

Supplemental File 1. Predicted Upstream TICs Identified in Cancer Genes.

Below are the 5'UTRs of mRNAs from genes overexpressed in cancer. Codons colored in red have KSSs ≥ 0.8 . Upstream ATGs that may be used for translation are bolded. Potential alternative TISs are followed by their KSS score. NCBI Nucleotide accession numbers for each sequence are in parentheses.

EPHA4 ([NM_001304536.2](#))

ACGCGTGCTCATCTTGTGTAAAAGTAAAAGTTGCTCATGTCATTAGCTCGGCTCTGAGTTTGCATGAGA
sAACCAGCGCAGCTCTCGAGCCACGGGAGAAAACACGATCTGCTGCGGAGCCCAGTGACCTGAAACT
GTAGCAGTGACTCGAGACCTGTCCTCTCCTCGACGTGCCCCATAACCCTCCCGCTTTATTTAGGATCC
GCTTTTCCGAGAGCAGCCACTCAGGCAACCCCCGGAAGAAGCGGCAGGAGCAGCG**TTG(0.82)**GCACC
GGCGAACC

YY1 ([NM_003403.5](#))

CTCCCTCTGCCTTCTTCCCCACGGCCGGCCGCCTCCTCGCCCGCCCGCCCGCAGCCGAGGAGCCGAG
GCCGCCGCGGCC**GTG(0.91)**GCGGCGGAGCCCTCAGCC

ERBB2 ([NM_004448.4](#))

CCCCTCCATTGGGACCGGAGAAACC**AGG(0.87)**GGAGCCCCCGGGCAGCCGCGCGCCCCCTTCCCACG
GGGCCCTTTACTGCGCCGCGCGCCCGGCCCCACCCCTCGCAGCACCCCGCGCCCCGCGCCCTCCCA
GCCGGGTCCAGCCGGAGCC**ATG(0.86)**GGGCCGGAGCCGCAGTGAGCACC

FOX2 ([NM_001031695.4](#))

CTTCAGCCATCTGCCTGAGATATGGGAGGGAGCTGGAGAAAG**AAG(0.81)**GAGGGGGAGAGACTGCC
AGAGAGGAAGAGAAAAGAAAGGAAGAAACATTAGAAAGAAAAAGGAAGGAAAACGGTATAAAGAG
AGATCAATTACCCACCCTTAAATAGCTAGATTGGGGGGGGAGGGGGGTGGAAAAGAAAGCTGTGGA
GGTGTGCCCCAGC**ACG(0.88)**GCTGCTTTGAAAGGTTTATCATCTATCCGTTTGTTT

KIT ([OM304357.1](#))

TCTGGGGGCTCGGCTTTGCCGCGCTCGCTGCACTTGGGCGAGAGCTGGAAC**GTG(0.82)**GACCAGAGC
TCGGATCCCATCGCAGCTACCGCG

AXL ([NM_021913.5](#))

GAGAAGGCGGCTGCTGGGCAGAGCCGGTGGCAAGGGCCTCCCCTGCCGCTGTGCCAGGCAGGCAGT
GCCAAATCCGGGGAGC**CTG(0.87)**GAGCTGGGGGGAGGGCCGGGGACAGCCCGGCCCTGCCCCCTCC
CCCGCTGGGAGCCCAACAACCTTCTGAGGAAAGTTTGGCACCC

MYC ([NM_002467.6](#))

AACTCGCTGTAGTAATTCCAGCGAGAGGCAGAGGGAGCGAGCGGGCGGCCGGCTAGG**GTG(0.80)**GA
AGAGCCGGGCGAGCAGAGCTGCGCTGCGGGCGTCCTGGGAAGGGAGATCCGGAGCGAATAGGGGG
CTTCGCCTCTGCCCCAGCCCTCCCGCTGATCCCCAGCCAGCGGTCCGCAACCCTTGCCGCATCCACG
AACTTTGCCCATAGCAGCGGGCGGGCACTTTGCACTGGAACCTACAACACCCGAGC**AAG(0.84)**GAC
GCGACTCTCCCGACGCGGGGAGGCTATTCTGCCCATTTGGGGACACTTCCCGCCGCTGCCAGGACCC
GCTTCTCTGAAAGGCTCTCCTTGCACTGCTTAGACG

MET ([NM_001127500.3](#))

AGACACGTGCTGGGGCGGGCAGGCGAGCGCCTCAGTCTGGTCGCCTGGCGGTGCCTCCGGCCCCAA
CGCGCCCGGGCCGCCGCGGGCCGCGCGCGCCGATGCCCGGCTGAGTCACTGGC**AGG(0.82)**GCAGCG
CGCGTGTGGGAAGGGGCGGAGGGAGTGCGGCCGCGGGCGGGCGGGGCGCTGGGCTCAGCCCGGC
CGCAGGTGACCCGAGGCCCTCGCCGCCCGCGGCGCCCCGAGCGCTTTGTGAGCAGATGCGGAGCC
GAGTGGAGGGCGCGAGCCAGATGCGGGGCGACAGCTGACTTGCTGAGAGGAGGCGGGGAGGCGCG
GAGCGCGCGTGTGGTCCTTGCGCCGCTGACTTCTCCACTGGTTCCTGGGCACCGAAAGATAAACCTCT
CATA

HP ([AF026219.1](#))

CCCAGCCAGGAC**ATG(0.81)**GCCGCACCTCTCCTCATCAGGAGCGCCGGCTCACGGACTTCTCGCCCA
ACTCCCTGAGCGCTCCCTCGTTTCGATCTTTAGAAAACCCTGCTTTCTTTCTGGGGCCGTGACG**AGG(0.82)**
GGCAGGGAGCGGCGAGCAAG(0.90)GATGCGTTGAGGACCGCGAGGGCGCGCGTCTCGGGTGCCG
CCGTG(0.86)GGTCCCGACGCGGAAGCCGAGCCGCCTCCGCCTGCCTCGACTTCCCCACAGCGTTCC
GCCGCCGCTGCCGTGCTTGATGTGCAGAAAGAAGCCGGACACC

EPHA1 ([NM_005232.5](#))

GCAAC**CTG(0.80)**GCGCTGCCATCCGGGCCACTGTCCCAGGTCCCGGCCCGGAGCT

MYCN ([NM_001293228.2](#))

AGGCTGTGACAGTCATCTGTCTGGACGCGCTGGGTGGATGCGGGGGGCTCCTGGGAACCTGTGTTGGA
GCCGAGCAAGCGCTAGCCAGGCGCAAGCGCGCACAGACTGTAGCCATCCGAGGACACCCCCGCCCC
CCCGGGCCACCCGGAGACACCCGCGCAGAATCGCCTCCGGATCCCCTGCAGTCGGCGGGAGGTAAG
GAGC**AGG(0.83)**GCTTGCAAACCGCCCGCGCCAGGGAAGCGACGAGCGCCGGGGCAAGGCAAGC
CTG(0.80)GACGGG**ATT(0.82)**GCGACGTGCGCACCGGGCGCCCTAATATGCCCCGGGGGACTGTTTCT
GCTTCCGAAACAAAACCATCTCTGGGTTTTCCAGAAAAGCCAGTTCAGCCCCGAAGGCATC**CTG(0.**
87)GCTAGAGGAGACCCGCCCTAATCCTTTTGAGCCCTTACCGGGGGGAGTAATGGCTTCTGCGAAA
AGAAATTCCCTCGGCTCTAGAAGATCTGTCTGTGTTTGAGCTGTGCGAGAGCCGTGTTGGAGGTCGGC
GCCGGCCCCCGCCTTCCGCGCCCCCCCACGGGAAGGAAGCACCCCCGGTATTAACGAACGGGGCG
GAAAGAAGCCCTCAGTCGCCGGCCGGGAGGCGAGCCG

FOXM1 ([NM_202002.3](#))

AACGCTCCGCCGGCGCCAATTTCAAACAGCGGAACAACTGAAAGCTCCGGTGCCAGACCCACCCC
CGGCCCCGGCCCGGACCCCTCCCTCCCGGGATCCCCGGGGTTCCACCCCGCCCGCACCGCCG
GGGACCCGGCCGGTCCGGCGCGAGCCCCCGTCCGGGGCC**CTG(0.84)**GCTCGGCCCCCAGG**TTG(0.85)**
GAGGAGCCCGGAGCCCGCCTTCGGAGCTACGGCCTAACGGCGGCGGCGACTGCAGTCTGGAGGGTC
CACACTTGTGATTCTCAATGGAGAGTGAAAACGCAGATTCATA

KPNA2 ([NM_001320611.2](#))

GTTGACTAGGCCTCGGGGGCGACGTTCAATTGACCAGGCGGCTGAGTTTCGCGGGGTCTGCGGGTTTA
GGGCGCCGACGCTCTGCAAACGGCAGCGGAGGCCTTAACGCGTCGCGGCCGGGAGAATCGGAGCGA
GCCAGGCTTGAGGGCGAATGTCCCGGGAGGACTTGTGGCGGCC**CTG(0.81)**GTTTCGCCTCCTCCTTTC
TCGTTGCATCTTCCCCGGC**GTG(0.83)**GGGGCAGGGGCTGGGGGTGGCAGTTGGGAGCACCGTCTCTG
ACACCTAGGCCCCGGGGGTGGCTCTGCCACC**AAG(0.84)**TCGTAGGCGAGCGTAATGAAAGCAAAGAT
AGCAAATTGTAAGGAGGGCTTTGACTTTTGTATCTTCTGAATGACGCACAGCTGATGTCATCCTAATT
AAGCGCATTCACTCCTAGTCTCTGGAAATGCAATCAAATATGCGAGATGCGGCACTGCATTTTTAATG
TTGACCATAATGTAATGATGAAGCAAATTTTTATTAAATTTTCGAGTCTGCACCTATTTTGGCCAAGTAA
AGACAGTAAAATAGGGAGAGCCTCCTGAGGATCTGAATTTATTGCCCTGGCACATAATTTTAGCTCTT
TCTCCCTTTGTCTCATAACC

STAMBP ([NM_006463.6](#))

GTTTCCGGAACCTCCGGGTGTCATCCGCGGGGAAAGGTGGGGAAGGGTCCCGGGAAC**GTG(0.88)**GTG
GGGC**AGG(0.80)**GCCTCCGAGCGTGGTTGGAAGGGGATCGGCCGCCATGCTGCATCCCCTTTT

TGGAATTGCTCAACCAGGTGGTAACCGGCGCCGCTTCCTGGCCTTGGGAGGTGGTTCCTTTCTTAACCC
ACAAGAACCTCTCCCAAGAGAACTTGGTCCTG

MAP3K8 ([NM_005204.4](#))

ACTCGTCCGCTCCGCTCTGGACTGCGCGCCACGCTCTGGGGTCCGGCGCCCTG(0.82)GTTCTGCTTCT
GCCGCTGCCGCCGCCGGATCCCAAGTGGCCCGGCTGCTCGGCTCCACAGGCCTGCAGCCAGCATC(9
0)GCACCGAACCTTCGGGGGGCGCGGCTGGAGCGCTCGGCCGGCCTG(0.83)GGAGCGCCAAAG(0.85)
GCCGCAGATGCAATCTTCTTACCGCGAAGAAGCCAGGGGAATAGGTAGCCACATCTTGTTCAGATA
AGAAAGGAAGCTAACGCAGTATCTGCAAAGCCAGGAGTCTGACTCAGTACTTTTCTCACTCATGCATA
CAAAGCAGCTAAAAATGACACAGCTTATTTACCATGCCCTGACACTGCACTGAGCACTTTATGAGCTT
GAACTCTGTTAATCCTCACGACCACCTCATGAGACTCTCCAGAAAGAGCAACAGTA

CDKN3 ([NM_005192.4](#))

ACCGGTGAGTCGCCGGCGCTGCAGAGGGAGGCGGCACTGGTCTCGACCTG(0.80)GGGCGGCCAGCG

ADAR ([NM_001111.5](#))

GAACCGGAGCCATCTTG(0.88)GGCCCCGGCGCGCAGACCCGCGGAGTTTCCCGTGCCGACGCCCCGGG
GCCACTTCCAGTGCGGAGTAGCGGAGGCTG(0.81)GGGGCCTCGAGGGGCTGGCGCGGCCAGCGG
TCGGGCCAGG(0.80)GTCGTGCCGCCGGCGGGTCGGGCCGGGCAATGCCTCGCGGGCGCA

RCC1 ([NM_001048194.4](#))

AGAGGCCTGCAGAGCGCATGCTCTGGGGCAGTTCGCGGCCCGGCGGGGAGCGCCGGAGTTCCTTGT
GGCCGACGTGCACCAG(0.85)GACAGGAAG

COL11A1 ([NM_001854.4](#))

ACTGACGGCATGAAGCCTTTAGGGGCACACAGTACTCTCAGCTTGTTGGTGGAAGCCCCTCATCTGCC
TTCATTCTGAAGGCTAGG(0.81)GCCCCGGCAGAGGAAGGATCAGAGGGTCGCGGCCGGAGGGTCCCCG
CCGGTGGGGCCAACTCAGAGGGAGAGGAAAGGGCTAGAGACACGAAGAACGCAAACCATCAAATTT
AGAAGAAAAAGCCCTTTGACTTTTCCCCCTCTCCCTCCCCAATGGCTGTGTAGCAAACATCCCTGGCG
ATACCTTG(0.85)GAAAGGACGAAGTTGGTCTGCAGTCGAATTCGTGGGTTGAGTTCACAGTTGTGA
GTGCGGGGCTCGGAG

BUD31 ([NM_003910.4](#))

GTCGAGAAGCAGCTACCCAAGCTCCAGGAGCTTCCGGTATGTGTTTTCCCTCTGTTCTCGATTACCTTG(0.86)GCAACGGCTGAGGCGGGAGACCGGTGGTCTGCACCGTCCTG(0.80)GAGGGAGATATGAGTGGCTGGACTCTCAGCCAGCCACTGGGATGTGTTCTGGGCTTTGGACCTTGAGGCCGGAGAGAGCTCCCGAGAGGAGGCGGCGCCACGTTCTGTTCTTCTGAGGGGACGGTAGATTTGGGGGTTTTCTCTAGGATTCTCGCGCCGTTTCTCTGAAGAAACAGGACCAGAGAGGGAAGGTGACCTGAAAGTCACAGAATAATTTTTTAAGCTGAACAAGAATCCAAGCCTGCAACTGCAGAGACGAGAGATCTTCTGCTGTCTATACTCTTGGAAGCACATCCTAAGATCTTGCAGATTATCCTGTGGAAGGAAA

KCNH2 ([NM_000238.4](#))

AACCCTTCCGCGGCCGGGGCCGAGCCGCAGGCGCTGCCCCAGCCGCGGGCGCTGGAGCGGCTGTCCGCGCGGTG(0.82)GCAGGCGGGAGCCAGGAGTCCGGGGCTCGGGCGGGCGGAGCGCAGCGCGGGGACGCGGCGGAGCGGGGCCCCGCGGCTCGGCGGGGGCCGGCAGACAGGTGTGCCGGCGGCGGGCGGCTCGCGTCAAGCGGCTCCAGGCCGGGCCCCGGGGTCCGGAGCGGGGAGCCGGGAGCCGAGCGAGGACC CGGCGCCCCGAGTCCAGTCTTG(0.82)GCCGCGCCCCGTGCTCGGCTTG(0.86)GCCGCGGGGTGCGGGG ACCACG(0.91)GCCCCGCCGGGCCACCCGAAGCCTAGTGCTGGGCCGGGCCGGGCCGGGGTGGGTGGGGCCCCGCCCGGCCCGCCCATGGGCTCAGG

BCAP31 ([NM_001139457.2](#))

GATGGGCCTCCGGGACGGTGTGCCAGGCCGGGGCCAAGTCGGAGGCCCTCGCTCTGGGTGGGCGCTGGGGCCCGCGAGG(0.80)GCTACTGTAAGGACCCCTGGCTTCTGAGGATACTGCGTCTAGAACTTTCTCCGTATGGGGCCTTGAGGTGCTTGGTCGAGACCTGCCTTTGCGCTTGGTCCCGAATCCTGCCCTCTAGGAGTCGCTCTTGCGGGCCTCCAGCCCACCGGAGGCGAAGCGGCCCGGGCGGAAGGCCGCTGGATCCTCGAGGGAGGTGCCGTTTCTCTCCGCGGGCGCCGTG(0.89)GGGACGTG(0.82)GGAGGCGGGGCGTCGGCAGCGCTTGACTAGGTGCGGCCCTTG(0.82)GGCCTGCCTGGTAGCGGGGATTTGGGCCCGCAGAGCGCCCCGCTCTGCGGCTGAGTTCTGCCTGGCGGGGAAGGGAGCGCCCCG

NME1 ([NM_198175.1](#))

GCAGAAGCGTTCCGTGCGTGCAAGTGCTGCGAACCACGTGGGTCCCGGGCGCGTTTTCGGGTGCTGGCGGCTGCAGCCGAGTTCAAACCTAAGCAGCTGGAAGGGCCCTGTGGCTAGGTACCATA(0.84)GAGTCTCTACACAGGACTAAGTCAGCCTG(0.86)GTGTGCAGGGGAGGCAGACACACAAACAGAAAATTGGACTACAGTGCTAAGATGCTGTAAGAAGAGGTAACTAAAGGACAGGAAGATGGGGCCAAGAG

RPA3 ([NM_002947.5](#))

AAGCTACTCAGATAAGAGGCTCCAAGAGGACATTTTTGGATGTGAAAAACAATGAGAAGGAGGACAA CACACATTTACAATCGTCTTAATTTTGTACTCAGAAAAAGGATGTGAAGACAATGCACAGGGAATACA

ATAGTTTCAGATCTGTGTACAGTTTCCTTTTGCTTCATCTCCTGCAACAATGTAATGAAGACACCATGAT
ATCATTAACATTTACACAAAAGGAAAATGAGGCTGAAATGGTGTGGGC **AAG(0.80)**GCCCAGGAATCT
GGAGCATCCCTAACCAAGCAGGAGAGCACCTGGGATAGAGAAAGTGCTCAAGAATGTTCACTTACTG
ATTACTACAATCAAAAAAAGATACGACACTAATTTACCACATTCTTCTTACTTATTTTATGAGATACTATT
CTTCCAAG **GTG(0.81)**GAGAAAGTGAGAAAGTAGAGTGACGCAGCTAAGGGAGTAAATCGACCCCTCA
GCCAACAAGTGGCAAAAGCCTGAAGAAAGTGATCAAGATCACTGATGACCCCGCTGCCCATCTCCAA
GGGGGCGGGTATCACAACCCCGACGCCACACCACGTATCATTCCGCAAACTCCCGCGCCTCCACG
CAGAACTGGCAAG **AGG(0.82)**GAAGGCGAGACAGCAGTGAACAGCTGGTACGCAGCACCCACAGCAC
CGCGGCAGCAGCTAGTGCCGACTCCCGCCTAGCTCTTTTGA CTCTGTTTCGCGGGAAGAATGGGGAAAC
AGTAAGGTTGCGGCGCCTCCCGCGAGACGAGGTACCTGAGG **CTG(0.80)**GCCCCGCAGTCCCCCGCCG
CACCAGCACCGGAGCTTCACACCCCACTTCCGGGGTCAAGTCACCGCCGGGAATCCTGTGATCGCAG
AAAGGTAGTCTCAGGTTCCGCCCTATCCAAGTCCCGCCTCCACTGCCTCTCGCCCTGTATCTGTCAAC
TTCCGGGACGCCGCGCTACTAAGCAGCCAATCTCCACTTCCGGACTCATCCAGCCCCTTCTCCACC
CCTTTCAGAGACAGCGCG **ATT(0.81)**GCGATTTAGGTTTCCGCGCATTTAATTGGCGAAG **CTG(0.81)**GA
GCGCTAGTCTTCGCTGATTGGTGCCGAGAAATCTGCCCCATAGACACCCGCGGGGCGCACAGTTTCAG
TCGTCCGTGGGTTCCCGCCAGCCGCGAGTCTTGACCATAATC

ELOC ([NM_005648.4](#))

CTTTCGACTGCCCCGGAACCCACCGGAGCAGGCAGCTGGGGGTGGGGGGGCGGCC **CTG(0.81)**GGAT
AGGGGCTGTGGCAGTACGCGGGGACCCGGCTGCG **GTG(0.81)**GCTGCGGGACTGACGAGAACTACT
AAAGTTCCTGGGGAAGCAAAGTAGAATTTATAAGAACAAA

DRAP1 ([NM_006442.4](#))

GGGCGGCGAGCAGGCCCCGGGAGCCGGGAGGCTGCGGGCGGCGGCG **CTG(0.81)**GACCCGACGCGGC
GAGAGAGGCCCCGAG

UBE2S ([NM_014501.3](#))

GGCTCAGTGCTGCCGGGCACCGGGGCGGCGGGTTGGTCTACGCTGTGCGCGGCGGACGTCCGAGGC
AGCGGGGAGCGGAGCGGGGCCCGGGGCTCTCCAGGGCCGCAGCGGCAGCAGTTGGGCCCCC
GCCCCGCGCGGCGGACCGAAGAACGCAGG **AAG(0.83)**GGGGCCGGGGGACCCGCCCCCGGCCGCG
CGCAGCC

PSMB8 ([NM_004159.5](#))

AAACTCCGCAGTGCTCAGCCAAGC **AGG(0.81)**GAGCAACGCTAGGAAGGGCGGGCAGAAAG **(0.80)**GG
CACGCTCTTGTGGGTGACTACAGGTTAGGAGACCGTTGAAC **CTG(0.85)**GAGGGGCCCTAGG **ATG(0.8**

0)GACCCCGTGGAAGATTGAGAGACTGCGCCCTCTCCCTGGCGCCGCCTTCCCCTACACGCGGCGGG
TATATTCTGTTGCAGTTGGCCCAGGACCTGTTTCCAAGACTCTGCCCCCTGCACTTCCGTCCCTCCTGG
TTTTGTAAAGTG

RNPS1 ([NM_006711.5](#))

GGAGGTGTCGAGGCCGTG(0.84)GCCCCGGAAGTGGTCGGGGCCGCTGCGGACGGAAGGGCGCCTGTG
CTTCGTCCGCTCGGCGGTGGCCCAGCCAGGCCCGCGGGACTCAGACCAGCGGGGAGCGCGGCCTCC
GCCCTTGGGGCCCTCCCGCCGGGCGGAGACCCAAGCCCCAACGCCAGGCCCTGCCCTG(0.83)GAA
GCGCTCGCGGCCCGGCGCCTGGACGGGGGAGTTGCTGCTCTTTGGCGTAAATTGCAATCGATTAGGG
ATCGTTTCTCAGAATCAAGTTAGAAGTGAGAGTTCAGATAAGTGAGGCCGCCATT(0.88)GCTGCTTTGA
ACACCTCAGAAGGGGAGA

DLGAP5 ([NM_014750.5](#))

AAGTTTGAATTCGTGGAGGCTCGGGTTGTGAGGGTTCTGCTTCGGAGTCGGCGGTGGTCGTCCAGA
CCGAGTGTTCTTTACTTTTTGTTTGAGGTTTACGCTAGAAGGTG(0.80)GCTCAGG

MFAP2 ([NM_017459.3](#))

GCAACTTGGTCTCACA**GTG(0.80)**GCTTAGGCCAGGGTGGGAGCAGTGAACGGAGTCACAAAAGAAAT
TTTTCAGCTGTCTCTCTGACACCACCCCGGCCTGCCTCTTTGTTGCC

USP7 ([NM_003470.3](#))

GACATTTTACGCCGCCCATTTTGAGAGCGAGCCGAGCCGAGCTGCCGGGCGCCGCGTCCGCTGCC
GGAGCCCCGACG**ACG(0.80)**ACGCCGAGGAGGCGGAGGCCGCGGCTCTCGAACGCGGCCGGCCCCG
TCGCCCCGCCGCTCCGCCGCTCCCGCCGGCCCCAGGGCCCCGAGGCCCGCCGCGGCCGAGGCC
TCCCGTCCGCCGCGCCCGGCCGAGGCGGGGCTGACTCCGCGGCCCCCGACCGGCCGCCCTCCGCC
CCCGGCCGCCCCGCGGCCCGCAGCCCCGGCCCCGGCCCCGGCGGCGGGAGGCGGGCCCCGCGGC
GGCGGGCGGGCGGCCGAGCGAGCGACGAGGCCGCCCGGCCCGGCCCGGCCGCCGCCGCCGCCG
CTCGGCGCCGAG**ATT(0.80)**GGGCGAATCGCGAGCAAGTACGTGCGGTCTCCCTGCCGCCGCCGCCG
CCCGCCGCGGGCCGCCCGGGGCCGCGTCGCCGACGACGCGCGGGAGGAGGAGGAGGAGGCCGC
CCCGCCGCCGCCGCCGCCGCCGCCGCCGCCGCCGCTCGCCGCCGCCGCCGCCGCCGCCGCCGCCG
GCCCCCGGCCCGCAGGCGAGGCCAGGCCGCGGCCGAC

LAGE3 ([NM 006014.5](#))

CTCGCGGGGTGCGCCTCTGGGATAGGCGACCACG(0.85)GTGTCTTCAAAGCCCCGTCAGGGTTGGC
TTCCTGGGGCCGGACCGACTGTGGGTCAGTTTGACACAGCGCTCTGGAATCGAGTTACGCGCGAAAG

GGCAGAGTTTCTGGAGGAAACCGCAGCCTCTCAACCGCTGACCGGGTCTCAGAAGGCCCCCGGCAGG
(0.86)GCCGCTTGCGGGAACTGACCACGCGCCAGTCAGGCTCTCCAGGGACCTGCGCAGGCGCGTGT
GGGCGGAGTCGTGCGCAGGGGGCGGGGCTTCGGGAAGGAGCCACAGAGAGG(0.80)GCGGGGCGTA
GGACCTGCGCTTCGGGGGTGGAGTCGGAGCGGCGCGGCGGCGGTC

NUTF2 ([NM_005796.3](#))

GCAGACCGCGCTGGGTTGCCGCTGCCGCTGCCGCCATC(0.86)GTGCCAGCCCCTCGGGTCTCCGTGA
GGCCGGGTGACGCTCCAGA

TRIM28 ([NM_005762.3](#))

AGTGACGCAGAGGCTGGAGACGACTCTACGGCGGCGAAGAGACGCGGGTTGAGGAAGAGGGACGG
ATTGCCCATGCGCTTGGGCGCACAGCGGCCCGCTTCTGTGTGGTCTGGAGGTGGAGCTGAGAGGGGA
ATCACACTCTATAAAGTTTCGCATACCCCACTGGCGGATTCAATTGCGGCAGTGACGTCACAGAGGCC
CCGCCCCGCCCCACAAGAGCCCCACCGACGTG(0.83)GGGTTG(0.82)GCGGTGGTGAAGGACTAG
GAGTTGGCGCGTGCGTACTGGCGGCCTCTCCCGCACCGACCGGCCTG(0.80)GGCCCCGCCCCGGGC
GTGAGGCGCCCAATGCGCGTGCGCGGCGGCGTCGGCGCCAGTTATTTCTGTCCCCGCCCCCGGCCTC
GGCTCTTTCTGCGAGCGGGCGCGCGGGCGAGCGGTTGTGCTTGTGCTTGTGGCGCGTGGTGCGGGTTT
CGGCGGCGGCTGAGGAAGAAGCGCGGGCGGCGCCTTCGGGAGGCGAGCAGGCAGCAGTTGGCCGT
GCCGTAGCAGCGTCCCGCGCGCGGCGGGCAGCGGCCAGGAGGCGCGTGCGGCGGCTCGGCCTCGC
GGCGGCGGCGGCGGCAGCGGCCAGCAGTTGGCGGCGAGCGCGTCTGCGCCTGCGCGGCGGGCCC
CGCGCCCCTCCTCCCCCCTGGGCGCCCCCGGCGGCGTGTGA

PTDSS1 ([NM_014754.3](#))

CCCTCTGCTCCAGCCTTTGCTGGGCGCCAGACCCGGCTTTGCCGTCCGGCTATTAGCCTACTGTGGCT
AGTACCCCCGGGTCCCGGCCTTCTCGGGCTGGGGCCCGGCCACCGCGGCAGGACG(0.83)GGGA
GGCGGGCC

TCEA1 ([NM_006756.4](#))

AGCCGGAAGCCACGCCTGCCCCTAGCCCGACGCCCCTGGCGGGAACATG(0.85)GGCTCGCCCC
TCACCAGCGATCTGCAGTCAGTTGGTAGCGCCTGCACGTCGCGCGCGGTGTTGATTGTCGCTGCCTG
GGGAGGAGGAGCCGGAGCCGCCGCCGCCGCCGCCGCCGGGCTTCGTTTCGTAAGGAAG(0.82)
GGGGCCTAGGCCCGGGCCTGCGGTGGTGGGGTTGCTGCGCGCCGGGGTTCGCTCCTGCTGTGTCTT
CCGCTCCAGCTTCGCCCACTTCCCTTGCCAGCGGGGTGGGCGCGGAGAAGACCTGCCGGAGCC

PCNA ([NM_002592.2](#))

GGATGGCCGGAGCTGGCGCCCTG(0.85)GTTCTGGAGGTAACCGTTACTGAGGGCGAGAAGCGCCAC
CCGGAGGCTCTAGCCTGACAAATGCTTGCTGACCTGGGCCAGAGCTCTTCCCTTACGCAAGTCTCAGC
CGGTCGTCGCGACGTTGCCCCGCTCGCTCTGAGGCTCCTGAAGCCGAAACCAGCTAGACTTTCCTCCT
TCCCGCCTGCCTGTAGCGGCGTTGTTGCCACTCCGCCACC

FDPS ([NM_002004.4](#))

GGGAACTACTCGACCCACAGAGCCGATCGCGGAGCGGATTCTGCTTTTAGGAGTACCCGCCAACAG(0.80)CGGGACCGAGCAGGAATCCGTATCTGGGAACAGG

PSMD2 ([NM_002808.5](#))

GCAGCGGGCCGGCAGTG(0.81)GCGGCGGAG

HMGA1 ([NM_145899.3](#))

CTTTTAAAGTCCCCTGAGCCGGTGCTGCGCTCCTCTAATTGGGACTCCGAGCCGGGGCTATTTCTGGC
GCTGGCGCGGCTCCAAGAG(0.83)GCATCCGCATTTGCTACCAGCGGCGGCCGCGGCGGAGCCAGG
CCGGTCCTCAGCGCCCAGCACCGCCGCTCCCGGCAACCCGGAGCGCGCACCGCAGGCCGGCGGCCG
AGCTCGCGCATCCCAGCCATCACTCTTCCACCTGCTCCTTAGAGAAGGGAAG

KPNB1 ([NM_002265.6](#))

CCCTCCCTGCGCGCCGCTCTCACTCACAGCCTCCCTTCCTTCTTTCTCCCTCCGCCTCCCGAGCACCA
GCGCGCTCTGAGCTGCCCCAGGGTCCCTCCCCCGCCGCCAGCAGCCCATTGGAGGGAGGAAGTAA
GGGAAGAGGAGAGGAGAG(0.80)GGGAGCCGGACCGACTACCCAGACAGAGCCGGTGAATGGGTTTGT
GGTGACCCCCGCCCCCACCACCCCTCCCTTCCCACCCGACCCCAACCCCATCCCCAGTTCGAGC
CGCCGCCCCGAAAGGCCGGGCGCGTCGTCTTAGGAGGAGTCGCCGCCGCCGCCACCTCCGCC

DYNLL1 ([NM_001037494.2](#))

CTTCGGGCGCTGACAGG(0.84)GAGAGCCTG(0.85)GGGCCGGGCCGTGTGGATGCCATCCCCGAGCGC
GGTTCGCGCTCGGCTGAGGCGCTGGACAAGTGGCTTGGGCTCCCGCGCCTCAGTTTCTCTCTGTGGCG
CCGCCTACCTCACAGACTTGTGAGCACTCACTGACGTGGGTAGCGCCAGGGCCTGCGGGGCGCAGG

AGAGCTG(0.80)GAGTCAGGCGGAGACCGCAGGCTGACCCCGCAGCGGCCGGGCTGTCGCGGCCCCC
ACCTCAGGTAACC

RUNX ([NM_001024630.4](#))

ATTGCCTCACAAACAACCACAGAACCACAAGTGCGGTGCAAACTTTCTCCAGGAGGACAGCAAG(0.8
1)AAGTCTCTGGTTTTTAAATGGTTAATCTCCGCAGGTCCTACCAGCCACCGAGACCAACAGAGTCAT
TTAAGGCTGCAAGCAGTATTTACAACAGAGGGTACAAGTTCTATCTGAAAAAAAAAAGGAGGGACT

MRPL3 ([NM_007208.4](#))

CAGAGAGCATC(0.82)GGCCGGCGACCGTTCCGGCGGCCATT(0.84)GCGAAAACCTCCCCACGGCTAC
TGCGTCCACGTGGCGGTGGCGTGGGGACTCCCTGAAAGCAGAGCGGCAGG(0.83)GCGCCCGGAAGT
CGTGAGTCGAGTCTTCCCGGGCTAATCC

SPP1 ([NM_001040058.2](#))

AGCAGCAGGAGGAGGCAGAGCACAGCATC(0.84)GTCGGGACCAGACTCGTCTCAGGCCAGTTGCAG
CCTTCTCAGCCAAACGCCGACCAG(0.83)GAAAACCTCACTACC

SNRPD2 ([NM_004597.6](#))

GCGTCCCAGAGGGAAGAGGGGCGGTGCCTGTCTCCGAAGCGAGGAGCGGATTGGCTTCACGGAGGC
CGCGCCCCCGAAGTCACG(0.83)GCCGGCGGGCATTGGAAATAGCTTGTCATTTCCCTCCTTCAACCT
GTACCATTCTTCAAGAAACGGCGCCAACGGAAGTGGGTCGCAGGAAGAGGAAGTCCCGCCTCTCTCT
CCTCAGGCAGCAGCAACGCGGAGGAAACGGGAGTGAACGGAGAGCGTAGTGACCATC

UCHL3 ([NM_001270952.2](#))

GCTCGGCAAGGCTCGGCTCGGAAGAGTCCAAGCGTGAGGGGAGAGGGCTGTGGATTCAGATACTGTT
TTTCTCCCGAAATAGGAAATTGGCTTATTTTTTCTCCTCGGCAGCATCTTAATTTAAAATATGACACTTG
ACCTACGGCCCTGCACGGAGCGGTTAAGAGG(0.80)GTCACCAACCAGTTTCTTAAACAATTAGGTCTA
CATCCTAACTGGCAATTCGTTGATGTATATGGA