGTGCACATTGGCCAGTCCAGCCCAAGCTACAGCGACCCCTACCTCGAAGC
CGTGGACATCCGCCAAATCTATGACAAATTCCCGGAGAAAAAGGGTGGACTCAAGGATCTCTTCGAACGGG
GACCCTCCAATGCCTTTTTTCTTGTGAAGTTCTGGGCAGACCTCAACACCAACATCGAGGATGAAGGCAGC
TCCTTCTATGGGGTCTCCAGCCAGTATGAGAGCCCCGAGAACATGATCATCACCTGCTCCACGAAGGTCTG
CTCTTTCGGCAAGCAGGTGGTGGAGAAAGTTGAGACAGAGTATGCTCGCTATGAGAATGGACACTACTCTT
ACCGCATCCACCGGTCCCCGCTCTGTGAGTACATGATCAACTTCATCCACAAGCTCAAGCACCTCCCTGAG
AAGTACATGATGAACAGCGTGTGGAGAACTTACCATCCTGCAGGTGGTCACCAACAGAGACACACAGGA
GACCTTGCTGTGCATTGCCTATGTCTTTGAGGTGTGAGCCAGTGAGCACGGGGCTCAGCACCATCTACA
GGCTGGTGAAAGAAAGAGAGACTCGGGGAGCAGGGAGGGGGGAAGAGACGTGTGTGCAGGAAACGGGGACG
TGGGGAGGGGACCTGCAGGGGCAGCCCCCTGAAGTGCCAAGAGAGCTGAGAGGAGCAGTTGTGACTCTACC
CAGGAACAACTGTGCCTGAACCTGAGGTGCCCAACCCCAAATAAACCAAGATGCTGTGTATTTTCAGAG
GAAAA

LEGTAGTITSNEWSSPTSPEGSTASGGSQALDKPIDNDAEGVWSPDIEQSFQEALAIYPPCGRRKIILSDE
GKMYGRNELIARYIKLRTGKTRTRKQVSSHIQVLARRKAREIQAKLKDQAAKDKALQSMAAMSSAQIISAT
AFHSSMALARGPGRPAVSGFWQALPGQAGTSHDVKPFSSQTYAVQPPLPLPGFESPAGPAPSPSAPPAPP

WQGRSVASSKLWMLFSAFLEQQQDPDTYNKHLFVHIGQSSPSYSDPYLEAVDIRQIYDKFPEKKGGLKDL
FERGPSNAFFLVKFWADLNTNIEDEGSSFYGVSSQYESPENMIITCSTKVCSFGKQVVEKVETERYENG
HYSYRIHRSPLCEYMINFIHKLKHLPEKYMMNSVLENFTILQVVTNRDTQETLLCIAVFEVSASEHGAQH
HIYRLVKE

+++++

#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; ETFR-1; TEAD3

TCCTCAACACAAACTTTCCGTCCCGCTCGCTCCCTCCTCCGCGCTCGGCGCCTCCCGCTCCAGCCCGGCTC
ATTCCGCACATTCCGGCCAGCCCCCTCCCCACGACCCCCCTTCCCCGGCCCCCTTGC GGCTCCCTCGGGC
CCGGCGGAGCGGCCCGGCCGAGCGCCCCGCGAGCTCGGACCAGGCTCAGCCGCCAGTGGGCTCAGGCC
CAGAGCCAGAGCAACCAGCACAAATAGCGTCCAACAGCTGGAACGCCAGCAGCAGCCCCGGGGAGGCCCGG
GAGGATGGGCCCCGAGGGCCTGGACAAGGGGCTGGACAACGATGCGGAGGGCGTGTGGAGCCCGGACATCGA
GCAGAGCTTCCAGGAGGCCCTGGCCATCTACCCGCCCTGCGGCCGGCGGAAGATCATCTGTCAAGCAGAGG
GCAAGATGTACGGCCGAAATGAGTTGATTGCACGCTATATTAAGTGAAGACGGGGAAGACTCGGACGAGA
AAACAGGTGTCCAGCCACATACAGGTTCTAGCTCGGAAGAAGGTGCGGGAGTACCAGGTTGGCATCAAGGC
CATGAACCTGGACCAGGTCTCAAGGACAAAGCCCTTCAGAGCATGGCGTCCATGTCTCTGCCAGATCG
TCTCTGCCAGTGTCTGCAGAACAAGTTCAAGCCACCTTCCCCTCTGCCCGAGGCCGTCTTCTCCACTTCC
TCGCGGTTCTGGAGCAGCCCCCTCTCCTGGGACAGCAGCCTGGACCCTCTCAGGACATCAAGCCCTTTGC
ACAGCCAGCCTACCCCATCCAGCCGCCCTGCCGCCGACGCTCAGCAGTTATGAGCCCTGGCCCCGCTCC
CCTCAGCTGCTGCCTCTGTGCCTGTGTGGCAGGACCGTACCATTGCCTCCTCCCGGCTGCGGCTCCTGGAG
TATTCAGCCTTCATGGAGGTGCAGCGAGACCCTGACACGTACAGCAAACACCTGTTTGTGCACATCGGCCA
GACGAACCCCGCCTTCTCAGACCCACCCCTGGAGGCAGTAGATGTGCGCCAGATCTATGACAAATTCCCCG
AGAAAAAGGGAGGATTGAAGGAGCTCTATGAGAAGGGGCCCTAATGCCTTCTTCTTGTCAAGTTCTGG
GCCGACCTCAACAGCACCATCCAGGAGGGCCCCGGGAGCCTTCTATGGGGTCAGCTCTCAGTACAGCTCTGC
TGATAGCATGACCATCAGCGTCTCCACCAAGGTGTGCTCCTTTGGCAAACAGGTGGTAGAGAAGGTGGAGA
CTGAGTATGCCAGGCTGGAGAACGGGCGCTTTGTGTACCGTATCCACCGCTCGCCCATGTGCGAGTACATG
ATCAACTTCATCCACAAGCTGAAGCACCTGCCCGAGAAGTACATGATGAACAGCGTGTGGAGAACTTAC
CATCCTGCAGGTGGTCACGAGCCGGGACTCCCAGGAGACCCTGCTTGTCAATTGCTTTTGTCTTCAAGTCT
CCACCAGTGAGCACGGGGCCCAGCACCATGTCTACAAGCTCGTCAAAGACTAGGGTGCCCTCTGCGCCTCC
TTAAGGATGCAGGGTGAGCATCTCCTCTCCACACCTGCCTGGCACCCCTGGGGGGGTCCAGGATTGAGGAT
TCATCTACCTGCCAGGCCTCAGGCCAGGACCCAGGAGGCCTCCCCACCTACCCAGCACACACACTCCCT
GCCACTGTTCTGCGCTTTAATTGTGGGAGAAGAGAGGAGAGGAGGGCTCAGCGGTGGGGCAGCCTGTCCGG
GGCGCTGACCCACCATACCCTGCTCTGCCAGCCTCGCGTGACCTCAGAGAGGTGGGGATAGGGGACACC
TTCAGCCTCCAGCATGTGTGGCCACTGTACCCCAACCCCTTGGGGGAGCATGATGGGCAGGTGAGGGC
AGGATGGAGACCAAGGGAGTCAAGTGAAGCAGAGGCCCTGGGAGTGTCCGGTTGGGGTTGGACTGAGGACAGA
GGGGCCACACTTCTTGGCCCTTTGTGTCCAGGCCTGGTGCCAGACTCCTTGATGGCTTGTGTGGTC
CTCAGACTCCGCACAGCGAGCGTAGGTCTCTGGGTTTCAGATGAAGTGCCAGGCTCCAGGAAGTTGAGGG
ACCCACAGGAGAGGTGGGCAGAGCTGGAGTTCTCATCCAGGGCTGCTTGTCCCCAGAGCCCAGGTTTATAC
TACCTCCCTGGGGCGGGGGCTGGCCGAGGGTAGGGGAGAGGCTCTGCAGTGTGGAGTGGAGCCTCATCGA
GGGGCGCTGGGTTAGGGGAGCACCTGTTTCAGACTGGGCATGAAGAAGGGAGCACAGCAGCTACTAGACCC
CATTAGCACCTCATTAGCCACAAGCCAGCCAGGGGCCCCAGGAAGATGGGGCACCCCCAGCACCTCCA
GATTGAGAGCAAGGTAGAGGAAGGAGTCCAGCCTCTGGGCAGACCAGAGGCCAGAGGGAGAGAGTAGCA
GAAGGCTTTTGAATTTTCTCTTGCCTGAGGCTTGAATCTGACAAACCCTTGGTGGGCACTGCTCCCTTAGG
TTCTTCCCCACCTCAATCTACCTGCCTAGAGTAGCAGCTCCAGACCCAGTTCTGGGACTGAAGGTTAACC
CTTCACCTGCTGTCCCTTTTAACACCCAGGCCCCAGAGCCAGCTGGGCCTGTCCAGCAGCCACCTGTGG
GTATTTATGAGTTTCATATGAAGTACTGTGCCCTTCCCTTCTCATCCCGACCCTGCCCGAGCTTCTGA
AGGTCCTCACTGTTTGCATATCGCTCAGGCCACCTCCAAACCCACCTAGGTTTTATAATGTATATTATAT
ATTTTTTGTGTATTTTTAAATCCAGCTGTGATGGGTTATATCATAAATGCAGCTTGGGGTTGGAGCAGG

GGCCCTCAAAGGCCAGCTCCTGCTCAAAAAAAAAAAAAAAAAAATTAAAGTTATTTGTTTGTGGGTCA
GTCATGTAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

IASNSWNASSSPGEAREDGPEGLDKGLDND AEGVWSPDIEQSFQEALAIYPPCGRRKIILSDEGKMYGRNE
LIARYIKLRTGKTRTRKQVSSHIQVLARKKVREYQVGIKAMNLDQVSKDKALQSMASMSSAQIVSASVLQN
KFSPSPPLPQAVFSTSSRFWSSPPLLGGQPGPSQDIKPAQPAYPIQPPLPPTLSSYEPLAPLPSAAASVP
VWQDRTIASSRLRLLEYSAFMEVQRDPDTYSKHLFVHIGQTNPAFSDPPLEAVDVRQIYDKFPEKKGGLKE
LYEKGPPNAFFLVKFWADLNSTIQEGPGAIFYGVSSQYSSADSMTISVSTKVCSFGKQVVEKVETEARLEN
GRFVYRIHRSPMCEYMINFIHKLKHLPEKYMNSVLENFTILQVVTSRDSQETLLVIAFVFEVSTSEHGAQ
HHVYKLVKD

+++++

#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
GGCCACGGCCCCCGGCTGCCCGTGGTCAAACTGGAGTCGCTGAAGCGCTGGAACGAAGAGCGGGGCTC
TGGTGCGAGAAGGGGGTGCAGGTGCTGCTGACGACGGTGGGCGCCTTCGCCGCCTTCGGCCTCATGACCAT
CGCCATCAGCACTGACTACTGGCTCTACACGCGCGCCCTCATCTGCAACACCACCAACCTCACGGCCGGCG
GCGACGACGGGACCCCCACCGCGGGGGCGGCGGCGCCTCGGAGAAGAAGGACCCCGCGGCGCTCACGCAC
TCGGGCTCTGGAGGATCTGCTGCCTGGAAGGGTTGAAAAGAGGCGTCTGCGTGAAGATCAATCATTTCCC
GGAGGACACGGACTACGACCACGACAGCGCGGAGTATCTACTCCGAGTTGTCCGGGCTCCAGCATCTTCC
CCATCCTTAGCGCCATCCTGCTGCTGCTCGGGGGTGTGTGCGTGGCGGCCTCCCGCTCTACAAGTCCAAG
AGGAACATCATTCTGGGCGCAGGGATCCTGTTCTGTCGAGCAGGCCTGAGCAACATCATCGGCGTGATCGT
GTACATCTCCGCCAACGCGGGCGAGCCGGGCGGCAAGCGGGACGAGGAGAAGAAAAACCACTACTCGTACG
GCTGGTCTTCTACTTCGGCGGGCTGTCTGTTTCATCCTGGCCGAGGTGATAGGCGTGTGCGCGTCAACATC
TACATCGAGCGCAGCCGCGAGGCGCACTGCCAGTCTCGCTCGGACCTGCTCAAGGCCGGCGGGGGCGCGGG
CGGCAGTGGCGGGGAGCGGCCCTCGGCCATCCTCCGTCTGCCAGTTACCGCTTCCGCTACCGCCCGGCT
CCCGCTCTAGCTCCCGCTCCAGCGAGCCGTGCGCGTGGCGGACGCGTCTCCCGCGGCCCCGGGGGCCG
GGCTTTGCCTCCACGGACATCTCCATGTACACGCTCAGCCGCGACCCCTCCAAGGGCAGCGTGGCCGCGGG
GCTGGCGGGGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGG
GCGGCGGCGGAGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGGCGG
CACAACGCCTTCCCCAAGGAGGCGGCGGCGGCGGCGTACGGTACGGTACCGGGCGCCCGCCCCGCCGC
GCCCGCGCCACCGCGCCCTCTGCGCCCGCCCCGGGACCCTGGCCAAGGAGGCGCGCGCTCCAACACCA
ACACGCTCAACAGGAAAACCACGCCTGTGTAGGGCGCGGCGGGGAGCCGAGGGGCGTGTCCGGGGC

LESLKRWNEERGLWCEKGVQVLLTTVGAF AAFGLMTIAISTDYWLYTRALICNTTNLTAGGDDGTPHRGGG
GASEKKDPGGLTHSGLWRICCLEGLKRGVCVKINHFPEDTDYDHDSA EYLLRVVRASSIFPILSAILLLG
GVCVAASRVYKSKRNIILGAGILFVAAGLSNIIGVIVYISANAGEPGPKRDEEKNHYSYGWSFYFGGLSF
ILAEVIGVLAVNIYIERSREAHQSRSDLLKAGGGAGSGSGSPAILRLPSYRFRYRRRSRSSRSSEPS
PSRDASPGGPGPGFASTDISMYTL SRDPSKGSVAAGLAGAGGGGGGAVGAFGGAAGGAGGGGGGGGAGA
ERDRGGASGFLT LHNAPKEAGGGVTVTVTGPPAPPAPAPPAPSAPAPGT LAKEAAASNTNTLNRKTPV

+++++

#8

NM_016178

CUG initiation well conserved in mammals.

OAZ3 ornithine decarboxylase antizyme 3

Synonyms: AZ3; OAZ-t; TISP15; OAZ3

GTTGCCTAAACCTCTGCCACCCACCTGTGAACCTCACTTTGCCACAGGGAGGCACCTGAAGTGAAGAACTGC
CTTGTAAGAGGTGTGCGCCCTCTGTCTACTCCCTTTCTTATATCAAGAGGGGAAAAACACGTAACCTACCTC
TACCCGATCTGGTCAACATACGCCTATTACCTTTACTGTTACAAGTACCGGATCACTCTCCGGGAGAAGAT
GCTGCCTCGTTGTTATAAAAGCATCACTTAAGGAAGAGGAGGACTTGACACTCCAGCCCCGTTCTGCC
TCCAGTGCTCCTGAGTCCCTAGTAGGCCTCCAGGAGGGCAAAAGCACCGAGCAGGGTAACCACGACCAGCT
TAAAGAACTGTATTGGCTGGGAACCTTGACGGTGTGGCTACTGACCCCTGCTCCACCAGGACCCAGTAC
AGTTAGACTTTCACTTCCGCCTTACCTCCCAGACCTCTGCCCATTGGCACGGCCTTCTCTGTGACCGTCGA
CTCTTCTGGATATCCCATATCAGGCCTTGGATCAAGGCAACCGGGAAAGTTTGACTGCAACCCTGGAGTA
CGTGAAGAGAAGACAAATGTGACTCTGTGTTGTGAACCTCCAGAATGATCGGAACGACAGAGGTGCC
TGCTGCGGGCCTTCAGCTACATGGGCTTTGAGGTGGTCAGACCAGATCACCTGCCCTCCCTCCCTTGAC
AATGTCATCTTTATGGTGTATCCCTTGAAAGGGATGTTGGCCACCTGCCAGTGAGCCTCCTTGAACATG
CTTATTCCAACGCTTTGAGGGGCTGGAAGCCTTGACACATGGAATCAGGGGGCCGGGATGTGATTGAGGAC
ACTTTCATCCTAGGAATAAAGGGTAGTGCAATCAAAAAAAAAAAAAA

LPCRCPSPVYSLSYIKRGKTRNYLYPIWSPYAYYLYCYKYRITLREKMLPRCYKSITYKEEDLTLQPRS
CLQCSSESLVGLQEGKSTEQGNHDQLKELYSAGNLTVLATDPLLHQDPVQLDFHFRLTSQTSAHWHGLLCDR
RLFLDIPYQALDQGNRESLTATLEYVEEKTNVDSVFNFNQDRNDRGALLRAFSYMGFEVVRPDHPALPPL
DNVIFMVYPLERDVGHLPEPP

+++++

#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

TTCCGAACATTCTTAGCATCGCTCGCGCCGCGCCGCGCCTGAGCCGAGCCGAGCCTCTGCTGCCGCCG
CCGCGGCCCGCCGCCGCGCGCGGGCGCCACCAAGCACTTTGCAGACTCGCTTCCACCCTGCGGGCCATT
CCGCGCGGGCGGGGCCCGGGCGGGCGCGCTCCAGGCACAGGCCATGCAGTGACGCCCCCACCCC
TCCACCTTTGCCCGGAGCGCGGGCAGCAGCCAGCGCGCCAGCCGGCCCCGGGGCAGGAGCGGTGCTAGGC
AGGGGTGGGGTGGCCGGGCCAGGGACCGGGAGCCGGGGAGGGAGCCGGGCACCGAGCAGAGGGCGGGGA
AGCGGCGCCGAAGTTTGCCTCGGACTCGCCGGGCGCTGCGGTGGCTCCCTGGGCCGAGGACTGTTGCTGCC
GCTGCCGCGCGCTTCATTGCACATTCAAGTGAAAAATTTTCAGGAGTCAGCAGAAACATTGTGTCCAAA
AAAGACTGAGTCGCAATTACCACAAACCCAGGAGGAGACTCTCCCTGGAAAACTTCCCTTCCCTTTCCGT
TTATTTTCTTGAAAAGGCTCCAGGCTTCGGCTTGGAATAATCCACCGCCAAAATTGAGCCAGCAGCTGGA
GCGGCAGTGAGAGCCCTGCCGAAAACATGGAAAGGATGAGTGACTCTGCAGATAAGCCAATTGACAATGAT
GCAGAAGGGGTCTGGAGCCCCGACATCGAGCAAAGCTTTCAGGAGGCCCTGGCTATCTATCCACCATGTGG
GAGGAGGAAAAATCATCTTATCAGACGAAGGCAAAATGTATGGTAGGAATGAATTGATAGCCAGATACATCA
AACTCAGGACAGGCAAGACGAGGACCAGAAAACAGGTGTCTAGTCACATTGAGTTCTTGCCAGAAGGAAA
TCTCGTGATTTTCAATCCAAGCTAAAGGATCAGACTGCAAAGGATAAGGCCCTGCAGCACATGGCGGCCAT
GTCCTCAGCCCAGATCGTCTCGGCCACTGCCATTATAACAAGCTGGGGCTGCCTGGGATTCCACGCCCGA
CCTTCCCAGGGGCGCCGGGGTTCTGGCCGGGAATGATTCAAACAGGGCAGCCAGGATCCTCACAAGACGTC
AAGCCTTTTGTGCAGCAGGCCTACCCCATCCAGCCAGCGGTACAGCCCCCATTCCAGGGTTTGAGCCTGC
ATCGGCCCCAGCTCCCTCAGTCCCTGCCTGGCAAGGTGCTCCATTGGCACAACCAAGCTTCGCTGGTGG
AATTTTCAGTTTTCTCGAGCAGCAGCGAGACCCAGACTCGTACAACAAACACCTCTTCGTGCACATTGGG

CATGCCAACCATTCTTACAGTGACCCATTGCTTGAATCAGTGGACATTTCGTCAGATTTATGACAAAATTTCC
TGAAAAGAAAGGTGGCTTAAAGGAACTGTTTGGAAAGGGCCCTCAAAATGCCTTCTTCTCGTAAAATTTCT
GGGCTGATTTAAACTGCAATATTCAAGATGATGCTGGGGCTTTTTATGGTGTAAACCAGTCAGTACGAGAGT
TCTGAAAATATGACAGTCACCTGTTCCACCAAAGTTTGCTCCTTTGGGAAGCAAGTAGTAGAAAAAGTAGA
GACGGAGTATGCAAGGTTTGAGAATGGCCGATTTGTATACCGAATAAACCGCTCCCCAATGTGTGAATATA
TGATCAACTTCATCCACAAGCTCAAACACTTACCAGAGAAATATATGATGAACAGTGTTTTGGAAAACCTTC
ACAATTTTATTGGTGGTAACAAACAGGGATACACAAGAACTCTACTCTGCATGGCCTGTGTGTTTGAAGT
TTCAAATAGTGAACACGGAGCACAAACATCATATTTACAGGCTTGTAAAGGACTGAACATGGTTATTTATAT
ATATAGATATCTGTATATACACACACACATATGTGCACACACACACTCTCTCTCCATTATCGAACGACTGA
CTGTAAACCTCACCACACAGGGTGGTGCCCTGGCCCCGAGGTACCCCCGACTTTTTCTAAATCTTGTGTGAG
TGAAGTCATTTTTTTCATGTGTTTCATACTATCATTGTAGCTGTGAAGTTCTGGTACAGTTGTAAAAAGAGAA
ATTGAGTTGTTTTCTCTATGTTCTTCAGATGTGCAGCCACAATTCCTCGGGAAAGGTGAACCTGAACAACC
CAAGTCTCTCTCTGCAGAGCCCTGTTTCTAATTGTGGTAGAAAATATTGAGACAGAGCATTGTCATGGGA
CATTTACAGCCTTTATACAAATGTATTTAGTTCTCTTTTTTCCAACATAAAATTCTTGTTTTAAAGATACAA
GTAAAATTAATCTTTAAATATAAATGTAAATTAGTACACAAAATAAGAATCTTTAGACTTATCTTTGTAA
CTAATTAGGGTGGAAAGTTATGAAAGAATGTAAATCACTAAATTATTTTTTAAATGAAACCTTTTTTTTTCT
TTTTGAAACCAAATGTTAAACTATAGCCTTAAGAAATGCTTGGTAGAAGTGCCTAATGAGACAAATTTGT
ACTTTTATCCTCAAGGTTAACACTAATCTCCTAATCCATTAACTCTTGAACAGGTATTACAAAGGAAGAA
AACTTCACCCCTTATCCTTAACATATATAGTATATTTAAAAAATATAAAATTGTATTGTACTAATGTGATG
ATGGATTATTTAATGAAAAAGAAAAATGGCTCTTTTTGCAATAAGTAGATACATACTGAAAAAATCTAAA
CTTACAATGTTTATAGTCTTGTGTGTGCAGTTATATTTTATATGGACGACCAAATTTTTTATTAAGATGAG
TAAATATTTGAACCACTGAATTTTAATAACAAAATTTTAAAATTGGCATGAATACGGAATACTGCACTGTG
AGATGCAAAGTATACAGAATCTGTGGCTGGGAGAAAATTTTCATCAAATAGACAAGTAAAAGGCTCATCAGT
TTTAGCATCTCTGCTCCCCAGAAAATTGTAAGCATCCTCACCAGCCTGTGGATACATTCTTTATTTCTAGT
GACCCAATATGCATATTAACCTGCTATAACTAGGGCTATATGTGTAGGTATGTGTATACATATACACAAAT
GCACATATAGAGTTAACACATTTAGTGAACACTTGTGTAGTGTCACTCAGTTTGCTAGGTGCTGATATGTA
CGTATATCTCAATGTGTCTGTAGACTTAGATACATCCTCTTGAAGCACATCCATTTCTTTAGCGTCTCTCA
GTAAGTTACAGTACTTGTGTGACTTAGGTTTAAAGAGGCCAGCTACCTATCTCTGACCTTTTCAAATAGGC
TCATTTGGGAGATTCTTTTGGCAGGAGAGATTCAACTTCCAATCTAAGTATTCCAGAGCATTGCCAGGC
AGAGTTGGTTTGTGTGGCCAGATGTTTTGAGTTATTTCCCTTAAGTGTTTCACTGGGGAGAGAAAGGGA
GTGCTCCTCCAGCTTCCCAAAGAAATATGTTTTTGTAAAGTGGTAGGAACATGTGCACACAATAGAACATGA
AATAAGTTTTTTAACTTGTAAACATGTCAAGATTTTTCCACCAAGCTAGAAAATAAAAAACTTAGTTCTA
CCACATCCAATTAACCTACACACCCCTTCCCTGTCTCAACACCTGCTTTGACCCTGCTTTTCTATTATTA
CATCAGTCAGCATCTTGTGGTCCCTAACATGAGGATGTGGCTGGCTCGTGGGAAACAGCAAAACACTAAGC
CTGACCTCTCCCAAATTGGGAAGACCAGAGGAGAAAGTGCAAACTGTCCCCATTTGGAATGCCCATTCCT
TCTAGAAACCAAGTTGGACAGTGCTCCTCTGCCCTTCATAAACAGACTACTGTTGGGTCCCTGATTCCAGGC
TGGCCTGTGAAGGATTGCCCCAGGTGTCCCTTTACGGTTGTACATTTACAGTGACTTCTGTTGAACAC
CCCTCTTAGGGATGTTTTCTTTTGTCTTATTTCTGCATCTTTCTTAAGGGAAGCCCCATCCTCTCCCAG
GACCAGGAGTTTATGACCAGGCGAGCACAAATGGCTAAAAGCCAAGCTGTCTAGAACTTCAGTGGGAGAG
CTGTCTGGTTTCATATTCTACCCAGGAATGGTACTTTTCAGTGCAGCCAGGAGGGCTCTTGGGATTTCTTTT
CCAAAGCACAAAATACTGGGACCCAAGAAGAACAGCTAGAGGACAACCTCTGTTGGCACAGAGACGGGGAC
AGCCCAGTCTGCTGACCTCACAGGGTCAGCTGGGCCCCCTGGTGCTTACCACCTGCATCCTCTTGCTCA
GAATGCCTTTGCAGTTGAGTTTTCTGGGTTTTCTATGATTGACCTTGAGGTTTACTCCTTGCTCTTACAACA
TTTCTAAGGATTTTTTAAAGTTTTACTTCTTGCTTGTCTTCTTCTAAAGCTTTCTCCAGGACAGATATTTTCC
CTGTCTTAACCACTGGTCCAGTCATCCAGTGGGCTTCTCTTTGTCTCTCCAGATTAGACCTTTGGGTGA
GATTGGCATCACAACTAATCTGAGTCTGTCTTTTGTCTTCTTCTTCTGATGGCAGTCTCCCTTTGTTA
TAAAAGCTTTTCTAAAGCATACTAAAGAAGCCTTCCAGAGCCCCGTCTTGCTTCTCTCCAGGTGCTCTAT
CCCCTCGAGACCTCTGGTGCCAGGCTTGCTTACGGCCATCTTGTGTTGTCACTGCAGAGTTTGGAGGCC
AGTTTTCCACAGCCTAAACAGGGAGGAGCTGCAGAATGGGGCTCTGGTCTCTGGGCATTCTTTCCCTCAT
AGAGGCTGAGAATAAAACAAGGACTTATTCACACATGTTCTAGAACCCCAGAATGGCCCAAGTTACCTGAG
ACCAGGGTTTCTCAACCTTGACACCATTGACATTTTGGACTGGGTAATTCTTTGTTCTGCAGAGCTGTCT
TTGCACTGTAGGAGATTTACTAATATCCCTGGCCTCTACCCAGTAGTACCACTAGCACCTATCCCCACCC
AGCGTGTCTCCAGATATTGTCAAATATCCCATCGGGTGCAAAATGATCCCTGGTCAAGATCTGTTGCCCAA
GATGTTACAGGTCACAATGACCACATTTGAAATTGTTTTCCCTTTTCAATTTACCCTGTGAAAGCATCTCTC
CTAGAGCCTTGCAAGAGGCAGGTGACATTGTGTCCATATTTCTTCTGTTTCAAGACTTCTGTTTCAAC
AATTTCTCTCTCGCTACAAGTATTCTTTCACTCAGCACTGGGGAAGTTGGGAACAGCTGGTCACCATCATC
CCTTTAATCAACTCACACCTGTTTAAAGAGTGTCTGATTTGACCTTCATCCCTTAGTTTACTGGCGTTA

AAAAAAGTCTCAGCAATTTCATTATTCTCTGTTGGGTCTCATTATCAAACCTTTACTTATTTTCGGCATATT
 TCCTCTGGGCTTCTTCTAGTTTTCTGCCTTACAAGCAATGCTGTTCTGTAAATTTATTGAAACCTCTGGAAC
 ATTTACACCTTTAGAGATGGAGGATGGAAGGATTGGTACCAGAAGAGGGCTAAGATACGTTTTCTGTCTTGA
 GCTGAAAGCACAGTCTACTCTCCTTCGTTTTGTCTGATGAGAAAGTTGAGGCCAGAGGGGAGGTGACATGTT
 TAGAGTCACCCAGCTGGTTAGTGACAGAAAAAGCGTGAGAGTTGTCTAGGATTCCCTGCCACTTTGGTCCCT
 GGCTCTCCTGGGGGAGGCTGCTGTTCTTAGGTGCTCTAAGCTTAATCCCTCAGAATGTGTGGACAGGTCA
 GCTTAGAAGAGATGGGGAGATTGAGGATCCCCCTGTGCCAGAGCACAGCCTCACCGGATGCTGCTTCCCAC
 ACTGAAGTGTCTGTCCGACCATTGCTATCTGAGGCATCCACAAGCAGGTAGGAAAAGCTGGCGAGCCATTT
 TACTTCTTGAGGACAATTCCCCAGCCACAGGCTCTGAGTCAAATTTCTATTTGGTAAGCATCCTAGCAGCA
 AAGTCTTGACATCAGACCAGCCAAAAAACAGCCCCATTCCAAGTACTTGGTGTCAAAAGTCCCCGAAACGA
 CTTTTAAACCCAAGTCTTCTTAAGGTTTTAGTACTGTGGTGGCTTTAGCAGTTGTTTTGTGCAACTATAA
 ATTTATTTAAATCATCTGAGATGACAGTCAAGATTTTACAAACCAAGGTACATATTAATTTGTATAATTTTGTAT
 ATGCTCTGGTACACTACCTGAACTAACGAAGGGTAGAACTAATTTCTGTTTGTGAGTGTTCACACCTGTAAC
 ATTAGGAGGATATGCTGTCATTGCTTATTTCTTTATGTTGGTGTCTGTGGCAAAGCCCTGCACATGGCA
 TTTCTGAAAAGCCTTAAATCTTTAAGATGTTGCATGTAGGGTATGCAGTGCAAAAGGCTGCCTCAGAACTG
 TGAGCCCTTTTGAAGCTGGAAGCATTTCTCTTACTACTGTTACTTTTGTAGGAAGTTTTCAATTCAGAGC
 TGCCAAAGGTTTCCCGTAAGCAGTGCCTTAGTAATACCTTAGTCATGCCGCCAGCCTTTTCTTACACCAAT
 TCCTAATGTTCAATTTACGAATTGGCCCAATATTGGAACAAAAACAAGCAAAATTTGTCTTCATTTTTGT
 TGTAAAGCCCATTTTTCTCCAGTTCTATAGGAAACTGACTGCTTGGTGTAAAATCCGAAACTGGACACAAG
 TCAGTTCTTTCACCACACTCAAATGTATATACCAAAACAAAAGGTTGCAACTTCATAGTTTACTATGAAAA
 GCAAATTTGACTTTTTAATGTTGCCTTTTAAATTCATGACCAAATACTTAGCTATTTGTGAATCTTCTGCA
 CTCTAGCATGAAAGTGCCTTTGGTTTGAGATTCCAGCTTAGAAAAAGTGCTGCCATAATAACGATAATTTGT
 AGAGAGACCAAAAAATTTTTGAGATCACCGTAATGCCTTTGGTTTACCGGGATGAGTAACCAACCACAGGC
 CTCTGTTTACAAGAGCACGACGTGGTCCCCGCCCTGCTGAGTCTGTCTGCCACTGGGGGCCCTCCAACAT
 CCATAGCACACTTACGCGGAAGGACCCCAAGAACTGTTGTGTTTTGTGTGCTGATGACCTAGTGTGTCAT
 TTCACCTCGTCAACCCAGCCCTGCGTCCGGATGAGGGGACTTCTGCACAAATGACAGAATCTCGGTGGTGG
 ACAGATACTACAGCTTTCTCCTCCTCCTTGTGTTCTGTGTTGAGTCTCTGTGGAGACTTTCTTTTCCATTCA
 AATGACAGTGCGCACTTATCTGGTTTACACAATGATACCATTTTAAAAGTTGGAAGCCTCAAACAGAGACG
 ACAGTGCAGAACAAAAACAAAAGTGAGTTAGGGTCGTTAAAATTTGAAGTGTCTTCTTAGGGCAAACATGTT
 GACTCCGAGTATTGTGTATGAATGTGCTACGAGAACTTCCAAAGAGCACCATTACAATTTGGCATTTC
 AAAGAATGTTCCAGCCCTCAAAGGGGCAACTCTTTAAAGTCCCTGTTGGCTTTTATCCAAACCTTGTAAGAA
 ATTGGGAAAGCTGATAGAGGTAAGGAAGACGAGTGAAAAGGACAAGAAGGCCAAACACCAGCCAAAAAGAA
 ACTAGGAAAAAAGATTTTCTTTGCTAATATAGATGTAAAAATAACATCAGACATCTTTGAAAAATTAGCCT
 CTAACCTCTTAATACATACGTTCTGTGTGCTCTACCTGGCGTCTTTAAGAATATCCTCTCTGGGCTCTGA
 AATTTTAGGAGTGATTCTTATCCACTCCAAGTTGTAAGTATTTGTAGAAATTTGTGCAAAACAAACAAAAAC
 TATCAAATGAAAAGAAAAATGACTCAACCTAACTTATAGTTAGCAGCTGGAATTCTCAACTCTTCCCTGCC
 AGCACTATACCACAGTGTGGAAGAAATTAGTCAAATGCTTGTCTTCTGCTTCTCTTTCAACTGTTACTG
 TGTCTTGTGTTGAAAAGTAGTTTTCTCTCAAAGCCGTGCTTATATCGTTAAGAATGAAGGTTTGTGTTTAA
 AAATTTATTGCAATTGCAAGGGTAGTTTCTAGTGAAGTCATGCACCAATTAATAAGATGAAATATTTGTATT
 TATTGTCCCTACTTCTCAAGCCGTAACCTCTTTTCTCTGTGAAATTTGCATTTGAGTCACTCATGTACACTA
 CATCGCTTTAGTATTTGAGATGGCATTATGTTTTCTCTCGTTTATCATGAAATGGGGTCAGATTCCATCA
 GATTCCACCTCTGTGAGGTGGACTCTTGTCTGCCCTCCATGATGAGATTTTTTTTTCTCCTTCCCTTTCTT
 TAAGAGAGGCTGACAGATCTAGGTGTCAATCAATTGGAACCCAGTCTCTGATTTTTTTTTTCAATAGTTATTT
 TCTATCATTAGTTTCACTGTGTAAATTAGATATCAACTGCACCTCTTTAAAAAATAACATCTCCCTATT
 ACCTCCTTGAAAGATTTACTTCTGTAGGCCTTTTTCAATAGGCTCATGACTGCAGACAAGGAAAAAAG
 TAAAAACAAAAACAGTATGTGCCTGAAAAATGACAAAAAATAATTTGTAACATTTAAAAAAGAAACCTGAA
 TAGCCTTTAATCTTTAATAATACACTTAAATTTTATGTAATCGGTTTTCGCCACGTGTGTTTGTTCACA
 TTCTAAATGACTTAATGGGATTCTCACGGTCTGTGCTTTGTGTACAGTGTATAAAATGGGCTTGTGATGT
 AAGCGTTTCATCTGGTCAGTGGTTCCCTTTGATATTGACTGCTGCTGGGAGTGGGCTGTGGAACCTGCCCT
 CGGGTAACTGGGTTCCCTTGGGTAGATTGGAGAGATGGGGTGGGCGTGGGCAAAATTCACACATGTTT
 TCTTAACCTATTTGCAGAAACTTTCAAAGGCATTTGATTAACCTCTTGGCAGTACAGTATTCTTGTATT
 TGTAAACGTCTGTGTTTAGGTACCTGGTACCTTTTTGTGTTTTAAATGTTCTAAGTGTGGCTTTAAAGTGAA
 TTTATCTTTAGTATGATAGTTATAGAAAAATATAGGATTTGTGTGAGAAATTTTTTATAAAGTGCTT
 TGTAAAAAATAAATAATGATTCTAGCTTTTTGCGGTACATATGTGTGATAACTTTAATACCCATGACAGTT
 AAGTGCAATTATTTCACTCACTCTAAAAATGCTATTTTTGTGTGAGTTCCTGCAGGTGTTTTCATGTCTTTG
 CAAAGTGACACATTTTGATGCCCTTCTTGATAAAGTGGTAGACATTTTGTAGCTTTCTAGAAAATTTGTATT

CATACGGTATCAATGAAAAATAAAGAAAATGAAAGTGTTGGGTCACCTTTTTTATCTGCAAAAAAAAAAAAAA
AAAAA

LENPTAKIEPSSWSGSESPAENMERMSDSADKPIDNDAEGVWSPDIEQSFQEALAIYPPCGRRKIILSDEG
KMYGRNELIARYIKLRTGKTRTRKQVSSHIQVLARRKSRDFHSLKLDQTAKDKALQHMAAMSSAQIVSATA
IHNLGLPGIPRPTFPGAPGFWPGMIQTGQPGSSQDVKPFVQAYPIQPAVTAPIPGFEPASAPAPSVPAW
QGRSIGTTKLRLVEFSFALEQQRDPDSYNKHLFVHIGHANHSYSDPLLESVDIRQIYDKFPEKKGGLKELF
GKGPQNAFFLVKFWADLNCNIQDDAGAFYGVTSQYESSENMTVTCSTKVCSFGKQVVEKVETEYARFENGR
FVYRINRSPMCEYMINFIHKLKHLPEKYMNSVLENFTILLVVTNRDTQETLLCMACVFVSNSEHGAQHH
IYRLVKD

+++++

#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

GTAAAGTTGGAGCCGACTCAGCGGCGGCCCATTTTGTGCAGTCGCTGGGAAGGAAGGAGACGCCTAAAC
CGCGGCACTGCCCGGTTTGAGCGTAGCCAAACCTGCCACCGGCTTTGTAGCCCCGATTCTCTGTGTTTTG
CTCCCGTCTCCGACGAGAGAGGCGGCGAAGGTTGGCGTCTGCGACGGGAGACAGCGCTCGGAGCGAGAGAG
CGCTGCGCCTGCCGCCGCCAACAGCGGAGGCGCGCGCCATCGGTCTGTCACCAGACCGGAGCCGCAGG
CCCTCCCGAGCCCGGCCATCCGTGCCCCGCTCCAGATCTCTATCCTTTTGGGACCATGCGCGGAGGAGGC
TTTGGGACCGGGACCGGGATCGTGACCGTGGAGGATTTGGAGCAAGAGGTGGTGGTGGCCTTCCCCGAA
GAAATTTGGTAATCCTGGGGAGCGTTTGCCTAAAAAAGTGGGATTTGAGTGAGCTCCCCAAGTTTGAGA
AAAATTTTTATGTGGAACATCCGGAAGTAGCAAGGCTGACACCATATGAGGTTGATGAGCTACGCCGAAAG
AAGGAGATTACAGTGAGGGGGGAGATGTTTGTCTAAACCCGTGTTGCCTTCCATCATGCTAATCTCCC
ACAATATGTAATGGATGTGTTGATGGATCAGCACTTTACAGAACCAACTCCAATTCAGTGCCAGGGATTTT
CGTTGGCTCTTAGTGCCCGGGATATGGTGGGCATTGCTCAGACTGGCTCTGGGAAGACGTTGGCGTATCTC
CTGCCTGCAATTGTTTATTAACCACAGCCATACTTGAAAGGGGAGATGGCCCAATCTGTCTAGTTCT
GGCTCCTACCAGAGAGCTTGCCAGCAAGTACAGCAGGTGGCCGATGACTATGGCAAATGTTCTAGATTGA
AGAGTACTTGTATTTATGGAGGTGCTCCTAAAGGTCCCAGATTCGAGACTTGGAAGAGGTGTTGAGATC
TGCATAGCCACTCCTGGACGTCTGATAGATTTCTGGAGTCAGGAAAGACAAATCTTCGCCGATGTACTTA
CCTTGATTGGACGAAGCTGACAGAATGCTTGATATGGGGTTTGAACCCAGATCCGTAAAATTGTTGACC
AAATCAGGCCTGATAGGCAGACACTGATGTGGAGTGCAACCTGGCCAAAAGAAGTAAGACAGCTTGACAG
GATTTCTTCGTGATTACACCCAGATCAACGTAGGCAATCTGGAGTTGAGTGCCAACCAACATCCTCCA
GATAGTGGATGTCTGCATGGAAAGTGAAGAAAGACCACAAGTTGATCCAATAATGGAAGAAATAATGGCTG
AAAAGGAAAACAAAACAATAATTTTGTGGAGACAAAGAGACGCTGTGATGATCTGACTCGAAGGATGCGC
AGAGATGGTTGGCCAGCTATGTGTATCCATGGAGACAAGAGTCAACCAGAAAGAGATTGGGTACTTAATGA
GTTCCGTTCTGGAAAGGCACCCATCCTTATTGCTACAGATGTAGCCTCCCGTGGGCTAGATGTGGAAGATG
TCAAGTTTGTGATCAACTATGACTATCCAAACAGCTCAGAGGATTATGTGCACCGTATTGGCCGAACAGCC
CGTAGCACCAACAAGGGTACCGCCTATACCTTCTTCAACCCAGGGAACCTAAAACAGGCCAGAGAGCTTAT
CAAAGTGCTGGAAGAGGCCAATCAGGCTATCAATCCAAAACCTGATGCAGCTTGTGGACCACAGAGGAGGCG
GCGGAGGCGGGGTAAGGGTGGTCTGTTCTCGTTACCGGACCACTTCTTCAGCCAACAATCCAATCTGATG
TATCAGGATGAGTGTGACCGAAGGCTTCGAGGAGTCAAGGATGGTGGCCGGAGAGACTCTGCAAGCTATCG
GGATCGTAGTGAAACCGATAGAGCTGGTTATGCTAATGGCAGTGGCTATGGAAGTCCAAATTCTGCCTTTG
GAGCACAAGCAGGCCAATACACCTATGGTCAAGGCACCTATGGGGCAGCTGCTTATGGCACCAGTAGCTAT
ACAGCTCAAGAATATGGTGTGGCACTTATGGAGCTAGTAGCACCACTCAACTGGGAGAAGTTCACAGAG
CTCTAGCCAGCAGTTTAGTGGGATAGGCCGGTCTGGGCAGCAGCCACAGCCACTGATGTCAACAGTTTG
CACAGCCTCCGGGAGCTACCAATATGATAGGTTACATGGGGCAGACTGCCTACCAATACCCTCCTCCTCT
CCCCCTCCTCCTCCTTACGTAATGAAACCACTCAAGTGGTAGTGACTCCAGCAGACTTAATTACATTTT

AAGGAACACTGTCTTTTCTTTTTTTTTCTCTTCGCCCTTTTCTTTTTTTTTCTTTTTTCTTTTTTTTTT
TTAATTTTTTCCCCCAACCATCGTGATTTGTCTTTTCATGCAGATTAGTTAGAATTCAGTCCAGGTTTCT
TCTGCCACCAAAATGATCCAGTCTGGAATAACATTTTGTAAAAAATATATATATATATATATATAT
AGCTGACTGGAAGAGATTAATTTCTTCCCCCACTTCTTGCATGTTGAAGATATTTGAGCTATTTTCATC
TAAAGAGTAAGGTATTAGGCCCTTTTGTGGGAGCCCCATGTTTTGTTTTCTGAGTTGGTGGGGAGGGAG
GGAGGGGGAGGGCTGAATTGTTTTGCAGAGGAAGATGGCATCTGTGCTTTAAATTTCTCATTACTGGGTTA
GAAAACAAAGAGGGATTGCCCTGCACATTTTCTTTTGTGCTTTTAAATGTTTCTTAAGTTGGAACAGGTTT
CCTCGGGCCTGTTTTGACTGATTGCTGGAGTGCATTTGATAGTTAAAAATTACTAATTGGTTTTATTTCCC
TTCACACTCTGCCTCCCCACTTCTCCCCCGTTACTGAAAAATAACCATTTTAGTGTCAGGCTAGAAATTG
AATTGCTGAGTTTTGTGTATCCTTTAAATTAACCAAGTGTATTATTGTAGTGGTTAACTGTAGCAT
CTCAGCATCTGGGTGGAAGCTGCCTATATTTCTTCCAGTTTAACTGGGGACCATCTGTGAAATTAATTTT
CCTCCAGACAGCTGCTGTGAGCAAATGAACATAAATGCTCGCTGGAAATTTACTAACCAGTTTTATATT
GACCTGCAGTGTAAGGACACATTTAATTATAAACAATATATTCAAAATGGGCAAATTTATTTTCAAATG
CAGTGATAGAGCTAGATTAAGCAACTCTTGGCACCTACTCTGCCCTTTTGGCAAAGTTACCTTGAACAA
AGAATCTTAAGGGTTTATTAAGAACTCTTATTTTCTTCATACCCTGTTCTCTGCAGTGCTTTCTAACAGC
TTCTGGGTGCAGATTTTCTTGGCATCCTTTGCACTCAGCTTATTACAGGTAGGTAGTGCTTAAGAAAAG
TCATGGAGGACTAAAGCCTAAGTCCTTTTCACTTTTCTCCATCTGAAGGTAGGTGAGTTCATCTCTTCA
TGGTAATGCTGTTTTACCAAGACTTTATAGCAGATGGACCCAGAAAGAATTTTCTGCTATTGTGTTCACTA
CAACAGGATAGGGACATCAGACAGCCCCAGAAACCCCTTCCAGATCTGATATGGGACTATTAATTTTTATG
CTGTTAATTGGTATTCATTACAATGCAGTTGAAGGGGAAGGCTCCACTGCATTCTTTGGCTAAGGCCTG
AATGCTTGCTCATCTGTAAGATCTATACTCGAGTTTTGTTTTCTTTTAAATTTCTTTAGGGAGAGAGGG
ATGTTTTCTGAGGGGTTCTGAAAGTATGATTCAATGTGCAACATACAGGTAGGTCTTCAGCATAAGCTGAA
ATATATGCATGTAAAACTTTGACATCTTTTTTTTTAATTTTCCACTTTCTTCTTAACCTTTACTTCTCTT
TTGTCCCCCCCCCATCTTACAGAAGTTGAGGCCAAGGGAGAATGGTAGGCACAGAAGAAACATGGCAAAT
GCTCTGTGCTTTCAAACCAAAGTGTTCCCCCAACCCCAATTTGTCTAAGCACTGGCCAGTCTGTTGTGG
GCATTGTTTTCTACAACCAAATTCTGGGTTTTTTTTCTTCTTTCTTTAAACATAGAGGTACCACCACAAGGG
ATGCCCTACTCTCTCGCAGCTCTTGAAGCATCTGTTTGAGGGAAAGGTCTCTGGGCAAGCAAGTGTTAT
TTGGATTGCTTGCTTCCCTTTTTCCACCTGGGACATTGTAATCATAAAATAACAGTAAATTTCAAACCTCA
AAAATATTATGGCCTGAGCACAGCTGAAATCTAGCAGAGTTTAACTCTTCTGCCTCCATGTCTGTCACTT
ATAATTCAGGTTCTGCTGTTGGCTTCAGAACATGAGCAGAAGAATCGTTTTATGCTAGTTATTGCATTCAT
GGTTGAAACTCAACTTAGGGAAAGGGTTCCAATGTATTAAGCAATGGGCTGCTTCTCCCAATCCTCCCTA
ACAATTCGTTGTGTGGACTTCTCATCTAAAGGTTAGTGGCTTTTGTGTTGGGATCAGTGCTCTCTATTGAT
GTTCTTGCTGGTCTCCAGACACATTCCTGTTGCATTAAGACTTGAAAGACTTGATAGTGTGTGATGTTTCA
GCACAGGATGCTGAAAGCTATGTTACTATTCTTAGTTTGAAATTGTCCTTTTGATACCATCATCTTGTTT
TCTTTTTGTAGGTATAAATAAAAAACTGTTGACAATAAAAAAAAAAAAAAAAAA

TVASATGDSASERESAAPAAAPTAEAPPSVTRPEPQALPSPAIRAPLPDLYPFGTMRGGGFGDRDRDRD
RGGFGARGGGGLPPKKFGNPGERLRKKKWDLSELPKFEKNFYVEHPEVARLTPYEVDLRRKKEITVRGGD
VCPKPVFAFHANFPQYVMDVLMQHFTEPTPIQCQGFPLALSGRDMVGIAQTGSGKTLAYLLPAIVHINH
QPYLERGDGPICLVLAPTRELAQQVQQVADDYGKCSRLKSTCIYGGAPKGPQIRDLERGVEICIA TPGR LI
DFLES GKTNLRRCTYLVLDEADRMLDMGFEPQIRKIVDQIRPDRQTLMWSATWPKEVRQLAEDFLRDYTI
NVGNLELSANHNILQIVDVCMESEKDHKLIQLMEEI MAEKENKTIIFVETKRRCDDL TRMR RDGW PAMCI
HGDKSQPERDWVLNEFRSGKAPIL IATDVASRGLDVEDVKFVINYDYPNSS E DYVHRIGRTARSTNKG TAY
TFFT PGNL KQARELIKVLEEANQAINPKLMQLVDHRGGGGGGGKGGRSRYRTTSSANNPNLMYQDEC DRRL
RGVKDGGRRDSASYRDRSETDRAGYANGSGYGSPNSAFGAQAGQYTYGQGTYGAAAYGTSSYTAQEY GAGT
YGASSTTSTGRSSQSSSQFSGIGRSGQQPQLMSQQFAQPPGATNMIGYMGQTAYQYPPPPPPPPSRK

+++++

#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

GGCTTGGGGCAGCCGGGTAGCTCGGAGGTCTGGCGCTGGGGGCTAGCACCAGCGCTCTGTCTGGGAGGCGC
AGCGGTTAGGTGGACCGGTACGCGGACTCACCGGCCAGGGCGCTCGGTGCTGGAATTTGATATTCATTGAT
CCGGGTTTTATCCCTCTTCTTTTTCTTAAACATTTTTTTTTTAAACTGTATTGTTTCTCGTTTTAATTTA
TTTTTGCTTGCCATTCCCACTTGAATCGGGCCGACGGCTTGGGGAGATTGCTCTACTTCCCAAATCACT
GTGGATTTTGGAAACCAGCAGAAAGAGGAAAGAGGTAGCAAGAGCTCCAGAGAGAAGTCGAGGAAGAGAGA
GACGGGGTCAGAGAGAGCGCGGGCGTGCAGCAGCGAAAGCGACAGGGGCAAAGTGAGTGACCTGCTTT
TGGGGGTGACCGCCGGAGCGCGGCGTGAGCCCTCCCCCTTGGGATCCCGCAGCTGACCAGTCGCGCTGACG
GACAGACAGACAGACACCGCCCCAGCCCCAGCTACCACCTCCTCCCCGGCCGGCGGGCGGACAGTGGACGC
GGCGGGCAGCCGCGGGGACGGGGCCGGAGCCCCGCGCCCGGAGGCGGGGTGGAGGGGGTCTGGGGCTCGCGGGC
TCGCACTGAAACTTTTCGTCCAACCTTCTGGGCTGTTCTCGCTTCGGAGGAGCCGTGGTCCGCGCGGGGGAA
GCCGAGCCGAGCGGAGCCGCGAGAAGTGCTAGCTCGGGCCGGGAGGAGCCGACGCCGAGGAGGGGGAGGA
GGAAGAAGAGAAGGAAGAGGAGAGGGGGCCGCACTGGCGACTCGGCGCTCGGAAGCCGGGCTCATGGACGG
GTGAGGCGGCGGTGTGCGCAGACAGTGTCCAGCCGCGCGCGCTCCCCAGGCCCTGGCCCGGGCTCGGGC
CGGGGAGGAAGAGTAGCTCGCCGAGGCGCCGAGGAGAGCGGGCCGCCCCACAGCCCGAGCCGGAGAGGGAG
CGCGAGCCGCGCCGGCCCCGGTGGGCTCCGAAACCATGAACCTTTCTGCTGTCTTGGGTGCATTGGAGCC
TTGCCTTGCTGCTCTACCTCCACCATGCCAAGTGATGCCAGGCTGCACCCATGGCAGAAGGAGGAGGGCAG
AATCATCATGCAAGTGGTGAAGTTTATGGATGTCTATCAGCGCAGCTACTGCCATCCAATCGAGACCCTGGT
GGACATCTTCCAGGAGTACCCTGATGAGATCGAGTACATCTTCAAGCCATCCTGTGTGCCCTGATGCGAT
GCGGGGGCTGCTGCAATGACGAGGGCCTGGAGTGTGTGCCCACTGAGGAGTCCAACATCACCATGCAGATT
ATGCGGATCAAACCTCACCAAGGCCAGCACATAGGAGAGATGAGCTTCTACAGCACAACAAATGTGAATG
CAGACCAAAGAAAGATAGAGCAAGACAAGAAAAAAATCAGTTCGAGGAAAGGGAAAGGGGCAAAACGAA
AGCGCAAGAAATCCCGGTATAAGTCTTGGAGCGTGACGTTGGTGCCCGCTGCTGTCTAATGCCCTGGAGC
CTCCCTGGCCCCCATCCCTGTGGGCTTGTCTCAGAGCGGAGAAAGCATTTGTTTGTACAAGATCCGCAGAC
GTGTAAATGTTCTGCAAAAACACAGACTCGCGTTGCAAGGCGAGGCGAGCTTGAGTTAAACGAACGTACTT
GCAGATGTGACAAGCCGAGGCGGTGAGCCGGGACAGGAGGAAGGAGCCTCCCTCAGGGTTTGGGAACCGA
TCTCTCACCAGGAAAGACTGATACAGAACGATCGATACAGAAACCACGCTGCCGCCACCACACCATCACCA
TCGACAGAACAGTCCTTAATCCAGAAACCTGAAATGAAGGAAGAGGAGACTCTGCGCAGAGCACTTTGGGT
CCGGAGGGCGAGACTCCGGCGGAAGCATTCCCGGGCGGGTGACCCAGCACGGTCCCTCTTGGGAATTGGATT
CGCCATTTTATTTTTCTTGCTGCTAAATCACCGAGCCCGGAAGATTAGAGAGTTTTATTTCTGGGATTCT
GTAGACACACCCACCCACATACATACATTTATATATATATATATTATATATATATAAAATAAATATCTCT
ATTTTATATATATAAATATATATATTTCTTTTTTAAATTAACAGTGCTAATGTTATTGGTGTCTTCACTG
GATGTATTTGACTGCTGTGGACTTGAGTTGGGAGGGGAATGTTCCCACTCAGATCCTGACAGGGAAGAGGA
GGAGATGAGAGACTCTGGCATGATCTTTTTTTGTCCCACTTGGTGGGGCCAGGGTCTCTCCCCTGCCA
GGAATGTGCAAGGCCAGGGCATGGGGGCAATATGACCCAGTTTTGGGAACACCGACAAACCCAGCCCTGG
CGCTGAGCCTCTCTACCCAGGTGAGCGGACAGAAAGACAGATCACAGGTACAGGGATGAGGACACCGGC
TCTGACCAGGAGTTTGGGGAGCTTCAGGACATTGCTGTGCTTTGGGGATTCCCTCCACATGCTGCACGCGC
ATCTCGCCCCCAGGGGCACTGCCTGGAAGATTAGGAGCCTGGGCGGCCTTCGCTTACTCTCACCTGCTTC
TGAGTTGCCAGGAGACCACTGGCAGATGTCCCGGCGAAGAGAAGAGACACATTGTTGGAAGAAGCAGCCC
ATGACAGCTCCCCTTCTGGGACTCGCCCTCATCTCTTCTGCTCCCCTTCTGGGGTGCAGCCTAAAAG
GACCTATGTCTCACACCATGAAACCACTAGTTCTGTCCCCCAGGAGACCTGGTTGTGTGTGTGTGAGT
GGTTGACCTTCTCCATCCCCTGGTCTTCCCTTCCCTTCCCGAGGCACAGAGAGACAGGGCAGGATCCAC
GTGCCATTGTGGAGGCAGAGAAAAGAGAAAGTGTATATACGGTACTTATTTAATATCCCTTTTTAAT
TAGAAATTAACAGTTAATTTAATTAAGAGTAGGGTTTTTTTTTCAGTATTCTTGGTTAATATTTAATTT
CAACTATTTATGAGATGTATCTTTTGCTCTCTCTTGTCTCTTATTTGTACCGTTTTTGTATATAAAATT
CATGTTTCCAATCTCTCTCTCCCTGATCGGTGACAGTCACTAGCTTATCTTGAACAGATATTTAATTTTGC
TAACACTCAGCTCTGCCCTCCCCGATCCCCTGGCTCCCCAGCACACATTCCTTTGAAATAAGGTTTCAATA
TACATCTACATACTATATATATATTTGGCAACTTGTATTTGTGTGTATATATATATATATATGTTTATGTA
TATATGTGATTCTGATAAAATAGACATTGCTATTCTGTTTTTATATGTAAAAACAAAACAAGAAAAATA
GAGAATTCTACATACTAAATCTCTCTCTTTTTTAAATTTAATATTTGTTATCATTTATTTATTGGTGCTA
CTGTTTATCCGTAATAATTGTGGGAAAAAGATATTAACATCACGTCTTTGTCTCTAGTGCAGTTTTTCGAG
ATATTCGCTAGTACATATTTATTTTTAAACAACGACAAAGAAATACAGATATATCTTAAAAAAAAAAAAAGC
ATTTTGTATTAAGAATTTAATTCTGATCTCAAAAAAAAAAAAA

LTDRQTDTPSPSYHLLPGRRTVDAAASRGQPEPAPGGGVEGVGARGVALKLFVQLLGCSRFGGAVVRA
GEAEPGSAARSASSGREEPQPEEGEEEEEEKEERGPQWRLGARKPGSWTGEAAVCADSAPAARAPQALARA
SGRGGRVARRGAEESGPPHSPSRSGASRAGPGRASET MNFLLSWVHWSLALLLYLHHAKWSQAAPMAEGG
GQNHHEVVKFMDVYQRSYCHPIETLVDIFQEYPDEIEYIFKPSCVPLMRCGGCCNDEGLECVPTESNITM
QIMRIKPHQGQHIGEMSFLQHNKCECRPKKDRARQEKKSVRGKGQKRKRKKSRYKSWSVYVGARCCCLMP
WSLPGPHPCGPCSERRKHLFVQDPQTCKCSCKNTDSRCKARQLELNERTCRCDKPRR

+++++

#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
GACCTGCAGGCCCCAGATATAGCCCCATGCTGCTCCTACCCAGAGCACACTGTTCAGGCTACTTCCAC
TGGTACTGAAATCCAGTATTTCACTTACTCTTTTCTTTCCAATATCCTCATGACATTCAATATTTCACTT
ACTCTAGGTCTCCTGCCTAAGGCCCAAGTCAACTTTCTGTCCAGTGGGATTTGTAATCCAATACCTCCT
AGCCCTAGCAGAATCCCATGTGGATAATCAGAAATGTGACTGGAAAAAGGACAGAGCTCTATGGCTGTGGG
TCCAGTCCCCACTGCTGGCAGTAAGTCCCCAGCAGTGAGCTGTGTAAGCACCTTACATTCTGCGCTTGGT
TGAAAACAGCAAGGCAAGCATCCACTTGAGAAATGTCAACCCTAGGAAATCCCAGCCTCAAGTCTTTCTC
ATCCCTTGGGAAGTGCAATTGGATAGAGAAGAAACCAATTA AAAACAAAACAAACAAATCATACTTAGAT
ATTCTGGCTTTTCTCACCAGGGCTGGATTAAAGCATGTACTTCAAATAATAACAACCTTAAGTCAATAAAT
AAATGTAAGGAAGTCCAAATGTTACCTGAAGACAACCTGTGGTCATTTTTTGGCAATCCCAGGTTCTCTTT
TCTACCTGTTTGCTCAATCGTGGTCTCCCTCTCCCTCTCTTGTGGGGCCCATGCCCTGCTTTACTGTTG
CCAGAGGCTTGACTTGTGCTTTTAGGTAGGAGCAGTTACTTCCACTCCCCTCACCTGCCATAAAGCA
TCTTTATAAACAAGCAAGTAGAAGAAACACATCCTGGTATCCACCACATTCGGCTTTTGTGATTCTGTT
CACTTGGGAGCACCTGCTGCTAGGGAATAAGAAGGTTGAGGCTGAAGAGTGAGGACTCTTCAGCTCCCCTC
TGGCAGGACCCGGGAGAGGAAAGAGCCCTCAGCTGGTCCATCCTCCCCACTCCTGGTCAGCCTTCTGTTCT
GAGATCAAAGTGGTGGGTACATTCTCGAGAAGTGTGCTCAGCCCCCTCATCTCACACCCTTTCCCTCTC
CCTGTGTGCTGCCCTCTTACATAACCATGCTGGTGATTGGCACCCTATAAATCAATCAATTTCTGCTCA
CTTTCACATCAAGTAACACTATCCAGGGAGGTGGTTTCAACAAAGGAGGAAGTATAAGGAGATCTAGGTTT
AAATTAATGTTGCCCTAGTGGTAAAGGACAGAGACCCTCAGACTGATGAAATGCACTCAGAATTACTTAG
ACAAAGCGGATATTTGCCACTCTCTTCCCCTTTTCTGTGTTTTTGTAGTGAAGAGACCTGAAAGAAAAA
GTAGGGAGAACATAATGAGAACAAATACGGTAATCTCTTCATTTGCTAGTTCAAGTGCTGGACTTGGGACT
TAGGAGGGGCAATGGAGCCGCTTAGTGCCTACATCTGACTTGGACTGAAATATAGGTGAGAGACAAGATTG
TCTCATATCCGGGGAAATCATAACCTATGACTAGGACGGGAAGAGGAAGCACTGCCTTTACTTCAGTGGGA
ATCTCGGCCCTCAGCCTGCAAGCCAAGTGTTACAGTGAGAAAAGCAAGAGAATAAGCTAATACTCCTGTCC
TGAACAAGGCAGCGGCTCCTTGGTAAAGCTACTCCTTGATCGATCCTTTGCACCGGATTGTTCAAAGTGGA
CCCCAGGGGAGAAGTCGGAGCAAAGAACTTACCACCAAGCAGTCCAAGAGGCCCAGAAGCAAACCTGGAGG
TGAGACCCAAAGAAAGCTGGAACCATGCTGACTTTGTACACTGTGAGGACACAGAGTCTGTTCTTGAAAG
CCCAGTGTCACGCAGATGAGGAAGTCGGAGGTCCCCAAATCTGCCGTGTATGTGGGGACAAGGCCACTGG
CTATCACTTCAATGTCAATGACATGTGAAGGATGCAAGGGCTTTTTTCAAGAGGGCCATGAAACGCAACGCC
GGCTGAGGTGCCCTTCCGGAAGGGCGCCTGCGAGATCACCCGGAAGACCCGGCGACAGTGCCAGGCCTGC
CGCCTGCGCAAGTGCTTGGAGAGCGGCATGAAGAAGGAGATGATCATGTCCGACGAGGCCGTGGAGGAGAG
GCGGGCCTTGATCAAGCGGAAGAAAAGTGAACGGACAGGGACTCAGCCACTGGGAGTGACAGGGGCTGACAG
AGGAGCAGCGGATGATGATCAGGGAGCTGATGGACGCTCAGATGAAAACCTTTGACACTACCTTCTCCCAT
TTCAAGAATTTCCGGCTGCCAGGGGTGCTTAGCAGTGGCTGCGAGTTGCCAGAGTCTCTGCAGGCCCCATC
GAGGGAAGAAGCTGCCAAGTGGAGCCAGGTCCGGAAGAGATCTGTGCTCTTTGAAGGTCTCTCTGCAGCTGC
GGGGGAGGATGGCAGTGTCTGGAACACAAACCCAGCCGACAGTGCGGGGAAAGAGATCTTCTCCCTG
CTGCCCCACATGGCTGACATGTCAACCTACATGTTCAAAGGCATCATCAGCTTTGCCAAAGTCATCTCCTA

CTTCAGGGACTTGCCCATCGAGGACCAGATCTCCCTGCTGAAGGGGGCCGCTTTTCGAGCTGTGTCAACTGA
GATTCAACACAGTGTTCACGCGGAGACTGGAACCTGGGAGTGTGGCCGGCTGTCCTACTGCTTGAAGAC
ACTGCAGGTGGCTTCCAGCAACTTCTACTGGAGCCCATGCTGAAATTCCTACTACATGCTGAAGAAGCTGCA
GCTGCATGAGGAGGAGTATGTGCTGATGCAGGCCATCTCCCTCTTCTCCCCAGACCGCCAGGTGTGCTGC
AGCACCGCGTGGTGGACCAGCTGCAGGAGCAATTCGCCATTACTCTGAAGTCCTACATTGAATGCAATCGG
CCCCAGCCTGCTCATAGGTTCTTGTTCCTGAAGATCATGGCTATGCTCACCAGAGCTCCGCAGCATCAATGC
TCAGCACACCCAGCGGCTGCTGCGCATCCAGGACATACACCCCTTTGCTACGCCCTCATGCAGGAGTTGT
TCGGCATCACAGGTAGCTGAGCGGCTGCCCTTGGGTGACACCTCCGAGAGGCAGCCAGACCCAGAGCCCTC
TGAGCCGCCACTCCCGGGCCAAGACAGATGGACACTGCCAAGAGCCGACAATGCCCTGCTGGCCTGTCTCC
CTAGGGAATTCCTGCTATGACAGCTGGCTAGCATTCTCAGGAAGGACATGGGTGCCCCCACCCTCAGTT
CAGTCTGTAGGGAGTGAAGCCACAGACTCTTACGTGGAGAGTGCCTGACCTGTAGGTGAGGACCATCAGA
GAGGCAAGGTTGCCCTTTCTTTTAAAAGGCCCTGTGGTCTGGGGAGAAATCCCTCAGATCCCATAAAGT
GTCAAGGTGTGGAAGGGACCAAGCGACCAAGGATGGGCCATCTGGGGTCTATGCCACATACCCACGTTTG
TTCGTTCTCTGAGTCTTTTCTATTGCTACCTCTAATAGTCCTGTCTCCACTTCCCACTCGTTCCCCTCCTC
TTCCGAGCTGCTTTGTGGGCTCCAGGCCTGTACTCATCGGCAGGCGCATGAGTATCTGTGGGAGTCTCTA
GAGAGATGAGAAGCCAGGAGGCCTGCACCAAATGTCAGAAGCTTGGCATGACCTATTCCGGCCACATCAT
TCTGTGTCTCTGCATCCATTTGAACACATTATTAAGCACCGATAATAGGTAGCCTGCTGTGGGGTATACAG
CATTGACTCAGATATAGATCCTGAGCTCACAGAGTTTATAGTTAAAAAACAACAGAAACACAAACAATT
TGGATCAAAAGGAGAAATGATAAGTGACAAAAGCAGCACAAAGGAATTTCCCTGTGTGGATGCTGAGCTGTG
ATGGCGGGCACTGGGTACCCAAGTGAAGGTTCCCGAGGACATGAGTCTGTAGGAGCAAGGGCACAACCTGC
AGCTGTGAGTGCCTGTGTGTGATTTGGTGTAGGTAGGTCTGTTTGCCACTTGATGGGGCCTGGGTTTGTTC
CTGGGGCTGGAATGCTGGGTATGCTCTGTGACAAGGCTACGCTGACAATCAGTTAAACACACCGGAGAAGA
ACCATTTACATGCACCTTATATTTCTGTGTACACATCTATTCTCAAAGCTAAAGGGTATGAAAGTGCCTGC
CTTGTTTATAGCCACTTGTGAGTAAAAATTTTTTGCATTTTACAAATTATACTTTATATAAGGCATTCC
ACACCTAAGAACTAGTTTTGGGAAATGTAGCCCTGGGTTTAAATGTCAAATCAAGGCAAAAGGAATTAATA
ATGTACTTTTGGCTAAAAAAAAAAAAAAAAAAAAAAAAAAAAA

LEVRPKESWNHADFVHCEDTESVPGKPSVNADEEVGGPQICRVCGDKATGYHFNVMTCEGCKGFFRRAMKR
NARLRCPFRKGACEITRKTRRQCQACRLRKCLESGMKKEMIMSDEAVEERRALIKRKKSSERTGTQPLGVQG
LTEEQRMIRELMDAQMKTFDITFSHFKNFRLPGVLSSGCELPESLQAPSREEAAKWSQVRKDLCSLKVSL
QLRGEDGSVWNYKPPADSGGKEIFSLPHMADMSTYMFKGIISFAKVISYFRDLPIEDQISLLKGAAFELC
QLRFNTVFNAETGTWECGRLSYCLEDTAGGFQQLLEPMLKFHYMLKKLQLHEEYVLMQAISLFSFDRPG
VLQHRVVDQLQEQAIFAILKSYIECNRPQPAHRFLFLKIMAMLTELRSINAQHTQRLRIQDIHPFATPLMQ
ELFGITGS

+++++

#11

NM_001172131

Region conserved in mammals.

HCK hemopoietic cell kinase

Synonyms: JTK9; HCK

GTCCCAGCTCGGGAGCACATCAGAGGCTTAGAGGCGAGTGGGAAGGGACTCAGACAGTGCAGGACGAGAAA
CGCCCCGCGGCACCAAAGCCCTCAGAGCGTCGCCCCCGCCTCTAGTTCTAGAAAGTCAGTTTCCCGGCACT
GGCACCCCGGAACCTCAGGGGCTGCCGAGCTGGGGGGCGCTCAAGCTGCGAGGATCCGGGCTGCCCGCGA
GACGAGGAGCGGGCGCCAGGATGGGGTGCATGAAGTCCAAGTTCTCCAGGTGCGAGGCAATACATTCTC
AAAACTGAAACCAGCGCCAGCCACACTGTCCTGTGTACGTGCCGGATCCACATCCACCATCAAGCCGG
GGCCTAATAGCCACAACAGCAACACACCAGGAATCAGGGAGGCAGGCTCTGAGGACATCATCGTGGTTGCC
CTGTATGATTACGAGGGCATTACCACGAAGACCTCAGCTTCCAGAAGGGGGACCAGATGGTGGTCTAGA
GGAATCCGGGGAGTGGTGAAGGCTCGATCCCTGCCACCCGGAAGGAGGGCTACATCCCAAGCAACTATG
TCGCCCCGCTTACTCTCTGGAGACAGAGGAGTGGTTTTTCAAGGGCATCAGCCGGAAGGACGCAAGCGC
CAACTGCTGGCTCCCGGCAACATGCTGGGCTCCTTCATGATCCGGGATAGCGAGACCACTAAAGGAAGCTA

CTCTTTGTCCGTGCGAGACTACGACCCTCGGCAGGGAGATACCGTGAAACATTACAAGATCCGGACCCTGG
ACAACGGGGGCTTCTACATATCCCCCGAAGCACCTTCAGCACTCTGCAGGAGCTGGTGGACCACTACAAG
AAGGGGAACGACGGGCTCTGCCAGAACTGTCTGGTGCCCTGCATGTCTTCCAAGCCCCAGAAGCCTTGGGA
GAAAGATGCCTGGGAGATCCCTCGGGAATCCCTCAAGCTGGAGAAGAACTTGGAGCTGGGCAGTTTGGGG
AAGTCTGGATGGCCACCTACAACAAGCACACCAAGGTGGCAGTGAAGACGATGAAGCCAGGGAGCATGTCTG
GTGGAGGCCTTCTGGCAGAGGCCAACGTGATGAAAACCTCTGCAGCATGACAAGCTGGTCAAACCTTCATGC
GGTGGTCACCAAGGAGCCCCTACATCATCACGGAGTTCATGGCCAAAGGAAGCTTGGTGGACTTTCTGA
AAAGTGATGAGGGCAGCAAGCAGCCATTGCCAAAACCTCATTGACTTCTCAGCCCAGATTGCAGAAGGCATG
GCCTTCATCGAGCAGAGGAACCTACATCCACCGAGACCTCCGAGCTGCCAACATCTTGGTCTCTGCATCCCT
GGTGTGTAAGATTGCTGACTTTGGCCTGGCCCGGGTCATTGAGGACAACGAGTACACGGCTCGGGAAGGGG
CCAAGTTCCCCCATCAAGTGGACAGCTCCTGAAGCCATCAACTTTGGCTCCTTCACCATCAAGTCAGACGTC
TGGTCCTTTGGTATCCTGCTGATGGAGATCGTCACCTACGGCCGGATCCCTTACCCAGGGATGTCAAACCC
TGAAGTGATCCGAGCTCTGGAGCGTGGATACCGGATGCCTCGCCAGAGAAGTGGCCAGAGGAGCTCTACA
ACATCATGATGCGCTGCTGGAAAAACCGTCCGGAGGAGCGGCCGACCTTCGAATACATCCAGAGTGTGCTG
GATGACTTCTACACGGCCACAGAGAGCCAGTACCAACAGCAGCCATGATAGGGAGGACCAGGGCAGGGCCA
GGGGGTGCCAGGTGGTGGCTGCAAGGTGGCTCCAGCACCATCCGCCAGGGCCACACCCCCTTCTACTC
CCAGACACCCACCCTCGCTTCAGCCACAGTTTCCTCATCTGTCCAGTGGGTAGGTTGGACTGGAAAATCTC
TTTTTGACTCTTGCAATCCACAATCTGACATTCTCAGGAAGCCCCCAAGTTGATATTTCTATTTCTGGAA
TGGTTGGATTTTAGTTACAGCTGTGATTTGGAAGGGAACTTTCAAATAGTGAAATGAATATTTAAATAA
AAGATATAAATGCCAAAGTCTTTACCAAAAAAAAAAAAAAAAAAAAAA

LGGRSSCEDPGCPRDEERAPRMGCMKSKFLQVGNTFSKTETSASPHCPVYVPDPTSTIKPGPNSHNSNTP
GIREAGSEDIIVVALYDYEAIIHEDLSFQKGDQMVVLEESGEWWKARSLATRKEGYIPSNYVARVDSLETE
EWFFKGISRKAERQLLAPGNMLGSFMIRDSETTKGSYLSVRDYPDPRQDQTVKHYKIRTLNNGGFYISPR
STFSTLQELVDHYKKGNDGLCQKLSVPCMSKPKQKPEKDAWEIPRESLKLEKKLGAGQFGEVWMATYNKH
TKVAVKTMKPGSMSVEAFLAEANVMKTLQHDKLVLHAVVTKEPIYIITEFMAKGSLLDFLKSDEGSKQPL
PKLIDFSAQIAEGMAFIEQRNYIHRDLRAANILVSASLVCKIADFLARVIEDNEYTAREGAKFPIKWTA
EAINFGSFTIKSDVWSFGILLMEIVTYGRIPYPGMSNPEVIRALERGYRMPRPENCPEELYNIMMRCWKNR
PEERPTFEYIQSVLDDFYTATESQYQQQP

+++++

#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
CGCTCCCCCACTTCCCGCCCTCCCTCCACCTACTCATTACCCACCCACCCACCCAGAGCCGGGACGGCA
GCCAGGCGCCCGGGCCCGCCGTCTCCTCGCCGCGATCCTGGACTTCCTCTTGCTGCAGGACCCGGCTTC
CACGTGTGTCCCGAGCCGGCGTCTCAGCACACGCTCCGCTCCGGGCCTGGGTGCCTACAGCAGCCAGAGC
AGCAGGGAGTCCGGGACCCGGGCGGCATCTGGGCCAAGTTAGGCGCCGCCGAGGCCAGCGCTGAACGTCTC
CAGGGCCGGAGGAGCCGCGGGCGTCCGGGTCTGAGCCGAGCAATGGGCTCCGACGTGCGGGACCTGAA
CGCGCTGCTGCCCGCCGTCCCCTCCCTGGGTGGCGGCGGCGGCTGTGCCCTGCCTGTGAGCGGCGCGGCGC
AGTGGGCGCCGGTGTGGACTTTGCGCCCCCGGGCGCTTCGGCTTACGGGTGCTTGGGCGGCCCGCGCCG
CCACCGGCTCCGCCGCCACCCCGCCGCCGCGCTCACTCCTTCATCAAACAGGAGCCGAGCTGGGGCGG
CGCGGAGCCGCACGAGGAGCAGTGCCTGAGCGCCTTCACTGTCCACTTTTCCGGCCAGTTCACTGGCACAG
CCGGAGCCTGTGCTACGGGCCCTTCGGTCTCCTCCGCCAGCCAGGCGTCATCCGGCCAGGCCAGGATG
TTTCCTAACGCGCCCTACCTGCCAGCTGCCTCGAGAGCCAGCCCGCTATTGCAATCAGGGTTACAGCAC

GGTCACCTTCGACGGGACGCCCAGCTACGGTCACACGCCCTCGCACCATGCGGGCGCAGTTCCCCAACCACT
CATTCAAGCATGAGGATCCCATGGGCCAGCAGGGCTCGCTGGGTGAGCAGCAGTACTCGGTGCCGCCCCCG
GTCTATGGCTGCCACACCCCCACCGACAGCTGCACCGGCAGCCAGGCTTTGCTGCTGAGGACGCCCTACAG
CAGTGACAATTTATACCAAATGACATCCCAGCTTGAATGCATGACCTGGAATCAGATGAACTTAGGAGCCA
CCTTAAAGGGCCACAGCACAGGGTACGAGAGCGATAACCACACAACGCCCATCCTCTGCGGAGCCCAATAC
AGAATACACACGCACGGTGTCTTCAGAGGCATTTCAGGATGTGCGACGTGTGCCTGGAAGTAGCCCCGACTCT
TGTACGGTCGGCATCTGAGACCAGTGAGAAACGCCCTTCATGTGTGCTTACCCAGGCTGCAATAAGAGAT
ATTTTAAGCTGTCCCACTTACAGATGCACAGCAGGAAGCACACTGGTGAGAAACCATAACCAGTGTGACTTC
AAGGACTGTGAACGAAGTTTTCTCGTTTCAGACCAGCTCAAAAGACACCAAAGGAGACATACAGGTGTGAA
ACCATTTCCAGTGTAAACTTGTGAGCGAAAGTTCTCCCGGTCCGACCACCTGAAGACCCACACCAGGACTC
ATACAGGTAAACAAGTGAAAAGCCCTTCAGCTGTGCGGTGGCCAAGTTGTGAGAAAAAGTTTGCCCGGTCA
GATGAATTAGTCCGCCATCACAACATGCATCAGAGAAACATGACCAAACCTCCAGCTGGCGCTTTGAGGGGT
CTCCCTCGGGGACCGTTTCAGTGTCCCAGGCAGCACAGTGTGTGAACTGCTTTCAAGTCTGACTCTCCACTC
CTCCTCACTAAAAAGGAAACTTCAGTTGATCTTCTTCATCCAACCTCCAAGACAAGATACCGGTGCTTCTG
GAACTACCAGGTGTGCCTGGAAGAGTTGGTCTCTGCCCTGCCTACTTTTAGTTGACTCACAGGCCCTGGA
GAAGCAGCTAACAATGTCTGGTTAGTTAAAGGCCATTGCCATTTGGTGTGGATTTTCTACTGTAAGAAGA
GCCATAGCTGATCATGTCCCCCTGACCCTTCCCTTCTTTTTTTATGCTCGTTTTCGCTGGGGATGGAATTA
TTGTACCATTTTCTATCATGGAATATTTATAGGCCAGGGCATGTGTATGTGTCTGCTAATGTAACTTTGT
CATGGTTTCCATTTACTAACAGCAACAGCAAGAAATAAATCAGAGAGCAAGGCATCGGGGTGAATCTTGT
CTAACATTCCCAGGTGAGCCAGGCTGCTAACCTGGAAGCAGGATGTAGTTCTGCCAGGCAACTTTTAAA
GCTCATGCAATTTCAAGCAGCTGAAGAAAAAATCAGAACTAACAGTACCTCTGTATAGAAATCTAAAAGAA
TTTTACCATTCAGTTAATTCATGTGAACACTGGCACACTGCTCTTAAGAAACTATGAAGATCTGAGATTT
TTTTGTGTATGTTTTGACTCTTTTGAGTGGTAATCATATGTGTCTTTATAGATGTACATACCTCCTTGCA
CAAATGGAGGGGAATTCATTTTCATCACTGGGAGTGTCTTAGTGTATAAAAAACCATGCTGGTATATGGCT
TCAAGTTGTAAAAATGAAAGTGACTTTAAAGAAAAATAGGGGATGGTCCAGGATCTCCACTGATAAGACTG
TTTTTAAGTAACCTTAAGGACCTTTGGGTCTACAAGTATATGTGAAAAAATGAGACTTACTGGGTGAGGAA
ATCCATTGTTTTAAGATGGTCGT
TTTTAAGGGAGGGAATTTATTATTTACCGTTGCTTGAAATTACTGTGTAAATATATGTCTGATAATGATTT
GCTCTTTGACAATAAAATTAGGACTGTATAAGTACTAGATGCATCACTGGGTGTTGATCTTACAAGATAT
TGATGATAACACTTAAATTGTAACTGCATTTTCACTTTGCTCTCAATTAAGTCTATTCAAAAG

LDLFLLLQDPASTCVPEPASQHTLRSGPGCLQQPEQQGVDRDPGGIWAKLGAAEASAERLQGRRSRGASGSEP
QQMGSDVRDLNALLPAVPSLGGGGGCGALPVSQAQWAPVLDFAPPGASAYGSLGGPAPPPAPPPPPPPPPH
SFIKQEPSWGAEPHEEQCLSAFTVHFSQGFTGTAGACRYGPFPPPPPSQASSGQARMFPNAPYLPSCLES
QPAIRNQGYSTVTFDGTSPYGHTPSHHAAQFPNHSFKHEDPMGQQGSLGEQQYSVPPPVYGCHTPTDSCGT
SQALLLRTPYSSDNLQMTSQLCMTWNQMNLGATLKGHSTGYESDNHTTPILCGAQYRIHTHGVRGIQD
VRRVPGVAPTLVRSASETSEKRPFMCAYPGCNKRYFKLSHLQMSRKHTGEKPYQCDFKDCERRFSRSDQL
KRHRQRRHTGVKPFQCKTCQRKFSRSDHLKTHTRHTGKTSEKPFSCRWPSCQKKFARSDLVRRHNMHQRN
MTKLQLAL

THE UNDERLAINED CUG IS THE ONE MARKED IN GENBANK

+++++

#15

NM_001172415

CUG initiated extension conserved in mammals.

BAG1 BCL2-associated athanogene

Synonyms: HAP; RAP46; BAG1

GCAGGCCGGGGCGGGGCTGGGAAGTAGTCGGGCGGGGTTGTGAGACGCCGCGCTCAGCTTCCATCGCTGGG
CGGTCAACAAGTGCGGGCCTGGCTCAGCGCGGGGGGGCGCGGAGACCGCGAGGCGACCGGGAGCGGCTGGG
TTCCCGGCTGCGCGCCCTTCGGCCAGGCCGGGAGCCGCGCCAGTCGGAGCCCCCGGCCAGCGTGGTCCGC

CTCCCTCTGGGCGTCCACCTGCCCGGAGTACTGCCAGCGGGCATGACCGACCCACCAGGGGGCGCCGCGCC
GGCGCTCGCAGGCGCGGATGAAGAAGAAAACCCGGCGCCGCTCGACCCGGAGCGAGGAGTTGACCCGGAG
CGAGGAGTTGACCCTGAGTGAGGAAGCGACCTGGAGTGAAGAGGCGACCCAGAGTGAGGAGGCGACCCAGG
GCGAAGAGATGAATCGGAGCCAGGAGGTGACCCGGGACGAGGAGTCTGACCCGGAGCGAGGAGGTGACCAGG
GAGGAAATGGCGGCAGCTGGGCTCACCGTGACTGTCAACACAGCAATGAGAAGCACGACCTTCATGTTAC
CTCCCAGCAGGGCAGCAGTGAACCAAGTGTCCAAGACCTGGCCAGGTTGTTGAAGAGGTTCATAGGGGTTT
CACAGTCTTTTCAGAACTCATATTTAAGGAAAAATCTCTGAAGGAAATGGAACACCGTTGTCACTT
GGAATACAAGATGGTTGCCGGGTCTGTTAATTGGGAAAAAGAACAGTCCACAGGAAGAGGTGAACTAAA
GAAGTTGAAACATTTGGAGAAGTCTGTGGAGAAGATAGCTGACCAGCTGGAAGAGTTGAATAAAGAGCTTA
CTGGAATCCAGCAGGGTTTTCTGCCCAAGGATTTGCAAGCTGAAGCTCTCTGCAAACCTTGATAGGAGAGTA
AAAGCCACAATAGAGCAGTTTATGAAGATCTTGGAGGAGATTGACACACTGATCCTGCCAGAAAATTTCAA
AGACAGTAGATTGAAAAGGAAAGGCTTGGTAAAAAAGGTTCAAGGCATTCTAGCCGAGTGTGACACAGTGG
AGCAGAACATCTGCCAGGAGACTGAGCGGCTGCAGTCTACAACTTTGCCCTGGCCGAGTGAAGGTGTAGCA
GAAAAAGGCTGTGCTGCCCTGAAGAATGGCGCCACCAGCTCTGCCGTCTCTGGAGCGGAATTTACCTGATT
TCTTCAGGGCTGCTGGGGGCAACTGGCCATTTGCCAATTTTCTACTCTCACACTGGTTCTCAATGAAAAA
TAGTGTCTTTGTGATTTTGTAGTAAAGCTCCTATCTGTTTTCTCCTTCTGTCTCTGTGGTTGTACTGTCCAG
CAATCCACCTTTTCTGGAGAGGGCCACCTCTGCCCAAATTTTCCAGCTGTTTGGACCTCTGGGTGCTTTC
TTTGGGCTGGTGAGAGCTCTAATTTGCCTTGGGCCAGTTTCAGGTTTATAGGCCCCCTCAGTCTTCAGATA
CATGAGGGCTTCTTTGCTCTTGTGATCGTGTAGTCCCATAGCTGTAAAACCAAGATCACCAGGAGGTTGCA
CCTAGTCAGGAATATTGGGAATGGCCTAGAACAAGGTGTTTGGCACATAAGTAGACCACTTATCCCTCATT
GTGACCTAATTCAGAGCATCTGGCTGGGTGTTGGGTCTAGACTTTGTCTCACCTCCAGTGACCCTG
ACTAGCCACAGGCCATGAGATACCAGGGGGCCGTTCTTGGATGGAGCCTGTGGTTGATGCAAGGCTTCCT
TGTCCTCAAGCAAGTCTTCAGAAGGTTAGAACCAGTGTTGACTGAGTCTGTGCTTGAACACAGGCCAGAG
CCATGGATTAGGAAGGGCAAAGAGAAGGCACCAGAATGAGTAAAGCAGGCAGGTGGTGAAGCCAACCATAA
ACTTCTCAGGAGTGACATGTGCTTCTTCAAAGGCATTTTGTAAACCATATCCTTCTGAGTTCTATGTTT
CCTTCACAGCTGTTCTATCCATTTTGTGGACTGTCCCCACCCCCACCCCATCATTGTTTTTAAAAAATTA
AGGCTGGCGCAGCAGCTCATGCCTATAATCCCAGCACTTTGGGAGGCTGAGGCGGGCGGATCACTTGAGG
CCAGGAGTTTGAGACCAGCCCAGGCAACATAGCAAAACCCCATTTCTGCTTTAAAAAAAAAAAAAAAAAAAA
TTAGCTTGGCGTAGTGGCATGTGCCTATAATCCCAGCTGAGGAGGCTGAGGCACAAGAATCATTTTGAA
CCTGGGAGGTAGAGGTTGCTGTGAGCCGAGATTACGCCCTGCACTCCAGCCTGGGTACAGAGTGAGACT
CCATCTCAGAAAAAAAAAAAAAATTGAGTCAGGTGCAGTAGCTCCTTCTGTAGTCCCAGCTACTTGGGAGGC
TGAGGCTAGAGGATCACTTGAGCCCAGGAGTTTGAAGTCTAGTCTGGGCAACATAGCAAGACCCCATCTCTA
AAATTTAAGTAAGTAAAAGTAGATAAATAAAAAAGAAAAAAAAAACTGTTTATGTGCTCATCATAAAGTAGAA
GAGTGGTTTGTCTTTTTTTTTTTTTTTTGGATTAATGAGGAAATCATTCTGTGGCTCTAGTCATAATTTATG
CTTAATAACATTGATAGTAGCCCTTTGCGCTATAACTCTACCTAAAGACTCACATCATTGTCAGAGAGAG
AGTCGTTGAAGTCCCAGGAATTCAGGACTGGGCAGGTTAAGACCTCAGACAAGGTAGTAGAGGTAGACTTG
TGGACAAGGCTCGGGTCCCAGCCACCGCACCCCACTTTAATCAGAGTGGTTCATATTGATCTATTTTT
GTGTGATAGCTGTGTGGCGTGGGCCACAACATTTAATGAGAAGTTACTGTGCACCAAACCTGCCGAACACCA
TTCTAAACTATTATATATATTAGTCATTTAATTCTTACATAACTTGAGAGGTAGACAGATATCCTTATTT
TAGAGATGAGGAAACCAAGAGAATTTAGGTCAATTAGCGCAAGGTTGTAGAGTAAGCGGCAAAGCCAAGACA
CAAAGCTGGGTGGTTTGGTTTCAGAGCCAGTGCTTTTCCCTCTACTGTACTGCCTCTCAACCAACACAGG
GTTGCACAGGCCCATTTCTCTGATTTTTTCTCTTGTCTCTGCCTCTCCCTCTAGCTCCCACTTCTCTC
TGCTCTAGTTCATTTTCTTTAGAGCAGCCGAGTGATCATGAAGTGCAAATCTTGCCATGTCAGTCCCCTG
CTTAGAACCTCCAATGGCTCACTTTCTCTTTAGGCAAAAGTCTTTACCCCATGCCTTCTCCCATCTCATC
TCAACCCCTCATTTGTTGGCTGTCTGCTGTGAGCCACTCTTCTTTAGGTCTCAGATGCACTGCACCT
CTCCTGCCTGGGGTCTTTGCTCCTGCTACTACCTCTGCTTGAACAGCTCCTCACCTTCTTCTTCTCAACC
CTACCTTGTATAGGTGACTTTTGTTCATCCTTCAAGATTTCAACTCACATGTCTCTTGCATGGAGAACCCT
CACCTACTGTGTTGAGACCCTGTCCAGCCCCAGGTGGGATCCTCTCTCGACTTCCCATACATTTCTTTCA
CAGCATTTACATAGTCCATGATAGTTTACTTGTGGGATTATTTGGTTAATCTTTGCCTTTAACACCAGGGT
TCCTTGGGTGAAGGAGCTTCTTTATCTTGGTAACAGCATTATTTCAAGCATAACTTGTAATATAGTTATAT
TACATATATAACATATATATATATAACATAACATATATAACATATATAACAAGCATAACTTGTTATATAGT
CTTGTATATAGTAAGACCTCAATAAATATTTGGAGAACAAAAAAAAAAAAA

LAQRGGARRPRGDRERLGSRLRALRPGREPRQSEPPAQRGPPPSGRPPARSTASGHDRPTRGAAAGARRPR
MKKKTRRRSTRSEELTRSEELTLSEEATWSEEATQSEEATQGEEMNRSQEVTRDEESTRSEEVREEMAAA
GLTVTVTHSNEKHDHLVTSQQGSSEPVVQDLAQVVEEVIGVPQSFQKLIFKGKSLKEMETPLSALGIQDGC

RVMLIGKKNSPQEEVELKKLKHLEKSVEKIADQLEELNKELTGIQQGFLPKDLQAEALCKLDRRVKATIEQ
FMKILEEIDTLILPENFKDSRLKRKGLVKKVQAFLECDTVEQNICQETERLQSTNFALAE

+++++

#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

GTACCACTCCCTGGCACTTCCACTCCTAGAGGGAGGAGGCTGAGCAGGCAGAGAATGGGACGTGTCCCCT
CAGAGGAGCCTCGAGCCAGTTCCAGCCAGCGGCCACTCAGTGAAGGTGCTCAAGTACCCACGTCCCCGC
CAGCTGCCAGGGTTCCCTCTCCTCCCTCCGTCCCTCCCCCATCTGGGGAGCCAGCGGTACTGAGGGGGC
GGAACGAGGCGGGGCCACCGAGCGGTTATAGCTGGGCCTGCAGGGGACCCACGGCTCGCCTCCAGCCTCCT
GCGCTCCGGTACCTGGGCGTCCCACTCCACTGCGCGCCAAACCCAGCCGAGCCGGTTCGTGGCCCGCCC
CGCCGGGCGGCCGTGACGCGAGCGCCCTGGCGTGGCGCCAGGGGAGCGGGGGGCTCCCGCGAGCCGGCC
GCGGCTGGCACTGCTGCTGCTTCTGCTCCTGCTGCCGCTGCCCTCCGGCGCGTGGTACAAGCACGTGGCGA
GTCCCCGCTACCACACGGTGGGCCGCGCCGCTGGCCTGCTCATGGGGCTGCGTTCGCTCACCTATCTGTGG
CGCCGCGCGCTGCGCGCGGGCCGCCGGGCCCCCTGGCCAGGGACACCCTCTCCCCGAACCCGCAGCCCGCGA
GGCTCCTCTCCTGCTGCCCTCGTGGGTTTCAGGAGCTGTGGGAGACGCGACGCAGGAGCTCCAGGCAGGGA
TCCCCGTCCGTGCGCCCCGGAGCCCGCGCGCCCCAGAGCCTGCGCTGGAACCGGAGTCCCTGGACTTCAGC
GGAGCTGGCCAGAGACTTCGGAGAGACGTCTCCCGCCAGCGGTGGACCCCGCAGCAAACCGCCTTGCCCT
GCCCTGCTGGCCCCCGGACCGTTCTGACAGCGTCCCCCGCCCGCCGTGGCGCCTCCGCGCCTGACCCAG
GAGGAGTGGCCGCGCCTTCCAGGAGCCGCTCATAGACCCGCGCTGCCGTCCGGTCAATAAAATCCGCGCTG
ACTCCTGCGCCCCCGCATGCGAAAAA

LAWRPGERGAPASRRLALLLLLLLLPLPSGAWYKHVASPRYHTVGRAAGLLMGLRRSPYLWRRALRAAAG
PLARDTLSPEPAAREAPLLPSWVQELWETRRRSSQAGIPVRAPRSAPRAPEPALEPESLDFSGAGQRLRRD
VSRPAVDPAANRLGLPCLAPGPF

+++++

#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
GAAGGGCAGGGCTTCTCAGAGGCTTGGCGGGAAGAAAGAACGGAGGGAGGGATCGCGCTGAGTATAAAGCC
GGTTTTCGGGGCTTTATCTAAGTCTGCTGTAGTAATTCCAGCGAGAGGCAGAGGGAGCGAGCGGGCGGCCGG
CTAGGGTGAAGAGCCGGGCGAGCAGAGCTGCGCTGCGGGCGTCTGGGAAGGGAGATCCGGAGCGAATAG
GGGGCTTCGCTCTGGCCAGCCCTCCCGCTGATCCCCAGCCAGCGGTCCGCAACCTTGCCGCATCCAC
GAAACTTTGCCATAGCAGCGGGCGGGCACTTTGCACTGGAACCTTACAACACCCGAGCAAGGACGCGACTC
TCCCGAGCGGGGAGGCTATTGCGCCATTTGGGACACTTCCCCGCGCTGCCAGGACCCGCTTCTCTGA
AAGGCTCTCCTTGAGCTGCTTAGACGCTGGATTCTTCGGGTAGTGGAACCAGCAGCCTCCCGCGAC
GATGCCCCCTCAACGTTAGCTTACCAACAGGAAGTATGACCTCGACTACGACTCGGTGCAGCCGTATTTCT
ACTGCGACGAGGAGGAGAACTTCTACCAGCAGCAGCAGCAGAGCGAGCTGCAGCCCCGGCGCCAGCGAG

GATATCTGGAAGAAATTCGAGCTGCTGCCCCACCCCGCCCCTGTCCCCTAGCCGCCGCTCCGGGCTCTGCTC
GCCCTCTACGTTGCGGTACACCCCTTCTCCCTTCGGGGAGACAACGACGGCGGTGGCGGGAGCTTCTCCA
CGGCCGACCAGCTGGAGATGGTGACCGAGCTGCTGGGAGGAGACATGGTGAACCAGAGTTTCATCTGCGAC
CCGGACGACGAGACCTTCATCAAAAACATCATCATCCAGGACTGTATGTGGAGCGGCTTCTCGGCCGCCGC
CAAGCTCGTCTCAGAGAAGCTGGCCTCCTACCAGGCTGCGCGCAAAGACAGCGGCAGCCCGAACCCCGCCC
GCGGCCACAGCGTCTGCTCCACCTCCAGCTTGTACCTGCAGGATCTGAGCGCCGCCGCTCAGAGTGCATC
GACCCCTCGGTGGTCTTCCCCTACCCTCTCAACGACAGCAGCTCGCCCAAGTCCTGCGCCTCGCAAGACTC
CAGCGCCTTCTCTCCGTCTCGGATTCTCTGCTCTCCTCGACGGAGTCTCCCCGAGGGCAGCCCCGAGC
CCCTGGTGTCCATGAGGAGACACCGCCCACCACCAGCAGCGACTCTGAGGAGGAACAAGAAGATGAGGAA
GAAATCGATGTTGTTTCTGTGGAAGAGGGCAGGCTCTGGCAAAGGTGAGAGTCTGGATCACCTTCTGC
TGGAGGCCACAGCAAACCTCCTCACAGCCACTGGTCTCAAGAGGTGCCACGTCTCCACACATCAGCACA
ACTACGACGCGCTCCCTCCACTCGGAAGGACTATCCTGCTGCCAAGAGGGTCAAGTTGGACAGTGTGAGA
GTCCTGAGACAGATCAGCAACAACCGAAAATGCACCAGCCCCAGGTCTCGGACACCGAGGAGAATGTCAA
GAGGCGAACACACAACGTCTTGGAGCGCCAGAGGAGGAACGAGCTAAAACGGAGCTTTTTTGCCTGCGTG
ACCAGATCCCGGAGTTGGAACAATGAAAAGGCCCCCAAGGTAGTTATCCTTAAAAAGCCACAGCATAAC
ATCCTGTCCGTCCAAGCAGAGGAGCAAAAGCTCATTTCTGAAGAGGACTTGTTGCGGAAACGACGAGAACA
GTTGAAACACAACTTGAACAGCTACGGAACCTTGTGCGTAAAGGAAAAGTAAGGAAAACGATTCCTTCTA
ACAGAAATGTCCTGAGCAATCACCTATGAACCTGTTTCAAATGCATGATCAAATGCAACCTCACACCTTG
GCTGAGTCTTGAGACTGAAAGATTTAGCCATAATGTAACTGCCTCAAATTGGACTTTGGGCATAAAAGAA
CTTTTTTATGCTTACCATCTTTTTTTTTTCTTTAACAGATTTGTATTTAAGAATTGTTTTTAAAAATTTT
AAGATTTACACAATGTTTCTCTGTAAATATTGCCATTAAATGTAAATAACTTTAATAAAACGTTTATAGCA
GTTACACAGAATTTCAATCCTAGTATATAGTACCTAGTATTATAGGTACTATAAACCTAATTTTTTTTTAT
TTAAGTACATTTTGCTTTTTTAAAGTTGATTTTTTTCTATTGTTTTTAGAAAAATAAAATAACTGGCAAAT
ATATCATTGAGCAAAAAAAAAAAAAAAAAAAAAA

LDFFRVVENQPPATMPLNVSFNTRNYDLDYDSVQPYFYCDEEENFYQQQQSELQPPAPSEDIWKKFELL
PTPPLSPSRRLGLCSPSYVAVTFPSLRGDNDDGGGGSFSTADQLEMVTELLGGDMVNQSFICDPDDETFIKN
IIIQDCMWSGFSAAAKLVSEKLASYQAARKDSGSPNPARGHSVCSTSSLYLQDLASAASECIDPSVVFYP
LNDSSPKSCASQDSSAFSPSSDLLSSTESSPQGSPEPLVHEETPPTTSSDSEEEQEDEEEIDVVSVEK
RQAPSGSESGSPAGGHSKPPHSPLVLKRCHVSTHQHNYAAPSTRKDYPAAKRVKLDSSRVLRQISNNR
KCTSPRSSDTEENVKRRTHNVLERQRRNELKRSFFALRDQIPELENNEKAPKVILKKATAYILSVQAEEQ
KLISEEDLLRKREQLKHKLEQLRNSCA

c)

#1

NM_002006

Does not appear conserved beyond humans.

FGF2 fibroblast growth factor 2 (basic)

Synonyms: BFGF; FGFB; HBGF-2; FGF2

CGGCCCCAGAAAACCCGAGCGAGTAGGGGGCGGCGCAGGAGGGAGGAGAACTGGGGGGCGGGGAGGCTG
GTGGGTGTGGGGGGTGGAGATGTAGAAGATGTGACGCCGCGGCCCGGGCGGGTGCCAGATTAGCGGACGCGG
TGCCCGCGGTTGCAACGGGATCCCGGGCGCTGCAGCTTGGGAGGCGGCTCTCCCAGGAGCGGTCCGCGGA
GACACCCATCCGTGAACCCAGGTCCCGGGCCGCCGGCTCGCCGCGCACCAAGGGGCCGGCGGACAGAAGAG
CGGCCGAGCGGCTCGAGGCTGGGGGACCGGGCGCGGCCGCGCTGCCGGGCGGGAGGCTGGGGGGCCG
GGGCCGGGGCCGTGCCCGGAGCGGGTGGAGGCGGGGGCCGGGGCGGGGGACGGCGGCTCCCCGCGCGG
CTCCAGCGGCTCGGGGATCCCGGCCGGGCCCGCAGGGACCATGGCAGCCGGGAGCATCACACGCTGCC
GCCTTGCCCCAGGATGGCGGCAGCGGCGCCTTCCCGCCCGGCCACTTCAAGGACCCCAAGCGGCTGTACTG
CAAAAACGGGGGCTTCTTCTGCGCATCCACCCGACGGCCGAGTTGACGGGGTCCGGGAGAAGAGCGACC
CTCACATCAAGCTACAACCTCAAGCAGAAGAGAGAGGAGTTGTGTCTATCAAAGGAGTGTGTGCTAACCGT

TACCTGGCTATGAAGGAAGATGGAAGATTACTGGCTTCTAAATGTGTTACGGATGAGTGTTCCTTTTTTGA
ACGATTGGAATCTAATAACTACAATACTTACCGGTCAAGGAAATACACCAGTTGGTATGTGGCACTGAAAC
GAACTGGGCAGTATAAACTTGGATCCAAAACAGGACCTGGGCAGAAAAGCTATACTTTTTCTTCCAATGTCT
GCTAAGAGCTGATTTTTAATGGCCACATCTAATCTCATTTTCATGAAAGAAGAAGTATATTTTAGAAATTT
GTTAATGAGAGTAAAAGAAAATAAATGTGTATAGCTCAGTTTGGATAATTGGTCAAACAATTTTTATCCA
GTAGTAAAATATGTAACCATTGTCCCAGTAAAGAAAAATAACAAAAGTTGTAAAATGTATATTCTCCCTTT
TATATTGCATCTGCTGTTACCCAGTGAAGCTTACCTAGAGCAATGATCTTTTTACGCATTTGCTTTATTC
GAAAAGAGGCTTTTTAAATGTGCATGTTTAGAAACAAAATTTCTTCATGGAAATCATATACATTAGAAAAT
CACAGTCAGATGTTTAATCAATCCAAAATGTCCACTATTTCTTATGTCATTTCGTTAGTCTACATGTTTCTA
AACATATAAATGTGAATTTAATCAATTCCTTTTCATAGTTTTATAATTCTCTGGCAGTTCCTTATGATAGAG
TTTATAAAACAGTCCTGTGTAACTGCTGGAAGTTCTTCCACAGTCAGGTCAATTTTGTCAAACCTTCTC
TGTACCCATACAGCAGCAGCCTAGCAACTCTGCTGGTGATGGGAGTTGTATTTTCAGTCTTCGCCAGGTCA
TTGAGATCCATCCACTCACATCTTAAGCATTCTTCTGGCAAAAATTTATGGTGAATGAATATGGCTTTAG
GCGGCAGATGATATACATATCTGACTTCCAAAAGCTCCAGGATTTGTGTGCTGTTGCCGAATACTCAGGA
CGGACCTGAATTCTGATTTTATACCAGTCTCTTCAAAAAGCTTCTCGAACCCTGTGTCTCTACGTAAAAA
AAGAGATGTACAAATCAATAATAATTACACTTTTAGAACTGTATCATCAAAGATTTTCAGTTAAAGTAGC
ATTATGTAAAGGCTCAAAACATTACCCTAACAAAGTAAAGTTTTCAATACAAATTCCTTGCCTTGTGGATA
TCAAGAAATCCCAAATATTTTCTTACCCTGTAAATTCAAGAAGCTTTTGAATGCTGAATATTTCTTTG
GCTGCTACTTGGAGGCTTATCTACCTGTACATTTTTGGGGTCAGCTCTTTTTAACTTCTTGCTGCTCTTTT
TCCAAAAGGTAAAAATATAGATTGAAAAGTTAAACATTTTGCATGGCTGCAGTTCCTTTGTTTCTTGAG
ATAAGATTCCAAAGAAGCTTAGATTCAATTTCTTCAACACCGAAATGCTGGAGGTGTTTGATCAGTTTTCAAG
AACTTGAATATAAATAATTTTATAATTCAACAAAGTTTTTACATTTTATAAGGTTGATTTTTCAATTA
AATGCAAATTTGTGTGGCAGGATTTTTATTGCCATTAACATATTTTTGTGGCTGCTTTTTCTACACATCCA
GATGGTCCCTCTAACTGGGCTTTCTCTAATTTTGTGATGTTCTGTCTCCCAAAGTATTTAGGAGA
AGCCCTTTAAAAGCTGCCTTCTCTACCCTTTGCTGGAAAGCTTCACAATTGTCACAGACAAAGATTTT
TGTTCCAATACTCGTTTTGCCTCTATTTTTCTTGTTTGTCAAATAGTAAATGATATTTGCCCTTGCAGTAA
TTCTACTGGTGAAGAACATGCAAGAAGAGGAAGTCACAGAAACATGTCTCAATTCCTCATGTGCTGTGACT
GTAGACTGTCTTACCATAGACTGTCTTACCCTATCCCTGGATATGCTCTTGTTTTTTCCCTCTAATAGCTA
TGGAAAGATGCATAGAAAGAGTATAATGTTTTAAACATAAGGCATTTCGTCTGCCATTTTCAATTACATG
CTGACTTCCCTTACAAATTGAGATTTGCCATAGGTTAAACATGGTTAGAAACAAGTAAAGCATAAAAGAA
AAATCTAGGCCGGGTGCAGTGGCTCATGCCTATATTCCTGCAGTTTGGGAGGCCAAAGCAGGAGGATCGC
TTGAGCCCAGGAGTTCAAGACCAACCTGGTGAAACCCGCTCTCTACAAAAAACACAAAAAATAGCCAGGC
ATGGTGGCGTGATCATGTGGTCTCAGATACTTGGGAGGCTGAGGTGGGAGGGTTGATCACTTGAGGCTGAG
AGGTCAAGGTTGCAGTGAGCCATAATCGTGCCACTGCAGTCCAGCCTAGGCAACAGAGTGAGACTTTGTCT
CAAAAAAGAGAAATTTTCTTAATAAGAAAAGTAATTTTTACTCTGATGTGCAATACATTTGTTATTTAAA
TTTATTATTTAAGATGGTAGCACTAGTCTTAAATTGTATAAAATATCCCCTAACATGTTTAAATGTCCATT
TTTATTCAATTATGCTTTGAAAAATAATTATGGGGAAATACATGTTTGTTATTTAAATTTATTATTAAGATA
GTAGCACTAGTCTTAAATTTGATATAACATCTCCTAAGTTGTTTAAATGTCCATTTTTATTCTTTATGTTT
GAAAATAAATTATGGGGATCCTATTTAGCTCTTAGTACCCTAATCAAAAGTTCGGCATGTAGCTCATGAT
CTATGCTGTTTCTATGTCGTGGAAGCACCGGATGGGGGTAGTGAGCAAATCTGCCCTGCTCAGCAGTCACC
ATAGCAGCTGACTGAAAATCAGCACTGCCTGAGTAGTTTTGATCAGTTTAACTTGAATCACTAACTGACTG
AAAATTGAATGGGCAAATAAGTGCTTTTGTCTCCAGAGTATGCGGGAGACCCTTCCACCTCAAGATGGATA
TTTCTTCCCAAGGATTTCAAGATGAATTGAAATTTTTAATCAAGATAGTGTGCTTTATTCTGTTGTATTT
TTTATTATTTAATATACTGTAAGCCAACTGAAATAACATTTGCTGTTTTATAGGTTTGAAGAACATAGG
AAAACTAAGAGGTTTTGTTTTATTTTTGCTGATGAAGAGATATGTTTAAATATGTTGTATTGTTTTGTT
TAGTTACAGGACAATAATGAAATGGAGTTTATATTTGTTATTTTCTATTTTGTATATTTAATAATAGAATT
AGATTGAAATAAAATATAATGGGAAATAATCTGCAGAATGTGGGTTTTCTGGTGTTCCTCTGACTCTA
GTGCACTGATGATCTCTGATAAGGCTCAGCTGCTTTATAGTTCTCTGGCTAATGCAGCAGATACTCTTCT
GCCAGTGGAATACGATTTTTTAAGAAGGCAGTTTGTCAATTTAATCTTGTGGATACCTTTATACTCTTA
GGGTATTATTTTATACAAAAGCCTTGAGGATTGCATTCTATTTTCTATATGACCCTCTTGATATTTAAAAA
ACACTATGGATAACAATTCTTCATTTACCTAGTATTATGAAAGAATGAAGGAGTTCAAACAAATGTGTTTC
CCAGTTAACTAGGGTTTACTGTTTGAGCCAATATAAATGTTTAACTGTTTGTGATGGCAGTATTCCTAAAG
TACATTGCATGTTTTCTAAATACAGAGTTTAAATAATTTTCAGTAATTCCTAGATGATTCAGCTTCATCAT
TAAGAATATCTTTTGTGTTTATGTTGAGTTAGAAATGCCTTCATATAGACATAGTCTTTCAGACCTCTACTG
TCAGTTTTTCATTTCTAGCTGCTTTTCAGGGTTTTATGAATTTTCAGGCAAAGCTTTAATTTATACTAAGCTT
AGGAAGTATGGCTAATGCCAACGGCAGTTTTTTTTCTTCTTAATTCACATGACTGAGGCATATATGATCTC
TGGGTAGGTGAGTTGTTGTGACAACCACAAGCACTTTTTTTTTTTTTTAAAGAAAAAAGGTAGTGAATTTT

TAATCATCTGGACTTTAAGAAGGATTCTGGAGTATACTTAGGCCTGAAATTATATATATTTGGCTTGAAAA
TGTGTTTTTCTTCAATTACATCTACAAGTAAGTACAGCTGAAATTCAGAGGACCCATAAGAGTTCACATGA
AAAAAATCAATTTATTTGAAAAGGCAAGATGCAGGAGAGAGGAAGCCTTGCAAACCTGCAGACTGCTTTTT
GCCCAATATAGATTGGGTAAGGCTGCAAAACATAAGCTTAATTAGCTCACATGCTCTGCTCTCACGTGGCA
CCAGTGGATAGTGTGAGAGAATTAGGCTGTAGAACAAATGGCCTTCTCTTTCAGCATTACACCACTACAA
AATCATCTTTTATATCAACAGAAGAATAAGCATAAACTAAGCAAAAGGTCAATAAGTACCTGAAACCAAGA
TTGGCTAGAGATATATCTTAATGCAATCCATTTTCTGATGGATTGTTACGAGTTGGCTATATAATGTATGT
ATGGTATTTTGATTTGTGTAAAAGTTTTAAAAATCAAGCTTTAAGTACATGGACATTTTTAAATAAAATAT
TTAAAGACAATTTAGAAAATTGCCTTAATATCATTGTTGGCTAAATAGAATAGGGGACATGCATATTAAGG
AAAAGGTCATGGAGAAATAATATTGGTATCAAACAAATACATTGATTTGTCATGATACACATTGAATTTGA
TCCAATAGTTTAAGGAATAGGTAGGAAAATTTGGTTTTCTATTTTTCGATTTTCTGTAAATCAGTGACATAA
ATAATTTCTTAGCTTATTTTATATTTCTTGTCTTAAATACTGAGCTCAGTAAGTTGTGTTAGGGGATTATT
TCTCAGTTGAGACTTTCTTATATGACATTTTACTATGTTTTGACTTCTGACTATTAATAAATAAATAGTAG
ATACAATTTTCATAAAGTGAAGAATTATATAATCACTGCTTTATAACTGACTTTATTATATTTATTTCAAA
GTTCAATTTAAAGGCTACTATTCATCCTCTGTGATGGAATGGTCAGGAATTTGTTTTCTCATAGTTTAATTC
CAACAACAATATTAGTCGTATCCAAAATAACCTTTAATGCTAACTTTACTGATGTATATCCAAAGCTTCT
CATTTTCAGACAGATTAATCCAGAAGCAGTCATAAACAGAAGAATAGGTGGTATGTTCTTAATGATATTAT
TTCTACTAATGGAATAAACTGTAATATTAGAAATTATGCTGCTAATTATATCAGCTCTGAGGTAATTTCTG
AAATGTTTCAGACTCAGTCGGAACAAATTGAAAAATTTAAATTTTTATTCTTAGCTATAAAGCAAGAAAGTA
AACACATTAATTTCTCAACATTTTTAAGCCAATTAATAAATAAAGATACACACCAATATCTTCTTCAG
GCTCTGACAGGCCTCCTGGAACTTCCACATATTTTTCAACTGCAGTATAAAGTCAGAAAATAAAGTTAAC
ATAACTTTCACTAACACACACATATGTAGATTTCAAAAATCCACCTATAATTGGTCAAAGTGGTTGAGAA
TATATTTTTTAGTAATTGCATGCAAAATTTTTCTAGCTTCCATCCTTTCTCCCTCGTTTTCTTTTTTTTG
GGGGAGCTGGTAAGTGAATCCTTTCCACCTTTTCTTTCAGGAAATATAAGTGGTTTTGTTTGGTT
AACGTGATACATTCTGTATGAATGAAACATTGGAGGGAAACATCTACTGAATTTCTGTAATTTAAATATT
TTGCTGCTAGTTAACTATGAACAGATAGAAGAATCTTACAGATGCTGCTATAAATAAGTAGAAAATATAAA
TTTCATCACTAAAATATGCTATTTTTAAATCTATTTCTATATTGTATTTCTAATCAGATGTATTACTCTT
ATTATTTCTATTGTATGTGTTAATGATTTTTATGTAAAAATGTAATTGCTTTTCATGAGTAGTATGAATAAA
ATTGATTAGTTTGTGTTTTCTTGTCTCCC

LVGVGGGDVEDVTPRPGGCQISGRGARGCNGIPGAAWEAALPRRRPRRHPSVNPSPRAAGSPRTGRGRTE
ERPSGSRLLGDRGRGRALPGGRLGGRGRGRAPERVGGGRGRGRGTAAPRAAPAARGSRPGPAGTMAAGSITTL
PALPEDGGSGAFPPGHFKDPKRLYCKNGGFFLRIHPDGRVDGVREKSDPHIKLQLQAEERGVSIIKGVCAN
RYLAMKEDGRLLASKCVTDECFFFERLESNNYNTYRSRYTSWYVALKRTGQYKLGSKTGPQKAILFLPM
SAKS

+++++

#2

NM_014293

No conservation found.

NPTXR neuronal pentraxin receptor

Synonyms: NPR; NPTXR

CGGCCGCGGCGACAGCTCCAGCTCCGGCTCCGGCTCCGGCTCCGGCTCCGGCTCCCGCGCCTGCCCCGCTC
GGCCAGCGCGCCCGGGCTCCGCGCCCCGACCCGCGCGCGCTGCCGGGGGCTCGGGCGCCCCCGCC
GCCCGCTCACGCTGAAGTTCTTGCCGCTGCTGCTGGCCGCGGGCATGCTGGCGTTTCTCGGTGCCGTAT
CTGCATCATCGCCAGCGTGCCCTGGCGGGCAGCCCGGCGCGGGCGCTGCCGGCGGGCGCCGACAATGCTT
CGGTGCGCTCGGGCGCCGCGCGTCCCCGGGCGCCGAGCGGAGCCTGAGCGCGCTGCACGGCGCGGGCGGT
TCAGCCGGGCCCCCGCGCTGCCCGGGGACCCGCGGGCAGCGCGCACCCGCTGCCGCCCGGGCCCCCTGTT
CAGCCGCTTCTGTGCACGCGCTGGCTGCTGCCTGCCCGTCCGGGGGCCAGCAGGGGGACGCGGCGGGCG
CTGCGCCGGGCGAGCGCGAAGAGCTGCTGCTGCTGCAGAGCACGGCCGAGCAGCTGCGCCAGACGGCGCTG
CAGCAGGAGGCGCGCATCCGCGCCGACCAGGACACCATCCGTGAGCTCACCGGCAAGCTGGGCCGCTGCGA
GAGCGGCTGCCGCGCGGCTCCAGGGCGCGGGCCCCGCCGCGACACCATGGCCGACGGGCCCTGGGACT

CGCCTGCGCTCATTCTGGAGCTGGAGGACGCCGTGCGCGCCCTGCGGGACCGCATCGACCGCCTGGAGCAG
GAGCTTCCAGCCCGTGTGAACCTCTCAGCTGCCCCAGCCCCAGTCTCTGCTGTGCCACCGGCCTACACTC
CAAGATGGACCAGCTGGAGGGGCAGCTGCTGGCCCAGGTGCTGGCACTGGAGAAGGAGCGTGTGGCCCTCA
GCCACAGCAGCCGCCGGCAGAGGCAGGAAGTGGAAAAGGAGTTGGACGTCTGCAGGGTCTGTGGCTGAG
CTGGAGCACGGGTCTCAGCCTACAGTCTCCAGATGCCTTCAAGATCAGCATCCCCATCCGTAACAACATA
CATGTACGCCCCGCGTGCGGAAAGGCTCTGCCCCAGCTCTACGCATTACCGCCTGCATGTGGCTGCGGTCCA
GGTCCAGCGGCACCGGCCAGGGCACCCCTTCTCCTACTCAGTGCCCCGGGCAGGCCAACGAGATTGTACTG
CTAGAGGCGGGCCATGAGCCCATGGAGCTGCTGATCAACGACAAGGTGGCCCAGCTGCCCCTGAGCCTGAA
GGACAATGGCTGGCACCACATCTGCATCGCCTGGACCACAAGGGATGGCCTATGGTCTGCCTACCAGGACG
GGGAGCTGCAGGGCTCCGGTGAGAACCTGGCTGCCTGGCACCCCATCAAGCCTCATGGGATCCTTATCTTG
GGCCAGGAGCAGGATACCCTGGGTGGCCGGTTTGATGCCACCCAGGCCTTTGTGGTGACATTGCCAGTT
TAACCTGTGGGACCACGCCCTGACACCAGCCAGGTCTGGGCATTGCCAACTGCACTGCGCCACTGCTGG
GCAACGTCTTCCCTGGGAAGACAAGTTGGTGGAGGCCTTTGGGGGTGCAACAAAGGCTGCCTTCGATGTC
TGCAAGGGGGAGGGCCAAGGCA

TGAGGGGCCACCTCATCCAGGGCCCCTCCCTTGCCCTGCCACTTTGGGGAC
TTGAGGGGGGTGATATTCCTCCTCAGCCTGCCACGCACTGGCCTTCCCTCCTGCCCCACTCCTGGCTGT
GCCTCCCATTTCCTCCTCACCTGTACCCACACCTCCAGAATGCCCTGCCCTGCGAGTGTGTCCCCTGTCCCC
ACCTGAGTGGGGAGGAGCGTCTCAAGTGAACAGTGGGAGCCTGCCACCTGGCACTGCACTGGAGTTGTCT
CTTACCCACCCCTCCCTGCCCATCAACTGTATCTGATTTTACTAATTTTGACAGCACCCCCAGTAGGGTAG
GATTGTGTATGAGGGGGACCCACTATCTCAGTGGTGGGGGTGGCCGCCCGCCCCCTTGTCCCCCATGCAA
CAGGCCCAGTGGCTTCCCTTCAGGGCCACAACAGGCTGTAGAAGGGGATGACGAGGACATCAGAGGTTAG
ACTTACCCTCCTCCCTCTTTCACCAGCTGCCAGTCAAGGGCAGTGGGATCTCGATGGAGCCTCCCCCCCC
CCCCACCCATGCCTCCCTCTTCTCCTCTTCTCCTCTCTTGTGTGTAGCGGTTTGAATGTTGGTTCCA
TGCCTGGCCCAGCCCCACCTCAGTCTCCAGGACATTCTTTCAGCTCCAGCCTGGAGGGAAGGGGACAA
AGACCCCAGGAGGCCAAAGGGCTGCAGTACCCCTTGTGCTCACCCATAGTGATGGCCACTGGTATAGTCA
TCGCTCTCCCTCCATGCCAAGGACAGGACTTGGACCGCTTACGCTGGGCTGGGAGCAGCCCTAAGGTAGA
GGCCTCATGGCCCAGGAGACCCACCTCTGGCAGAGCCACATTACCTACCCTGTGCATGGTCTGGGGCAG
CAAGGAAGAAGCTCAGAGGGTGGGGAGAAGCATGAAGCAGTGAGCAGAGCACTGGGTGAGAGGGAGAAGAC
CTTGGTTCTTAGCCAGCCCTGCTAATGTGCTGTGTGGCCTTCTGTAAGTCCCTGCCCTCTCTGGGCCTGGC
CTTCCTCATTCGTGAGCTGAGGCCCTCGCTTTGGTCAATTTGCTCTCCAGATTGGGTGTGAGCTTCTGTG
ATTCCAGGTGATATGTGGGGAAGCTCTGGTGACCTGGGCTTCGCAGGGGTAGATCCAGGACTCGGCA
GTGGATGGGATGCAGCCAGTCATGGGTTAGGGTCAGCAGAGACTCAGAGTCCAGGGCAAGGTTCAAGGCAG
ACTAACCTCATGCATGGATTGTAAAAAACCAGCTCCCTTTGGATCAACCCAGCCTGGCACCCCTTGCTGTC
TGAGAGTGTCTCAAAGGGCTGATGGCTTCTGGTCCCCTTGAGTCATACCAGCTTCCCCAAGAGAGTGTG
AGAATCTTAAGAGCTGAGAGGCCGGGCACGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCTGAGA
CAGGCAGATCACTTGAGGTGAGGAGTTCGAAGTCAGCCTGGCCAACGTGGTGAAACCCCATCTTCACTAAA
AATACAAAACCTTAGCTGGTTAGGTGGTGCATGCCTGTAGTCCCAGCTACTCGGGAGGCCGAGGCAGAAGAA
TCTCTTGAAGTGAAGGAGGTGGAGGTTGCAGTGAGCCGAGATCACGCCATTGCACTCCAGCCTGGGCAACAG
AGCAAGACTCCATCTCAAAAAAATAATAATAATCTTAAAGATGAGAAAAGCCACCCCATCTGGCACCACAG
CTGCATCTTGCTTGTGAGAAATGGGGAAGAGTTCAGGGAGGACACGTGACCTGCACAGGATCACAGAGCAT
GGGGCAGAGCCAGGACTAGAGCTCAGGGCATCTGACTCCCTCTTCAGTGTTCTTCCCCCTCCATGTTGCCT
GCCCCGTAAGACCTTTGAGTTCACTACACCTAAGCAGGTAGACATCCGCGAGGTGAGATGCTTTCCAAC
ATGACACCTGAACATCTTCTTTATGCAACACCCAAACATCTTGGCATCCCCACCCAGGAAGTGCGGGGA
GGAGGTTATGATCCCTGGGCGCTTCGGCAGAATGGAGAGCTGAGGTGTCCCTCCCCTGCTAGTCACCTACC
AGGTGTCTGAGCAGCTGCATGCTCCCTGGCTCAAGTGGGCACTGTACCTTTTGCTGCTTTTGTTCCT
ATCTCCACTCCCTGAGGCCACTTAGCCTGAGACATGATGCAAGAGCTGCAGGCCGGGGGGCTCAGTGCCAT
GGAAGCTACTCCAAGTTGCATTGCCCTCCCGCGCCAGATCCTGCTTTCCATTTGAGAACATAAATAGATT
GCCCAGCCCCCTCCAGTACAATCCCAGTGAAGAAAAGGCAATGGCGGGCTTCAGCCAGACCTGCTGAGACC
TAGGTTGCCACGGTAACAGCCAAAGACATCAACCCAAGTGCTGGGTCAAGTGTCTCATCACTAGGCACTG
TTGCTGGGGTGACGGCAGAATTGAGAACTTCAATTTCAAGTGACGCCAAGCTTGATGTGTTTCTGTTATTGT
TTTGAAGAAGGTAGCTCTTGTGGAGGACTTGGGAGAAGGATGGGGTCTTAGGAAGGAGGTGACAGCACTTG
CATGGTCACTTGAGCCACACACACGCTCAACCCCAAGTCCTTTATGCTTTGTACAGTGAAGATGAGACC
TCTGACGTCCAAGCCTTGTTCTGTGCTGCATACCCACTCAGCCTTCCAAAGGGAACAGGAACAAATTTTC
CCCAGCACCACTGTTTGGGTCCCGCTTTTCTATCTTCTGCTGCCCTGAGCACATCCAAGCAGACAGGGA
AAGAGGAGTCAGACATGGCCAGTCACATCCTGAGCTGCTCCTGGCTGATAACCACGATGGAGCCCGTGTT
TGTCTGCCATCTGGCACTGCACTGAGTGTGGCACAGGCACCGTCCTGTTGATCTCACAACACAGTTCTAA
GTTAGGACGTTCTTGCTCCGTTAGACAGGTGAGGAACTGGGGCACAGAGAGGTGATGTCTGCTGCTGG
TGTCATCAGCTAGCAAGTGATGGAGCCCAGATTTCAAACCAAAGGGGGTTACGTCCAGGGGCTGAGTTCC

LKFLAVLLAAGMLAFLGAVICIIASVPLAASPARALPGGADNASVASGAAASPGPQRSLSALHGAGGSAGP
PALPGAPAASAHPLPPGPLFSRFLCTPLAAACPSGAQQGDAAGAAPGEREELLLLQSTAEQLRQTALQQEA
RIRADQDTIRELTGKLGRCESGLPRGLQGAGPRRDTMADGPWDSPALILELEDAVRALRDRIDRLEQELPA
RVNLSAAPAPVSAVPTGLHSKMDQLEGQLLAQVLALEKERVASHSSRRQRQEVEKELDVLQGRVAELEHG
SSAYSPPDAFKISIPIRNNMYARVRKALPELYAFTACMWLRSRSSGTGGTGFPSYSVPGQANEIVLLEAG
HEPMELLINDKVAQLPLSLKDNQWHHICIAWTTRDGLWSAYQDGELQSGENLAAWHPKPHGILILGQEQ
DTLGGRFDATQAFVGDIAQFNLWDHALTPAQVLGIANCTAPLLGNVLPWEDKLVEAFGGATKAAFDVCKGR
AKA

#3

No conservation found.

Synonyms: HB-1; HLA-HB1; HMHB1

#4

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.

Synonyms: FLJ39527; KIAA1482; STIM2

GGCGGAGCGTGGTACTACGACCAGCGCGGGCCGGAGGGGGCGGGGGGATGCGCCGCGGCGGGCGGGCGCGG
GGAGCTGGGGTTGGTGTGGCGGCGCCAGAGCAGCGGATCCCGGTCTCGCCGAGCAGCAGCGCGGGTGT
CGTGACCGCCTGAAGACGCCGTACCTTTCTACCCCCACCTTTTTTTTTTTTTTTTTTAAATAACCGGAA
CCAATGAACGCAGCCGGGATCAGAGCTCCGGAGGCCGCCGGTGCCGATGGGACCAGGCTGGCGCCCGGCGG
GAGCCCGTGTCTGAGGCGGCGGGGGCGGCCGGAGGAGTGC CGCGGCGGCGGTGGTGGCGCCTCGCGGAGCCG
GCGAGCTGCAGGCGGCGGGGGCGCCGCTGCGCTTTACCCGGCTTCTCCTCGGCGCCTTCATCCCGCCTCG
ACTCCTGGCCAGCGTGGGGCTGGCTGCTGCGGCGGCGGCGCTGGGCTGCGTTGCTGGTGTCTGGGCTGCT
GGTAGCCGGAGCGGCGGACGGATGCGAGCTTGTGCCCCGGCACCTCCGCGGGCGGCGGGCGACTGGCTCTG
CCGCAACTGCCGCCTCCTCTCCCGCCGCGGCGGCGGCGGATAGCCCGGCGCTCATGACAGATCCCTGCATG
TCACTGAGTCCACCATGCTTTACAGAAGAAGACAGATTTAGTCTGGAAGCTCTTCAAACAATACATAAACA
AATGGATGATGACAAAGATGGTGGAATTGAAGTAGAGGAAAGTGATGAATTCATCAGAGAAGATATGAAAT
ATAAAGATGCTACTAATAAACACAGCCATCTGCACAGAGAAGATAAACATATAACGATTGAGGATTTATGG
AAACGATGGA AAACATCAGAAGTTTATAATTGGACCTTGAAGACACTCTTCAGTGGTTGATAGAGTTTGT
TGA ACTACCCCAATATGAGAAGAATTTAGAGACAACAATGTCAAAGGAACGACACTTCCCAGGATAGCAG
TGCACGAACCTTCATTTATGATCTCCAGTTGAAAATCAGTGACCGGAGTCACAGACAAAACCTTCAGCTC
AAGGCATTGGATGTGGTTTTGTTGGACCTCTAACACGCCACCTCATAACTGGATGAAAGATTTTATCCT
CACAGTTTCTATAGTAATTGGTGTGGAGGCTGCTGGTTTGCTTATACGCAGAATAAGACATCAAAAGAAC
ATGTTGCAAAAATGATGAAAGATTTAGAGAGCTTACAACTGCAGAGCAAAGTCTAATGGACTTACAAGAG
AGGCTTGAAAAGGCACAGGAAGAAAACAGAAATGTTGCTGTAGAAAAGCAAAATTTAGAGCGCAAAATGAT
GGATGAAATCAATTATGCAAAGGAGGAGGCTTGTGCGCTGAGAGAGCTAAGGGAGGGAGCTGAATGTGAAT
TGAGTAGACGTCAGTATGCAGAACAGGAATTGGAACAGGTTGCGATGGCTCTGAAAAAGGCCGAAAAAGAA
TTTGA ACTGAGAAGCAGTTGGTCTGTTCCAGATGCACTTCAGAAATGGCTTCAGTTAACACATGAAGTAGA
AGTGCAATACTACAATATTA AAAGACAAAACGCTGAAATGCAGCTAGCTATTGCTAAAGATGAGGCAGAAA
AAATTA AAAAGAAGAGAAGCACAGTCTTTGGGACTCTGCACGTTGCACACAGCTCCTCCCTAGATGAGGTA
GACCACAAAATTCTGGAAGCAAAGAAAGCTCTCTCTGAGTTGACA ACTTGTTTACGAGAACGACTTTTTTCG
CTGGCAACAAATTGAGAAGATCTGTGGCTTTAGATAGCCCATAACTCAGGACTCCCCAGCCTGACCTCTT
CCCTTTATTCTGATCACAGCTGGGTGGTGTATGCCAGAGTCTCCATTCCACCCTATCCAATTGCTGGAGGA
GTTGATGACTTAGATGAAGACACACCCCCAATAGTGTCACAATTTCCCGGGACCATGGCTAAACCTCCTGG
ATCATTAGCCAGAAGCAGCAGCTGTGCCGTTACGCCGAGCATTGTGCCGTCCTCGCCTCAGCCTCAGC
GAGCTCAGCTTGCTCCACACGCCCCCCCCCGTGCACCCCTCGGCACCCTCACCACCCGCAACACACACCA
CACTCCTTGCTTCCCTGATCCAGATATCCTCTCAGTGTCAAGTTGCCCTGCGCTTTATCGAAATGAAGA
GGAGGAAGAGGCCATTTACTTCTCTGCTGAAAAGCAATGGGAAGTGCCAGACACAGCTTCAGAATGTGACT
CCTTAAATTCTTCCATTGGAAGGAAACAGTCTCCTCCTTTAAGCCTCGAGATATACCAAACATTATCTCCG
CGAAAGATATCAAGAGATGAGGTGTCCCTAGAGGATTCTCCCGAGGGGATTGCGCTGTA ACTGTGGATGT
GTCTTGGGGTTCTCCCGACTGTGTAGGTCTGACAGAACTAAGAGTATGATCTTCAGTCTGCAAGCAAAG
TGTACAATGGCATTTTGGAGAAATCCTGTAGCATGAACCAGCTTTCCAGTGGCATCCCGGTGCCTAAACCT
CGCCACACATCATGTTCTCAGCTGGCAACGACAGTAAACCAGTTCAGGAAGCCCCAAGTGTGGCCAGAAT
AAGCAGCATCCACATGACCTTTGTGATAATGGAGAGAAAAGCAAAAAGCCATCAAAAATCAAAAGCCTTT
TTAAGAAGAAATCTAAGTGA ACTGGCTGACTTGATGGAATCATGTTCAAGTGGCATCTGTAACTATTATC
CCCCACCCTCCACTCCCCACCTTTTTTTTGGTTTAATTTAGGAATGTA ACTCCATTGGGGCTTTCCAGGC
CGGATGCCATAGTGGAACATCCAGAAGGGCAACTGTCTACTGTCTGCTTATTTAAGTGACTATATATAATC
AATTCATCAAGCCAGTTATTACTGAAAAATCATTGAAATGAGACAGTTTACAGTCATTTCTGCCTATTTAT
TTCTGCTTTGTTCTCAGTGATGTATATGCAACATTTTGTGAAAGCCACGATGGACTTACAAGCTTTAATG
GACTCGTAAGCCAGCATGGGCTTGC AAAAATTTCTTGTTTACCAGAGCATCTTCTTATCTTTCCACAGAGC
TATTTACATCCTGGACTATATAACTTAAAAGAAGTAAACGTAATTGCACTACTGTTTTCCAGACTGGAAA
AAAAAAAATCTCTGCAAGTGAACTGTATAGAGTTTATAAAATGACTATGGATAGGGGACTGTTTTCACT
TTTAGATCAAAATGGGTTTTTAAGTAGAACCTAGGGTTTCTAATTGACTTGATTTCTGGAAATGAAAACCC
GCGTTTTTATTATGGGAAGCTTCTTGA ACTGCATTTACTATTGTGAAGTTTCAAGTCCCGCTGTAAAGATC
ATGTTGTTTTGTTTTCCCGAGGGCTTTCACTGTGATTTACTGCATTGCAGGCTGTATGATAAAACACACAT
AATTTAAAGAGAGAAGGCTCTTGATTCTTATGCAAGTGGAAGAGTTGAACTTGATTGAAGGACTTAAAA
CATTCAACCTTAAGCCGAGGTGGGGGGATATGGGGATTGAGGCAATTGTTTACACACTTTGAATAACTG
CAAAGGATTTACGTTTTGTGAAAATGTGTACTGTGGAAGAGATAATAAATTGAAGACATTATTGTGTGGG
ATTGTGCTGATTTTTGTTGATAACACAAAAAACA CTATGTTTTCTGGAGAGCTGTGTAAGCTGTCTTGTG
CTTAGTTGCAATATAAGAAATAGTGATGTTTTGGACGTAAGTTGTCAACAAATTTCTATTTTATATTGTTA
TATTTTTATGTAGTTTGAAATGTAAAAATGTTCTAATATCAAGATTAACAAATATAAATTTATGGTGCATT
TAGAAAAAAAAAAAAAAAAA

+++++

#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

AGGAGCCGCGCCAGTGGAGGGCGGGCGCTGCGGCCGCGGCCGGGGCGGGCGCAGGGCCGAGCGGACGGG
GGGGCGCGGGCCCCCGGGAGGCCGCGGCCACTCCCCCGGGCCGGCGCGGGGGAGGCGGAGGATGG
AAACACCCTTCTACGGCGATGAGGCGCTGAGCGGCCTGGGCGGCGGGCGCCAGTGGCAGCGGCGGCAGCTTC
GCGTCCCCGGGGCGCTTGTTCCCCGGGGCGCCCCGACGGCCGCGGCCGGCAGCATGATGAAGAAGGACGC
GCTGACGCTGAGCCTGAGTGAGCAGGTGGCGGCAGCGCTCAAGCCTGCGGCCGCGCCGCCTCCTACCCCC
TGCGCGCCGACGGCGCCCCAGCGCGGCACCCCCGACGGCCTGCTCGCCTCTCCCGACCTGGGGCTGCTG
AAGCTGGCCTCCCCGAGCTCGAGCGCCTCATCATCCAGTCCAACGGGCTGGTCACCACCACGCCGACGAG
CTCACAGTTCTCTACCCCAAGGTGGCGGCCAGCGAGGAGCAGGAGTTCGCCGAGGGCTTCGTCAAGGCCC
TGGAGGATTTACACAAGCAGAACCAGCTCGGCGCGGGCGCGGCCGCTGCCGCCGCCGCCGCCGCCGCCGGG
GGGCCCTCGGGCACGGCCACGGGCTCCGCGCCCCCGGGCAGCTGGCCCCGGCGGGCGGGCGCGCCGAAGC
GCCTGTCTACGCGAACCTGAGCAGCTACGCGGGCGGGCGCGGGGGCGCGGGGGCGCGCGACGGTCGCCT
TCGCTGCCGAACCTGTGCCCTTCCCGCCGCCGCCACCCCCAGGCGCGTTGGGGCCGCCGCGCCTGGCTGCG
CTCAAGGACGAGCCACAGACGGTGCCCCGACGTGCCGAGCTTCGGCGAGAGCCCGCCGTTGTGCGCCATCGA
CATGGACACGCAGGAGCGCATCAAGGCGGAGCGCAAGCGGCTGCGCAACCGCATCGCCGCCTCCAAGTGCC
GCAAGCGCAAGCTGGAGCGCATCTCGCGCCTGGAAGAGAAAGTGAAGACCCTCAAGAGTCAGAACACGGAG
CTGGCGTCCACGGCGAGCCTGCTGCGCGAGCAGGTGGCGCAGCTCAAGCAGAAAGTCTCAGCCACGTCAA
CAGCGGCTGCCAGCTGCTGCCCCAGCACCAAGGTGCCCGCGTACTGAGTCCGCGCGCGGGGCGCATGCGCGG
CCACCCTCCCCAAGGGGCGGGCTCGCGGGGGGGTGTGCTGGGCGCCCCGGACTTGGAGAGGGTGCGGCCCT
GGGGACCCCCCTCCCCGAGTGTGCCAGGAATCAGAGAGGGCGCGGGCCCCGGGGATTCCCCCCCCCG
AGGGTGCCCAAGACTCGACAAGCTGGACCCCCTGCTCCGGGGGGGCGAGCGCATGACCCCCCGCCCTCG
CGTGCTCTTTCCCCCGCGCGGGCGCCCCGTGTTGCACAAACCCGCGCGTCTCGGCTGCCCCTTTGTACA
CCGCGCCGCGGAAGGGGGCTCCGAGGGGGCGCAGCCTCAAACCCTGCCTTTCTTTACTTTTACTTTTTT
TTTTTTTCTTTGGAAGAGAGAAGAACAGAGTGTTTCGATTCTGCCCTATTTATGTTTCTACTCGGGAACAAA
CGTTGGTTGTGTGTGTGTGTTTTCTGTGTTGGTTTTTAAAGAAATGGGAAGAAGAAAAAAATTCT
CCGCCCCCTTCTCGATCTCGCTCCCCCTTCGGTTCTTTGACCGGTCCCCCTCCCTTTTTTGTCTGT
TTTGTGTTGTTTTGCTACGAGTCCACATTCTGTTTGTAAATCCTTGTTTCGCCCGTTTTCTGTTTTCAGT
AAAGTCTCGTTACGCCAGCTCGGCAAAAAAAAAAAAAAAAAAAAAA

+++++

#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; MRVI1

GGCGCTGGCCCAGGGTCTTCTCCAGGCTCACATGCTTGCTGGAGGCTCCAGGCGGGTGGGGAGATCTGCAG
GGTCCCTTTGTTCCCGTCCGGCCAGGACAGTGTCCAGTGGCACGAGTTGCCATGGGGACTGCCATCTGCTG
TGTGGATACCCATCGGAGGGGGCCAGGGTGAGCGACTGCCCCAAAGGCCAGCCTGCCCTGAGCCCTGAGG
CCAGCTGGTCGGCTTTCCCTGCCATTATCCCCGAGCCAGGCCGGAGTTCTGCAGCCAGAGGCTTCTCGGCTCTGA
CTCTAAGTCCCAGCCCCTCTCAGAGGAGGCGTGC GGCCGAGGTTCTGCAGCCAGAGGCTTCTCGGCTCTGA
GCTCCGGAGCCAGATGTAACATTGACCTTAAATGGTAAAAGCTCCCCAGAGTGAAGAGAGGCTGGCCAGAG
GAGGAAAGGAGAATAACTCAGTTTTAGACAGGGTCTCGCACTGTCACCCAGGCTGGAGTGCAGTGGTGCAA
CCCCACCTCCCGGGTTCAAGCAATTCTCATGCCTCAGCCTCCCAAGTAGCTGGGATTACAGGGTCTCTCTA
CCGCAGGAGTATCTTGACAGTCCAACCTCCCACGATTGTCCTGACTGGGGATGCCACTTCACCAGAAGGAGAA
ACCGACAAAAACCTGGCCAACAGAGTTACAGTCCCCACAAGAGGCTTTCTCACCGACACTTGAAGGTGTC
CACTGCCTCCCTGACATCTGTGGACCCCGCGGGGCACATCATTGACCTGGTGAATGACCAGCTGCCAGACA
TCAGCATCTCAGAGGAGGACAAGAAGAAAAACCTGGCGCTGCTGGAAGAAGCCAAGTTGGTGAGTGAGCGA
TTCTGACCCGCGGTGGGAGGAAGTCCAGGAGCAGCCCCGGAGACTCCCCATCAGCTGTTTCCCCGAACCT
CAGCCCCAGCGCTTCTCTACATCTCTCGGAGCACTCACTTACAGTCCCCACCCCGCAGGTTTGGATG
TGTGCAGTGGCCCGCCATCCCCTCTGCCTGGAGCACCACCACAGAAGGGGGATGAGGCCGACGTCTCTTCA
CCTCACCTGGCGAGCCTAACGTCCCCAAAGGGCTAGCTGACAGGAAGCAGAATGACCAGAGGAAAGTGTC
TCAGGGCAGGCTGGCTCCTCGTCCTCTCCAGTTGAGAAGTCCAAAGAGATTGCAATAGAACAAAAGGAAA
ACTTCGATCCCCTCCAGTACCCCGAGACCACACCCAAAGGCCTAGCTCCTGTTACAAACAGCAGTGGGAAA
ATGGCCCTGAACAGCCCTCAGCCTGGCCCCGTGGAGAGCGAGCTGGGGAAGCAGCTCTTGAAAACGGGCTG
GGAGGGCAGCCCTCTGCCGAGAAGTCCAACCCAGGATGCGGCAGGAGTGGGTCCCCAGCCTCCCAGGGGA
GAGGCCCAGCTGGAGAGCCGATGGGGCCCCGAGGCTGGCTCCAAAGCTGAGCTTCCACCCACTGTGTCCCG
CCCCCGCTGCTGCGAGGGCTCTCCTGGGACAGTGGCCCTGAAGAACCTGGCCCCCGGCTGCAGAAAGTGCT
TGCCAAGCTGCCACTGGCAGAGGAAGAAAAGCGTTTTGCAGGCAAGGCCGGCGGAAGCTGGCCAAGGCC
CTGGTCTCAAAGACTTTTCAGATACAAGTGCAGCCCGTGC GGATGCAGAAACTGACCAAGCTCCGAGAGGAG
CACATCCTGATGAGAAATCAGAACTTAGTGGGGCTCAAGCTTCAGACCTTAGTGAAGCAGCTGAGCAGGA
AAAAGGGCTTCTTCTGAACTCTCCCCAGCTATTGAGGAAGAAGAGTCAAAGAGTGGCTTAGATGTCATGC
CTAATATTTCTGATGTGCTGCTGCGCAAACCTGCGGGTCCACAGGAGTCTCCCTGGAAGTGCCCCCTCCACTC
ACTGAAAAGGAAGTTGAGAACGTGTTTGTGCAACTGTCCTTGGCCTTTAGAAATGACAGCTACACTCTGGA
ATCTAGAATTAACCAGGCTGAAAGGGAACGCAACCTGACAGAGGAGAACACTGAGAAAGAACTGGAAAAC
TCAAAGCTTCCATTACGTCTCAGCTTCACTCTGGCACCCTGTGAGCACCGGGAAACCTACCAGAAGTTG
CTGGAGGACATCGCTGTCCTGCACCGCTGGCTGCCCGCTCTCCAGCCGAGCTGAGGTGGTAGGCGCCGT
CCGCGAGGAAAAGCGCATGTGAAAGCAACGGAAGTATGATGCAGTATGTGGAGAATCTAAGAGGACGT
ATGAGAAGGACCATGCGGAGCTCATGGAGTTTAAAAAGCTTTGCAAATCAGAATTCAAGCCGAGCTGTGGC
CCCTCTGAAGATGGGGTCCCTCGCACGGCACGGTCCATGTCCCTCACGCTGGGAAAGAATATGCCTCGCCG
GAGGGTCAGCGTTGCTGTGTTTCTAAGTTTAAATGCCCTGAATCTGCCTGGCCAAACTCCCAGCTCATCAT
CCATTCCCTCCTTACCAGCCTTGTGGAATCACCCAATGGGAAAGGCAGCCTACCTGTCACTTCAGCACTG
CCTGCACTTTTGGAAAATGGAAAGACAAATGGGGACCCAGATTGTGAAGCCTCTGCTCCTGCGCTGACCCT
GAGCTGCCTGGAGGAGCTTAGTCAGGAGACCAAGGCCAGGATGGAGGAAGAAGCCTACAGCAAGGGATTCC
AAGAAGGTCTAAGAAGACCAAGAAGCTTCAAGACCTGAAGGAGGAGGAGGAAGAACAGAAGAGTGAGAGT
CCTGAGGAACCTGAAGAGGTAGAAGAACTGAGGAAGAGGAAAAGGGCCCAAGAAGCAGCAAACTTGAAGA
ATTGGTCCATTTCTTACAAGTCATGTATCCCAAACCTGTGTGAGCACTGGCAAGTGATCTGGATGATGGCTG
CAGTGATGCTGGTCTTGACTGTTGTGCTGGGGCTCTACAATTCCTATAACTCTTGTGCAGAGCAGGCTGAT
GGGCCCCCTTGGAAGATCCACTTGCTCGGCAGCCAGAGGGACTCCTGGTGGAGCTCAGGACTCCAGCATGA
GCAGCCTACAGAGCAGTAGGAAACCTCACACCTAGCCAGTGCCCTGCTCTGAGACACTCAGACTACCACCC
TTTCCCCAAGTATAACGTCAAGGCCAAAGTGTGGACACACTGCCGCCCATCCCATCAGGTCATGAGGAAGGG
TTCTTTTAACTCGGCACTTCTGTGGGAGCTATTATACACAGTGACTTGATGTTCTTGGAGGATCAACA
AAACTGCCCTGGGAAAGCATCCAGTGGATGAAGAAGTCACCTTCACCAAGGAACCTCTATTGGAAGGGAAGG
TCTCCTGCCCTAGCTCAGGTGGCTGGGGAGAACTAAAACACCTTCACTGGTGGTTGGGGGTAAAGGAGCGG
GGCAGGGGGGAGGAGGTAGGGGGCAGTAAAAACCTTACTCTCTTTTTCTCTCTGTAATTTGGTTATC
AGGAAGAATTTGCTTAATGACTAACACCCTAAGCATCAGACCTGGAATTTGGAGTTGCAAGTGACTACTCT
TCCCATTTCCCATCTCATTTTCAATAACTTCAGCCTCCCATTCTTTCTTTTGAATGAGAGTTTCTTTTA
CAGAAGTAGGAAAGGCTTCTCAGAAAAAAGGATATAGGCTGAATTTAGCTCAGTGCTTGAATGG
GAAGATATGAATTATTATATACGCATCTGTCCACACATACACACATACTGTTGTGTACACACACACAACAT
GCCTGTGCACAGAGCCAACAACCTTCAAAGTGTGCTCTGGGTGTGTACCTCTGGATAAATAAGATGCAT
GCCAAGCCAACCCACAGATTTTACCAGTGTGGGGCAGTCACCAGGCACCTGTTCAATGAGCTGTCCACAT

GGATTGAAGATGTTTTAAAAACACAGAAAACCTCATGGCTTCAATGGCAGACTTACTAGTCTCCATTTCAAA
TGCCAACTCTGAGCTGCTGTACAGCACAATCTATTCCCTATTCTCTTTGAAAACAGTTAACCCACCTCA
CAGGTGAATGAGGAGAGAAGATGTGCTTTCTGCTTCAGTCTCTTACTCTGTGTGTGACCACATGCAAGAGT
AAACTTGACCTCAGTGCTTCAGTTCAAATGGGGTTTTCCAACCCCAGTATAATTAGGGGTGTTTCAGAGCA
TCCCCAGTTATTTAGCACAACACTGAAGGAGCACATCCCCTCTCCATTTTGACTTCTCTCCCCACTTTTAC
AGCCACTGCCTTCATCAGTTTTGTAGAGGTTTGATTTCCATGTGGGTTTTGTTGTCATTGTTTTGCATTTT
TGTTTTGTTATTGATATTGTTTGCTTTTCATTGCTAAAACTCATATACGACTTACTATGAGCCAAGCACTGT
TCTCAGTATTACATAGGTATGAATTCATTTAAGTCCTGAAGAAAAAGAAAAAAAATACGAAGTGGATATT
ACCCTTCCCATTTTCAAATAAGGAACTGAAGCACAAAAAGAACAACTTGAAGGACACCCCGGTA
GTAAATCAGTGGGCTGGAGCTCAACCCAGGGTAGGCTGGCTCCAGAGCTGTGCTCTCCTTGACTCTTCTG
ATGGTCTCCTAGCTGGAAGCCTCACATTTTCAGTCTCATTCCCCCAAGTGGCCCATCAGCTACCTCATCTCT
GGCTCCCCAACATAACAGTTTTCTCTCATAGTGCTGGACCTCCACTCACTAGTTTTTTTTTCCAGCTGTTCTT
CTCTTTTCTTCAGGTCACTCTTCTCGACCGAGTGCAAAAATTATCCCCTCCATACCAGCTTTGATGACCTT
CCTTCCATACTCCTCACCAGACACAACATAATAGGTACACACTCCTCTGTGCTTTCTGGCAGTTTTTAAA
CATTATTATTATTGACCTTTACCTATAGTATACCATGGCCTATTTATGTATCCATCTCCCCTAGCATTTTT
CCTCAAAGACAAGAACCATGTCTTACCCATCTCTTGGGTAAGTGCCTAGCATGGTGGCTGACGCTTGGGAG
GGTGTCAATTAATGTTGCTCAAAGAACAAGCAAACATTTAAGGTGGTGGAGAGCAGCCTGGGGACAGCTG
ACATGCTGCATGCTTCTCAGTACCAGCACCATCACAAATGCAAAAAGCAACATCTTTCTTAACCTCAGCTTA
TTCTGTTTTTTCAGTCTACTCTGTGAGAGAGCAGGAATGAGACCAGACTAGCAACACCATTGCCAAGCTCAA
GGACTGGGCTCAATGCAGTCACTCCTTCAGAGAGACCCCCACCCCAAGCATGCCCCACTTTAAAATAGCA
TGTTTTATTGAAGGGGGCATCCTTTACAGTAGCTAGAAAATGACTGAGGCCAAGCCAGGGTTGATCAAGGA
TGTGCCATTAAGGTAAAGAGTTACAGAGCAGGGCAGAGGGACTCTGGGGGCAGAAGTGGATGATTTGCCCG
GCCTCTTCCAGGGGGTCTGGATACAACCTGAAGGAGCTTTAGCTACATGAGGCCCTCAGAGCCAAAGACAGG
ATGCAATAGAGTTCTAGAGAGTGGCCGTGGAAGCAGAACTCCAGGTGGGGAATGTTCAATCTCTGCCTCC
CTTAAAGCAGGGCCAGGCTCAGCTGGCCCCATTGTTCACTTGGTCACAAGTTTTCTACCTTTGTTTCTGGA
TGAGTCAAAGGCCAGGAAGGCAGTTATGGAGAGCTCCTGCACCTCCAGCTGCCCCACAGAAAAGCCTGCAA
GAGTACTTCCAGGCACAGGCCCTCTCCCACCCTATTCCATTTGTAAGCAAGGGAGGTGAGGAAAAGGACA
TCTCCAAAAGGGAGCATAAGAATAGCCATATATACAGGGCTGAAAAAGTGTCTCATGAGTCCATCTTTTCT
GGAAAGCAAAGACAGCCTGAAGCAGTGGGAGCTGCTGCCCAAGCGGTAGTGAAGTGGAGAGAAACAGGCC
CTGGATTTTTCAGTGAGGATGTGGATCTGAAGAGTCCCCAAATGCCTCTGAAGTCTGAGATCTCTGTTAG
CCCTAGGAGTCTGGTTCCCTGCCTTCAGTTGCAGAGTGATGTGTTTGTGTCATTGTTGATGTCACCTCCTA
AAAAGACCTTCACTTTCTGGCTGCCACAAAGCCATATGTGTTGCTCCCCATATACAGCCTGACAGAGTAAA
TGGAGAGGAAGTGTGGATTTGTGTATCACTGGCTATCAGTTCCTCATGTTGTTAAGCCTCACACAGGTGT
GCTAGCATTGAAGTGTAGAGTGTCACATACCTGAGTTTGAAAATAAAAGCACATTTCCAAACCTCAAAAAA
AAAA

LTGDATSPEGETDKNLANRVHSPHKRLSHRHLKVSTASLTSVDPAGHIIDL VNDQLPDISISEEDKKKNLA
LLEEAKLVSERFLTRRGRKSRSSPGDSPSAVSPNLSASPTSSRSNSLTVPTPPGLDVCSGPPSPLPGAP
PQKGDEADVSSPHPGEPNVPKGLADRKQNDQRKVSQGR LAPRPPPVEKSKEIAIEQKENFDPLQYPETTPK
GLAPVTNSSGKMALNSPQPGPVESELGKQLLKTGWEGSPLPRSPTQDAAGVGPPASQGRGPAGEPMGPEAG
SKAELPPTVSRPPLLRLGLSWDSGPEEPGPRLQKVLAKLPLAEEEEKRFAGKAGGKLAKAPGLKDFQIQVQPV
RMQKLTKLREEHILMRNQNLVGLKLPDLSEAAEQEKGLPSELSPAIEEEESKSGLDVMPNISDVLLRKLRLV
HRSLPGSAPPLTEKEVENVFVQLSLAFRNDSTLESIRINQAERERNLTEENTEKELENFKASITSSASLWH
HCEHRETYQKLLEDIAVLHRLAARLSSRAEVVGAVRQEKRM SKATEVMMQYVENLKRTYEKDHAE LMEFKK
LANQNSSRSCGPSEDGVPRTARMSLT LGKNMPRRRVSVAVVPKFNALNLPGQTPSSSSIPSLPALSESPN
GKGS L PVT SALPALLENGKTNGDPDCEASAPALTLSCLEELSQETKARMEEEAYSKGFQEG LKKT KELQDL
KEEEEEQKSESPEEPEEVEETEEEEKGRSSKLEELVHFLQVMYPKLCQHWQVIWMMMAAVMLVLT VVVLGLY
NSYNSCAEQADGPLGRSTCSAAQRDSWSSGLQHEQPT EQ

+++++

#7

NM_001085386

No conservation found.

NF-E4 transcription factor NF-E4

Synonyms: NF-E4

GACAATTCCTGTTTACGGAAGACTATAAAACCTGCCCTACTCATTTGGTGCTGACGCCATTTTAGGCC
TTAGCCTGCCTGCACCCAGGCGCTCATTAAAACAGCAGGTTGCTCCACA**CTGCCTCGTGTGTCTGTTGGC**
ACACTCTCAAGAGTTTGAACGGATACAAGAATCTTTCATCTGGTGCCGAAACCCGGGAGGGGCTCCGGTCT
TCGTCCCCCGTGGACCTACCCCTCCGCCCCAGAAAGCAGGCCACAGCAGCCGGACAAAGGAAGCTCCTCAG
CCTCCAGTTGCTTCTCTGTGC**ATGCACATCAGTCACTGATCTCACCTACTGGGGCCCTGCAGGCCATGGGG**
CCACAGCTCCACACAGAAGCCTCCTAGCAATCCACCTCCACCTGGTGCCTGCTTCAAGTGCGGCA**ATGAAG**
GCCACTGGCCACACAATGCCCAAACCCAGGTAAACCCACGAGGCCATGCCCCCTCTGCGGAGGACCCAC
TGGAAGTTGGACTGTGAGCGGCCCTGCAAGGACCACCCCATCCCTTCTGAGCCAATCAAACCTCCTA
CTCGGATCTCGTCAGCCTTGCCGCTGAAGACTGATAGTGCCTTGGAACAGACACCCAGCAACTACCATCG
CTTCATCTGAGCCAAGGGTAACCCTGATGGTGGCAGGCCAGTCCCAAGGCGCAAGGCCACTTGTGCCAGC
AGTGTGAGTCAGCAAGATAGCAGAAGCAGGAAGAGAGCCGGCCAGAAGACACCTACTCTGACTGGGAGACA
CGTACCCCTGAAGATTGAGAAAGAGGCCATCCAGGTACCACATAGCAGTTACATCAGACTGGGACATTTCC
TGTTTACAGGAGACTATAAAACCCCTGCCCTACTCATTTGGTGCTGACGCCATTTTAGGCCTCAGCCTG
CCTGCACCCAGGTACTCATTAAAACAGCGTGTGCTCCAAAA

LPRVVCWHTLKSLNGYKNLSSGAETREGLRSSSPVDLPLRPRKQATAAGQRKLLSLQLLLCACTSVTDLTY
WGPAGHGATAPHRSLLAIHLHLPASSAAMKATGPHNAQTQVNPRGHAPSAEDPTGSWTVSGPCKDHPHPF
LSQSNPPTRISSALPLKTDSALEQTPQQLPSLHLSQG

+++++

#8

NM_199072

No conservation found.

MDFIC MyoD family inhibitor domain containing

Synonyms: HIC; MDFIC

CCCAGGCCGGCTCTGGCCTCTGACCCAGACAGCGCAGGGCGCGAGGGATCGCGCGGCCGAGCCCGGGTCG
CGCCGCTCCCAGCATCGGGCCGCTAGCCAAGAGTTTCGAGGCCCTCCCGATCCGGATGTGATGAAAAAGAG
CAACAGAGGGGAGAAGTGTTCAGGATTG**TAG**GAGTGAAGAGGGGAAAGAGAGGCAGAGAGGGGGAAGGCC
CCCTCGCAGGGGAGCCGGCTGGAGTGAGCTGGCTGGAAGAGGGGGCGGA**GTGCGCGGAGTCAGAGCCGCC**
ACCGCTGCCGCAGTTGCCGCCACTGCGGCGTCTGGGCTGAGCCGGAGGGAGGCGGGAGGACGCGCAGGGGC
GGCCGCCGCCGTCTGTCAGGCCACCGGGGCGAAAAATGCGGCCGCTGCCGGAGGCTCGCTAACTTTCCGGGGC
GGAAGAGGAGGAGGAGGAGGAGGAAGGGGCTTGGAGCGACTACGGGGGGATGCGGAGAAGCAGTCAGTTCC
CTGCACCCAGCACCTCACAGCCCTTCTCCGTGCGCCCTGCCGGGCGGCGAGCTAGGCGGCAGCGGCGCGG
CGCGGGCTCGGCGGAGCGGCCCATGTCCGGCGCGGGCGAAGCCCTCGCTCCCGGGCCCGTGGGGCCGCAGC
GCGTGGCCGAGGCGGGCGGCGGCCAGCTGGGCTCCACAGCCAGGGAAAAATGTGATAAAGACAATACTGAG
AAAGATATAACTCAAGCTACCAATAGCCACTTCACACATGGAGAGATGCAAGACCAGTCCATTTGGGGAAA
TCCTTCGGATGGTGAAGTCAATAGAACCAACCTCAGCGCTTGCTCAGCTTCAGACTTCAGCCCAGGTGC
CAAGTGGTGAGGAAATAGGCAAGATAAAGAACGCCACACAGGTCTGAGCAATGGAATGGAATTCACCAC
GGGGCCAAACACGGATCCGCAGATAATCGAAACTTTCAGCACCTGTTTCTCAAAAAATGCATAGAAAAAT
TCAGTCCAGCTTGTCTGTAAACAGCGATATCAGTAAGAAGAGCAAAGTAAATGCTGTCTTTCCAAAAAGA
CAGGCTCTTCACCTGAAGATTGTTGTGTCCACTGTATCCTGGCTTGCTTGTCTGCGAATTCCTGACCCTT
TGCAACATTGTCTGGGACAAGCGTCATGTGGCATCTGCACCTCAGAAGCCTGCTGCTGTTGCTGTGGTGA
CGAGATGGGGGATGATTGTAAGTGCCTTGTGATATGGAAGTGTGGCATCATGGATGCCTGTTGTGAATCAT
CAGACTGCTTGGAATCTGTATGGAATGCTGTGGAATTTGTTTTCTTCATAA**ATATTTATCTTTGTTTG**
TGTTAAAAGTGGAGAGTGTAAAAATTTCTTTTGGGGGAAGAAAAGCACATTGTAAGATTCTCATGAA
ACAACATGGAATTTGCACTGTTAACTCATTATTGTAAGTAATCTCTGAAAGCCTTTTTACTTTAACCAAAT
CTACATGGTTTAAATATGTGAAATTTAACTACTTTAACTAGTTTTATAAATTTCTTAATATGTTACAATAA
CTTAGGGACATTTTGACACCCCTTCCCAAATGTTAAATGCCTTCTCCTTTTACCGATATTTCTGTTTC

TTTTAACCGTTCTCAGGAGCACTTTGCTCCAAATATATTATTTTTTCAGTGTGTATTTAAACGAGGCAGTTT
ATTTTGATATGTATCTATTCATGATTGAAAGGAAGCAGTCTTGGCCAGGCACGGTGGCTTACACCTGTAAC
CCTGGCATTGTTGGGAGGCCAAGGTGGGCAGATTGCCTGAGCTCAGGAGTTCGAGACCAGCCAGGGCAACAT
GGTGAAACCCCATCTCTACTAAAATACAAAAAGTTAGCTGGGCTTGGCGGTGTGCGCCTGTAGTCCCAGCT
ACTCAGGAGGCTGAGGCAGGAGAATTGCTTGAACCCGAGAGGCGGAAGTTGCAGTGAGCCGAGATTGTGCC
ACTGAACCTCCAACCTGCACTCCAGCCTGGGCAACAGAGCGAGACTCCATCTCTAAATAAATAAATAAATAA
ATAAATAAATAAATAAATAAATAAACAACAGTCTTTATTTTAAAGAACTTTAGGAAACAAACCCACA
TAATAGTTGGGAACCAAGTGTGATCTCTCTCCCTTACCTTCTCCACTTGTTCAACAGACTCTGAATGCCGA
CTGTGTGGACTCTCTTCCTCAGACTGTGGGGACAGATACAATTCCACTCCTGTCCACAGGAACATGAGATT
TAGCAGACTAAGGAGACTGTGTAAGAATGAACCATACCACAAGGCATACTGAAGTGAGGATTATAAGAGAA
ATAAACTCAAAATGCTGTTGGAATATGCAGAGAATTGCTACCAGAATATTCAGTAAGGTTTCAGGGAGAAT
GTGGCATTGAGGACTCTCTTAGAATGAGTGATTACCTGCTATTTAAATGAATTATTTAGATTTTTTGACA
AAGATTTAGGTGGACACCCTAACTGTGTGTGCCTTTAACAGTTAAAAGAACAGTGCCTTCAGCATACTT
TTTTATTAGTTGTAGGAATACAGCTTTTTGAAAAAGCTATAAAGTTTAAATTAATAAATAAATATGCATTTT
CTTACACATAATTTAAATGTTATCATACTTTTTGATGAAAACATAATGCCTTAGTAAAATAGCTCTATTT
AATAAAGAAGATTGAGTACTCTGACACATTTCAATTAATTAGGAAATTTTTAATATTAATAATCCAGTGT
TCTGAGTTATTGAAAGGCTTTCTTTATTTTGAAGCTTTAGGTCTTTTTGGGATGAGAACATTTTAGTTG
TTTAGTTTGTCTTAAGCAGTGCTATTTTTGTAAACACAGATAAATGAAACCATTTCTTTCAATGCAG
AAGAAATCTAGATATCCCTACTGTGACCAAATTTCTGTATTACGATTTTATGTTAAATTAATAATATG
GCAGGTTATAATGATCCTTAAGTGTAAGAAATCAGTCAATTACAAGAGTAATTGTATAGTTATTGAGACC
TATAGTGTGTGGCTTAGATGAAAGGGAGAGTAAATTTTATACCATGCTCTCTCTACTCAGTTTGATCTC
TCTAAATTTGATGTTTGGTTTGATTTAATATAATTCTTAGTAGAAATTTTGAAGTATGCTTTGGGATTAA
TAATTATTTTTAATTTTTCTGGCTGAATATCAAATTGATAGTAACAACAGAAGCATAATTTAGGAAGGCT
TTCGCAAACCTAGCCTTTTAAAGAGAGGTTTTAACCTGAAGCATGAGAATATATCACCTGTGGTTTTCT
TTGAGATGAAACGTAGTTTCTAGTTATATCATTACTTAAAGGGCTTAAAAAGAAAAAACTTAGCAAACCTT
TGAATCTTTCTTTTATTGCTATTTACACATACATACACACATACAAAACCTTTAAATTTTGGGATCTGAAT
ATAATTCTGGTAAACAGCTGTCTTCATTTTTCTCCTCTAAAGAACTTAATTCATTTGTTACATAAAATATA
AGGAAATCTTTATACTATTTTACAGTAACCACAATCTAAATATTTACATATACCCAAAATTAACCTATGCT
CATATATTAGGATGTGAGAATATCATCTGTTTATGGACACATGAAACCTCCTAATGACCTGGAATTGTTAG
AATATTTGACTTTTTATATGCAAAGTTTTTCAACCAAGTGTTTTGTCTAATATTTAAACATGTACTGGCAC
AATTTGTGATGAAAATATTAGCACATTTGCAATAATGTTTCTCCATAACAGAGAATGTTAATGGATACCAG
AATTTTATTTTTGTATTTATGTTTCATAGTACTTTTCTCTTGTCTACTCCAGACAGTTATTCCATAAAGCA
TTTGTATAATTAAGGAAAACAGAAAAAGGAAAAGTAGGCAAATGTGAAAATAGTTTCAATATATCTTAT
GATTTCTTAATGTAAATGTTTTGTTGAAGTATATGGCTATCATGACTAAGTGCTAGAATTTATAGTTACA
GGCGGTGTCCTTTTAAATGTGGAAAGGCTTTTAAATATTTTAAACTGGACCTGTATTATCCTGAATACA
CTATTTTGAATTTTTTAAATGACTTCTTTATTTTGTCTTACCGTATGTTTATATCTAATTGACATATT
GACTAATGTTTGAAGAATTCAACCATAAGTTAAATCTGAAGGTTATCTTTATCATGTTTCATCCCTGTC
TGAAGATTTCTAGTCTTCTTATGTAAATCAGATGACTCATGTCCGTAAATGAACTATGAAAGATATCGAT
CAGTTTATGATCATTGACATGTGATTTCAAAACACAGTGTTCTTTTAAATCTATAATATGTCAAAATAC
AAGTTTTTTTTTTTACATCGTTTTAGTAAGTTAATTTCAATTTATTTACTTTGGAGCTATATTTCCACTTA
GAAAACTAAGGTAATTTTACAATATATGCTGAGATTAACCAAGGTAATAATGATCAACATATATGA
AATTGAGTCTTAGATTTAATGAATTTCACTCGAAAATAAATGATCAGAAGAATTTTCATCTAA

VRGVRAATAAAVAATAASGLSRREAGGRAGAAAAVVRPPGRKCGRCRRLANFPGRKRRRRRRRKGLGATTGG
CGEAVSSLHPAPHSPSSVRPAGRRARRQRRGAGSAERPMSGAGEALAPGPVGPQRVAEAGGGQLGSTAQGK
CDKDNTEKDITQATNSHFTHGEMQDQSIWGNPSDGELIRTQPQLPQLQTSQVPSGEEIGKIKNGHTGLS
NGNGIHHGAKHGSADNRKLSAPVSQKMRKIQSSLVNSDISKSKVNAVFSQKTGSSPEDCCVHCILACL
FCEFLTLCNIVLGQASCGICTSEACCCCGDEMGGDCNCPDMDCGIMDACCESSDCLCICMECCGICFPS

+++++

#9

NM_005583

Not well conserved beyond humans.

LYL1 lymphoblastic leukemia derived sequence 1

Synonyms: bHLHa18; LYL1

CAGCCTGGCCCTTATCTGCACTGGGCCAGCATCCTCCGGCCGCTGCGCCGCCAGGGGTGAGAGGGAGGAAA
CCGGGCCCGGGGGCGGGGAGAAGGCGGGCCGGCCCGGGAGCCGCTCACTTTCCCTGGGGGGGACCTACG
CGGAGACCTCGGCTATCCTGGCCTTCCGAGGCCACGAGGAGGCGCGGCCAACGCCGGGGCTGGAGCAT
TGAGGCCGGACCCTCGCGAGACAGCAGAGCCTGGCCTGACGCTGGAAACCACACCCTGGGCCAGACTGCCA
GCCCTGACGGGACAGAGCCAGGGCACTCACCAGGCTGCAAGAACAGTGCTGGGGTGAGTACCCCCACGTCG
GGGTCCATGTGCCCCGCTCAGGCACAGGCAGAGGTGGGCCCCACCATGACTGAGAAGGCAGAGATGGTGTG
TGCCCCCAGCCAGCGCCTGCCCCACCCCTAAGCCTGCCTCGCCTGGGCCCCCGCAGGTGGAGGAGGTGG
GCCACCGAGGAGGCTCCTCGCCCCCAGGCTGCCACCTGGTGTACCACTGATCAGCCTGGGCCACAGCAGG
CCCCCAGGGGTAGCCATGCCACACAGAGCTGGGCACTCTGCGGCCCCCGCTGCTGCAACTCTCCACCCT
GGGAAGTGGCCCGCCACTTTGGCCCTGCACTACCACCCTCACCCTTCTCAACAGTGTCTACATTGGGC
CAGCAGGACCTTTTAGCATCTTCCCTAGCAGCCGGTTGAAGCGGAGACCAAGCCACTGTGAGCTGGACCTG
GCTGAGGGGACACAGCCCCAGAAGGTGGCCCGGCGCGTGTTCACCAACAGCCGGGAGCGCTGGCGGCAGCA
GAACGTTAACGGCGCCTTCCGCGAGCTGAGGAAGCTGCTGCCGACGCACCCGCCGACCGGAAGCTGAGCA
AGAACGAGGTGCTCCGCCTAGCCATGAAGTACATCGGCTTCTGGTGCGGCTGCTGCGCGACCAAGCCGCA
GCTCTGGCCGCAGGCCCCACCCCTCCCGGGCCTCGCAAACGGCCGGTGCACCGGGTCCCAGACGACGGCGC
CCGCCGGGGATCCGGACGCAGGGCCGAGGCGGCAGCGCGCTCGCAGCCCGCGCCCCCGGCCGACCCCGACG
GCAGCCCCGGTGGAGCGGGCCCGGCCCATCAAGATGGAGCAAACCGCTTTGAGCCCAGAGGTGCGGTGACCG
CACGCGGCAGCACCTCTGAGCCGGAGGGCACCAGGGACTCGGCCAGGGCCGTCAAGGAAAGGGCAGTGGA
CGTGCTGCGCATGTTGCGGAGCGAACTCCCCGAAGAAGGACCACTGAAGACGTGAGGGCAAGTCTCGG
GGTCCGGAAGGGTGATCATCGACCCCAAGGGACCCGAGACCCCTTAAAAAATCACCCACAACCCCTCTG
GAAGTGGCCTTGCCCGGTCCCCTTCCAGGGGCGAGGTGGCAAAGCAACATGGCAGAGCAGTCATAGGAA
AAAAAAAAAAAAAAAAAAAA

LAQTASPDGTEPGHSPGCKNSAGVSTPTSGSMCPPQAQAEVGPTMTEKAEMVCAPSPAPAPPPKPASPGPP
QVEEVGHRGGSSPPRLPPGVVISLGHSPGVPAMPTTELGLRPPLLQLSTLGTAPPTLALHYHPHFLN
SVYIGPAGPFSIFPSSRLKRRPSHCELDLAEGHQPKVARRVFTNSRERWRQQNVNGAFELRKLPTHPP
DRKLSKNEVRLAMKYIGFLVRLLRDQAAALAAGPTPPGPRKRPVHRVPDDGARRGSGRRAEAAARSQPAP
PADPDGSPGGAARPIKMEQTALSPEVR

+++++

#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

GGCTCCCCACTCTGCCAGAGCGAGGCGGGGCAGTGAGGACTCCGCGACGCGTCCGCACCCTGCGGCCAGAG
CGGCTTTGAGCTCGGCTGCGTCCGCGCTAGGCGCTTTTCCAGAAGCAATCCAGGCGCGCCCGCTGGTTT
TTGAGCGCCAGGAAAAGCCCGGAGCTAACGACCGGCCGCTCGGCCACTGCACGGGGCCCCAAGCCGCAGAA
GGACGACGGGAGGGTAATGAAGCTGAGCCAGGTCTCCTAGGAAGGAGAGAGTGCGCCGGAGCAGCGTGGG
AAAGAAGGGAAGAGTGTCGTTAAGTTTACGGCCAACGGTGGATTATCCGGGCGGCTGCGCGTCTGGGGGCT
GCGGAATGCGCGAGGAGAACAAGGGCATGCCAGTGGGGGCGGCGAGCATGAGGGTCTGGCCAGCGCCGCG
GCGCGGGGACTAGTGAGAGAAGGTGCGACAGCTCCTGGAAGCCGGCGCGGATCCCAACGGAGTCAACCGTTT
CGGGAGGCGCGGATCCAGGTCTGATGATGGGCAGCGCCCGCGTGGCGGAGCTGCTGCTGCTCCACGGCG
CGGAGCCCAACTGCGCAGACCCTGCCACTCTACCCGACCGGTGCATGATGCTGCCCGGGAGGGCTTCTTG
GACACGCTGGTGGTGTGTCACCGGGCCGGGGCGCGGCTGGACGTGCGCGATGCCTGGGGTCTGCTGCCCGT
GGACTTGGCCGAGGAGCGGGGCCACCGCGACGTTGCAAGGTACCTGCGCACAGCCACGGGGGACTGACGCC
AGGTTCCCCAGCCGCCACAACGACTTTATTTTCTTACCCAATTTCCACCCCCACCCACCTAATTCGATG
AAGGCTGCCAACGGGGAGCGGGCGAAAGCCTGTAAGCCTGCAAGCCTGTCTGAGACTCACAGGAAGGAGGA

CCCGACCGGGAATAACCTTCCATACATTTTTTTCTTTGTCTTATCTGGCCCTCGACACTCACCATGAAGCG
AAACACAGAGAAGCGGATTTCCAGGGATATTTAGGAGTGTGTGACATTCCAGGGGTCGTTTGCTTTTCAGG
GTTTTCTGAGGGAAAGTGCATATGAAATCCTTGACTGGACCTGGTGGCTACGAATCTTCCGATGGATGAAT
CTCCCACTCCAGCGCTGAGTGGGAGAAGGCAGTGATTAGCACTTGGGTGACGGCAGTCGATGCGTTCACTC
CAATGTCTGCTGAGGAGTTATGGTGAACCCACAACCTTAGGCCCTAGCGGCAGAAAGGAAAACCTGAAGACT
GAGGACAAAGTGGAGGAGGGCCGAGGTGGGCTTCAGTAAGTCCCCGGCGGCGCTTTAGTTTGAGCGCATGG
CAAGTCACATGCGTAAACGACACTCTCTGGAAGCCCTGGAGACCCTCGCCCAACTCCACCAGATAGCAGAG
GGGTAAGAGAGGATGTGCAAGCGACGACAGATGCTAAAATCCCTGGATCACGACGCTGCAGAGCACCTTTG
CACAGGATGCTGGCCTTTGCTCTTACTACACTGAGGAGAGATTCCCGCGGGTTCGCGAGGCAGACTACACA
GGATGAGGTGGTGGAGTGGAGTGAGAGCAATTGTAACGGTTAACTGTAACGTTTTCTTTACACACACACA
CACACACACACACACATGCTAGGATGCGGAAATCCCCTTATGACTTGCTACTTTTTGATTTTGTGATAT
TTTGTACTTTTTAGTTGTTTCAGCAACTGTCTTATTTAATGGGGAGATTTTAAGTAACATAACTAGTGGCTC
TCAGTTAAAATGTGAGGAAGAACTACAGCTCTTAAATGTAGCAATGGCACTGTTGCAAACCTCAGTGCAAAC
GCCTAGATTGCTTTCTTCTTAACCTATTTATTTCTTTGTTAAATTTTTCTGATTGTTTCCTTTATAGAGTG
TCTCAGGGTGCAGAGGTCAGACTAAGAAATATTTCAAATGTCTTTTAGAAGATAGATGCACTTATGCAGTA
AATTATCTTGGGATAGTTCCCAAAAGATTGCTGAAAAAGTAGATTGAGTATAAAAACTTGAAAATATATGA
TGGCTCGTGGGATGTCCTACTATCACTGAACAACTAAAGGTGCACTGCTTTGGGATTTAATTTCCAGGGT
TGCTTGATCATTATATCATTGGAACAACCTGATACTTCACTACTTTAATAAAGAATTAACAGAGATTGAACT
CCAAGAGGTGGGTAATTTGGTTTTAAAAATACATGTTTCATGGGTTTACCACTAACTCCTGAGAAATGTTAAA
GGTTCACAGGGGTTCCCTTCTCTCAATGTTTGTAAATTTGCTCATAAGCAATACCAGCAATTCATAAAAA
CTGCTTACTTATGCCATAGAAAAATTAACACAAAGTGATACATGTATTATGCTTCTAAATGCTCATTCTA
CCAGATACACATTTAAAAGAGAAAAAAGGAACAGAAACAAGTCATTTGAGAGTGGAGACTTATAAGAAGGA
GTACATTTGAGTTGAATACACAAATCTTTACTTCTCTACCAATTCCTATTCCCAAAATGAACATATTACTG
GGGAAAGTTAGTTGAGAATCAGAGCATATGTTATTGGGGAAAGGATATGTTTATTGACACATAATCTGTAC
CAGGTATGCATTAAATATATTTGTTAATTTAATTTAAACCTGAGAGATAGGTATTGTTTCCAGATGA
GGACAATGAGGCAAAGAAATATCAAGTAACTTGCCAAAGGTTACAAGATATTCATTCCATGGATGCACAAA
GAAGTGCATCTAGTTCCACAGCTGATTATGGTTGTCTTGCTTTTCTTCCATTGCACCAGCTTGTCTCTCA
AAATCATGAATGATACACATGAAGATAACTTTTTTAAAAAAGCAGAAATACACAATGATCTCCCTTGT
AAGTCTCTAAGGTGGCTTTTCTTCTCTAATCTAGTAAATATAAACGGTTTGTGTTGAAAACATTTTTAA
AATGTCAACAATATGGAGAATAACCCCCCAACACACCTATAAAAAACCAAATTTTTGGAACAAAGATAA
TGGAACCTCCATTTTCAAACCTGAAGCACAGGGACAGAAAAATATATTTCTAGTTATCACTTAAGCACTCAAT
CATTAGAGGCTACAAGAATAATATTTTTAAAGTTACAGTATTTTACAATTATTAGAAAACATTCTATATAA
AAGAAGTCAGTTGATACTTTAAATCTCCCATTTGGTTTATAAAATCCCTTAATTTGACCTCTATATCTTA
AATTCCAAGATGTTTAAATTTGCTAGTTGCATTATACTGGGTCATGAAAAATTATCCCTTGAAATAGATAT
GAAACATGTTACTTCATTTCTGGTTTAAATAACTTGTGGAATCTTTCCTAATGACAACCTGATATTAAGGG
AACTAAAGAAAATGTTATTGTGGATCCACAGTACTATATTACACTGTTTTTTTTGTTTGTGTTTGTAGT
TTTTTTTTATTTAAAGCAAACCTCAAACATTATTGGGTATCAATTACCACCTGGTTGTATTGAAATAGTAAC
TTATCAATGCCATGTAAAAATTAATTCATTTTGAAGCCACCTGGCAGACAGGTTTAGCTGTTTCATCAG
CAGCCTAATATATACTGTTAAATTTGTTAAGGATTTCACTTTGAAGGATACATGCAAAACATATAGTTACT
ATTTTCATGAGTCCTGCTTCTAGCTCCATTGTGGAATACAGAAAAATTAATATACCTGTTAAGTTCGTATC
TAAACCTAAGACATTACCAAGGTTTGTACAAATTCTACTACCTGACATTTATTCCAAGAAGATCTGGAAG
TTAAATAAATTTATAAATTTAATAACAAAAA

TVDYPGRCASGGCGMREENKGMPSGGGSDEGLASAAARGLVEKVRQLLEAGADPNGVNRFGRRAIQVMMMG
SARVAELLLHGAEPNCADPATLTRPVHDAAREGFLDTLVVLHRAGARLDVRDAWGRLPVDLAEERGRHDV
AGYLRTATGD

+++++

#11

NM_001085386

Apparently conserved in primates only.

NFE4 transcription factor NF-E4

Synonyms: NF-E4

GACAATTCCTGTTTACGGAAGACTATAAAACCCCTGCCCCCTACTCATTTGGTGCTGACGCCATTTTAGGCC
TTAGCCTGCCTGCACCCAGGCGCTCATTAAACAGCAGGTTGCTCCACACTGCCTCGTGTGTCTGTTGGC
ACACTCTCAAGAGTTTGAACGGATACAAGAATCTTTCATCTGGTGCCGAAACCCGGGAGGGGCTCCGGTCT
TCGTCCCCCGTGGACCTACCCCTCCGCCCCAGAAAGCAGGCCACAGCAGCCGGACAAAGGAAGCTCCTCAG
CCTCCAGTTGCTTCTCTGTGCATGCACATCAGTCACTGATCTCACCTACTGGGGCCCTGCAGGCCATGGGG
CCACAGCTCCACACAGAAGCCTCCTAGCAATCCACCTCCACCTGGTGCCTGCTTCAAGTGCGGCAATGAAG
GCCACTGGCCACACAATGCCCAAACCCAGGTAAACCCACGAGGCCATGCCCCCTCTGCGGAGGACCCAC
TGGAAGTTGGACTGTGAGCGGCCCTGCAAGGACCACCCCATCCCTTCTGAGCCAATCAAACCCCTCCTA
CTCGGATCTCGTCAGCCTTGCCGCTGAAGACTGATAGTGCTTGGAACAGACACCCAGCAACTACCATCG
CTTCATCTGAGCCAAGGGTAACCTGATGGTGGCAGGCCAGTCCCAAGGCGCAAGGCCACTTGTGCCAGC
AGTGTGAGTCAGCAAGATAGCAGAAGCAGGAAGAGAGCCGGCCAGAAGACACCTACTCTGACTGGGAGACA
CGTACCCCTGAAGATTGAGAAAGAGGCCATCCAGGTACCACATAGCAGTTACATCAGACTGGGACATTTCC
TGTTTACAGGAGACTATAAAACCCCTGCCCCCTACTCATTTGGTGCTGACGCCATTTTAGGCCTCAGCCTG
CCTGCACCCAGGTACTCATTAAACAGCGTGTGCTCCAAAAA

LPRVVCWHTLKSLNGYKNLSSGAETREGLRSSPVDLPLRPRKQATAAGQRKLLSLQLLLCACTSVTDLTY
WGPAGHGATAPHRSLLAHLHLPASSAAMKATGPHNAQTQVNPRGHAPSAEDPTGSWTVSGPCKDHPHPF
LSQSNPPTRISSALPLKTD SALEQTPQQLPSLHLSQG

+++++

#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*, *Dasyurus 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

CGGAGGTGCGCGGGCGCGGGCGAGCAGGGTCTCCGGGTGGGCGGGCGGCGACGCCCCGCGCAGGCTGGAGGC
CGCCGAGGCTCGCCATGCCGGGAGAACTCTAACTCCCCCATGGAGTGGCCGACTTCTACGAGGCGGAGCC
GCGGCCCCCGATGAGCAGCCACCTGCAGAGCCCCCGCACGCGCCAGCAGCGCCGCTTCCGGCTTTCCCC
GGGGCGCGGGCCCCGCGCAGCCTCCCGCCCCACCTGCCGCCCGGAGCCGCTGGGCGGCATCTGCGAGCAC
GAGACGTCCATCGACATCAGCGCCTACATCGACCCGGCCGCTTCAACGACGAGTTCTGGCCGACCTGTT
CCAGCACAGCCGGCAGCAGGAGAAGGCCAAGGCGGCCGTGGGCCCCACGGGCGGCGGCGGCGGCGGCGACT
TTGACTACCCGGGCGCGCCCGCGGGCCCCGGCGGCGCCGTCATGCCCGGGGAGCGCACGGGCCCCCGCCC
GGCTACGGCTGCGCGGCCCGCGGCTACCTGGACGGCAGGCTGGAGCCCCTGTACGAGCGCGTGGGGCGCC
GGCGCTGCGGCCGCTGGTGATCAAGCAGGAGCCCCGCGAGGAGGATGAAGCCAAGCAGCTGGCGCTGGCCG
GCCTCTTCCCTTACCAGCCGCCGCCGCCGCCGCCCTCGCACCCGACCCGACCCGCCGCCGCCGCGCAC
CTGGCCGCCGCCGACCTGCAGTTCCAGATCGCGCACTGCGGCCAGACCACCATGCACCTGCAGCCCGGTCA
CCCCACGCCGCCGCCGACGCCGTGCCAGCCCGCACCCCGCGCCCGCGCTCGGTGCCGCCGGCCTGCCGG
GCCCTGGCAGCGCGCTCAAGGGGCTGGGCGCCGCGCACCCCGACCTCCGCGCGAGTGGCGGCAGCGGCGCG
GGCAAGGCCAAGAAGTCGGTGGACAAGAACAGCAACGAGTACCGGGTGCGGCGCAGCGCAACAACATCGC
GGTGCGCAAGAGCCGCGACAAGGCCAAGCAGCGCAACGTGGAGACGCGAGCAGAAGGTGCTGGAGCTGACCA
GTGACAATGACCGCCTGCGCAAGCGGGTGAACAGCTGAGCCGCGAAGTGGACACGCTGCGGGGCATCTTC
CGCCAGCTGCCAGAGAGCTCCTTGGTCAAGGCCATGGGCAACTGCGCGTGAAGGCGCGCGGCTGTGGGACCG
CCCTGGGCCAGCCTCCGGCGGGGACCCAGGGAGTGGTTTGGGGTGCCTGGATCTCGAGGCTTGGCCGAGCC
GTGCGAGCCAGGACTAGGAGATTCCGGTGCCTCCTGAAAGCCTGGCCTGCTCCGCGTGTCCCTCCCTTCC

TCTGCGCCGGACTTGGTGCGTCTAAGATGAGGGGGCCAGGCGGTGGCTTCTCCCTGCGAGGAGGGGAGAAT
TCTTGGGGCTGAGCTGGGAGCCCGGCAACTCTAGTATTTAGGATAACCTTGTGCCTTGGAAATGCAAACCTC
ACCGCTCCAATGCCTACTGAGTAGGGGGAGCAAATCGTGCCTTGTCATTTTATTTGGAGGTTTCCTGCCTC
CTTCCCGAGGCTACAGCAGACCCCCATGAGAGAAGGAGGGGAGCAGGCCCCGTGGCAGGAGGAGGGGCTCAGG
GAGCTGAGATCCCGACAAGCCCGCCAGCCCCAGCCGCTCCTCCACGCCTGTCCTTAGAAAAGGGGTGGAAC
ATAGGGACTTGGGGCTTGGAACTAAGGTTGTTCCCTAGTTCTACATGAAGGTGGAGGGTCTCTAGTTCC
ACGCCTCTCCACCTCCCTCCGCACACACCCACCCAGCCTGCTATAGGCTGGGCTTCCCCTTGGGGCGG
AACTACTGCGATGGGGGTACCAGGTGACCAAGTGGGAGCCCCACCCGAGTCACACCAGAAAGCTAGGT
CGTGGGTCAGCTCTGAGGATGTATACCCCTGGTGGGAGAGGGAGACCTAGAGATCTGGCTGTGGGGCGGGC
ATGGGGGGTGAAGGGCCACTGGGACCCTCAGCCTTGTTTGTACTGTATGCCTTCAGCATTGCCTAGGAACA
CGAAGCACGATCAGTCCATCCAGAGGGACCGAGTTATGACAAGCTTTCAAATATTTTGCTTTATCAGC
CGATATCAACACTTGATCTGGCCTCTGTGCCCAGCAGTGCCTTGTGCAATGTGAATGTGCGCGTCTCTG
CTAAACCACCATTTTTATTTGGTTTTTGTGTTTTGTTTTGTTTTGCTCGGATACTTGCCAAAATGAGACTCTC
CGTCGGCAGCTGGGGGAAGGGTCTGAGACTCCCTTTCCTTTTGGTTTTGGGATTACTTTTGATCCTGGGGG
ACCAATGAGGTGAGGGGGGTTCTCCTTTGCCCTCAGCTTTCCCCAGCCCCTCCGGCCTGGGCTGCCCACAA
GGCTTGTCCCCAGAGGCCCTGGCTCCTGGTCGGAAGGGAGGTGGCCTCCCGCCAACGCATCACTGGGGC
TGGGAGCAGGGAAGGACGGCTTGTTCTCTTCTTTTGGGGAGAACGTAGAGTCTCACTCTAGATGTTTTAT
GTATTATATCTATAATATAAACATATCAAAGTCAA

VRGRGRAGSPGGRRRRPAQAGGRRGSPCRENSNSPMESADFYEAEP RPPMSSHLQSPPHAPSSAAF GFPRG
AGPAQPPAPPAAPEPLGGICEHETSIDISAYIDPAAFNDEFLADLFQHSRQKEKAKAAVGPTGGGGGGDFD
YPGAPAGPGGAVMPGGAHGPPPGYGCAAAGYLDGRLEPLYERVGAPALRPLVIKQEPREDEAKQLALAGL
FPYQPPPPPPPSHPHPHPPPAHLAAPHLQFQIAHCGQTTMHLQPGHPTPPPTPVPSHPAPALGAAGLPGP
GSALKGLGAHPDLRASGGSGAGKAKKSVDKNSNEYRVR RERNNI AVRKSRDKAKQRNVETQQKVLELTSD
NDRLRKRVEQLSRELDTLRGIFRQLPESSLVKAMGNCA