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 ITPR1-237
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Donor Sequence WT -> SNV
|
gRNA Protospacer Sequence
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SNV

INK2J00055_ITPR1_N602D_A1 0_BB
88,854 bp

Start (0)
AgAATGGATGCAGAATAGTTCAGTGTTGAGCTTGCTCTTGGGAAGGAAACACAAGCCCAGGAAGAATATTATTACCTAAT HبНبН TCTTACCTACGTCTTATCAAGTCACAACTCGAACGAGAACCCTTCCTTTGTGTTCGGGTCCTTCTTATAATAATGGATTA

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| $\square$ |

CGTTAAGAAACGTACTGGAGAATTCTCTTCTGCAGACATCTTTCTATGAGATTTCTGGTTTTGGAGTTGGTTTTACATTT
 GCAATTCTTTGCATGACCTCTTAAGAGAAGACGTCTGTAGAAAGATACTCTAAAGACCAAAACCTCAACCAAAATGTAAA

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ATAGAATTTTTTATGACGTATTCCCTTAGGGCTTAGGGGTGAAATGATGCCATGTGTTTATATTAAAGATATAGTGGAGT
 TATCTTAAAAAATACTGCATAAGGGAATCCCGAATCCCCACTTTACTACGGTACACAAATATAATTTCTATATCACCTCA

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CTTTTCTTCCTGCACCTTTAAAATTCTCCGTCTCTTTCTAGAAACATGATCTTTATTTTGTTTCTGATTCATGTTTTATG
 GAAAAGAAGGACGTGGAAATTTTAAGAGGCAGAGAAAGATCTTTGTACTAGAAATAAAACAAAGACTAAGTACAAAATAC


ACATTCTAAGTCATTGTCTATAGAGATATCTTATACATAGTTATATTTTACATATTATACATAGTATATGTGTATTTATA
 TGTAAGATTCAGTAACAGATATCTCTATAGAATATGTATCAATATAAAATGTATAATATGTATCATATACACATAAATAT

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TACACACACAATGTATAGTCTCCTATGAAATAAATGTCCTAGGAGCTCCAAACAACCTTCAGATTCTAAGAAAACCTGAG
 ATGTGTGTGTTACATATCAGAGGATACTTTATTTACAGGATCCTCGAGGTTTGTTGGAAGTCTAAGATTCTTTTGGACTC

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AACTATATTGCTACATCATTGGTTCTTAACTGGGGGTAATTTTGTCCCCCAAAGAATATTTGGCAACATCTGGAGACCCT
 TTGATATAACGATGTAGTAACCAAGAATTGACCCCCATTAAAACAGGGGGTTTCTTATAAACCGTTGTAGACCTCTGGGA


TTTGAGTTTTATAACTTCATGGTGCTGCTGGCATCTGGTGAGGGGAGGCTAGGGATGCTCTCAAACACCCAGCAGTGCCA
 AAACTCAAAATATTGAAGTACCACGACGACCGTAGACCACTCCCCTCCGATCCCTACGAGAGTTTGTGGGTCGTCACGGT


AGGACATCCCCACACAACCAAGAATTATCCTGCCTAAAATGTCAGTAGTGCTGAGGTTTAGAAAATTTGTGCCACATGGA
 TCCTGTAGGGGTGTGTTGGTTCTTAATAGGACGGATTTTACAGTCATCACGACTCCAAATCTTTTAAACACGGTGTACCT


GTACCGTAGGCATGCAAAATGATGCTTATCATAACCTTGACTCTTACCACTTTATGTGAACTATCCCTGCCTTTTGGGGC
 CATGGCATCCGTACGTTTTACTACGAATAGTATTGGAACTGAGAATGGTGAAATACACTTGATAGGGACGGAAAACCCCG


AAAAGGCTTTTGTTTTTAAGGTTTTGACTGCCACTATACTGGACTTTTAGAGTTTTTTCTTTGTAATTAAAGGTTTTTGT
 TTTTCCGAAAACAAAAATTCCAAAACTGACGGTGATATGACCTGAAAATCTCAAAAAAGAAACATTAATTTCCAAAAACA

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CATGTCATCATAAAGATAGTGTTGATCTTGAATAGTGCTTTTTTTGAAGTGTATCAAGCTGTGATTGCTTTAAATCCACC ب+ + + $+\boldsymbol{+}$ GTACAGTAGTATTTCTATCACAACTAGAACTTATCACGAAAAAAACTTCACATAGTTCGACACTAACGAAATTTAGGTGG


TTCAGTGCGTTGATACTGTAATCCAATAGCCAGAGAGATTTTATTCTGTTCCTCTCTCCCATCTTCAGATGAGGATACAT + $+\boldsymbol{+}$ AAGTCACGCAACTATGACATTAGGTTATCGGTCTCTCTAAAATAAGACAAGGAGAGAGGGTAGAAGTCTACTCCTATGTA

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CTGGGTCTGTGGGGTGTGTCAAGACACTTTGCTTGTACATGAGGAAACAAACTAGTTACTCTTGGAATTGCTGGATTAGA + $+\boldsymbol{+}$ GACCCAGACACCCCACACAGTTCTGTGAAACGAACATGTACTCCTTTGTTTGATCAATGAGAACCTTAACGACCTAATCT

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CATCTTTGCTTAGTTGTTTTCGGATCCTTTACCAGTTGGCAGATGATAAGTTCCTACACAATGCCTCCTTATAGAATACA ب中ب + $+\boldsymbol{+}$ GTAGAAACGAATCAACAAAAGCCTAGGAAATGGTCAACCGTCTACTATTCAAGGATGTGTTACGGAGGAATATCTTATGT

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GGCTGAAAACCATGGCCTGTTTTCATTATGTTAATCCTAAATAGTTAACCGGGATTTAGGAATTAATGGGAAAAAAATTA
 CCGACTTTTGGTACCGGACAAAAGTAATACAATTAGGATTTATCAATTGGCCCTAAATCCTTAATTACCCTTTTTTTAAT

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AAGCAAGTTTCAAGGGCCACTTGAATTTTGAGCAAGCAGTCTATCTTGGCCAGGGAAGCATCTTTGAACAGAAACAAACA بम TTCGTTCAAAGTTCCCGGTGAACTTAAAACTCGTTCGTCAGATAGAACCGGTCCCTTCGTAGAAACTTGTCTTTGTTTGT

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GGTATTTGTAAGAGATTTCCTTGAGTTCACAAATATTTCTATGGAATGTGATAGCTGATCCCAAAAGAGAGAAACCAGAG + $+\boldsymbol{+}$ CCATAAACATTCTCTAAAGGAACTCAAGTGTTTATAAAGATACCTTACACTATCGACTAGGGTTTTCTCTCTTTGGTCTC

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ATGTATTCATGAGTTCCATGCATATGATGGATTTTCTTAGGTATTTATTCCTGACCTTCTTATGCTACTCATTGACTTTA
 TACATAAGTACTCAAGGTACGTATACTACCTAAAAGAATCCATAAATAAGGACTGGAAGAATACGATGAGTAACTGAAAT


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TATTTAGCAGCACAGATCACTGGGGGCACAGTTAAGTCCTCTTGAATTAGGAATACGTTTAGAGCTGAAAACCAGCTTTG HبН ATAAATCGTCGTGTCTAGTGACCCCCGTGTCAATTCAGGAGAACTTAATCCTTATGCAAATCTCGACTTTTGGTCGAAAC


GACCTTTTTGAAAAATAAATCACTAGATTAAAATTTATACTGTGCACTTAATAAAATATCCACGTGTAAATACAGGCTAT
 CTGGAAAAACTTTTTATTTAGTGATCTAATTTTAAATATGACACGTGAATTATTTTATAGGTGCACATTTATGTCCGATA

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TTTGCTTAATTACATTTGTGTGGCAGGCTTAGAAAAGTAAAGGATGTGAAGGAGTTTGCAGCTGTTGCCCTAGGATAGAA + $+\boldsymbol{+}$ AAACGAATTAATGTAAACACACCGTCCGAATCTTTTCATTTCCTACACTTCCTCAAACGTCGACAACGGGATCCTATCTT

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AGTTGTAGGAAGACCCTCCCTTATACTGTAATGTCTCTTAGGGGCAGTAGTTCTCATCAGGAAACATTGCTGCTTTCTTT + $+\boldsymbol{+}$ TCAACATCCTTCTGGGAGGGAATATGACATTACAGAGAATCCCCGTCATCAAGAGTAGTCCTTTGTAACGACGAAAGAAA

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AGTCTACGCTTAACCATATTGTCATTTATCCTTCCTACTGACGTCTCTTTTCTCTCCTTATAAAGGAGTATATAGCCAAG
 TCAGATGCGAATTGGTATAACAGTAAATAGGAAGGATGACTGCAGAGAAAAGAGAGGAATATTTCCTCATATATCGGTTC




GAGGCGGGAGTGGGGTCCATGCAGGATGGTGTCTCTGCCTGTAAGATGCAGGGACTTAGCTGGTGCTTTTTACTACGTTT + $+\boldsymbol{+}$ CTCCGCCCTCACCCCAGGTACGTCCTACCACAGAGACGGACATTCTACGTCCCTGAATCGACCACGAAAAATGATGCAAA


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CCTTGTGCTGCTAGTGACAAGTTTTGATTAGTTAGGTCTGGAGAGGCTTTTTGATGAGTAGTGGCAAGAACTTGGTGTTA ب中 $+\boldsymbol{+} \boldsymbol{+}$ GGAACACGACGATCACTGTTCAAAACTAATCAATCCAGACCTCTCCGAAAAACTACTCATCACCGTTCTTGAACCACAAT


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AAATGAGACCTGGGGGTGCATTCCTAGCTCCAGTGTGTCCCACCTGGATGAGCTTGGGTTTTTTCCTGAACTTTAATTTC
 TTTACTCTGGACCCCCACGTAAGGATCGAGGTCACACAGGGTGGACCTACTCGAACCCAAAAAAGGACTTGAAATTAAAG


CTTATCTGCTAAATGGGTAGTTATGAAAATTAAATGAGAATAAACGCAGGTGACGTGCAGGCACTTAGTGGATGCAGAGG



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## TTTACTGTTTAA

PCR Reverse

Ag GTGTATATATTTATGGGGTACATGAGATGTTTTGATGTAGGCATGCAATGTGTAATAATCACATTGTAGAGAATGGGG
 TCCACATATATAAATACCCCATGTACTCTACAAAACTACATCCGTACGTTACACATTATTAGTGTAACATCTCTTACCCC


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TATCCATCCCCTCAAACATTTATTTTTTGTTACAAAGAATTCAGTTCTATTCTTTTAGTTATTTTAAAATGTACAATTAA
 ATAGGTAGGGGAGTTTGTAAATAAAAAACAATGTTTCTTAAGTCAAGATAAGAAAATCAATAAAATTTTACATGTTAATT


ATTATTGACTGTAATTACCCCATTTACCTACAAACAGTAGGTCTTATTCATTCTGTAATTACCCAATTTACCTACAAACA
 TAATAACTGACATTAATGGGGTAAATGGATGTTTGTCATCCAGAATAAGTAAGACATTAATGGGTTAAATGGATGTTTGT


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GTAGGTCTTATTCGTTCTTTCTATTTTTTTTTTTTTTTTTTTTACCTGTTAACATCCCCACCTCCCCCCTGCCCTCCCAC
 CATCCAGAATAAGCAAGAAAGATAAAAAAAAAAAAAAAAAAAATGGACAATTGTAGGGGTGGAGGGGGGACGGGAGGGTG


TATCTTTCCCAGCCTCTGGTAACCATCCTTCTACTCTGTGTCCATGAGTTCAATTGTTTTGATTTTTAGATCCTACAAAT HبНبץبץبATAGAAAGGGTCGGAGACCATTGGTAGGAAGATGAGACACAGGTACTCAAGTTAACAAAACTAAAAATCTAGGATGTTTA


AAGTGAGAAGATGCGATGTTTGTCTTTCTGTGCTTGGCTTATTTCACTTAGCATTATGACCTCCTCCAGTTCCATCCATG
 TTCACTCTTCTACGCTACAAACAGAAAGACACGAACCGAATAAAGTGAATCGTAATACTGGAGGAGGTCAAGGTAGGTAC


TTGTTGCAAATGACTGGATCTCACTCTTTTCATTCCCTTTTTCTTTTTTTTTTTAAGATGGAGTCTCGCTCTGTCACCCA



GGCTGGAGGGCAGTGGCGAGATCTCAGCTCACTGCAACCTCCGCCTCCCGGGTTCAAGCAATTGTTCTGCCTCAGGCTCC
 CCGACCTCCCGTCACCGCTCTAGAGTCGAGTGACGTTGGAGGCGGAGGGCCCAAGTTCGTTAACAAGACGGAGTCCGAGG


CCAGTAGCTGCGACTACAGGCACGTGCCACCACACCCAGCTAATTTTTGTGTTTTTAATAGAGACGGGGTTTCACCATAT
GGTCATCGACGCTGATGTCCGTGCACGGTGGTGTGGGTCGATTAAAAACACAAAAATTATCTCTGCCCCAAAGTGGTATA


TGGCCAGGCTGGTCTTGAACTCCTGACCTCGTGATCTGTCCGCCTTTGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGC
 ACCGGTCCGACCAGAACTTGAGGACTGGAGCACTAGACAGGCGGAAACGGAGGGTTTCACGACCCTAATGTCCGCACTCG


CACCGCGCTCGGCCTCATTCACTTTTTAGCACCTCTTGCTTATCAGTTAAACACTCCCCTCCCTCAGTATAATCAGTAAG
 GTGGCGCGAGCCGGAGTAAGTGAAAAATCGTGGAGAACGAATAGTCAATTTGTGAGGGGAGGGAGTCATATTAGTCATTC


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AGTCTTGCAAGTTCAGTTGTTGGTTGAGCGTTTTTATTATAGATTAGTGAATTCTATTGATTGTATCTCATTCACACAGA

TCAGAACGTTCAAGTCAACAACCAACTCGCAAAAATAATATCTAATCACTTAAGATAACTAACATAGAGTAAGTGTGTCT


TCTGCTCCTCTTTCGTACACCCTCTCCCCATTTCTTTCCCCTTCTCTTGTCCTTCTAATTAAGACCCATATTTTCAGTTG

AGACGAGGAGAAAGCATGTGGGAGAGGGGTAAAGAAAGGGGAAGAGAACAGGAAGATTAATTCTGGGTATAAAAGTCAAC



ACCACCCTTGAAAATAACCCGCATTTTCTGGAGCCTGCTCAAGGGCTCAGGTAGTGAGCAATGGAAGCACTTCCGTTAAT HبН TGGTGGGAACTTTTATTGGGCGTAAAAGACCTCGGACGAGTTCCCGAGTCCATCACTCGTTACCTTCGTGAAGGCAATTA


TATCTCATTTAATCCGCAGGACAGCCCTCAGAAGTGACACATTATCCTTTTCTGTAGACGAGCATCAATTAAAGCACAGT
 ATAGAGTAAATTAGGCGTCCTGTCGGGAGTCTTCACTGTGTAATAGGAAAAGACATCTGCTCGTAGTTAATTTCGTGTCA


GAAATTAGTAATTTCCCCAAATGAACGCTCCATAGCAGAACTCCGCTAATAAGATCCTAACTGGGCTTCCAACACACGTA HبH H CTTTAATCATTAAAGGGGTTTACTTGCGAGGTATCGTCTTGAGGCGATTATTCTAGGATTGACCCGAAGGTTGTGTGCAT


GCCAAACATCAGGGCGTTGCCTCTCACCACTGTGGTTCCCCTGTGTCTCCACCACACCTTCCTTATGTGAGCTGCTTTCT
 CGGTTTGTAGTCCCGCAACGGAGAGTGGTGACACCAAGGGGACACAGAGGTGGTGTGGAAGGAATACACTCGACGAAAGA
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TGTCTTGTTCCTTCTTCTCATCTTTGCCTCATCACCTCTTCCTTGACCACAGCCACTCCTGTCTTTCCTTCTTGTTTCCT
 ACAGAACAAGGAAGAAGAGTAGAAACGGAGTAGTGGAGAAGGAACTGGTGTCGGTGAGGACAGAAAGGAAGAACAAAGGA


CTTCCTTCTTTCTGGCATGTGGCTTTCTGGTGATGCCATAAACATTGGCATCAAGACTTAGAATGCTGCTGACATGTCTT




TTTTGTTTCTGTTTCTGTTTAGATTCTTAGATTACCTCTCCGACCTCTGTGTCTCCATGAACAAATCAATTCCAGTGACC
 AAAACAAAGACAAAGACAAATCTAAGAATCTAATGGAGAGGCTGGAGACACAGAGGTACTTGTTTAGTTAAGGTCACTGG


CAGGAACTGATATGTAAAGCTGTGCTGAACCCCACCAACGCTGACATCCTGATTGAGACCAAGTGAGTGGGGAGCCAGGG
 GTCCTTGACTATACATTTCGACACGACTTGGGGTGGTTGCGACTGTAGGACTAACTCTGGTTCACTCACCCCTCGGTCCC


TTTAGATGGAAAACATGGGGTTCATTCAGTGTTGGTGCTCATGAGGAATAAAACCTAGCCCTATCATTTTTTGAGTGAT +H-HH-HH AAATCTACCTTTTGTACCCCAAGTAAGTCACAACCACGAGTACTCCTTATTTTGGATCGGGATAGTAAAAAACTCAACTA


CTAAAGTCAGTGTGGCTGGCATTTGATCTTCTTATTGGAAAAGTCTTGATTAGGAGAATTCCCGAATTTGATTTTGGTGT
 GATTTCAGTCACACCGACCGTAAACTAGAAGAATAACCTTTTCAGAACTAATCCTCTTAAGGGCTTAAACTAAAACCACA
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CACCTCCTCTTCATAGTGGTGTCACTTATTTTGCATACAAGTTTAGAAGTCATGTAAACTCACCGGGGAGCATTTTATAC
 GTGGAGGAGAAGTATCACCACAGTGAATAAAACGTATGTTCAAATCTTCAGTACATTTGAGTGGCCCCTCGTAAAATATG


AGCTACATTTTAAGAGTTTAAAACTCTTTGTAAGTGTGACCATCAATTTAAAATTTCAAATGACATAATGAATATTCAGT
 TCGATGTAAAATTCTCAAATTTTGAGAAACATTCACACTGGTAGTTAAATTTTAAAGTTTACTGTATTACTTATAAGTCA



ACCAGTAGTAATTCATTTTTGGCAAAGGAGCAGTTTTCCTGAGAAGTACAGTGCCGGTAATATGGACAGCCTTAAAAAAC
 TGGTCATCATTAAGTAAAAACCGTTTCCTCGTCAAAAGGACTCTTCATGTCACGGCCATTATACCTGTCGGAATTTTTTG


ATACTAAATtACGTCCTGAGCTAGTGATACTTCATTGATtCACATGTATAACTCAGTTTTGGGCTTGGGCTAATGCAGGG HHH TATGATTTAATGCAGGACTCGATCACTATGAAGTAACTAAGTGTACATATTGAGTCAAAACCCGAACCCGATTACGTCCC


TTTTTCAGTTTAGGTATTTTCACATTTCGGGCTTGGTAATTCTTTGTTGTGGGGCTGTGCTAGGCACTGTAAAATGTTCA
 AAAAAGTCAAATCCATAAAAGTGTAAAGCCCGAACCATTAAGAAACAACACCCCGACACGATCCGTGACATTTTACAAGT


GCAGCATCCCTGGCCCCTACCCACTTAGATGCCAGTAGCACCTCTCCATTTCGGTTGTGACAACCAAAAACCTGTCCAGA
 CGTCGTAGGGACCGGGGATGGGTGAATCTACGGTCATCGTGGAGAGGTAAAGCCAACACTGTTGGTTTTTGGACAGGTCT


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GACATTGCCTGGTGTCCACTGGGGGCAGCAGCACCATAGTCGAGAACCACTGGGTTACAGTATATGAAGATGTTAATGTC
 CTGTAACGGACCACAGGTGACCCCCGTCGTCGTGGTATCAGCTCTTGGTGACCCAATGTCATATACTTCTACAATTACAG


AGGCTCTCTGCGGCTCTGCCCTTGGGGGAAATACAAAACAAAAAGTGTCTTTCCATGTGTCTTTATGCTGAAAGTAAAGC




TTGAAGGTGTCTCTTCCACTGGAGAGAATGCTCTGGAGGCAGGAGAAGACGAGGAAGAGGTGTGGCTGTTTTGGAGGGAC
 AACTTCCACAGAGAAGGTGACCTCTCTTACGAGACCTCCGTCCTCTTCTGCTCCTTCTCCACACCGACAAAACCTCCCTG


AGCAACAAAGAGATTCGCAGCAAGAGTGTGAGGGAATTGGCTCAGGATGCTAAAGAAGGGCAGAAGGAGGACCGAGACGT
 TCGTTGTTTCTCTAAGCGTCGTTCTCACACTCCCTTAACCGAGTCCTACGATTTCTTCCCGTCTTCCTCCTGGCTCTGCA


TCTCAGCTACTACAGGTGCGTGGGACACGTGTGGGGCTCAGATTGGGGTGCCCCAAAACAGTGGCACTTAGGAATTTGTT
 AGAGTCGATGATGTCCACGCACCCTGTGCACACCCCGAGTCTAACCCCACGGGGTTTTGTCACCGTGAATCCTTAAACAA

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GCTCGTTTGTTGATTACTTCAAGGAATCACAAGGAGTCATCTTGTAAGATTGTCTAGAAAAAAGCCAGATGTGTGTTTTA
 CGAGCAAACAACTAATGAAGTTCCTTAGTGTTCCTCAGTAGAACATTCTAACAGATCTTTTTTCGGTCTACACACAAAAT


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GGAGTTTGGAGTGTAAGATTTCAGTTAGTTGACATCTGGATGTGGCTGGTTCCCAAAAAGGATGAGTGCTTGCCTCAGTC
 CCTCAAACCTCACATTCTAAAGTCAATCAACTGTAGACCTACACCGACCAAGGGTTTTTCCTACTCACGAACGGAGTCAG


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CCTGGTGATAGTTTATCCTTCAGCAGCATGGCCCATAGATATGGTGGTAGGTACGTAAGAGGCAGGCTGTGGGGTCACAT Hبнبн ب


CCCTACCTCTCCGCTTACCAGTTTTTTGACATTGGCCAAGTTTGATTTTATGCTCTAATTTCTTTATCTGCAAAATGAAG




CATCCATGTATCTTTCTATAACTACACAAATATATAATAAAAAGCATGTACTTACACTAATACTTCCAATTCCATTCCAA
 GTAGGTACATAGAAAGATATTGATGTGTTTATATATTATTTTTCGTACATGAATGTGATTATGAAGGTTAAGGTAAGGTT


CACCATAGGATTTATTCTAGCCTTCACCTTTTCCATTTCATGACTCCCTCCAGCTGCCACGATTCCCTGTATGTTTACCC
 GTGGTATCCTAAATAAGATCGGAAGTGGAAAAGGTAAAGTACTGAGGGAGGTCGACGGTGCTAAGGGACATACAAATGGG


ATCTGCCCGTTTCCCTGTGTGTACCTGTCTCACCTCTGCCACCCACCTCCACGGTCCCCAGTGTCTCCTTGGCTCCAGCT
 TAGACGGGCAAAGGGACACACATGGACAGAGTGGAGACGGTGGGTGGAGGTGCCAGGGGTCACAGAGGAACCGAGGTCGA


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GTAAGACCTGCCAGTCCTGCCACCTGAAGGGAAGGGAAGGGGAAGAAAGAAAGGAAGTGAACCAATTAATACTTTTAAAA
 CATTCTGGACGGTCAGGACGGTGGACTTCCCTTCCCTTCCCCTTCTTTCTTTCCTTCACTTGGTTAATTATGAAAATTTT


GAAAAGGAAAGGGAAGATAAAGCAAGGCTTTTATTATTTTTTAATAAAATAAATAAAACTGCAGATAAAATGCCTTTTCT HبH СТTTTCCTTTCCCTTCTATTTCGTTCCGAAAATAATAAAAAATTATTTTATTTATTTTGACGTCTATTTTACGGAAAAGA


TGCCTCCTGTATTCTGTTCTTTCATTCATGTGTGATGTACGCATCCTATCCACATTCTCTGTGTGCTGCATTTGTATGCA



TCTGTAAATCATATGTAGTATTTTATCTCTACTTAAAATTTTATATAAATGGGACTGTACTCCAAATACCATTCTAAAAC
 AGACATTTAGTATACATCATAAAATAGAGATGAATTTTAAAATATATTTACCCTGACATGAGGTTTATGGTAAGATTTTG

tTGCCTTATTTATTCAATACGGGTACTGAAGCCATATTGAATATATCTGCGTTAATAGAGATTAATCCATTTCTGTAATT HبНН世H AACGGAATAAATAAGTTATGCCCATGACTTCGGTATAACTTATATAGACGCAATTATCTCTAATTAGGTAAAGACATTAA


TGGACTGTTGGATGATATTCTGTTTTATTGATTTATCACATTTTCATCGCTGTTTGATATTTGATCACATGCTGCAGTTC HبH ACCTGACAACCTACTATAAGACAAAATAACTAAATAGTGTAAAAGTAGCGACAAACTATAAACTAGTGTACGACGTCAAG


TTCATGTCAGGAAACATCTTCATTCAAATTTTTCTGAGTATATGTATGAATTTCCATTCCACACTGGGAGGTGGGCTTGG
 AAGTACAGTCCTTTGTAGAAGTAAGTTTAAAAAGACTCATATACATACTTAAAGGTAAGGTGTGACCCTCCACCCGAACC


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AGGATATTCATATTTTAAGCTTTACTAAGCAATTCTAAATTGGATGTGTCAGTGTACACACCCACCAGTTGTAGACGACA
 TCCTATAAGTATAAAATTCGAAATGATTCGTTAAGATTTAACCTACACAGTCACATGTGTGGGTGGTCAACATCTGCTGT


AGCTTTGTTTCTTCATGTCTTTGTTAACCTTGAATATCATGATGCTTTTTAATTTTTGGTAATTTTATAAGTGTGAAATA HبН + + ب




AGTGTTTGATGAATCTTCTCCCAAGTGAATGAGAAAGAGTGCCTTAATTGGTCAGGTTCCAGTTAACAACATTCACTTGC TCACAAACTACTTAGAAGAGGGTTCACTTACTCTTTCTCACGGAATTAACCAGTCCAAGGTCAATTGTTGTAAGTGAACG


AATTGGATGAAGATGAAAAGTGAGGAGTCTCCTACTTTTGTAAATGAAATGTTTTTTTACACGTGTAGGAATTAGAGTGA
 TTAACCTACTTCTACTTTTCACTCCTCAGAGGATGAAAACATTTACTTTACAAAAAAATGTGCACATCCTTAATCTCACT


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CTTACATGATATAAGATCTTTAAAATGTTATAAAATTTCTAATTAGGCTGAATATGTGTGATATCTTGAACATTTCCTAC
 GAATGTACTATATTCTAGAAATTTTACAATATTTTAAAGATTAATCCGACTTATACACACTATAGAACTTGTAAAGGATG


ATGGTCTTTACTGTATAAAACACAGCTGAAGGGAAAGAAATAGACAACCATCTTAGGCCTTAGCATTCCCCCCGTTTATT
 TACCAGAAATGACATATTTTGTGTCGACTTCCCTTTCTTTATCTGTTGGTAGAATCCGGAATCGTAAGGGGGGCAAATAA


TTAAAAAGTAAACATTAAGGACCTAGTGGAATTAGGTCGTCACATAATTGCTCCAACACAGCTGGATAGACATGTGTTCC

AATTTTTCATTTGTAATTCCTGGATCACCTTAATCCAGCAGTGTATTAACGAGGTTGTGTCGACCTATCTGTACACAAGG


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TACAAGAGCAATTTAGGGGTGTTGATGTATGAGTTTAGTTGGCCAAATGTCACTCCCATGACAGTCAGGGCTGCCCAGAC HبН ATGTTCTCGTTAAATCCCCACAACTACATACTCAAATCAACCGGTTTACAGTGAGGGTACTGTCAGTCCCGACGGGTCTG


GACCCTTCATTCATCCTGAATGATtTCTGGAGCGTGAGCTGTGTGCCCTTGTTCCTTCCTCTAGATATCAGCTGAACCTC HبН CTGGGAAGTAAGTAGGACTTACTAAAGACCTCGCACTCGACACACGGGAACAAGGAAGGAGATCTATAGTCGACTTGGAG



TTTGCGAGGATGTGTCTGGACCGCCAATACCTGGCCATCAACGAAATCTCAGGCCAGCTGGATGTCGATCTCATTCTCCG
 AAACGCTCCTACACAGACCTGGCGGTTATGGACCGGTAGTTGCTTTAGAGTCCGGTCGACCTACAGCTAGAGTAAGAGGC
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CTGCATGTCTGACGAGAACCTGCCCTATGACCTCAGGGCGTCCTTCTGCCGCCTCATGCTTCACATGCATGTGGACCGAG世+Н世+Н بНН GACGTACAGACTGCTCTTGGACGGGATACTGGAGTCCCGCAGGAAGACGGCGGAGTACGAAGTGTACGTACACCTGGCTC


ATCCCCAGGAACAAGTCACCCCCGTGAAATATGCCCGCCTCTGGTCGGAGATTCCCTCGGAGATCGCCATTGACGAGTGA HبН TAGGGGTCCTTGTTCAGTGGGGGCACTTTATACGGGCGGAGACCAGCCTCTAAGGGAGCCTCTAGCGGTAACTGCTCACT


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GCCTGGCACCTGAAAACCTCACTTTACATTATTCTGTGCGGCAGTAGATAGCCCCATATGGTCTCATTAAATCTTAGAAG Hبнبн ب



AAGATGGCATGATTATGTTTTTGGTTTTTGTTTGTTTGTTTGTTTGTTTGAGATGGAGTCTCACTCTGTTGCCCAGGCTG
 TTCTACCGTACTAATACAAAAACCAAAAACAAACAAACAAACAAACAAACTCTACCTCAGAGTGAGACAACGGGTCCGAC


AACTGCAGTGGCGCAATCTCGGCTCACTACAAGCTCTGCCTCCCGGGTTCGTGCCATTCTCCTTCCTCAGCCTCCCAAGT
TTGACGTCACCGCGTTAGAGCCGAGTGATGTTCGAGACGGAGGGCCCAAGCACGGTAAGAGGAAGGAGTCGGAGGGTTCA


AGCTGGGACTACAGACGCCCACCACCACGCCCGGCTAATTTTTTGTATTTTTAGTAGGGACGGGGTTTCACCGTGTTAGC
 TCGACCCTGATGTCTGCGGGTGGTGGTGCGGGCCGATTAAAAAACATAAAAATCATCCCTGCCCCAAAGTGGCACAATCG


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TAGGACGGTCTCGATCTCCTGACCTTGTGAGCCGTCCACCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACC H-H+H+ННННННН ATCCTGCCAGAGCTAGAGGACTGGAACACTCGGCAGGTGGAGCCGGAGGGTTTCACGACCCTAATGTCCGCACTCGGTGG
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GCGCCTGGCCCCGATTGTATTTTTTATATCTCATTTATCTCCTCTTTCATTCTGCAAATATTTAAGTGTGTACTATGTGC
 CGCGGACCGGGGCTAACATAAAAAATATAGAGTAAATAGAGGAGAAAGTAAGACGTTTATAAATTCACACATGATACACG


CAAGCTCAAGAAATATATCAGTGAACAAACTAGAAAGCAATCTCTATGCTAGTTGGTGGAAGACAGACAATAGGCAAGAT




GGATGTTGACTTTTGAAGCTGAGTGACCCAGGAAGACCTCTCTGGGAATAACTTGAAATTTTGTTTCCTTTCTTTCTCCT HبН CCTACAACTGAAAACTTCGACTCACTGGGTCCTTCTGGAGAGACCCTTATTGAACTTTAAAACAAAGGAAAGAAAGAGGA


TTCTTTTCAGCTATGATAGTAGTGGAGCTTCCAAAGATGAAATTAAGGAGAGATTTGCTCAGACCATGGAGTTTGTGGAG HHHHHH AAGAAAAGTCGATACTATCATCACCTCGAAGGTTTCTACTTTAATTCCTCTCTAAACGAGTCTGGTACCTCAAACACCTC


GAGTATTTAAGAGATGTGGTTTGTCAGAGGTTCCCTTTCTCTGATAAAGAGAAGAATAAGCTTACGTTTGAGGTAACTCA
 СТСАТАAATTCTCTACACCAAACAGTCTCCAAGGGAAAGAGACTATTTCTCTTCTTATTCGAATGCAAACTCCATTGAGT


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TGATGAAATCTTCTATGTGTATTATCTGCCTCTCAGTGGTCATTTTTCTATGGGGCAAATAGAAAATATGTGAGTAGGTT
 ACTACTTTAGAAGATACACATAATAGACGGAGAGTCACCAGTAAAAAGATACCCCGTTTATCTTTTATACACTCATCCAA


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GTGATTTTGGTCATGATGCTCTGGTTTTGTAATGGAAAGGAATTCAGCTTGGTTTTGTTCCAGAATAAAATAAAACGGAT
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TAAATTTAGCTAGGAATCTCATATACTTTGGTTTCTACAACTTCTCTGACCTTCTACGATTAACTAAGATCCTTCTGGCC HHHHHH|HHHHHH ATTTAAATCGATCCTTAGAGTATATGAAACCAAAGATGTTGAAGAGACTGGAAGATGCTAATTGATTCTAGGAAGACCGG

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| 895 | 1 | 1 | 1 | 1 | 900 | 1 | 1 | 1 | 1 | 905 | 1 | 1 | 1 | 1 | 910 | 1 | 1 | 1 | 1 | 915 | 1 | 1 | 1 | 1 | 920 | - |
| I | L | D | C | V | H | V | T | T | I | F | P | I | S | K | M | A | K | G | E | E | N | K | G | N | N | D |
| ENS E00001258258 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

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TGGAGAAACAAGGGCCCGTTCTCAGGTGGATGGAGCAGCCTGAAGCCGAGTACCATGGGATGCAGGTCAGTGGGCAGTTC HبH ACCTCTTTGTTCCCGGGCAAGAGTCCACCTACCTCGTCGGACTTCGGCTCATGGTACCCTACGTCCAGTCACCCGTCAAG


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CCCTACATGATGTCAGCTGCTCAATCTTTCTTTTTGGTTCTAGCAGCAATCCTGGGAAAAGTGACCCTGTGTTGGAATAA
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GAACACCCCACTGGACTTGGATGACCACGGCGGCAGAACCTTTCTCCGTGTCCTGCTCCACTTGACGATGCATGACTACC
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CACCCCTGGTGTCAGGGGCCCTGCAGCTCCTCTTCCGGCACTTCAGCCAGAGGCAGGAGGTGCTCCAGGCCTTCAAACAG HبНННН GTGGGGACCACAGTCCCCGGGACGTCGAGGAGAAGGCCGTGAAGTCGGTCTCCGTCCTCCACGAGGTCCGGAAGTTTGTC


GTAGCTCAGGTCACCCACGTGTGTGTTGTCTGTCCAAGAAGCTGTTGTGTGCACCTAACGGATTGCGTTCATTAAGGTTC HبН H
CATCGAGTCCAGTGGGTGCACACACAACAGACAGGTTCTTCGACAACACACGTGGATTGCCTAACGCAAGTAATTCCAAG


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AACTGCTGGTTACCAGCCAAGATGTGGACAACTACAAACAGATCAAACAAGACTTGGATCAACTGAGGTCCATCGTGGAA
 TTGACGACCAATGGTCGGTTCTACACCTGTTGATGTTTGTCTAGTTTGTTCTGAACCTAGTTGACTCCAGGTAGCACCTT

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| 1 | 1 | 1 | 1 | 1115 | 1 | 1 | 1 | 1 | 1120 | 1 | 1 | 1 | 1 | 1125 | 1 | $\perp$ | 1 | $\perp$ | 1130 | $\perp$ | $\perp$ | 1 | 1 | 1135 | $\perp$ | 1 |
| Q | L | L | V | T | S | Q | D | V | D | N | Y | K | Q | I | K | Q | D | L | D | Q | L | R | S | I | V | E |
| ENSE00001210825 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

AAGTCAGAGCTTTGGGTGTACAAAGGGCAGGGCCCCGATGAGACTATGGATGGTGCATCTGGAGAAAATGAACATAAGAA
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TTTTAGGTATAAATGTGATAGGATTTATTTTCAAGAGATCTGCTTGTTAAGTCACCAAGATCACAAGCTGTTTGCCTAGG HبН H H H AAAATCCATATTTACACTATCCTAAATAAAAGTTCTCTAGACGAACAATTCAGTGGTTCTAGTGTTCGACAAACGGATCC


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AAATAAGCTACGAATCAAAGTTTAGCTATGTCTCCTGTGCAGCCTTGGACCATGTAGAAGAGACTGCGATATTGAGTGAA
 TTTATTCGATGCTTAGTTTCAAATCGATACAGAGGACACGTCGGAACCTGGTACATCTTCTCTGACGCTATAACTCACTT


TTAGCACCAGGTTTCCCTTACAGACCCACTTGGGAATTGACCTGTTCTCTAGGCATGGCCCAGCCCACTACTATCCCTTC Hبнب-H AATCGTGGTCCAAAGGGAATGTCTGGGTGAACCCTTAACTGGACAAGAGATCCGTACCGGGTCGGGTGATGATAGGGAAG


CCAAGGAAACCCATAGCAAGTAGGTAGATGACTGGGGCATAAGCCCAGCATGACTATTGTAAAACAGTATAGAACTCCCT Hبץ

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TTCTTTCCTAAAGGTCGATGCTAACTGTAAAAAACTGACAGTAGCCCAAGAGTTGTACAGATCACACTTGTGTTCACTTT
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СТССтСССССACCACCATTTTTCCTTTCTTTATGAATTCTCTAAGGAGCTTTAGTTTGTGATAGTCAAGTTGAAGGTACA
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GAAACTGTCCCACTTGTTGTTGAAGCCATAATCCCCTGCTTATTCTGGAAGACGTGACCTTAGTCTTATGGATTTGGCTT HبнНCTTTGACAGGGTGAACAACAACTTCGGTATTAGGGGACGAATAAGACCTTCTGCACTGGAATCAGAATACCTAAACCGAA


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GATGGAGTCAACAGAAATGCCACATACTGAAGGAATTTTGTTTTACGTTTTTAATGCATTATAATCCCCTTTGCCTCCCT Hبץب+ץ CTACCTCAGTTGTCTTTACGGTGTATGACTTCCTTAAAACAAAATGCAAAAATTACGTAATATTAGGGGAAACGGAGGGA


GCCCGCCACCACCCTCTGCAATCTTTTTCCAGCTATAGTTCCTAGTTTTCTGAGACTGATTTCTTTCATTCTACTAGATT
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TTGATTCGGCTTAGCAAACTCTGTGTTCAAGAGAGTGCCTCAGTGAGAAAGAGCAGGAAGCAGCAACAGCGTCTGCTCCG + $+\boldsymbol{+}$ AACTAAGCCGAATCGTTTGAGACACAAGTTCTCTCACGGAGTCACTCTTTCTCGTCCTTCGTCGTTGTCGCAGACGAGGC
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 CTTGTACCCGCGCGTGCGGCACCACGACCTCGACGACGTCTAAGGGATACTCTTCCACTCGCCACGGAGTACGTGTCGTC



TGTGACTATTGTGACTACAAAGCAATTTCAGGTATTGATATGAAACAGAGCATCTGAAAAATAAAGTAAAATCACCCGTG
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TTTGCCTCTAATTTTTCACATTAGCGTTTGTCATTGATACGTATTTGATTTGGGGAGGCAGGAGCAGGCTGACAGTGCTT HبН
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TGCATGCATGTAGGCTGACAAGACACTTATGAAATCATTCATTCAAGCCTACAAGACCCACTCGGGTATTTGTGTTGTGC



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TAAATTCTCCTCTGTTTTGGTTTGATTGTCAAAGCTGGGAGCTCACCTTCCTCCCACAACTCTGTTTTGTCACAGAGTTA
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GGAATGGTTATTACATTTTAAAATAGTCACATAAGTACCTACATAATGTCCTTGATACTCCCTCTCTACCCACAAAGCCC HبН CCTTACCAATAATGTAAAATTTTATCAGTGTATTCATGGATGTATTACAGGAACTATGAGGGAGAGATGGGTGTTTCGGG


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СTCCTTTTCACGGATGAGTAAACAGCGACACTGAGAGGCTAAGAAATGTGCTCCAGGTCACACAGCCAGGAAGTTGGAGA

GAGGAAAAGTGCCTACTCATTTGTCGCTGTGACTCTCCGATTCTTTACACGAGGTCCAGTGTGTCGGTCCTTCAACCTCT
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TCTGGGATAAGAGTAGCGCAGTCAGGTTTGGTGACCTGCATTCCTACCTGCTATCCTCTCTTGCCTCTGAAATGAGGTGA



TGGCTGTGAAGACTTAGGAAGACTATTGTGGGCTGTAAGAATATGAAGGATGATTTCCAGTTTAGAAATTCTTGTTCTGT
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GTTGCTCTAATGTGTGATCTCAGGAGATTTCCACTTTGCCATGGGAGCTGATGGCAAAAGTTAATGTCTAATAGGTCGGA
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AACACATAAACCTGTTTCTCAACCCAGGGGTAAGACTTGAGGCCAATCTGCAAATCTATAGAGGGAGGAGGGCAGGGAAG بץ+ $+\boldsymbol{+} \boldsymbol{+}$ TTGTGTATTTGGACAAAGAGTTGGGTCCCCATTCTGAACTCCGGTTAGACGTTTAGATATCTCCCTCCTCCCGTCCCTTC


AGgGAGGAGGAACAGCTTGTTCTTTGGCTGTTGTGGCTTCTGGGGCTTGTTATAATGCAACATTCATTCCAAAGGGGAAC
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AAGTGCTAAATGTCTCTCCTGCCACCTGCTACTGAAGTCATGCATAAAGTTTTCTGTGGCTATGTATACATATATAATAT
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tTCCATATCAAACATATCTGTAATACATCTTAGTTTGTTAAATATATTTCTAGAAGTATATTAAATGTATTGTAGGTTTT нبнبн ب AAGGTATAGTTTGTATAGACATTATGTAGAATCAAACAATTTATATAAAGATCTTCATATAATTTACATAACATCCAAAA


GTAAAGAAAAATGATGCCACACTCTATGCATTGTCTTGTGTTCTGCTTTTTTCACTTAACACATTATGGATGCCTTTGCA
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GGCAGTAACCATGCAGCACATCTTCATGAACAATTTCCAGCTTTGCAGTGAGATCAACGAGAGAGTTGTTCAGCACTTCG
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$+H+H$



GTGCATATGTCTGTGTCATCTCTTGTGTGAGCTTAAGTTGTAGATATAGGCAAGAATCTGATCTGATATTTCATAGCAAC
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GCCAACGTGGTGGCTCATGCCTGTAATCCCAGCTCTTTGGGAGGCTGAGGCAGGAGCATCACTTGAGGCCAGGAGTACAG HبH H H H
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GACCAGCCTGGGCAACATAGTAAGACCCTTGTTTCTACAAAAAATTTTAAAAATTAGCTGGGTGTAGTGGCATGTGCCCA بץ+ $+\boldsymbol{+} \boldsymbol{+}$


TAATCCCAGTTACAGAGGAAGATCCCTTGAGCCCAGGATTTTGACCTTGCAGTGAGCTATGATGGCACCCACTGCACTCC HبН ATTAGGGTCAATGTCTCCTTCTAGGGAACTCGGGTCCTAAAACTGGAACGTCACTCGATACTACCGTGGGTGACGTGAGG


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ATAATGAATACCTAAGTTTTGAAGTTAATCCTTCCAGGCTTCCTTTTTTCCTACTCATAGATTATATTGATTAGTAATGA + $+\boldsymbol{+}$



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TGTGAATTTCAAATATCAGAAAATCATAGAAGTAAGACTTGGCAGTGGGGAATGGGATGACCATTTTCATCGGTCCTTGC + $+\boldsymbol{+}+\boldsymbol{+}$
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$+1+H+H$


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CTGTTGGGTTCTCATCCCAAATCCAGCACTTACTGGCTAATAGGGCAGGCGATAATGCACTGCTTCCTTCACAGGGTGAT
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TCCCCTCTCACCCTTGCCTCAGGGTCCATTAACAAGGCAGTGTCTGTCTCTGATCTGGGGTCCAGTGGTTCAAGACAATG
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CGTGGACCTGGACAGCCAAGTCAACAACCTCTTTCTCAAGTCCCACAGCATTGTGCAGAAAACAGCCATGAACTGGCGGC
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GTAATGCCTGGTGTTGAGAGAAGTGATGCTTAGCCTGGCCTCACGTGATTGCCACACACAGCAGTGCATCCTTGAGCCAC
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Sall
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\footnotetext{
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tACTGCTATGATTGTAATAGTtACTGAGTCTCTGTACAGTTACACAACCTACTTGAAGACAGATGAATTCGTTAAATCAT HبН ATGACGATACTAACATTATCAATGACTCAGAGACATGTCAATGTGTTGGATGAACTTCTGTCTACTTAAGCAATTTAGTA


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GGTGTtTGTTGTGTTGGTTTTGCTGCTCTTTCAACTTCTCTCTGTTTTCCTTTCCTACAGCTATGTGTTTTGCATTTGAA HبННННННH-HبH CCACAAACAACACAACCAAAACGACGAGAAAGTTGAAGAGAGACAAAAGGAAAGGATGTCGATACACAAAACGTAAACTT


GACCATCATGCTATCAGGGTACATGTATTTAGCATGTTGATACAGCATGTTCATTCATTGGTGTCCTCATGTTTGTATGA HННННН H H H CTGGTAGTACGATAGTCCCATGTACATAAATCGTACAACTATGTCGTACAAGTAAGTAACCACAGGAGTACAAACATACT


CTTTATTATGTGAATAATTCATGCTCATTGAAAATAAACAACACTGACAAGTATTTCTATATAGAAGAAAATCAGAATCA HННН GAAATAATACACTTATTAAGTACGAGTAACTTTTATTTGTTGTGACTGTTCATAAAGATATATCTTCTTTTAGTCTTAGT


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CTCAGGCCCCTGGTGCAGGCAGAGTTATCTGTGCTCGTGGATGTTCTCCACAGACCCGAGCTGCTTTTCCCAGAGAACAC
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GAAGGAGAACAAGGGACACTAAAGTATTTCTGTCTCCTGACCTGGTAGCTGGTATTCACTTTGTCTGTCTCACTAAGGCT HبН CTTCCTCTTGTTCCCTGTGATTTCATAAAGACAGAGGACTGGACCATCGACCATAAGTGAAACAGACAGAGTGATTCCGA


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CACCATTTGAGTGTTTTGAGGTCCACCTACAGGTTGAACCTGTAAGTTTCCTTTATGTTACACGATTATGTAAACAATAG
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TTAATAAACTTTAAAATTATATCAGGACTTTATAAACACTCTGTGTGCAATGCCTACTAATCTCTGCTTTTAATCTACAG
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$+H+H$
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TTTGTTTTTCTTGGACACGATGCTGATAAATCCCATGTCACTAATATCACTTGAGTTGGCACTAATCATCCTAGAGGGAA HH-HH AAACAAAAAGAACCTGTGCTACGACTATTTAGGGTACAGTGATTATAGTGAACTCAACCGTGATTAGTAGGATCTCCCTT


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$+1+H$


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GGCCCGAGGCACCTTGCATTCTTATATTTTCCATCCTTGCCTGCCCTTTAGAATTGTCCTAGGTCCTAGGAGTAGCTGAT
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AAAGGCACATAGCTGTCCCTCATGTCCTGAGCTCTCAGAGGACTTGGTATGGAATGCTGCCTATGCCTGTGAACTTTGTA
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ATTAGAAACAGGTTCAAGTTTTGGGGTTTTCTTTTTGCCAGATACTAGCTGTGTGATTTTGAGCAAGTTAACCTCCCTGT HبH TAATCTTTGTCCAAGTTCAAAACCCCAAAAGAAAAACGGTCTATGATCGACACACTAAAACTCGTTCAATTGGAGGGACA


GCCTCAGTTTCTTCTGCTGTAAAATGGGGGTGACAATGGTCCCTATACCTTAGGACAGTGAGCTGTGCACATGAAGCCCT
 CGGAGTCAAAGAAGACGACATTTTACCCCCACTGTTACCAGGGATATGGAATCCTGTCACTCGACACGTGTACTTCGGGA

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TAACACAGTGGCTGGAATGTGATAAGGGATATTAACTTGTAGATACCTTGTGGAGTGAAACATTGAGGTGATTTTGTAGA
 ATTGTGTCACCGACCTTACACTATTCCCTATAATTGAACATCTATGGAACACCTCACTTTGTAACTCCACTAAAACATCT


CAACAAGAGGAGAAGGAAGGTATTTTAAAATCCAGGCGCTACCCTCATGCCGACTAAGGTGTGAGAGGCTCACAGCTCAC

GTTGTTCTCCTCTTCCTTCCATAAAATTTTAGGTCCGCGATGGGAGTACGGCTGATTCCACACTCTCCGAGTGTCGAGTG



CTTTGTGTGTGGCAATGTTAACTCCTTAGTGCCTTGTTCAACACTGGCTCTCTTCCCACGCAGTTCATTCGCTTATTTAG
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TTCAGTTCATATCAGTGGAACTCATATTGGTAGAGTGACCAGGTAGGAGCTTGGTTTAATTACTCCACATCACTAATCTA +H-HH AAGTCAAGTATAGTCACCTTGAGTATAACCATCTCACTGGTCCATCCTCGAACCAAATTAATGAGGTGTAGTGATTAGAT


CCAATTTTCATTGTTTTAATGTGACACTTATTACAAATGACTTTTTCTTTTCTCAGTCTTAGGTAATAATGTGTGGGAAT
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TTCTGACTGAGACAAACATCTGATATTTGTTTGCATACTGTAGGTGTAAACTGCTGGAAAAAAACTGGTATTATTTTTAA
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AAAGGGTTGCACAGCCAAATGTTAAAGCTGAAGAAGTGACGTTATTTTAGAAGTCTTTTTTTTTTTTTTTCCTTCTCTGC
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AATCAGATTTCTCAGCCTGGTACATTATGAACAGCTTAGTGCTGTTGAGTAATTTATATCAGGATGATTAGGAAAGCTTT
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TCTCTGCAGATTTTAATTTTTCTTAAATTAAACCACTGGCTCAAACAGAATTTTCCTTGAACCCAAGTTTTCACATTAGA
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TAATTGTGTGTGTGTGTGTATGTGTGTATAGAGAAGGTGAGATGAATATGTGCCAAAAACCTTATAATTAAAAGCAAAAA
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TTCTGTTGAAGGAGAGACAAAATGGTAATGTGAGATCCCTTTGTAACTTGAGTTTGGCATCCAGTCTGCATAAATGTGGA

AAGACAACTTCCTCTCTGTTTTACCATTACACTCTAGGGAAACATTGAACTCAAACCGTAGGTCAGACGTATTTACACCT


GTTCCTGTTCCTGGCGTCCACGTGCTCCTTTCATTACCTCCTGCTTGCTTGATTGCAGACTGACCAGGGTCTTGCTGTTC


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ACCCTCAAAAACACGAAGGGGGGAAGAAAAAAGCCACCACTAGAAACTGAAAATCTAAGCAAGTCACTCTAGCTCCAAGT
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CACTTGACCACTCAACCCTATGCTCTTTCAGATTCCCGTTGCGATGGCTACGTTGGCTGTCTTCCCTGGCTGCGGCTTAC HبH H H H GTGAACTGGTGAGTTGGGATACGAGAAAGTCTAAGGGCAACGCTACCGATGCAACCGACAGAAGGGACCGACGCCGAATG


GGGTCTCAGCCCAGCCATCTAGCGCTCAAACAATGTTCTCACAGTGCCAAAGGGGATCCAGTCAGAGACTCAGGATGGTC
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TTTTCTGCACATTCATTTAAAAATCAGTCCCCTCCCGTCTCCCCTGTTTATCCCATCCCAATCTGTCCCTGGAATCTTTA HННННН H H H AAAAGACGTGTAAGTAAATTTTTAGTCAGGGGAGGGCAGAGGGGACAAATAGGGTAGGGTTAGACAGGGACCTTAGAAAT


ATTAGCAGCATGAATTAACAGAGTAGATAAACCCTTTCTGGGACTTTCCATGGTTTTGATGATTGACAGGAGCCAAGAGT



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GCTCCCTCCCATCTTGTTTTGCAAATGCCTCACTTGAAATCTCCAGACCTATTCTCAGAGCTTATTAACAAATCATTTTA
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AACACCTTTCCTCTCGGCCAGACTTCTTCTCCCTCACCTCTCTTCATGACGTACCAGAGGAACTCCGTGACTTGCTACTT
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CCCTTAGGAGTGCGGGTGAAAGTGTAGAGCTGAGAATGCAGAACGCATGCTGCCTCTGGTTACTGGCTTGCCAGTATCCC
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CCAGTATTACTGAACAATGGAGGTTTTTTTGGTTAGAGTAATAACAAAGAGTTACTATATCCCTGTTCAGGACTCTTTGA بНННبН
GGTCATAATGACTTGTTACCTCCAAAAAAACCAATCTCATTATTGTTTCTCAATGATATAGGGACAAGTCCTGAGAAACT


TATTTATATTTTTAAAAAATTTTATTACAGAAAGGTTGAAATGTATATAAAAGGAGTCAGAAAGGTTTTGAAACCCCTCA + $+\boldsymbol{+}$ ATAAATATAAAAATTTTTTAAAATAATGTCTTTCCAACTTTACATATATTTTCCTCAGTCTTTCCAAAACTTTGGGGAGT


TTCATAACTCTGCTTCAACAGCAACTGTCAGCTCATGCCCACTCTTGTCTCACTTATATCCCTCGCTGCTTCCCCTTCTC
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CCACTCATGCCACTAATTTATTTCCTATAGCATTATGAGGTTTTTGTTGTTGTTTTGGTTTGTCTTTTGTTTTTTTAACC HبН+Н-Hب-HبН GGTGAGTACGGTGATTAAATAAAGGATATCGTAATACTCCAAAAACAACAACAAAACCAAACAGAAAACAAAAAAATTGG


ATTTGGCCCATCGACTATTTTTGTAAGAAAGGCTTACTCTTGGCTTATTGTATCATCTTATTCTATTACCCTGATATCTT
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AATATTTTTTCGGACCTTGGGAATAAACCTTGTGGTTGAAATAACATTTTTATATTGCTATGTGGAAGCTGACCTGTAAG
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CCTTTTCAATTTGTCTTAATTTTATCAACTTACCCCAAAGAGATTTTTGTTTGTTATTGTTAGTTGTCCTTCAAAATTAC

GGAAAAGTTAAACAGAATTAAAATAGTTGAATGGGGTTTCTCTAAAAACAAACAATAACAATCAACAGGAAGTTTTAATG


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TCTGAGAAAATATTGAAGTTAACTTCAGAGTTTCTAAATGCTTCCATGAATAATTTATTCTTTCGCCAAGTGAAACTGGG
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CCAATTATAACTGAGTACCCCTGTGTGTTTTGAATATTCGTCCCTCGGTGATGCATTAAATGCAGAAGCTGATTTTATTA HHMH—HHHHH GGTTAATATTGACTCATGGGGACACACAAAACTTATAAGCAGGGAGCCACTACGTAATTTACGTCTTCGACTAAAATAAT


TCCTGTTTGAATTAAGGGTGAGGCGCTCAGGCAAGTTCTGGTCAACCGTTACTATGGAAACGTCAGACCTTCGGGACGAA
 AGGACAAACTTAATTCCCACTCCGCGAGTCCGTTCAAGACCAGTTGGCAATGATACCTTTGCAGTCTGGAAGCCCTGCTT


GAGAGAGCCTTACCAGCTTTGGCAATGGCCCACTGTCAGCAGGAGGACCCGGCAAGCCCGGGGGAGGAGGTACGCTTTGT بНبץبץ CTCTCTCGGAATGGTCGAAACCGTTACCGGGTGACAGTCGTCCTCCTGGGCCGTTCGGGCCCCCTCCTCCATGCGAAACA


GGTGTAATTACCTTCGTGTGTGAATCAAGTGTGTTCTGTGATAGCTGCATGTTTCCTCCTAACAGGTTGAAATGCTCACA
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TGGTGATGGTTGAATGATTTGAGGGATTTGATTTTATTGCACTTCGTCCCGTGGTTGTTAGGACTCTTGTCTTTCCGTAA
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AATAATGAGGATATTGGCACCCAGGATAGTGAAAGCTGCCATTTATTATACATTTACTGAATGCCAGGGGCTTTCCTAAG
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TGCATTGCATTCTTTGTCTCATTTTCTCCTCCCAGCTACTCATTATATGATAGGTACAGTCTATCCCAGTTCCACAGAGG
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AAATGGAAGCTTGTTAGTGGCTGGTCTGTAATTTCAGCCTGGTATATCTAATTCTAATGCCCATGCTGTGTACATCCACA
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AACTCCTATGGGAGTTTACAAAAAAACATCCCTGTACAGAAGTGCTTACTTTAAATCAGTTTAAGCACAATTACAGGTAA
 TTGAGGATACCCTCAAATGTTTTTTTGTAGGGACATGTCTTCACGAATGAAATTTAGTCAAATTCGTGTTAATGTCCATT


AAGATACAAAAACATGGAACTCAAAGGTGGGTCTTACCTAGTTTGTGTTTTTAGGCAGTGCTCAAAGCACAGATGTGAGT
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TGCCTGATTTCCTGTCTTATGGTGATGACTGTGGGGCAGCTTCAGATCCTTGGTGGGTTCCATGTATAGCACAGAAATAC



TCAGTGTACGCTTAATTTGTCCTAGCACATGCTAAGGAGGAAGCCTGGACTTCTCACTAAATGAAAACTGGAAGCATAGC HبН AGTCACATGCGAATTAAACAGGATCGTGTACGATTCCTCCTTCGGACCTGAAGAGTGATTTACTTTTGACCTTCGTATCG


TGCCCAGTTCATGGAGCTATGCTGGCTTCAGTGAAGATGCAGTTCTCAAGGCATCCTAGAGATGAGAACTTGGCCTTTCA HبН ACGGGTCAAGTACCTCGATACGACCGAAGTCACTTCTACGTCAAGAGTTCCGTAGGATCTCTACTCTTGAACCGGAAAGT


AATCCAAAAATCAATGCAGAGGTTCTTCACATAATCTCTCAAAACCATTCTCTTTACTTTCTGTAGTGAGGTCATTTAAC
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AATTATGTGAAGCCCTTGGGGAGGCATCATGACAGGGATTTGGAAATGCAAGACAGACTCTGCTCTGAGAAGCTGTAGCA
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GAGAGAATGTGCAACCCAATTTCTACCTTGTGCTATAGATATAAGGACAAGTCAAGGACAAGCAGCATAAAGGAGGTGAC
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ATTGGAATTGAGTTCTGCACGAAAGGACAGATAGACAATTTTCTGCCTTTTGAAGCTGATCAGCCCATTTCTCCATGTGC




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CTAAAGTGATCATTATAGGCTGAGCTTCCTTGAGAGTGTTCTAAGAAGTGTTTGACTTTGGTTTGTTTCTGAAACCAGTT
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CTGAACTCTGCCACAAGTAATTGTGTTTTAATGTAAGGGAGAGTCTTTGCTGGCTGGCTTTAGGTCCCTTGCTGGAAATG
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TATCATTCTTTTTTCATCTTACCTGTCTGAATTCAAACACCATCTCTGCTGCTGACAAGCTGGGTGTCCTTAGGGAAAGC HННННН H H H ATAGTAAGAAAAAAGTAGAATGGACAGACTTAAGTTTGTGGTAGAGACGACGACTGTTCGACCCACAGGAATCCCTTTCG


ACCTTCATCGCTCTGTGTTAATAATCAGTATTTTCCTTGTGGGATTAAAAGGGTTAAAAGAGATGAACATGGGTAAAGCA
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TTTAGTGCATAAAGTGTTGGTGCGTAGTAAGTATGCAGCAAACATTAGCTGTTCTGATTGTGCTTAGTAAAAACAATATT



CCATCTTCTTAGGGGGAGGTTCCGGATCCAGCTCTATGAGCAGGGGTGAGATGAGTCTGGCCGAGGTTCAGTGTCACCTT
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GACAAGGAGGGGGCTTCCAATCTAGTTATCGACCTCATCATGAACGCATCCAGTGACCGAGTGTTCCATGAAAGCATTCT
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CCTGGCCATTGCCCTTCTGGAAGGAGGCAACACCACCATCCAGGTAGGAAGGCAGCTTGGCTACTGGTATGGCATCCCTG HبH GGACCGGTAACGGGAAGACCTTCCTCCGTTGTGGTGGTAGGTCCATCCTTCCGTCGAACCGATGACCATACCGTAGGGAC


CTGAGCAGGAGGAGAGTCTGTTCTGGGAGCCAGATGTCTGGGTGGTACCAAGCCTTGTTTGAGAGACAGCTCATTCTGAG
 GACTCGTCCTCCTCTCAGACAAGACCCTCGGTCTACAGACCCACCATGGTTCGGAACAAACTCTCTGTCGAGTAAGACTC

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 CCGTGTTTTAAGACAAAACTTTTTACTCAAGACGATCATAGGACGACACTAGTAAACCAGTATTTAGTCTGAACCAAGGT

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GAACATGAGTTACATTTGAAAACTGATAAAACACTGAGAATACGCAAAGGAAACTGGCCTAAGATCTGGCACATAGTGGG
 CTTGTACTCAATGTAAACTTTTGACTATTTTGTGACTCTTATGCGTTTCCTTTGACCGGATTCTAGACCGTGTATCACCC

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CACTCCATAAATGTTTGTTGAATAAGTAAATGATTGCATGAAGTTTATTTACAGTTTTTATCCAAGATTGTAGGGGATCT
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CATCACAAGATGACCAAAGAGTTTGAACTGTGTGTGCTATTTAGAAGATTTAACTTTTATGTATCTATAGATACCACAGC HبН GTAGTGTTCTACTGGTTTCTCAAACTTGACACACACGATAAATCTTCTAAATTGAAAATACATAGATATCTATGGTGTCG

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TGTTGCTTCTGATAAATTTACCTACCTTTTAACTGAAAGTTTAATAAAGCCAAATCAATTTGAAATACTAGAGATACCAG ب+ + + $+\boldsymbol{+}$ ACAACGAAGACTATTTAAATGGATGGAAAATTGACTTTCAAATTATTTCGGTTTAGTTAAACTTTATGATCTCTATGGTC

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GCTATGTTAGTCAGAAATGAATAGATGACTTTTTGAAAGGTAGGTATGATATATATTTAAAACTAATAATAAAAACTCAA
 CGATACAATCAGTCTTTACTTATCTACTGAAAAACTTTCCATCCATACTATATATAAATTTTGATTATTATTTTTGAGTT

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AATCCCCGCTTCCCCCAACGTACACTTTTGAAGTTCATTGTCACGTGTTGCACCAGGTTGGGATTTGGGACAATGAGTGA
 TTAGGGGCGAAGGGGGTTGCATGTGAAAACTTCAAGTAACAGTGCACAACGTGGTCCAACCCTAAACCCTGTTACTCACT

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GGCACCTGGGCCAGTGGCAAGGCCCACTGCTTGTCTAAGTTGTCACGTGGGCACGAGTCGTACACGTTGGGATTGCTTTT
 CCGTGGACCCGGTCACCGTTCCGGGTGACGAACAGATTCAACAGTGCACCCGTGCTCAGCATGTGCAACCCTAACGAAAA

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TATTTTGTCATGTGTGTGTGGGTGGGTCCTGCAGTCCTTCTCATCAATGGAATGTTGCCCAGCCACTGCTGTGTTCTGGG + $+\boldsymbol{+}$ ATAAAACAGTACACACACACCCACCCAGGACGTCAGGAAGAGTAGTTACCTTACAACGGGTCGGTGACGACACAAGACCC

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CTCCTGTGTTGGGAGGAAGCAGAGCTGAAATGCTCCTTGTCTTAGAACCACATGATTTCCTGTGATTAGAGCAGTTGAAC
 GAGGACACAACCCTCCTTCGTCTCGACTTTACGAGGAACAGAATCTTGGTGTACTAAAGGACACTAATCTCGTCAACTTG

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TGAATAGTCATTGAGCCCTTTCTGCGTATGTGCTGCTATACCAGGGGCGATGATGGGGCAGTGGTTTCCAGACATGGGAG HبН世+Н ACTTATCAGTAACTCGGGAAAGACGCATACACGACGATATGGTCCCCGCTACTACCCCGTCACCAAAGGTCTGTACCCTC

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CCAGTTCGTCTGTGAGGATTTTCTCCAGGCATAGTCAAGTGTGGAAAATGAGGACAATGTGGTGAACTTTTCATAAACCA
 GGTCAAGCAGACACTCCTAAAAGAGGTCCGTATCAGTTCACACCTTTTACTCCTGTTACACCACTTGAAAAGTATTTGGT

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ATGGATTCAGGTTGAAGACCTGGCCATTTTTTTCTGAGATTATATCTCTCCAATCTTTATCCTTAGCCACAGTGTCTTCT بम ب $+\boldsymbol{+}$ TACCTAAGTCCAACTTCTGGACCGGTAAAAAAAGACTCTAATATAGAGAGGTTAGAAATAGGAATCGGTGTCACAGAAGA

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TTAATGAAATGGTGTTGATTATGGATGATAGATTTTTTTTTTCTGTTGGCCAAATTAGAAGTTGGAAACCCTAGGTTGTT + $+\boldsymbol{+}$ AATTACTTTACCACAACTAATACCTACTATCTAAAAAAAAAAGACAACCGGTTTAATCTTCAACCTTTGGGATCCAACAA

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ATTCCTTCCCTTCCCCAAATTTCAAAGCTTTACCAGTTTGAGAAATCCCAGAATCTCAGTCCTCAAGAAATTGAACCTCT
 TAAGGAAGGGAAGGGGTTTAAAGTTTCGAAATGGTCAAACTCTTTAGGGTCTTAGAGTCAGGAGTTCTTTAACTTGGAGA

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AACAAGGATACGTGGATGTGCACATACGATGCTATGTCTCAAGGATGACATTTAGTGCCCTCCAAGAAGTAGAAGTGATG ب中ب $+\boldsymbol{+}$ TTGTTCCTATGCACCTACACGTGTATGCTACGATACAGAGTTCCTACTGTAAATCACGGGAGGTTCTTCATCTTCACTAC

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CCGGGGAACCACCAAGGAAGAAGGACCAGCATCTCTCTGGGGAGCCTGCAGACGGTCTGTGGATGAAATGGGCTTTCAAG
 GGCCCCTTGGTGGTTCCTTCTTCCTGGTCGTAGAGAGACCCCTCGGACGTCTGCCAGACACCTACTTTACCCGAAAGTTC

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GATGGACATGGGACTGAAAGGGGGAAATTGGGCATGGACCTGGGGCATAAGGAATCTTTGTCATATTCCATGGTAGAGAG
 CTACCTGTACCCTGACTTTCCCCCTTTAACCCGTACCTGGACCCCGTATTCCTTAGAAACAGTATAAGGTACCATCTCTC

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| ITPR1-237 | GGCCCAGAGGTGTGAGAGCAGCAGTTGGGTTTCCAGAACAGCGGTTGGGTCTTTCAGACCGAGGAGTGCTATGTAGAAGT بम + CCGGGTCTCCACACTCTCGTCGTCAACCCAAAGGTCTTGTCGCCAACCCAGAAAGTCTGGCTCCTCACGATACATCTTCA


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GAAGGGCCTTGGATGGGGGTTGGGGTTCATATATAGGAGCAGTGCAGCCCTCCAAGGGGCTTTGGAGCTGTAACGGAGGA
 CTTCCCGGAACCTACCCCCAACCCCAAGTATATATCCTCGTCACGTCGGGAGGTTCCCCGAAACCTCGACATTGCCTCCT

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CTATACACCTGGCAGTAGAGGACAGGTAAACTGAGGAAAGCAGGGTCCCAAGGAGGCAGTCTAAGAATTAAAAAGTTAAT HبНННН GATATGTGGACCGTCATCTCCTGTCCATTTGACTCCTTTCGTCCCAGGGTTCCTCCGTCAGATTCTTAATTTTTCAATTA $\begin{array}{r}\hline \\ \hline \\ \hline\end{array}$

GGGCAGTAATTTGTGGAAGAGCTGATGAGAACCTGAACTTAAATCTCTGATAAAAGAGTTCATATCTTGGGAGAGGATAT世بнبн ب CCCGTCATTAAACACCTTCTCGACTACTCTTGGACTTGAATTTAGAGACTATTTTCTCAAGTATAGAACCCTCTCCTATA | ITPR1 |
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TTTCTCATAATGGCACAAGAGAGCTCTCTGGGTGCTGGAAACATATTCGACCTCTTTGTTTGGGTGGTGGTTACATGACT
 AAAGAGTATTACCGTGTTCTCTCGAGAGACCCACGACCTTTGTATAAGCTGGAGAAACAAACCCACCACCAATGTACTGA

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GTGCACATGTTTAAAACTCCGTGATCGTATCCTTTGCTGGGACACGGATGGAGCTGGAGACCATTATCCTTAGCAAAATA HبНبн CACGTGTACAAATTTTGAGGCACTAGCATAGGAAACGACCCTGTGCCTACCTCGACCTCTGGTAATAGGAATCGTTTTAT

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|  | ITPR1-237 |

ACACAGGAACAGAAAATCAAATACCGCATGTTCTCAGTTATAAGTGGGAGCTAAGTGACAGGAACACATGGACACTTATA
 TGTGTCCTTGTCTTTTAGTTTATGGCGTACAAGAGTCAATATTCACCCTCGATTCACTGTCCTTGTGTACCTGTGAATAT

| ITPR1 |
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| ITPR1-237 |

## GGGGGAACGACGCCCACTGGGGCTTTTCGGAAGGTGGAGGTCGGAAGGAGGGAGAGGATGGAAAAATAACTAATGGGTAC

 بНبН $+\boldsymbol{+}$ CCCCCTTGCTGCGGGTGACCCCGAAAAGCCTTCCACCTCCAGCCTTCCTCCCTCTCCTACCTTTTTATTGATTACCCATG| ITPR1 |
| :--- |
|  |

TAGGTTTAATACCAGAGTGGTGAAGCAATCTATGTGATAAACCCCAGTGACACAAGCTTACCTATGTAACCTGCAATTGC
 ATCCAAATTATGGTCTCACCACTTCGTTAGATACACTATTTGGGGTCACTGTGTTCGAATGGATACATTGGACGTTAACG

| ITPR1 |
| ---: |

AACCCTGAATTTAAAATAAAAGTTTAAAAAAGAAAAAAAACAACAACTCAGTAAGCCATATGCTTAAAATTAGTGTGCTT ب+ + + $+\boldsymbol{+}$ TTGGGACTTAAATTTTATTTTCAAATTTTTTCTTTTTTTTGTTGTTGAGTCATTCGGTATACGAATTTTAATCACACGAA


TACTGTACCTATGTTATATGTCAATCAACAAATAAAAGAAATGAGGGCAGGGAATGAGACTCTGAACCTTGCTGGGACTA
 ATGACATGGATACAATATACAGTTAGTTGTTTATTTTCTTTACTCCCGTCCCTTACTCTGAGACTTGGAACGACCCTGAT

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AAGGGGTGGGGGTGAGGGACAGGATGTCACAAACAGAGACCCTGTCACTCCTTGCACCAGGCCCAGGCCTGGACCTGCTG + $+\boldsymbol{+}$ TTCCCCACCCCCACTCCCTGTCCTACAGTGTTTGTCTCTGGGACAGTGAGGAACGTGGTCCGGGTCCGGACCTGGACGAC

| ITPR1 |
| ---: |
| ITPR1-237 |

ATACTTGGTAAATGTTGGCTGAAATGGCGTCTGATTAGACGTGGAAGAGAAGTCAGAGGCCCCATTCGGTTCTGGGCTTG
 TATGAACCATTTACAACCGACTTTACCGCAGACTAATCTGCACCTTCTCTTCAGTCTCCGGGGTAAGCCAAGACCCGAAC

| ITPR1 |
| ---: |
|  |

GCATCGGGATGACCAGGTGCACAAAGGCACCATTAATTAAGGACTAACAATGAAGTATAGTGGCTGGTGGGGCTGAGGGC HبНبн ب CGTAGCCCTACTGGTCCACGTGTTTCCGTGGTAATTAATTCCTGATTGTTACTTCATATCACCGACCACCCCGACTCCCG

| ITPR1 |
| ---: |
| ITPR1-237 |

CGCCAGCACTGAGGCTCCTGGGGAGACGATGTCTGTGGCTCTGGTGAGATGCCATGTTTTTCACGGAGCACCCTGATGGT + $+\boldsymbol{+}$ GCGGTCGTGACTCCGAGGACCCCTCTGCTACAGACACCGAGACCACTCTACGGTACAAAAAGTGCCTCGTGGGACTACCA

| $\square$ ITPR1 |
| :--- |
| ITPR1-237 |

GACGGCCAGGCACACAGAAGCTGTTTTTCCTTCAAGTTCTTTATCTTGTAAGGTCATTATGAATATTAGTTTCATGGTTT + $+\boldsymbol{+}$ CTGCCGGTCCGTGTGTCTTCGACAAAAAGGAAGTTCAAGAAATAGAACATTCCAGTAATACTTATAATCAAAGTACCAAA

|  | ITPR1 |
| ---: | ---: |
|  | ITPR1-237 |

CACACATTTATTACTCATACACCCAGGCTGTAGATGAAATGCCATGATGGAGTTACCGCAGTTCAGCCACGTGTGGAGCA
 GTGTGTAAATAATGAGTATGTGGGTCCGACATCTACTTTACGGTACTACCTCAATGGCGTCAAGTCGGTGCACACCTCGT

| ITPR1 |
| :--- |
|  |

GGGATGTTTTCTCTTGGGGGAACGCAGGGGTGGTGTGGGGGCCTGTGGATCCATGCCAGGATGGAAGGGTGCGGGTGTGG بНبН $+\boldsymbol{+}$ CCCTACAAAAGAGAACCCCCTTGCGTCCCCACCACACCCCCGGACACCTAGGTACGGTCCTACCTTCCCACGCCCACACC

| ITPR1 |
| :--- |
| ITPR1-237 |

CCGCACGCACATGCTGTTTTCTCCTCCCCGCTTCTGTGACCCCTGGGGGGCCCAGTCTAACCCAGTGTCTCACAGGAGGC
 GGCGTGCGTGTACGACAAAAGAGGAGGGGCGAAGACACTGGGGACCCCCCGGGTCAGATTGGGTCACAGAGTGTCCTCCG


CGATGGTTCCAGGAAAATGCCTTCTAGCCTAGACTTGACTTGTCAGAGCCCCTTGGCCCCAAGCTTCTCTTTCTCTGGAG
 GCTACCAAGGTCCTTTTACGGAAGATCGGATCTGAACTGAACAGTCTCGGGGAACCGGGGTTCGAAGAGAAAGAGACCTC


AAAATGATGTGGAACTAGGGTTGTGTCTGGGGCCAGTTAAGGACAGGAACCTTGAAGCCCCAGGGGGAGTGATTCAGAGT بम + TTTTACTACACCTTGATCCCAACACAGACCCCGGTCAATTCCTGTCCTTGGAACTTCGGGGTCCCCCTCACTAAGTCTCA

| ITPR1 |
| ---: |
| ITPR1-237 |

TTCGTCTTGCTGTTGAGAAGTTGGTTCAGAGTAGTAAGTGGCCAGCTGGGAAGTGAGCCTGACTTGGGCTAAGACCACAG
 AAGCAGAACGACAACTCTTCAACCAAGTCTCATCATTCACCGGTCGACCCTTCACTCGGACTGAACCCGATTCTGGTGTC

| ITPR1 |
| :---: | :---: |
| ITPR1-237 |

TGTGGCAATTAATGATTGCTGAGATGCTTTGCTCCACTGAAGACATGGTGGGTTCTTGCCGGAGCTGGTGGAGCACGGTC ب中ب + ACACCGTTAATTACTAACGACTCTACGAAACGAGGTGACTTCTGTACCACCCAAGAACGGCCTCGACCACCTCGTGCCAG

| ITPR1 |
| ---: |
| ITPR1-237 |

ACTTCCTGTTCGGTGCACCATGGAGGGTCTCAGGAAGGGAAATGGGTCTGTGGTCAGCTGGCCTTCTTGAGATCCATGTT
 TGAAGGACAAGCCACGTGGTACCTCCCAGAGTCCTTCCCTTTACCCAGACACCAGTCGACCGGAAGAACTCTAGGTACAA

| ITPR1 |
| ---: |
| ITPR1-237 |

TCCTGATGACAGGTGGTAGAAAGGGGAGTTGCAGGGAAGCAGGCAGGCCTACACAGTTCCAGAAATGTATACAGTCTGCC
 AGGACTACTGTCCACCATCTTTCCCCTCAACGTCCCTTCGTCCGTCCGGATGTGTCAAGGTCTTTACATATGTCAGACGG

| ITPR1 |
| ---: |

CTCTGTGTTTGTCGGTTCTGCATCTGTGGATTCAACCAACTGCAGATTTAAAATATTTAGGGAACGCTGGGCACAGTGGC
 GAGACACAAACAGCCAAGACGTAGACACCTAAGTTGGTTGACGTCTAAATTTTATAAATCCCTTGCGACCCGTGTCACCG

| ITPR1 |
| :--- |
| ITPR1-237 |

TCAAGGAAACAGAAACTCAAGGAGGTTATGACTTACTCAGAGTTCCAGAGCTGGACAAAACCCATGATAAAATATCCTGT Hبн+بн AGTTCCTTTGTCTTTGAGTTCCTCCAATACTGAATGAGTCTCAAGGTCTCGACCTGTTTTGGGTACTATTTTATAGGACA

| ITPR1 |
| ---: |
| ITPR1-237 |

ACCTCTTGTCCGTCCCACCTCCACCTGTAGTTATCTGTCACTGAATAACCACCTAAAAATTTAATAGCCTAAAGCAATGG
 TGGAGAACAGGCAGGGTGGAGGTGGACATCAATAGACAGTGACTTATTGGTGGATTTTTAAATTATCGGATTTCGTTACC

| ITPR1 |
| :--- |
|  |

CCATTTTGGTGCCTAGCATGATTCTGTGAGCTTGGGCTCAGCTGGGTGGTTCTTTTGCTCTGTGTGATCTTGGCTGGGTC
 GGTAAAACCACGGATCGTACTAAGACACTCGAACCCGAGTCGACCCACCAAGAAAACGAGACACACTAGAACCGACCCAG

| ITPR1 |
| ---: |
| ITPR1-237 |

TGCAACCATCAGGGGGTTGACTGGTCTTAGAACAGCTTACGTGGTCACTCATATGACTGTGGCCATTGGTGCTGGTCCTT بम + $+\boldsymbol{+} \boldsymbol{+}$ ACGTTGGTAGTCCCCCAACTGACCAGAATCTTGTCGAATGCACCAGTGAGTATACTGACACCGGTAACCACGACCAGGAA

| ITPR1 |
| ---: |
| ITPR1-237 |

TGCTGAGAGCTCAGCTGGGGGTACTGCCTGGAGTGCCTTGGTTCTCTGTGTGGTTTGGGCTTCTTAGAACATGGTGACTG H-بНبACGACTCTCGAGTCGACCCCCATGACGGACCTCACGGAACCAAGAGACACACCAAACCCGAAGAATCTTGTACCACTGAC

| ITPR1 |
| ---: |
| ITPR1-237 |

GGTTCTGAGAAACAGTGTTTCAAGAAGCAGGAAGTGGAAGCTACTAGCCTTTTCAAAGCCTGGGTTTAGAATTCCTAGAA
 CCAAGACTCTTTGTCACAAAGTTCTTCGTCCTTCACCTTCGATGATCGGAAAAGTTTCGGACCCAAATCTTAAGGATCTT

| ITPR1 |
| :--- |
| ITPR1-237 |

TATCACTTCTATCACATTCTATTGGTCAAAGCCAGACATGAGGCCAGCCCCATTTCAAAGGCGGGGAGAAAAACTCCACC HبН世+Н ب ATAGTGAAGATAGTGTAAGATAACCAGTTTCGGTCTGTACTCCGGTCGGGGTAAAGTTTCCGCCCCTCTTTTTGAGGTGG

| ITPR1 |
| ---: |
| ITPR1-237 |

TCTTATTGTGAGGAGGGTACATGTATAAAAAGAGAGAATTGTTGGGGACCACCTTTGGGGACTGGCTTCCTCACCACCAC
 AGAATAACACTCCTCCCATGTACATATTTTTCTCTCTTAACAACCCCTGGTGGAAACCCCTGACCGAAGGAGTGGTGGTG


CCCCATTATAATCGATTGAGCACCTACCATGGGTCAGCCAGGCCCCCAAGCTGGATGCTACAGCTGCAGGAAAGGGAGAC + $+\boldsymbol{+}$ GGGGTAATATTAGCTAACTCGTGGATGGTACCCAGTCGGTCCGGGGGTTCGACCTACGATGTCGACGTCCTTTCCCTCTG

| ITPR1 |
| ---: |
| ITPR1-237 |

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ACCATTGTCTCTGCAGTTGAGGAGTTTGGATCTCCCTGGATACTAAATCCCTTCTTTGCAAAAGTGTTGACTCTTGTCTT + $+\boldsymbol{+}$ TGGTAACAGAGACGTCAACTCCTCAAACCTAGAGGGACCTATGATTTAGGGAAGAAACGTTTTCACAACTGAGAACAGAA

| ITPR1 |
| :--- |
| ITPR1-237 |

TCTCCTTTTGGATGTTGTAAGAAAATTCAGTCCTGCCTTAGGATAAGCTCACTGGGAATCACAGCACTCCAGAAATTCTA
 AGAGGAAAACCTACAACATTCTTTTAAGTCAGGACGGAATCCTATTCGAGTGACCCTTAGTGTCGTGAGGTCTTTAAGAT

| ITPR1 |
| ---: |
| ITPR1-237 |

GATTTCATTGTCCAGACCCTAGAGGATTCAATTTATGGGAATCCACAAATAATGACATACAGTGCTTGCTAGGCACTCTC ب中 $+\boldsymbol{+}$ CTAAAGTAACAGGTCTGGGATCTCCTAAGTTAAATACCCTTAGGTGTTTATTACTGTATGTCACGAACGATCCGTGAGAG


ATGGAGGGTTTGCTCCCTTATTATGAAACCCTGTCATCCATCACATCATCACCTAAAGCCCTGAAATGCCTGGAAGCCAA
 TACCTCCCAAACGAGGGAATAATACTTTGGGACAGTAGGTAGTGTAGTAGTGGATTTCGGGACTTTACGGACCTTCGGTT

| ITPR1 |
| ---: |
| ITPR1-237 |

ATACAGGTTACTTCCCAGTCTGGCATAATGGACTCCCAGGGGTGGTGTCCCCAGGTCTCCCAGCATCTTTTCTTCCTGCC
 TATGTCCAATGAAGGGTCAGACCGTATTACCTGAGGGTCCCCACCACAGGGGTCCAGAGGGTCGTAGAAAAGAAGGACGG

| ITPR1 |
| ---: |
| ITPR1-237 |

CCGGCTCCTGCAATGGTGATAACATCTGAGGGTAGATCGTGACTCCCAGACTTCTCCTACCTGGCTGCCATCAGAGCAGG بम + GGCCGAGGACGTTACCACTATTGTAGACTCCCATCTAGCACTGAGGGTCTGAAGAGGATGGACCGACGGTAGTCTCGTCC

| ITPR1 |
| ---: |
| ITPR1-237 |

CTTCACATTGAACCCTCCGCTTATGGGAACAAGGAGACAGTACCACAGCCCGTGGATTTTCCAGAAACGGGTGACACGTT

+     +         + GAAGTGTAACTTGGGAGGCGAATACCCTTGTTCCTCTGTCATGGTGTCGGGCACCTAAAAGGTCTTTGCCCACTGTGCAA


GTCAGGTGATAGGATCACGCTTGTCTTGAAGAGAACTTCCGGCTTTCTTTCTCCCCACTCTGGTGCCACCCGCTTCCTGT
 CAGTCCACTATCCTAGTGCGAACAGAACTTCTCTTGAAGGCCGAAAGAAAGAGGGGTGAGACCACGGTGGGCGAAGGACA

| ITPR1 |
| ---: |
| ITPR1-237 |

CAGCCCCCAGAAGAAATATTTCCTTGTGGCTTGATGTTTTGTAGCAAGTGGGAAACTATAAAATAAGCATTTGCTTATGA
 GTCGGGGGTCTTCTTTATAAAGGAACACCGAACTACAAAACATCGTTCACCCTTTGATATTTTATTCGTAAACGAATACT

| ITPR1 |
| ---: | ---: |
| ITPR1-237 |

ATTAATTTTTGGCACACATGGGGCTCAGCAGGGCTCACGGCACTTTCATATCCGTCCTTCGAGTCCTTGCCAATTTCTAT
 TAATTAAAAACCGTGTGTACCCCGAGTCGTCCCGAGTGCCGTGAAAGTATAGGCAGGAAGCTCAGGAACGGTTAAAGATA

| ITPR1 |
| ---: |
| ITPR1-237 |

GTTCCTTCCTCCTAAGATGTTCCCACCAGCGCCTGGGGGAAGTTCCCTTCGCTTCCTCTTCCTTACAGAAGGACAGGGGC + $+\boldsymbol{+}$ CAAGGAAGGAGGATTCTACAAGGGTGGTCGCGGACCCCCTTCAAGGGAAGCGAAGGAGAAGGAATGTCTTCCTGTCCCCG

| ITPR1 |
| ---: |
| ITPR1-237 |

TGTCCTTACCTGGAATGAAGAGGAGGACAGGCTATCTTTGGACATACCTCGTTTTTTATTTTTGTTTTTTTTAAGCCAAT
 ACAGGAATGGACCTTACTTCTCCTCCTGTCCGATAGAAACCTGTATGGAGCAAAAAATAAAAACAAAAAAAATTCGGTTA


ACAGATGTTTTGGGATATATATGCTGACATGACCATAGAGAACCTCCTAGCACATTATGGGGATAGATAGTTAAACATTT
 TGTCTACAAAACCCTATATATACGACTGTACTGGTATCTCTTGGAGGATCGTGTAATACCCCTATCTATCAATTTGTAAA

| ITPR1 |
| ---: |
| ITPR1-237 |

TTTTGGACTAATTGCTTCTGGTTTCAGAAGCACTGGGAATTTCATGTATCAAATGGCTGCCCACGTCTATTCCTATGCCA
 AAAACCTGATTAACGAAGACCAAAGTCTTCGTGACCCTTAAAGTACATAGTTTACCGACGGGTGCAGATAAGGATACGGT


AAGTCTAGTCTACAGACACACCCGAAAAGGGTTTTCTTTTCTGCACGTAAGCAGCTAGAGATGGAAAATGTGAGAAGTGC بम + $+\boldsymbol{+}$ TTCAGATCAGATGTCTGTGTGGGCTTTTCCCAAAAGAAAAGACGTGCATTCGTCGATCTCTACCTTTTACACTCTTCACG

| ITPR1 |
| ---: |
| ITPR1-237 |

TCCGTCAGGAAACTGGCCTGCAAATTCAGCAGAGAGAGTGATCCCTGGTTCATGAGGCCTTTCCTACACCACACTCTTTT
 AGGCAGTCCTTTGACCGGACGTTTAAGTCGTCTCTCTCACTAGGGACCAAGTACTCCGGAAAGGATGTGGTGTGAGAAAA

| ITPR1 |
| ---: |
| ITPR1-237 |

TTTTTTTTTGAGGTTGGCTTAAGAAATCAGCCCAAGAACAAGTGTTAGATAGGAAATCTCACATCCCTTCCGGAAGTCAC
 AAAAAAAAACTCCAACCGAATTCTTTAGTCGGGTTCTTGTTCACAATCTATCCTTTAGAGTGTAGGGAAGGCCTTCAGTG

| ITPR1 |
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CAACACAGTGTGGGAGGGACACGTTGGTTGGGCTATCTCTGACCCCAGTTAGCAAAGAGATGAGGGCGGAAAGGGCAATT
 GTTGTGTCACACCCTCCCTGTGCAACCAACCCGATAGAGACTGGGGTCAATCGTTTCTCTACTCCCGCCTTTCCCGTTAA

| ITPR1 |
| ---: |
|  |

TGATTTGCCTCTGCTGGAAATGGAAGGCCAGTTTGTGAGGAAGATCAGCCTTGGTTTGACAGGGCAGTCACCCTGAGGAG HبНبн ACTAAACGGAGACGACCTTTACCTTCCGGTCAAACACTCCTTCTAGTCGGAACCAAACTGTCCCGTCAGTGGGACTCCTC

| ITPR1 |
| :--- |
| ITPR1-237 |

GAGGAAAAGATTGGTGTGTGAGCAAGTTACGTAAATGGGTGTTGTTTTTGGCAGGGAAGTCAGGAATGAGTCACTTCTGA HبНبн ب СTCCTTTTCTAACCACACACTCGTTCAATGCATTTACCCACAACAAAAACCGTCCCTTCAGTCCTTACTCAGTGAAGACT

| ITPR1 |
| :--- |
| ITPR1-237 |

GCGGTGTTTTCTAACCTCAGGTTTTATCCATGTGGGAAAGGAGTGAAGCCAGCAGTGGAGTCAGGGCAGCTCTCCTCCTG + $+\boldsymbol{+}$ CGCCACAAAAGATTGGAGTCCAAAATAGGTACACCCTTTCCTCACTTCGGTCGTCACCTCAGTCCCGTCGAGAGGAGGAC

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|  | ITPR1 |
|  | ITPR1-237 |

CACGTGGGGGTTCGAGAGCTGTTGGCATTAAAGAAAGAGGGAGGCAGTGACTTGTCCCCAGCAGGCGTCCCCAGAGACAC
 GTGCACCCCCAAGCTCTCGACAACCGTAATTTCTTTCTCCCTCCGTCACTGAACAGGGGTCGTCCGCAGGGGTCTCTGTG

| ITPR1 |
| ---: |
| ITPR1-237 |

TGCCCTTCTGCGGAAGCTGTGAGGGGTCAGCAAAGCCACCCCAGGTTGGCTCAAGGACCAGCTTGGCTCCTTTGAGAAAT بНبН
ACGGGAAGACGCCTTCGACACTCCCCAGTCGTTTCGGTGGGGTCCAACCGAGTTCCTGGTCGAACCGAGGAAACTCTTTA

| ITPR1 |
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| ITPR1-237 |

GGTGGCGTAAAGGTTAGGGACTCAGGGAGGACCCCCTGGAAGGAGAGAGCCTATCAACTGCGGGCCTCCAGACCACAATA
 CCACCGCATTTCCAATCCCTGAGTCCCTCCTGGGGGACCTTCCTCTCTCGGATAGTTGACGCCCGGAGGTCTGGTGTTAT


TTTGTGCTGGAATTCCAGCTCTGCCCCTGCCAGCCTTCAGTGACCTTGGGGTTTGTCAGGGCCACTTTGAAACTCAGTTT
 AAACACGACCTTAAGGTCGAGACGGGGACGGTCGGAAGTCACTGGAACCCCAAACAGTCCCGGTGAAACTTTGAGTCAAA


CCTCATCTGCAAAATGAGGGTTGGAAAAGCCTAGTCCCTTCCTTATGGAGTTACGAAGAACATGAGGGTAAAGTGTGTGG + $+\boldsymbol{+}$ GGAGTAGACGTTTTACTCCCAACCTTTTCGGATCAGGGAAGGAATACCTCAATGCTTCTTGTACTCCCATTTCACACACC

| ITPR1 |
| ---: |
| ITPR1-237 |

TCCGGTAGACAAGTGGAGCTGCTGCCAGGGCTGCTGATTCTGTGGTGTGGGTACAGCCTGGGCTCAAGCCCTGCCTCCTA + + + AGGCCATCTGTTCACCTCGACGACGGTCCCGACGACTAAGACACCACACCCATGTCGGACCCGAGTTCGGGACGGAGGAT

| ITPR1 |
| ---: |
| ITPR1-237 |

TATGCCCACCTCAGGACTCCTGGCGAAGTCCACCTCACTCATCCCACTGGTTCCTGACTTGGAGAATAGGATGGTGACGG ب中ب $+\boldsymbol{+}$ ATACGGGTGGAGTCCTGAGGACCGCTTCAGGTGGAGTGAGTAGGGTGACCAAGGACTGAACCTCTTATCCTACCACTGCC

| ITPR1 |
| ---: |
| ITPR1-237 |

TTCCCACCTCAGAGAACTCCTGAGATGTTTTCACAGACTATTTATAGAAAGCACCTCACGTGGCATCTGGCCAATACAAA
 AAGGGTGGAGTCTCTTGAGGACTCTACAAAAGTGTCTGATAAATATCTTTCGTGGAGTGCACCGTAGACCGGTTATGTTT

| ITPR1 |
| ---: |
| ITPR1-237 |

GATCTCAAGATGATGTGGTTCTTATTTTTATTTGTTCATATATATTTTTAAGAGATAGGGTCTTGCTATGTTGCTGAGGC ب+ CTAGAGTTCTACTACACCAAGAATAAAAATAAACAAGTATATATAAAAATTCTCTATCCCAGAACGATACAACGACTCCG

| ITPR1 |
| :--- |
| ITPR1-237 |

TAGACTTGAACTCCTGGGCTCAAGCATTCCTCCTCCCTCAGCCTCCTGAGTAGCTGGGACTATAGGTGCGGACCACCATG
 ATCTGAACTTGAGGACCCGAGTTCGTAAGGAGGAGGGAGTCGGAGGACTCATCGACCCTGATATCCACGCCTGGTGGTAC

| ITPR1 |
| ---: |
| ITPR1-237 |

CTCGGTTCTAATTAATAATATTTTTATTTATTTTAAATACATGCTGTATTTTGTGAAATGTGTTTTCTGTCTAAAATCCT
 GAGCCAAGATTAATTATTATAAAAATAAATAAAATTTATGTACGACATAAAACACTTTACACAAAAGACAGATTTTAGGA

| ITPR1 |
| :--- | :---: |
| ITPR1-237 |

ACTTCTGATATTTTCTATTTTTGCATAGTGGTTTATCATCCAGCAGGCCTGGGGGACGCTCTGTCTTATGTTATTTTCAC

TGAAGACTATAAAAGATAAAAACGTATCACCAAATAGTAGGTCGTCCGGACCCCCTGCGAGACAGAATACAATAAAAGTG

| ITPR1 |
| ---: |
| ITPR1-237 |

ACTCAATTGACCCAAGTCCTTCTGACTGTATATTAAAAATGATTTTAGAACTCCAGGACATTGGGAAATTTCATTGCCTT
 TGAGTTAACTGGGTTCAGGAAGACTGACATATAATTTTTACTAAAATCTTGAGGTCCTGTAACCCTTTAAAGTAACGGAA


GAGTACAGGTTATTTAGGTTGGTGCAAAAGTAATTGCGGTTTTTGCCACTAATAGTAATGAGAGACATTCTGGGATGAAG بम + $+\boldsymbol{+}$ CTCATGTCCAATAAATCCAACCACGTTTTCATTAACGCCAAAAACGGTGATTATCATTACTCTCTGTAAGACCCTACTTC

| ITPR1 |
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CAGAAAGAAAAACAGCAATCTAGTCACTTCTTTGTGGTTTGAAGTGCTCCCTGGCCCAGGCCATTGTCTTGTCTGTCCTT
 GTCTTTCTTTTTGTCGTTAGATCAGTGAAGAAACACCAAACTTCACGAGGGACCGGGTCCGGTAACAGAACAGACAGGAA

| ITPR1 |
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| ITPR1-237 |


 AAAAGGAAAGGAAAGAAAGGGAGGAAGAGAAGGAAAGGAGGATGAAATAGACGGAAACTGGACTTGTGGAGTGTGGGAAG

| ITPR1 |
| ---: |
| ITPR1-237 |

TTCACCATTCCCAGGAAACTGGACTGTTATTGAACAGGAGTCCTTGAGGATTATTGGTCTAAATCCAGGTCTTAAGGAGG HبНبН ب AAGTGGTAAGGGTCCTTTGACCTGACAATAACTTGTCCTCAGGAACTCCTAATAACCAGATTTAGGTCCAGAATTCCTCC

| ITPR1 |
| :--- |
| ITPR1-237 |

AAGCTCAAAATTCAAAAGTCGTTACATTCTTAGGCATATCAGACTTGAGTGAGCCCTCCTGCAGAAGAAGATGGCAGTTC
 TTCGAGTTTTAAGTTTTCAGCAATGTAAGAATCCGTATAGTCTGAACTCACTCGGGAGGACGTCTTCTTCTACCGTCAAG

| ITPR1 |
| :--- |
| ITPR1-237 |

CCACAACTCTGCCCTGGTCATCCTTAGCGCAGCTCTCTGAGTGACGGCAGACAGTAGGTAATGCATGCACCTACTGGCAT HبНبн ب GGTGTTGAGACGGGACCAGTAGGAATCGCGTCGAGAGACTCACTGCCGTCTGTCATCCATTACGTACGTGGATGACCGTA

| ITPR1 |
| ---: |
| ITPR1-237 |

TCAGTTTCCCAGTTCGGGGCAAGAAATTACTGCAAGACTTGTCAGCATCATTCATCTGTGAGTCCCTCCAGGTTGGTGAT HبН AGTCAAAGGGTCAAGCCCCGTTCTTTAATGACGTTCTGAACAGTCGTAGTAAGTAGACACTCAGGGAGGTCCAACCACTA

| ITPR1 |
| :--- |
| ITPR1-237 |

AAGAGGCACAATCCCTTTGAGGTGGTCCCAGGGGAGAATGTGCATCCTGGTTCATGCTTCCAGAGGAGCTGGAGACCCAG
 TTCTCCGTGTTAGGGAAACTCCACCAGGGTCCCCTCTTACACGTAGGACCAAGTACGAAGGTCTCCTCGACCTCTGGGTC

| ITPR1 |
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|  |

CGTGATTTTTCTTATTTCCTGAGTAGCAGAGCCAACAATATGGGCAGAAGTGGACAGTTACATACATCTGCTTGTCTGGC بम ب $+\boldsymbol{+}$ GCACTAAAAAGAATAAAGGACTCATCGTCTCGGTTGTTATACCCGTCTTCACCTGTCAATGTATGTAGACGAACAGACCG

| ITPR1 |
| :--- |
|  |

CTTCCATGAGAGGACTACAGTTGTTGAGGGGGAAGGGGGAGGGGAAGAACTTTGGAAGCAGAATGTTAATCTCCTTCCTT
 GAAGGTACTCTCCTGATGTCAACAACTCCCCCTTCCCCCTCCCCTTCTTGAAACCTTCGTCTTACAATTAGAGGAAGGAA


TCTGCGAAACCTAGAAGCAGGAATTTGTTTCTTGTTCGTTTGTCTGTTTGTTTGTTTGTTTGAGACGGAGTCTCACTATG
 AGACGCTTTGGATCTTCGTCCTTAAACAAAGAACAAGCAAACAGACAAACAAACAAACAAACTCTGCCTCAGAGTGATAC

| ITPR1 |
| ---: |
| ITPR1-237 |

TCACCCAAGCTGGAGTGCAGTGGCGCGATCTCAGCTCACTGCAACCTCCGCCTCATGGGTTCAAGCAATTCTCCTGTCTC Hب世ب世H AGTGGGTTCGACCTCACGTCACCGCGCTAGAGTCGAGTGACGTTGGAGGCGGAGTACCCAAGTTCGTTAAGAGGACAGAG

| ITPR1 |
| ---: |
| ITPR1-237 |

AGCCTCCTGAGTAGCTGGGACTACAGGTGCCCACCCCCACGCCCAGCTAATTTTTTGTATTTTTAGTAGAGACGGGGTTT
 TCGGAGGACTCATCGACCCTGATGTCCACGGGTGGGGGTGCGGGTCGATTAAAAAACATAAAAATCATCTCTGCCCCAAA

| ITPR1 |
| ---: |
| ITPR1-237 |

CTACATGTTGGCCAGGCTGGTCTTGAGCTCCAGACGTCAAGTGATCCGCCCGCCTCAGCCTCCCAAAGTGCTGGGATTAC
 GATGTACAACCGGTCCGACCAGAACTCGAGGTCTGCAGTTCACTAGGCGGGCGGAGTCGGAGGGTTTCACGACCCTAATG

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| ---: |
|  |

AGGCGTGAGCCACCACGCTGGCTAGGAATTTGTTTCTAAGAGGAGATGTCTTCAGAGAGAACCTCAGGTTTTCCACAGTC
 TCCGCACTCGGTGGTGCGACCGATCCTTAAACAAAGATTCTCCTCTACAGAAGTCTCTCTTGGAGTCCAAAAGGTGTCAG $\begin{array}{r}\hline \text { ITPR1 } \\ \hline \\ \hline\end{array}$

TCCAAAATTTTACTAAAAGTGCAGAGAAAAATGACAGAGAAGACCTGGAAATTTTTGTAAAGTGAGGCATCAATTCATTT + $+\boldsymbol{+}$ AGGTTTTAAAATGATTTTCACGTCTCTTTTTACTGTCTCTTCTGGACCTTTAAAAACATTTCACTCCGTAGTTAAGTAAA $\begin{array}{r}\hline \text { ITPR1 } \\ \hline \\ \hline\end{array}$

TATCCCACTGAATCCTCAACAGGTCCAGATATTCCTTATTTCTTTCTCTTCCTTCTGGTCTAGCAAGAGGTCTGTGCTCT + $+\boldsymbol{+}$ ATAGGGTGACTTAGGAGTTGTCCAGGTCTATAAGGAATAAAGAAAGAGAAGGAAGACCAGATCGTTCTCCAGACACGAGA

| ITPR1 |
| ---: |
| ITPR1-237 |

TCCTAACTTTCTTTAGTGACTTCCGAGTGTGAGATGCCTCTTGGGAACTGCCAGGCAGAGGATTGGTCAGTCTTCCTCTG
 AGGATTGAAAGAAATCACTGAAGGCTCACACTCTACGGAGAACCCTTGACGGTCCGTCTCCTAACCAGTCAGAAGGAGAC


GCATAGCTGCAGTTTTTCCTTTGGGATTGTCCTAACTGCTTTCCTGCTTCAGGGGCAGAGTTGAGTAGTTGTGACAGATA
 CGTATCGACGTCAAAAAGGAAACCCTAACAGGATTGACGAAAGGACGAAGTCCCCGTCTCAACTCATCAACACTGTCTAT

| ITPR1 |
| ---: |
| ITPR1-237 |

GCTGCAATGACCCTCAGCGTGTGAAATGTTTACCATTTGGCCCTTTGGAAAAATGTTTGCTGACCCTAGGGTTTGTTTAA
 CGACGTTACTGGGAGTCGCACACTTTACAAATGGTAAACCGGGAAACCTTTTTACAAACGACTGGGATCCCAAACAAATT

| ITPR1 |
| ---: |
| ITPR1-237 |

TCTTTACTATGTAGATGTTAAACTGCCTAAGGGAAAGAACCACAGTATTTCCCCTTTGTTCTGTGCTCCTCATCCCCTGG
 AGAAATGATACATCTACAATTTGACGGATTCCCTTTCTTGGTGTCATAAAGGGGAAACAAGACACGAGGAGTAGGGGACC

| ITPR1 |
| ---: |
| ITPR1-237 |

TATGGCAATTTTTAAGTAAATATTCACCAGATGAGCAATATCCTAAGTCCCAAGATATGTTGGCCACTTACTCAGCTAAT
 ATACCGTTAAAAATTCATTTATAAGTGGTCTACTCGTTATAGGATTCAGGGTTCTATACAACCGGTGAATGAGTCGATTA

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|  | ITPR1-237 |

AAATGGGAATTCAGGGAAACAGGCTGGGGCCTCCCTCCCTCCCTTCCTCCCTCTCTGTCTCCCTCCCTCCTTCCTTCCTT
 TTTACCCTTAAGTCCCTTTGTCCGACCCCGGAGGGAGGGAGGGAAGGAGGGAGAGACAGAGGGAGGGAGGAAGGAAGGAA

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ССттссттссттссттссттссттссттссттссттссстссстссстссттссттссттсяттсссстстттсстсст
 GGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGAAGGGAGGGAGGGAGGAAGGAAGGAAGCAAGGGGAGAAAGGGAGGA

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## $>$


 AGAGAGGAAGAGAAAGGAAGGAAGGAGGAAGGGAAAGAAAAGAAGAAATAGAGAAAGAAAAGGAAAGAGAAAGACACAAA

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 AGAAAGAAAGAGAGAGAAAGAGTGACAGAAAAAAAAAAGAAAGGGAGGAAGGGAGGGAGGGAGAGAAGGAGGGAGGGAAG

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 AAAGGAAGGGAAGGAAAGGGGAAAAGGAAGTAAAAAAAGAAAGAAAAGAAAGAAGGAAAACCACCCTCGTCTGTCCCAAC

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TTTTTTAAAAGACGTTTTCTTCCCTAGAGTCATCTCTGCTCTCCCCACATAGCCTCTGCCAGGATGTACTCCATCACCCC

AAAAAATTTTCTGCAAAAGAAGGGATCTCAGTAGAGACGAGAGGGGTGTATCGGAGACGGTCCTACATGAGGTAGTGGGG

| ITPR1 |
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| ITPR1-237 |

AGTTTACTATCTTTCAACACAGATTCGGGACGCAGACAAAGCAGGACATTCCTTAGGAAATTGTATATGTAGCCTGAGAG
 TCAAATGATAGAAAGTTGTGTCTAAGCCCTGCGTCTGTTTCGTCCTGTAAGGAATCCTTTAACATATACATCGGACTCTC

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| ITPR1-237 |

TCCAGACACCTGCGATTACAGACTTTGGATCTGTGAGCCCCCTCTGACCGTCCTACCCCAAAGCATCATGGTTTCAGGTT ب+ + + $+\boldsymbol{+}$ AGGTCTGTGGACGCTAATGTCTGAAACCTAGACACTCGGGGGAGACTGGCAGGATGGGGTTTCGTAGTACCAAAGTCCAA

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AGTCACTCCCTTATGGCTTAATGCTGTGCTATTTCTGTGCCTCCTACAAACGTTTTCCTAGTGGTAAACACAGGGACTTC
 TCAGTGAGGGAATACCGAATTACGACACGATAAAGACACGGAGGATGTTTGCAAAAGGATCACCATTTGTGTCCCTGAAG

| ITPR1 |
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| ITPR1-237 |

TCAGGGCATATACGGTTGACCTTAAAACATCTGAAATGTTTTGAGGCCCCATCTCCAGCCTGTTTGCCTTCTTTTTCTAC
 AGTCCCGTATATGCCAACTGGAATTTTGTAGACTTTACAAAACTCCGGGGTAGAGGTCGGACAAACGGAAGAAAAAGATG

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CGATCCCCTTGGGTAATCTCATCTACTGCCCAGGCCTCCAGCAGCCATTTATGCCAACACCTCCCAAAGATACAGCTCTC HبНبН ب GCTAGGGGAACCCATTAGAGTAGATGACGGGTCCGGAGGTCGTCGGTAAATACGGTTGTGGAGGGTTTCTATGTCGAGAG

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GGTCCCACCTCTCTGCCGATTTCTAGATTTCTGCTCAAATCCCTGATGGGCATCTCCACTTGTGTTAGCTATAAGTTAGC
 CCAGGGTGGAGAGACGGCTAAAGATCTAAAGACGAGTTTAGGGACTACCCGTAGAGGTGAACACAATCGATATTCAATCG

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| ITPR1-237 |

AGGACCCCATGACACTGTCATCTCCCTTCCTCCATTCTATTTGCCCTCTCGTGTTCCATAGCTTTCTCAGTGGACTCACC بम + + TCCTGGGGTACTGTGACAGTAGAGGGAAGGAGGTAAGATAAACGGGAGAGCACAAGGTATCGAAAGAGTCACCTGAGTGG $\begin{array}{r}\hline \text { ITPR1 } \\ \hline \text { ITPR1-237 } \\ \hline\end{array}$ $>$ ACCAGCCAAGGATACCCAAGCTAGAAGCTTTGCAGTCATCAGACTTCTTTTTCTCTTGCTTTTCTCCAGGAACTAATCTG + $+\boldsymbol{+}$ TGGTCGGTTCCTATGGGTTCGATCTTCGAAACGTCAGTAGTCTGAAGAAAAAGAGAACGAAAAGAGGTCCTTGATTAGAC $\begin{array}{r}\hline \text { ITPR1 } \\ \hline \\ \hline\end{array}$ > TGCCCACTCTACCTCCTGGGAGTTTAACCATTGTTAGGACTTATAATGAGCCAGATAGTTGGCACTGTGAATTCAGAGTG
 ACGGGTGAGATGGAGGACCCTCAAATTGGTAACAATCCTGAATATTACTCGGTCTATCAACCGTGACACTTAAGTCTCAC

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GCCCAGCTGGGAATGGAGGAGCAGCGGTTTGAAACTAGGCACTGTTACTTCAGGATTCATATTCTTGACCACCAGGCTCG بНبН CGGGTCGACCCTTACCTCCTCGTCGCCAAACTTTGATCCGTGACAATGAAGTCCTAAGTATAAGAACTGGTGGTCCGAGC

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ACCGCCTGCCAGCATAGGGCTGCTGAGATCTGCACCTGTCAGCCTTTTTGCCTGGATAACTGAGATAGCCTTTTAGTGGC بНبН ب TGGCGGACGGTCGTATCCCGACGACTCTAGACGTGGACAGTCGGAAAAACGGACCTATTGACTCTATCGGAAAATCACCG


CTCCTGCCTCTGGGCATTTCTCTCTTCCACGCGGTTGTCAGTGATGCCCCCCAAATGGAACCCTCACTACCTGCTTCCCC HبНب世 GAGGACGGAGACCCGTAAAGAGAGAAGGTGCGCCAACAGTCACTACGGGGGGTTTACCTTGGGAGTGATGGACGAAGGGG

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ATCTGAACAGCCTTCTGTGGAGTATGGAGCCCATGGCCACCCTGATGGAACCCATCAGTGCCTCACGTGGTCTGGCCCCA
 TAGACTTGTCGGAAGACACCTCATACCTCGGGTACCGGTGGGACTACCTTGGGTAGTCACGGAGTGCACCAGACCGGGGT

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CCTGGGTTTCTCCACTCACTCCCCTACGCTTATTGTCCTGCAGCTGCAACTCATGCCTGCCAATCCCCAGCGGGGCCATG
 GGACCCAAAGAGGTGAGTGAGGGGATGCGAATAACAGGACGTCGACGTTGAGTACGGACGGTTAGGGGTCGCCCCGGTAC

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| ITPR1-237 |

AACTCAGATGCCTTTGCTTCATGTGGGACGTGCCCTCATTCCCTTTGGCAGGCTCCCCAAGCCCTGATTGAAATGTCTCC HبН TTGAGTCTACGGAAACGAAGTACACCCTGCACGGGAGTAAGGGAAACCGTCCGAGGGGTTCGGGACTAACTTTACAGAGG

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TACTCTAGAAACTTCCTCTTGATCCCCTGAGGCAGAGATAATGGGTTGTGCTTCATTTACTGTAGTAATGACCACACTTC
 ATGAGATCTTTGAAGGAGAACTAGGGGACTCCGTCTCTATTACCCAACACGAAGTAAATGACATCATTACTGGTGTGAAG

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#### Abstract

AbsI AACTGGAGCTTGACTGTAAGACCCGAGGGGGCAGAGACCAAGTCTGTCTTCACTCCGAGTCCCC「CGAGGAGCCTCCACA  TTGACCTCGAACTGACATTCTGGGCTCCCCCGTCTCTGGTTCAGACAGAAGTGAGGCTCAGGGGAGCTCCTCGGAGGTGT




CGTGCTGGATGAAAGGTCCTCAGTGTGTACATGATGAATCAGTGTGGATACTCCTACTGTATAAACTATTCTGGGAATTC
 GCACGACCTACTTTCCAGGAGTCACACATGTACTACTTAGTCACACCTATGAGGATGACATATTTGATAAGACCCTTAAG


ACTGAGATAATATGTGGAAGGCACTCAGCTCAGCATGGAGCTTTTAACACATCGTAACAGCTCATCCAAAGCAACTCTGC
 TGACTCTATTATACACCTTCCGTGAGTCGAGTCGTACCTCGAAAATTGTGTAGCATTGTCGAGTAGGTTTCGTTGAGACG

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TTACTTTTTGGTTGTTTATCTTCCCTCACCCACTAACTCGCCCAAGGGTGCACTTTCTTCCGGGGTCAAGTCTCCATCTG
 AATGAAAAACCAACAAATAGAAGGGAGTGGGTGATTGAGCGGGTTCCCACGTGAAAGAAGGCCCCAGTTCAGAGGTAGAC

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| ITPR1-237 |

ACTCCCCAGCACTCAGACTGTAAATGTAGAGATAGAAGTTCTGACCCAGTGTGGCCACCGTGTTACTTTAGCCTTCTTAC
 TGAGGGGTCGTGAGTCTGACATTTACATCTCTATCTTCAAGACTGGGTCACACCGGTGGCACAATGAAATCGGAAGAATG

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| $\square$ |

CATTTTTGAATAGAAACATGAGGATGTGAAATGTGAACTTGTGTTGTTGATGATTATTGCCATTTTAAAGGGGACCTTCT
 GTAAAAACTTATCTTTGTACTCCTACACTTTACACTTGAACACAACAACTACTAATAACGGTAAAATTTCCCCTGGAAGA

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| ITPR1-237 |

TTAGGTGTGGGAGGGAATTGATCTGAGCCCATGGGAAATACATGTCAACTTGGAGAAATAGCCTTATGATGGCAGCAGTC + $+\boldsymbol{+}$ AATCCACACCCTCCCTTAACTAGACTCGGGTACCCTTTATGTACAGTTGAACCTCTTTATCGGAATACTACCGTCGTCAG

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СтСтTTTCTTCTTCTTTGTAATAATGATGGACAGTAGTGGTAACAAGTGCTCATGTACCACGGGCTAGCCAGGCGCCCTC + + + GAGAAAAGAAGAAGAAACATTATTACTACCTGTCATCACCATTGTTCACGAGTACATGGTGCCCGATCGGTCCGCGGGAG

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ACTGCATGGTCTCATCCATCTTCCTGGGGCGCCTATGTAGTAGGTACTGTTTTGATCCCTTTCTGCTAATGAGGAAATAG
 TGACGTACCAGAGTAGGTAGAAGGACCCCGCGGATACATCATCCATGACAAAACTAGGGAAAGACGATTACTCCTTTATC

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AGGATCCGAGAGGTCAGGTTATATGCTCAGAGTCACAGAGCCAGCTGGTAGTTGTTCCAGGGTTTGTTTTCTGCCAGAAC
 TCCTAGGCTCTCCAGTCCAATATACGAGTCTCAGTGTCTCGGTCGACCATCAACAAGGTCCCAAACAAAAGACGGTCTTG

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GTGAGTTTGTAACCTCTCTACCATGCCGCCTCCTTACTCCACCAATTTTCCAGGCACAGACATGGCCGCTTCAAGGACTT بम $+\boldsymbol{+}$ CACTCAAACATTGGAGAGATGGTACGGCGGAGGAATGAGGTGGTTAAAAGGTCCGTGTCTGTACCGGCGAAGTTCCTGAA


TGCGTCTGTTTGCCAGGCAGATTGGAAGTTGTGCCTCCACATTTTGTTTTCTTTGGTAGTGGAGTCTTTGTGGGAGACAC + $+\boldsymbol{+}$ ACGCAGACAAACGGTCCGTCTAACCTTCAACACGGAGGTGTAAAACAAAAGAAACCATCACCTCAGAAACACCCTCTGTG

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TGTGCCCTCCTGATAATCAGAAGGCAGCTCGAGTGGTCAGTGTATTTGCTTTGTTTATAAGGTCTGCCCATGAATTCTGG
 ACACGGGAGGACTATTAGTCTTCCGTCGAGCTCACCAGTCACATAAACGAAACAAATATTCCAGACGGGTACTTAAGACC

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| ITPR1-237 |

AGGAGGAAATCATGAAAGACTTTTCCTTTCAGACTGGGCATCTCATTTGCCAAATGACAATTATGTGTGCTACATACATG بम $+\boldsymbol{+}$ TCCTCCTTTAGTACTTTCTGAAAAGGAAAGTCTGACCCGTAGAGTAAACGGTTTACTGTTAATACACACGATGTATGTAC

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| ITPR1-237 |

TACTTCCAGCAAGTTCCAGGTTCCCAGGTCTTAGGAAAGTTAATGACAGGAAGACTGTCCTACAGAACTTCCTCACTGTG
 ATGAAGGTCGTTCAAGGTCCAAGGGTCCAGAATCCTTTCAATTACTGTCCTTCTGACAGGATGTCTTGAAGGAGTGACAC

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GAAGAGATTGACAGCAGCTCATCTAATTAGGGCCGTTATGAAAAGTTGGATTAATAGCGATTTTTGTTTTTCGCTTGCGT بम + $+\boldsymbol{+}$ СТ TСТСТАACTGTCGTCGAGTAGATTAATCCCGGCAATACTTTTCAACCTAATTATCGCTAAAAACAAAAAGCGAACGCA

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CTAAAGAAGCATATGTTCTTTGGCATCATGTGATGGTTATTAGATCTCAGCTTTTGCCCGTTTTGCTCAGAGAAGCTAAA
 GATTTCTTCGTATACAAGAAACCGTAGTACACTACCAATAATCTAGAGTCGAAAACGGGCAAAACGAGTCTCTTCGATTT

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TGCACCAGATACTCCCCACATCTGAGTCTTTACTGGTTGAAGAATATTCATGTTTGGGCGAAGGGAAAGGGAGGAAGGTC بннНبН ACGTGGTCTATGAGGGGTGTAGACTCAGAAATGACCAACTTCTTATAAGTACAAACCCGCTTCCCTTTCCCTCCTTCCAG

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TTCTCATTTTATAAAGTGCCCAGCACTGTGCGTGGAGCCAGTAGGTACTCTATCTGGGCTACATGGAATAGTCCCAATTG ب中ب $+\boldsymbol{+}$ AAGAGTAAAATATTTCACGGGTCGTGACACGCACCTCGGTCATCCATGAGATAGACCCGATGTACCTTATCAGGGTTAAC

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CAGATGAGGAAACTGAGTCTGAAAAAAGCCATGTGTCTTACCCAAAGTCACCCAGTTGGCAGAGCTGGGATTTGAACACA
 GTCTACTCCTTTGACTCAGACTTTTTTCGGTACACAGAATGGGTTTCAGTGGGTCAACCGTCTCGACCCTAAACTTGTGT

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AGGCCCTCAGAAGTCTCTCAGCTTTCTCCCATGCTAGCCAGCCTTTAAGTTACATGAGTACAATGTGAGGGAGCTATTCA بम ب $+\boldsymbol{+}$ TCCGGGAGTCTTCAGAGAGTCGAAAGAGGGTACGATCGGTCGGAAATTCAATGTACTCATGTTACACTCCCTCGATAAGT

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GTGCCCTGTACCCACTTTGGAGCTCTGCCTACTAGAGAGCAGTGTCTATCTTGTTTTCGTTTGGGGTGGGAACAGGCTGC + $+\boldsymbol{+}$ CACGGGACATGGGTGAAACCTCGAGACGGATGATCTCTCGTCACAGATAGAACAAAAGCAAACCCCACCCTTGTCCGACG

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| ITPR1-237 |

ACTGGTTATTTGATCTGAGAAGCAAGTAGTCACTGCTTGGTTAGCCAATGAGTTTTAAAGGTAGACCTTTAAAATGGAGT
 TGACCAATAAACTAGACTCTTCGTTCATCAGTGACGAACCAATCGGTTACTCAAAATTTCCATCTGGAAATTTTACCTCA

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| ITPR1-237 |

GGAATGGAAGCACATTTTTTTTTAATAACAATGCATGAGCTTTTCCTTAATTTCTGCTGGTGTCTTTCTTGTGGGTAGCT
 CCTTACCTTCGTGTAAAAAAAAATTATTGTTACGTACTCGAAAAGGAATTAAAGACGACCACAGAAAGAACACCCATCGA

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| ITPR1-237 |

TCCTCACAATTGTTAGAGGAGAGCTTGTCCCCGACAGAAGAAAGGCTCTTCCTCAGTTATCGTTTCTGTAGGTTTTCTGG
 AGGAGTGTTAACAATCTCCTCTCGAACAGGGGCTGTCTTCTTTCCGAGAAGGAGTCAATAGCAAAGACATCCAAAAGACC

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| ITPR1-237 |

AATTCATCTTGAGGGTAAGAGTGAAGGCTGGGATGCACTGCAGATAGCTATTGCAAACCCCTCTACTATTTCCGATTAGT
 TTAAGTAGAACTCCCATTCTCACTTCCGACCCTACGTGACGTCTATCGATAACGTTTGGGGAGATGATAAAGGCTAATCA

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| ITPR1-237 |

GGATACGTGTGTGAGTTGTATGCCTGTCTTATATTTACAAGAGGAAGTATCCCGTTTAATTTTACTTTCACACCAAAAAC
 CCTATGCACACACTCAACATACGGACAGAATATAAATGTTCTCCTTCATAGGGCAAATTAAAATGAAAGTGTGGTTTTTG


CCAAGTGTTAAGAGAACGCGGTGTTTTAACACTCCCTCGGTTATCAGCTGCAGAGCGGAGGTTGTATATTGTCACATACA
 GGTTCACAATTCTCTTGCGCCACAAAATTGTGAGGGAGCCAATAGTCGACGTCTCGCCTCCAACATATAACAGTGTATGT

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GTTTTTGGAGTATGTTTCTACATTTGTTACCTGGCAACATTGCTGCACTGGGACGCGAAGTTGTATTGGTTCCCAGCAGA
 CAAAAACCTCATACAAAGATGTAAACAATGGACCGTTGTAACGACGTGACCCTGCGCTTCAACATAACCAAGGGTCGTCT


CCCTCGCTGTTCGTACTGTAGAAGGCAGAAGTTGTTTTCCTCCGCGGGGATTTAGAAGAGAAGGCACAAGGCTAGTGGGG
 GGGAGCGACAAGCATGACATCTTCCGTCTTCAACAAAAGGAGGCGCCCCTAAATCTTCTCTTCCGTGTTCCGATCACCCC

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| ITPR1-237 |

TTTGGCTGACAGATGGGCTGATGCGCTTCGGTGACATGACCCAGAACCAGGCACTGGGCAGGGGATGTGGACTCTTGTCC HبН AAACCGACTGTCTACCCGACTACGCGAAGCCACTGTACTGGGTCTTGGTCCGTGACCCGTCCCCTACACCTGAGAACAGG

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| ITPR1-237 |

TGTCCCAACAACAGCTCCCTGTAATGCAAGGTCACGTGGTAGACAAGGGTTAGTATTAGGTAACCTTGAATACTAATTCG + $+\boldsymbol{+}$ ACAGGGTTGTTGTCGAGGGACATTACGTTCCAGTGCACCATCTGTTCCCAATCATAATCCATTGGAACTTATGATTAAGC

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TGATTCTTTATCTTCTCAAAGTAAAAACAAAAGAACAAACTTTTGTTCTGGTCATTTTATGAGTCATCTGAGCACTTGCA
 ACTAAGAAATAGAAGAGTTTCATTTTTGTTTTCTTGTTTGAAAACAAGACCAGTAAAATACTCAGTAGACTCGTGAACGT

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| ITPR1-237 |

GAACCATAATGGCAAATAGCTAATACATGGCACCTTTTCAGTTGCTCACATTGGATACCCAATTCCCTGCCTTCATTTAT
 CTTGGTATTACCGTTTATCGATTATGTACCGTGGAAAAGTCAACGAGTGTAACCTATGGGTTAAGGGACGGAAGTAAATA


GCATTATTGTGGTTTTGACCACCTACTGGTTCTGATGAGAGAGGAAATCCCGTAGTAGGAGTGATAGCCAGAGCATCTCT
 CGTAATAACACCAAAACTGGTGGATGACCAAGACTACTCTCTCCTTTAGGGCATCATCCTCACTATCGGTCTCGTAGAGA

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TGCTGAGGTGACCCCCTGAGCTGATTATAGCCCTATGGGGTATTTTGTTTTGCTGATACATAATACATTGAAAACACTGT
 ACGACTCCACTGGGGGACTCGACTAATATCGGGATACCCCATAAAACAAAACGACTATGTATTATGTAACTTTTGTGACA


ATATAGAATTTTTTGAATGCTTAAGTGGGGCCTCCATATACACTGAGATCATTTTATCCCCCTACCTTCCACTGCACTTC
 TATATCTTAAAAAACTTACGAATTCACCCCGGAGGTATATGTGACTCTAGTAAAATAGGGGGATGGAAGGTGACGTGAAG

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ACTGACACTTAACCCCGAAGACATTTGCATTGGAAACTTCGCATTATCTGTTTGAAAGTCCTCTCAGTTCAAGCCACACA
 TGACTGTGAATTGGGGCTTCTGTAAACGTAACCTTTGAAGCGTAATAGACAAACTTTCAGGAGAGTCAAGTTCGGTGTGT

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TTCTAAGACTCAGCAAAAGCTTATTGACACCAAGGGCATTGAATTCACCAGCACCTGTAACGTTTCTTGAAGAATGCTTG
 AAGATTCTGAGTCGTTTTCGAATAACTGTGGTTCCCGTAACTTAAGTGGTCGTGGACATTGCAAAGAACTTCTTACGAAC

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CTAGGGAAAAGTTCCCATGGTAACTGTTTTTAAAAGAGTTTTGTAGCATCAACAGGTTAGACAGGAAGTCAAAATCATGG Hبнبн GATCCCTTTTCAAGGGTACCATTGACAAAAATTTTCTCAAAACATCGTAGTTGTCCAATCTGTCCTTCAGTTTTAGTACC

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AGCTCAGCAGCATCCCCTATAAGCACGTGCTCCTTTTTAACCACCCCTAACAAAGACACTGAAGCACCCTGTTCATAAGC بम ب $+\boldsymbol{+}$ TCGAGTCGTCGTAGGGGATATTCGTGCACGAGGAAAAATTGGTGGGGATTGTTTCTGTGACTTCGTGGGACAAGTATTCG

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CCTGATGGGCACTGGAGGGTCTGGCCAGGTTGGGCTGGATTTCAGGGGACCTGATTTGTGTTTCCCTGTGCAGTGCTCGT + $+\boldsymbol{+}$ GGACTACCCGTGACCTCCCAGACCGGTCCAACCCGACCTAAAGTCCCCTGGACTAAACACAAAGGGACACGTCACGAGCA

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TTCCATCACCATCTTTAAGGAGGAGGCCTTTTCCATCCACTGGACTCTTACCATCGTGCCTGTTAAGGAACAAAAAGACA
 AAGGTAGTGGTAGAAATTCCTCCTCCGGAAAAGGTAGGTGACCTGAGAATGGTAGCACGGACAATTCCTTGTTTTTCTGT

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ACTGCTTAGGCCTGGAGGGTATGTGGAAACCACCAGTTACCTTTGAATATACCTGTGGTGCTCGAACCTCCTTTAGAAAA HبН TGACGAATCCGGACCTCCCATACACCTTTGGTGGTCAATGGAAACTTATATGGACACCACGAGCTTGGAGGAAATCTTTT


CCCAAGATGCCATTTTAATGATGCTTTGCTCTTGGGTATCAAATTTACTCCTTAATTTACCTCAGGAGATGTTCTAAGAG
 GGGTTCTACGGTAAAATTACTACGAAACGAGAACCCATAGTTTAAATGAGGAATTAAATGGAGTCCTCTACAAGATTCTC

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GAAGCCACAAGATTCCATACCTGCTGTTGTTGTTTTAGAGCTGGTGGATTTTTTTTTTTTTAATCCGCGGAGGAGGACTT
 CTTCGGTGTTCTAAGGTATGGACGACAACAACAAAATCTCGACCACCTAAAAAAAAAAAAATTAGGCGCCTCCTCCTGAA

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GACCCTGTGGGTTCCTAACTTGGATGGCCATGCAGAGCACCCTTAACTTGGAAATCTATATCCTGCTGTTTAAACTTCAA بम + CTGGGACACCCAAGGATTGAACCTACCGGTACGTCTCGTGGGAATTGAACCTTTAGATATAGGACGACAAATTTGAAGTT

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| ITPR1-237 |

GATGATTCCTATCTGGATTAAAGTCCTCAACCAGCAGGCCGAGGCAAACTCTAAAGAAAAACAAGGTCATGCTGCATTTT
 CTACTAAGGATAGACCTAATTTCAGGAGTTGGTCGTCCGGCTCCGTTTGAGATTTCTTTTTGTTCCAGTACGACGTAAAA

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TTTTTGGTAAGCACAGGAATCAACAAAGAGATGTTATATAACTTCTATTTATATCCTCCTTGCTCACTATCTGCAGGCAG
 AAAAACCATTCGTGTCCTTAGTTGTTTCTCTACAATATATTGAAGATAAATATAGGAGGAACGAGTGATAGACGTCCGTC

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ACAAGAGTCGCTGAGAAGGGATTTAATGAGCTCTCTGGGTTTGCTCACCTTCCTGAGCTGGTAGGAACCAGCTTGTTCTC HبН TGTTCTCAGCGACTCTTCCCTAAATTACTCGAGAGACCCAAACGAGTGGAAGGACTCGACCATCCTTGGTCGAACAAGAG

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AAATGCGTCAGTAAAGAATCTGGCTGTGGGTGGGCGGCCAGGGTAGGTGGACTGCGTTGTTGCTATGGTGTTTTTTAATT بम ب $+\boldsymbol{+}$ TTTACGCAGTCATTTCTTAGACCGACACCCACCCGCCGGTCCCATCCACCTGACGCAACAACGATACCACAAAAAATTAA

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CCCCTGTCTCTCAAAGATCTCACTCCCCCCTTCCCTGACTCCTTCCTTTTGCCCCCTTCCTTTCTTTCTTTCTTTTTTTT + $+\boldsymbol{+}$ GGGGACAGAGAGTTTCTAGAGTGAGGGGGGAAGGGACTGAGGAAGGAAAACGGGGGAAGGAAAGAAAGAAAGAAAAAAAA

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TTTAAATCTGTAAGCTTCCTTGTTTCTCACACCTACTCATGATTCTTGGAGCTGTCTCCGGAAACAGAATATTTTCCCTC
 AAATTTAGACATTCGAAGGAACAAAGAGTGTGGATGAGTACTAAGAACCTCGACAGAGGCCTTTGTCTTATAAAAGGGAG

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TCCTTCCTAAGTGCTCAGCTCCCCCATTGTGTAGCCCCGGGACATCAGAAGTTGTTTTCTAAGGTGTGTTTTTTCCACCC بНبН

TCCCTTATTTCTTTTCCCATGATTTTTTTATTACCAATCCCTCCATGAGAGAGACCTATCCTAGGAGTCTTCCATCTTGC
 AGGGAATAAAGAAAAGGGTACTAAAAAAATAATGGTTAGGGAGGTACTCTCTCTGGATAGGATCCTCAGAAGGTAGAACG


CTGATAGAAGTTTTCTCTGGCATATTCCAAATTCAGATTGCTCCAAAACCAGGTGAAGTCTGTTGCTAGTTGGACAGTCG
 GACTATCTTCAAAAGAGACCGTATAAGGTTTAAGTCTAACGAGGTTTTGGTCCACTTCAGACAACGATCAACCTGTCAGC

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GTATGGCCTGGAGGAGAAGGGCTGTTTGTATTTCCATGCATCCTCCTTTGTCCTCTTGCCCTGGGTGAAGCAATGACGTC Hب-HبH CATACCGGACCTCCTCTTCCCGACAAACATAAAGGTACGTAGGAGGAAACAGGAGAACGGGACCCACTTCGTTACTGCAG

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TCTGTCTCCTCTAGTGCGTTATAAAATAGAACCGCAAGAAAACAAGAGAATGGGTTTACCCCACAATCATAATTCCTGGA
 AGACAGAGGAGATCACGCAATATTTTATCTTGGCGTTCTTTTGTTCTCTTACCCAAATGGGGTGTTAGTATTAAGGACCT

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GCTTGGGTAACTCCTGTTACCTGAAGGTTGCAGGTTGAAATGACTCAGCTTGCATTTAATTAAAAAAAAAAATGCTGCCC
 CGAACCCATTGAGGACAATGGACTTCCAACGTCCAACTTTACTGAGTCGAACGTAAATTAATTTTTTTTTTTACGACGGG $\begin{array}{r}\hline \text { ITPR1 } \\ \hline \text { ITPR1-237 } \\ \hline\end{array}$

CATCAGATTCTCAGCAGGGACGACGAATGCACCTTGCTGAGAACCCTATGGCTGCCCAGGGAGTGGCCCCCTGCACCCTG
 GTAGTCTAAGAGTCGTCCCTGCTGCTTACGTGGAACGACTCTTGGGATACCGACGGGTCCCTCACCGGGGGACGTGGGAC

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GCCGGCCTGGTGGTGGCCACAGAGGCTTCTGAGATGGCTCTGTGTTGTCCATCACATTCCCACCAGAGCAGAGACACTTA
 CGGCCGGACCACCACCGGTGTCTCCGAAGACTCTACCGAGACACAACAGGTAGTGTAAGGGTGGTCTCGTCTCTGTGAAT


GAAGATGTGAGTAGGGAGGTTAGGATGAAAAGTTCTTAGAAAAGAATATGTAGTTCCATGAGGACAGGCTGAAAAAATTT
 СТTCTACACTCATCCCTCCAATCCTACTTTTCAAGAATCTTTTCTTATACATCAAGGTACTCCTGTCCGACTTTTTTAAA


TTAAAAAGCCAAACCCACCTCTGCCTTGCCCAGAAGTTGTGCAATCCTTAATAGCAGTAGCCTGTTTGAATAATCAGAGG
 AATTTTTCGGTTTGGGTGGAGACGGAACGGGTCTTCAACACGTTAGGAATTATCGTCATCGGACAAACTTATTAGTCTCC


CAAGCTGACTTCCCTTTATTAACTTCTGTTAGAGACATCTGCATAAAATATCCCCGGATTCCAGACCAAGTAGGTAATTT
 GTTCGACTGAAGGGAAATAATTGAAGACAATCTCTGTAGACGTATTTTATAGGGGCCTAAGGTCTGGTTCATCCATTAAA


TTTTTTCCCCTCTGAGTAACGGGAGGGACTTTCCCTTTGGAAATCTTCCAGCAGAGTTAACTTCATGGTTGAGACTGTTT
 AAAAAAGGGGAGACTCATTGCCCTCCCTGAAAGGGAAACCTTTAGAAGGTCGTCTCAATTGAAGTACCAACTCTGACAAA


TCTCATTATAAGGTGCCAACAGCTAGATTCCTGATGCAGGGACAGTGAAGGCGCCTCATGTACACACTTGGATCCCCTGC
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| ITPR1 |
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| ITPR1-237 |

Sanger Sequencing Primer

TTCCCTGAGAACTGACTTGATGTTCACAGTTGCCTCTGGTTCTTCTGCCTTGACCCTCCTTTTCACGGAGAAATCTATGC
 AAGGGACTCTTGACTGAACTACAAGTGTCAACGGAGACCAAGAAGACGGAACTGGGAGGAAAAGTGCCTCTTTAGATACG


CCGCTCACATTTCCTGAGGTCCTCTGAGTTCCTCTTTGAAACTGTCAGAGGCTCTCTCAAAGTTTCTACCAATTTCCTAT
 GGCGAGTGTAAAGGACTCCAGGAGACTCAAGGAGAAACTTTGACAGTCTCCGAGAGAGTTTCAAAGATGGTTAAAGGATA


TCCTGGGTTTTAGACTTTTGATCAAGATGGCTCTGACACTGAAGGGGATAGTCCTGTAAACCCTCTGAAGTCTTCAAGCC
 AGGACCCAAAATCTGAAAACTAGTTCTACCGAGACTGTGACTTCCCCTATCAGGACATTTGGGAGACTTCAGAAGTTCGG

| ITPR1 |  |
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|  | ITPR1-237 |

TCGTTTTTCCCCTGGAATTCAGGACTTTAAAAATATATATATTTTATTGCTCTTCGAGGAGGATGTGTTGCAGTTGCCCT
 AGCAAAAAGGGGACCTTAAGTCCTGAAATTTTTATATATATAAAATAACGAGAAGCTCCTCCTACACAACGTCAACGGGA

| ITPR1 |  |
| ---: | :--- |
|  | ITPR1-237 |

CACCATATGGTATTTGAGAAATATGTTTTTATTAGCCTCCTTGCAACACAAACCCACAAACTGTTGAGCCCAGAGCTTGT
 GTGGTATACCATAAACTCTTTATACAAAAATAATCGGAGGAACGTTGTGTTTGGGTGTTTGACAACTCGGGTCTCGAACA

| ITPR1 |
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| ITPR1-237 |$\gg$

AGCTATCAAGTCTGGGGAGGGAGCCAGGTTTGGAGACGGAAGGTGCACAAATGATCATCCCTCCCGGGCTGTAGTTAATC ННННННННННН TCGATAGTTCAGACCCCTCCCTCGGTCCAAACCTCTGCCTTCCACGTGTTTACTAGTAGGGAGGGCCCGACATCAATTAG


ATGCAAGCTGCTGTGTCACTGGGGCCGGGGTAGTTAACAGTTAACTCGATGGATTAAGGATCCTCAGCCAGGCTGAGCCC
 TACGTTCGACGACACAGTGACCCCGGCCCCATCAATTGTCAATTGAGCTACCTAATTCCTAGGAGTCGGTCCGACTCGGG



$>$ $>$

GTGCTGCATATTCCCACTTAGCAGGACTTTGAGCTTTCACATGCAGGCTTCTTCTGGCCATAAAGTTATACTTCAGCTGC
 CACGACGTATAAGGGTGAATCGTCCTGAAACTCGAAAGTGTACGTCCGAAGAAGACCGGTATTTCAATATGAAGTCGACG

| ITPR1 |
| ---: |

CATGGATGCAAAGCTTGGCTTGAGTGTTTCGGAATTGCACCTCCTTCAGGATTATTGTTCATTCATTAATATAGTAAATT
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| ITPR1 |
| ---: |
| ITPR1-237 |

TTTTAAAAAGAGAGAAGAGGCCTTACTGTGTTGACCAAGCTGGCCTTGAACTCCTGGGCTGAAGAGATCTTTCTGTCTCA
 AAAATTTTTCTCTCTTCTCCGGAATGACACAACTGGTTCGACCGGAACTTGAGGACCCGACTTCTCTAGAAAGACAGAGT

| ITPR1 |
| ---: |
| ITPR1-237 |

GCCTCCGGAGTAGCTAGAACTACTGGCTTGTGTCACCACAGCCGGCTTAATATAGCAGATGTTTACTTACTGAGCACTCC
 CGGAGGCCTCATCGATCTTGATGACCGAACACAGTGGTGTCGGCCGAATTATATCGTCTACAAATGAATGACTCGTGAGG

| ITPR1 |  |
| :--- | :--- |
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CTGGGTGTCAGGTGCTATACACATTGGCGTCAATACAGTCAGGGATGAGACCAACATAGCCCCTGCCCTCCAGGAGCTTA
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| ITPR1 |
| ---: |
| ITPR1-237 |

CAGTCTTGTGGGAGACAGAGCTAGGAAATCAGCTCATCATCAGCTAAATCAGAGCTTCAGAGAAGTGTGATGGGGAAGCA
 GTCAGAACACCCTCTGTCTCGATCCTTTAGTCGAGTAGTAGTCGATTTAGTCTCGAAGTCTCTTCACACTACCCCTTCGT

| ITPR1 |
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AACAGGCGCCACGAAGCGTGGCCAGGGAGGGCTTCTCTGGGGAGATACCGTTCAAGCTGAGACCCAACAGATGCGAAGAG
 TTGTCCGCGGTGCTTCGCACCGGTCCCTCCCGAAGAGACCCCTCTATGGCAAGTTCGACTCTGGGTTGTCTACGCTTCTC

| ITPR1 |
| ---: |
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AAGGAGCTGTGTGAAGAGTAGCAGAGGGCAAGAGTATTTCAGAAGAGGGTTGGCTTGTGCTTGGGATGTTGGAGGAGCTG + $+\boldsymbol{+}$ TTCCTCGACACACTTCTCATCGTCTCCCGTTCTCATAAAGTCTTCTCCCAACCGAACACGAACCCTACAACCTCCTCGAC

| ITPR1 |
| ---: |
| ITPR1-237 |

AGTGAAGGAAGCTAACGCGGTCTACCCCATGGTGGTCGGTCAGGGGCAGAGCTGCGGAAAGTATCTGCTCCACCAGGGTG
 TCACTTCCTTCGATTGCGCCAGATGGGGTACCACCAGCCAGTCCCCGTCTCGACGCCTTTCATAGACGAGGTGGTCCCAC

| ITPR1 |
| :--- |
| ITPR1-237 |
| ATGGGCTTGTCATCAAGTCGGGGCTGGATGAGGTGATCTCTGTGGTTCCCGCCGATCCCTAGTCGGTGCTTCTAAAGGGC |
| TACCCGAACAGTAGTTCAGCCCCGACCTACTCCACTAGAGACACCAAGGGCGGCTAGGGATCAGCCACGAAGATTTCCCG |

ACCAAGTTGGCTTGGGCCTGTCCCCTGCTTGGATATGCGCTGCCGCCGCCAAAGCCCTAATATACAAAGCAGCTTTACCC
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| ITPR1 |
| ---: |
| ITPR1-237 |

AGATGAGTGCTGTGTGATTTCACCCTGCCCTGCTCTAACCGCTTGGCCATCTGTACATCTTACTGTCAGCTGCCAGGGAT
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| ITPR1 |
| ---: |
| ITPR1-237 |

GCTCTCTGTGGCCGTGTGGAAGTTACCTGGTGGGCCAGCACACAGCAAGATGGGGATGCAGGGTGGGGAGACATGAAGAG
 CGAGAGACACCGGCACACCTTCAATGGACCACCCGGTCGTGTGTCGTTCTACCCCTACGTCCCACCCCTCTGTACTTCTC

| ITPR1 |
| ---: |
| ITPR1-237 |

TCCCAGAGCATTCTGCTGGGGACCAGACTCGGCTGTACCCGAGAGTCAGTTGAGTTGGGAAGGACTAGGGTTGACTGGGG + $+\boldsymbol{+}$ AGGGTCTCGTAAGACGACCCCTGGTCTGAGCCGACATGGGCTCTCAGTCAACTCAACCCTTCCTGATCCCAACTGACCCC

| ITPR1 |
| ---: |
| ITPR1-237 |

GTGACTGCAGTCTTCATCAAGGAGGCACTTGCTTTGCTTGATGCTTTGCCACCTAAGCCAGTGTCCTTGCCTCCATCCGG
 CACTGACGTCAGAAGTAGTTCCTCCGTGAACGAAACGAACTACGAAACGGTGGATTCGGTCACAGGAACGGAGGTAGGCC

| ITPR1 |
| ---: |
| ITPR1-237 |

CCTGAGTGGATTTATTTTTTTCGGCTTCTATGGCCAAGTGTCCTTGTCACAGTTTGTGTGGAGAGCAGCGAAGGGAACGT HبНبн GGACTCACCTAAATAAAAAAAGCCGAAGATACCGGTTCACAGGAACAGTGTCAAACACACCTCTCGTCGCTTCCCTTGCA

| ITPR1 |
| :--- |
| ITPR1-237 |

GGCTGGTGTAGACACCCTGCCGGTACTGTGCGGGCTCTCACCTGTTTTCTCTCCTGCACTCCTTGCAATAGAATCTCAAG
 CCGACCACATCTGTGGGACGGCCATGACACGCCCGAGAGTGGACAAAAGAGAGGACGTGAGGAACGTTATCTTAGAGTTC

| ITPR1 |
| :--- |
| ITPR1-237 |

TGGTTCTCCTCCTCTTTCTCCATTGCAGATGAGGGAACTGAGGATGGAAGTTAATAAATGAGCTGTCCAAACCCACCCAG + $+\boldsymbol{+}$ ACCAAGAGGAGGAGAAAGAGGTAACGTCTACTCCCTTGACTCCTACCTTCAATTATTTACTCGACAGGTTTGGGTGGGTC

| ITPR1 |
| :--- |
| ITPR1-237 |

TTCCTAAGTCACCCCTATGCGTATGTTTCTACCTTGCTAAAGATGCAGGATAGAGATCGCTTTCACTGAGCCGTGTGACT
 AAGGATTCAGTGGGGATACGCATACAAAGATGGAACGATTTCTACGTCCTATCTCTAGCGAAAGTGACTCGGCACACTGA

| ITPR1 |
| ---: |
| ITPR1-237 |

GCACAAACACAGAAAATGGGGGGGGGGTGGCAAGGATTATTCTTGGCATCTGTATAAATTTCAAGTTGAATTCCCTGGGA
 CGTGTTTGTGTCTTTTACCCCCCCCCCACCGTTCCTAATAAGAACCGTAGACATATTTAAAGTTCAACTTAAGGGACCCT

| ITPR1 |
| ---: |
| ITPR1-237 |

End $(88,854)$

GGGGAGTTGTTTCCAGAGATCGACTCCCCTGACCCTGCAACTCCTGCTTCAGCC +ННННННННН CCCCTCAACAAAGGTCTCTAGCTGAGGGGACTGGGACGTTGAGGACGAAGTCGG
$3^{\prime}$
88,854
$5^{\prime}$

## ITPR1

ITPR1-237
ITPR1 $\quad=\quad \underset{\text { Protein }}{\text { gene ENSG0000015 }} 00150995$
/note

| ITPR1-201 |  |
| :--- | :--- |
|  |  |
| /note | $=$primary transcript ENST00000302640 <br>  <br>  <br> Nonsense mediated decay |


/note $=$ coding sequence ENSP00000346595
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,, FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, , LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, , YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, ,YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENK, GSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKREFDESNSQT SETSSGNSSQEGPSNVP, GALDFEHIEEQAEGIFGGS, , EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, ,VQLLVTSQDVDNYKQI KQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, ,EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVLELLQIPYEK , , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIKKCQDMVMAE , , LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDTEVEMKEIYT SNHMWKLFENFLVDICR, ,ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, , TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV, ,AKSRAIA IPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ, ,DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGFICK, LIKH TKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, LISIDELDNAE, , LPPAPDSENATE, , QELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRESLTSFGNGP LSAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1269 amino acids $=144.7 \mathrm{kDa}$

/note $=$ coding sequence ENSP00000401671
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,,FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, , LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, , YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, ,YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENKGNNDVEKLK, , SSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKR EFDESNSQTSETSSGNSSQEGPSNVP, , GALDFEHIEEQAEGIFGGS, , EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, ,VQLLVTS QDVDNYKQIKQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, , EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVL ELLQIPYEK, , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIK KCQDMVMAE, , LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDT EVEMKEIYTSNHMWKLFENFLVDICR, , ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, ,TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV , , AKSRAIAIPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ,, DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGF ICK, LIKHTKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, LISIDELDNAE, , LPPAPDSENATE, , ELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRES LTSFGNGPLSAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1277 amino acids $=145.6 \mathrm{kDa}$

## ITPR1-205

1986 .. 69,963 67,978 bp $\quad \rightarrow$ CDS
| 24 segments $=3687 \mathrm{bp}$
/note $=$ coding sequence ENSP00000397885
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,,FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, , LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, , YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, , YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENK, GSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKREFDESNSQT SETSSGNSSQEGPSNVP, , GALDFEHIEEQAEGIFGGS, ,EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, ,VQLLVTSQDVDNYKQI KQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, , EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVLELLQIPYEK , , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIKKCQDMVMAE , LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDTEVEMKEIYT SNHMWKLFENFLVDICR, , ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, , TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV, , AKSRAIA IPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ, ,DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGFICK, , LIKH TKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, , GEALRQVLVNRYYGNVRPSGRRESLTSFGNGPLSAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLV IDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1229 amino acids $=140.2 \mathrm{kDa}$
ITPR1-230 1986 .. 69,963 67,978 bp $\square \longrightarrow C D S$
| 27 segments $=3804 \mathrm{bp}$
/note $=$ coding sequence ENSP00000498014
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,,FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK,, LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, , YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, , YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENK, GSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, , FILNVRLDYRISCLLCIFKREFDESNSQT SETSSGNSSQEGPSNVP, , GALDFEHIEEQAEGIFGGS, , EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, , VQLLVTSQDVDNYKQI KQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, , EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVLELLQIPYEK , , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIKKCQDMVMAE , , LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDTEVEMKEIYT SNHMWKLFENFLVDICR, , ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, , TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV, , AKSRAIA IPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ, , DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGFICK,, LIKH TKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, , LISIDELDNAE, , LPPAPDSENATE, , ELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRESLTSFGNGPL SAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1268 amino acids $=144.6 \mathrm{kDa}$
ITPR1-231 1986 .. 69,963 67,978 bp $\square \longrightarrow C D S$

* 27 segments $=3804 \mathrm{bp}$
/note $\quad=$ coding sequence ENSP00000497026
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,,FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, ,YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, , YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENK, GSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKREFDESNSQT SETSSGNSSQEGPSNVP, , GALDFEHIEEQAEGIFGGS, ,EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, ,VQLLVTSQDVDNYKQI KQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, , EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVLELLQIPYEK , , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIKKCQDMVMAE , , LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDTEVEMKEIYT SNHMWKLFENFLVDICR, ,ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, , TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV, ,AKSRAIA IPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ, ,DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGFICK,, LIKH TKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, , LISIDELDNAE, , LPPAPDSENATE, , ELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRESLTSFGNGPL SAGGPGKPGGG, ,GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1268 amino acids $=144.6 \mathrm{kDa}$
| 27 segments $=3831 \mathrm{bp}$
/note $\quad=$ coding sequence ENSP00000497605
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,, FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, , LVLSRFEFEGV
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VTTIFPISKMAKGEENKGNNDVEKLK, ,SSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKR
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ELLQIPYEK, , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIK
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, , AKSRAIAIPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ,, DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGF
ICK, LIKHTKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, LISIDELDNAE, , LPPAPDSENATE, , ELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRES
LTSFGNGPLSAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ
1277 amino acids $=145.6 \mathrm{kDa}$
ITPR1-254
1986 .. 69,963 67,978 bp $\square \rightarrow$ CDS
* 27 segments $=3834 \mathrm{bp}$
/note $=$ coding sequence ENSP00000498056
/translation = EYIAKQFGFMQKQIGYDVLAEDTITALLHNNRKLLEKHITAAEIDTFVSLVRKNREPR,,FLDYLSDLCVSMNKSIPVTQELICKAVLNPTNADILIETK, , LVLSRFEFEGV SSTGENALEAGEDEEEVWLFWRDSNKEIRSKSVRELAQDAKEGQKEDRDVLSYYR, , YQLNLFARMCLDRQYLAINEISGQLDVDLILRCMSDENLPYDLRASFCRLMLHMHV DRDPQEQVTPVKYARLWSEIPSEIAIDD, , YDSSGASKDEIKERFAQTMEFVEEYLRDVVCQRFPFSDKEKNKLTFE, ,VVNLARNLIYFGFYNFSDLLRLTKILLAILDCVH VTTIFPISKMAKGEENKGNNDVEKLK, , SSNVMRSIHGVGELMTQVVLRGGGFLPMTPMAAAPEGNVKQAEPEKEDIMVMDTKLKIIEILQ, ,FILNVRLDYRISCLLCIFKR EFDESNSQTSETSSGNSSQEGPSNVP, , GALDFEHIEEQAEGIFGGS, ,EENTPLDLDDHGGRTFLRVLLHLTMHDYPPLVSGALQLLFRHFSQRQEVLQAFKQ, ,VQLLVTS QDVDNYKQIKQDLDQLRSIVEKSELWVYKGQGPDETMDGASGENEHKKTE, , EGNNKPQKHESTSSYNYRVVKE, , ILIRLSKLCVQESASVRKSRKQQQRLLRNMGAHAVVL ELLQIPYEK, , AEDTKMQEIMRLAHEFLQNFCAGNQQNQALLHKHINLFLNPG, , ILEAVTMQHIFMNNFQLCSEINERVVQHFVHCIETHGRNVQYIKFLQTIVKAEGKFIK KCQDMVMAE, LVNSGEDVLVFYNDRASFQTLIQMMRSERDRMDENSPLMYHIHLVELLAVCTEGKNVYTEIKCNSLLPLDDIVRVVTHEDCIPE, ,VKIAYINFLNHCYVDT EVEMKEIYTSNHMWKLFENFLVDICR, , ACNNTSDRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, ,TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV , , AKSRAIAIPVDLDSQVNNLFLKSHSIVQKTAMNWRLSARNAARRDSVLAASRDYRNIIERLQ, , DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGF ICK, , LIKHTKQLLEENEEKLCIKVLQTLREMMTKDRGYGEK, LISIDELDNAE, , LPPAPDSENATE, , QELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRE SLTSFGNGPLSAGGPGKPGGG, , GGGSGSSSMSRGEMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ 1278 amino acids $=145.7 \mathrm{kDa}$

| Donor Sequence WT -> SNV | 2010 | 2109 | 100 bp | $\square$ | misc_feature |
| :---: | :---: | :---: | :---: | :---: | :---: |
| PAM | 2069 | 2071 | 3 bp | $\square$ | misc_feature |
| gRNA Protospacer Sequence | 2072 | 2091 | 20 bp | $\square$ | misc_feature |
| SNV | 2076 | 2076 | 1 bp | $\square$ | misc_feature |


|  |  |
| ---: | :--- |
| $/$ note $\quad$ | $W T=A$ |
|  | $S N V=G$ |




/note $=$| primary transcript ENST00000650146 |
| :--- |
|  |
| Retained intron |

| ITPR1-2 23 |  |
| :--- | :--- |
| /note | $=\quad \underset{\text { primary transcript ENST000000 }}{ }$ |

ITPR1-233
9750 .. 88,854 79,105 bp $\square \longrightarrow$ prim_transcript
/note $=$ primary transcript ENST00000648431
ITPR1-233 $9750 \quad . .69,963 \quad 60,214 \mathrm{bp} \quad \square \quad \longrightarrow$ CDS
| 22 segments $=2846 \mathrm{bp}$
/note $\quad=$ coding sequence ENSP00000498149
/translation = SFWPYWTVYM*QQSSPLARWRKEKRIK, AVT**DLFMAWES**PRWCSGEEAFCP*LPWLLPLKAM*SRQSLRRRTSWSWTPS*RSLRYSS, , LF*M*GWIIGSPASCVYLS
ESLMKAIPRLQKHPPETAAKKGQVMYQ, VLLTLNTLKNKQKASLEE, ,VRRTPHWTWMTTAAEPFSVSCST*RCMTTHPWCQGPCSSSSGTSARGRRCSRPSNR, , FNCWLP
AKMWTTTNRSNKTWIN*GPSWKSQSFGCTKGRAPMRLWMVHLEKMNIRKRR, , REITSHKSMKAPAATTTEWSKR, , F*FGLANSVFKRVPQ*ERAGSSNSVCSGTWARTPWC
WSCCRFPMRR, , PKIPRCKR**GWLMNFCRISAQATSRIKLCYINT*TCFSTQG, , SWRQ*PCSTSS*TISSFAVRSTRELFSTSFTA*RLTVGMSSI*SSYRQLSRQKGNLL
KNAKTWLWPS, , WSIRERMSSCSTTTEPLSRL*SR*CGQNGIGWMRTALSCTTSTWSSSWLCARRVRMSTQRSSATPCSRWMTSFAW*PTRTASLR, , LKLHTLTS*ITAMWI
QRWK*RRFIPAITCGNCLRISL*TSAG, ,PVTTLVTGNMQTRFWRSMSPKSS*VLLLLSSALPSQTRVRLCR, , LASLSLCNCCKACSGFTTATG*CQAKKPPWRAVFGCCLM
*, ,PRAGPLPFPWTWTAKSTTSFSSPTALCRKQP*TGGSQPAMPHAGTLFWQLPETTGISLRDCR, , TSSPRWRTVSGPWCRQSYLCSWMFSTDPSCFSQRTQTPEGNVKVAV
SFA, ,S**SIQNSC*KKMKRSSALRSYRP*GK**PKIEAMEKS, , *FPLMNWIMLS, ,FLQLRILRTPLR, , SLNQVHPCGSWKTIKG, ,VRRSGKFWSTVTMETSDLRDEER
ALPALAMAHCQQEDPASPGEE, , GEVPDPAL*AGVR*VWPRFSVTLTRRGLPI*LSTSS*THPVTECSMKAFSWPLPFWKEATPPS
948 codons (42 internal stop codons)

/note $=$ coding sequence ENSP000000498022
/translation $=\mathrm{K}^{*}$ CTR,, CS*L*TH*RTSRRHLWRK, , ${ }^{*}$ GEHPTGLG*PRRQNLSPCPAPLDDA*LPTPGVRGPAAPLPALQPEAGGAPGLQT, , GSTAGYQPRCGQLQTDQTRLGSTEVHRGK VRALGVQRAGPR*DYGWCIWRK*T*ENG, GGK*QATKA*KHQQLQLQSGQR, , DFDSA*QTLCSRECLSEKEQEAATASAPEHGRARRGAGAAADSL*E, , GRRYQDARDNE VGS*IFAEFLRRQPAESSFAT*THKPVSQPR, , DPGGSNHAAHLHEQFPALQ*DQRESCSALRSLHRDSRSECPVYKVLTDNCQGRREIY*KMPRHGYGR, , AGQFGRGCPRV LQRQSLFPDSDPDDAVRTGSDG*EQPSHVPHPLGRAPGCVHGG*ECLHRDQVQLPAPAG*HRSRGDPRGLHP*, , G*NCIH*LPESLLCGYRGGNEGDLYQQSHVEIV*EFPC RHLQ, , GL*QH**QETCRLDFGEVCHRNRHEYCYYFLQLSLLRPEYDFA, , DSPACLCATAARRVQGLPLQLVNAKPKSLRGELYSGAV*CS, , QEPGHCHSRGPGQPSQQPL SQVPQHCAENSHELAALSPQCRTQGLCSGSFQRLPEYH*EIA, , GHRLRAGGPSQAPGAGRVICARGCSPQTRAAFPREHRRQKEM*KWRFHLQ, , VNKAYKTAARRK*REAL H*GPTDPEGNDDQR*RLWRK, ANFH**IG*C*, ASSSSGF*ERH*, GA*TKSTPAAAGRP*K, , G*GAQASSGQPLLWKRQTFGTKREPYQLWQWPTVSRRTRQARGRR, , GRFRIQLYEQG*DESGRGSVSP*QGGGFQSSYRPHHERIQ*PSVP*KHSPGHCPSGRRQHHHP 817 codons (47 internal stop codons)


| /note | $=$ coding sequence ENSP00000496893 |
| :--- | :--- |
| /translation | $=$ GAGAAADSL*E, , GRRYQDARDNEVGS*IFAEFLRRQPAESSFAT*THKPVSQPR, ,DPGGSNHAAHLHEQFPALQ*DQRESCSALRSLHRDSRSECPVYKVLTDNCQGRREI | Y*KMPRHGYGR, , AGQFGRGCPRVLQRQSLFPDSDPDDAVRTGSDG*EQPSHVPHPLGRAPGCVHGG*ECLHRDQVQLPAPAG*HRSRGDPRGLHP*, G*NCIH*LPESLLC GYRGGNEGDLYQQSHVEIV*EFPCRHLQ, GL*QH**QETCRLDFGEVCHRNRHEYCYYFLQLSLLRPEYDFA, , DSPACLCATAARRVQGLPLQLVNAKPKSLRGELYSGAV *CS, , QEPGHCHSRGPGQPSQQPLSQVPQHCAENSHELAALSPQCRTQGLCSGSFQRLPEYH*EIA, , GHRLRAGGPSQAPGAGRVICARGCSPQTRAAFPREHRRQKEM*KW RFHLQ, , VNKAYKTAARRK*REALH*GPTDPEGNDDQR*RLWRK, , ANFH**IG*C*, ,ASSSSGF*ERH*, , AGA*TKSTPAAAGRP*K, , G*GAQASSGQPLLWKRQTFGT KREPYQLWQWPTVSRRTRQARGRR, , GRFRIQLYEQG*DESGRGSVSP*QGGGFQSSYRPHHERIQ*PSVP*KHSPGHCPSGRRQHHHP 626 codons (34 internal stop codons)


| ITPR1-2 21 |  | 25,933 .. 48,440 | 22,508 bp | $\square$ | $\rightarrow$ | prim_transcript |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| /note | $\begin{aligned} &= \text { primary transcript ENST00000647673 } \\ & \text { Retained intron } \end{aligned}$ |  |  |  |  |  |
| ITPR1-243 |  | 34,440 .. 72,934 | 38,495 bp | $\square$ | $\rightarrow$ | prim_transcript |
| /note | $=$ primary transcript ENST00000649414 |  |  |  |  |  |
| ITPR1-243 |  | 34,440 .. 71,895 | 37,456 bp | $\square$ | $\rightarrow$ | CDS |

/note $=$ coding sequence ENSP00000497099
/translation = DRKHADSILEKYVTEIVMSIVTTFFSSPFSDQSTTLQ, ,TRQPVFVQLLQGVFRVYHCNWLMPSQKASVESCIRVLSDV, ,AKSRAIAIPVDLDSQVNNLFLKSHSIVQKTAM NWRLSARNAARRDSVLAASRDYRNIIERLQ, , DIVSALEDRLRPLVQAELSVLVDVLHRPELLFPENTDARRKCESGGFICK, , LIKHTKQLLEENEEKLCIKVLQTLREMMT KDRGYGEK, , LISIDELDNAE, LPPAPDSENATE, , ELEPSPPLRQLEDHKR, , GEALRQVLVNRYYGNVRPSGRRESLTSFGNGPLSAGGPGKPGGG, , GGGSGSSSMSRG EMSLAEVQCHLDKEGASNLVIDLIMNASSDRVFHESILLAIALLEGGNTTIQ, , LYQFEKSQNLSPQEIEPLTRIRGCAHTMLCLKDDI*
408 amino acids $=45.4 \mathrm{kDa}$

/note $=$ coding sequence ENSP00000497404
/translation $=$ PRAGPLPFPWTWTAKSTTSFSSPTALCRKQP*TGGSQPAMPHAGTLFWQLPETTGISLRDCR,, TSSPRWRTVSGPWCRQSYLCSWMFSTDPSCFSQRTQTPEGNVKVAVSFA , , S**SIQNSC*KKMKRSSALRSYRP*GK**PKIEAMEK
148 codons (7 internal stop codons)
Size
Type
ITPR1-235 40,807 .. 69,918 $29,112 \mathrm{bp} \quad \square \quad \longrightarrow \mathrm{CDS}$

* 6 segments $=745 \mathrm{bp}$
/note $=$ coding sequence ENSP00000497186
/translation = PGQPSQQPLSQVPQHCAENSHELAALSPQCRTQGLCSGSFQRLPEYH*EIA, , GHRLRAGGPSQAPGAGRVICARGCSPQTRAAFPREHRRQKEM*KWRFHLQ, ,VNKAYKTA
ARRK*REALH*GPTDPEGNDDQR*RLWRK, AGA*TKSTPAAAGRP*K, G*GAQASSGQPLLWKRQTFGTKREPYQLWQWPTVSRRTRQARGRR, , GRFRIQLYEQG*DESG
RGSVSP*QGGGFQSSYRPHHERIQ*PSVP*KH
248 codons (12 internal stop codons)
/note

[^1] IncRNA

| ITPR1-235 |  |
| :--- | :--- |
| /note $=$ | primary transcript ENST000000648564 |
| ITPR1-244 | $=$primary transcript ENST000000649425 <br> Retained intron |
| /note |  |
| ITPR1-218 | primary transcript ENST000000494681 <br> Retained intron |
| /note |  |


| ITPR1-240 |  |
| :--- | :--- |
| /note | $=$primary transcript ENST000000649144 <br> Retained intron |

46,210 .. $88,854 \quad 42,645 \mathrm{bp} \quad \square \quad \rightarrow$ prim_transcript
58,986 .. 70,234 $11,249 \mathrm{bp} \quad \square \quad \longrightarrow$ prim_transcript
64,992 .. $88,854 \quad 23,863 \mathrm{bp} \square \longrightarrow$ prim_transcript
83,801 .. 86,199 $2399 \mathrm{bp} \square \longleftarrow$ gene
83,801 .. 86,199 $2399 \mathrm{bp} \square$ - prim_transcript
84,942 .. 85,294 $353 \mathrm{bp} \quad \square \quad \longrightarrow$ gene
84,942 .. 85,294 $353 \mathrm{bp} \square \longrightarrow$ prim_transcript
88,855 .. 128,641 39,787 bp $\square \longleftarrow$ gene
88,855 .. 128,641 39,787 bp $\square$ - prim_transcript
88,855 .. 127,136 38,282 bp $\square$ prim_transcript
88,855 .. 109,733 20,879 bp $\square$ prim_transcript
88,855 .. 109,629 20,775 bp $\square$ prim_transcript

$$
\text { 88,855 .. 109,649 20,795 bp } \square \quad \longleftarrow \text { prim_transcript }
$$

40,807 .. 69,918 29,112 bp $\square \quad \rightarrow$ prim_transcript
45,042 .. 52,835 $7794 \mathrm{bp} \square \longrightarrow$ prim_transcript
46,195 .. 69,819 23,625 bp $\square \longrightarrow$ prim_transcript
$=$ primary transcript ENST00000686919 IncRNA
$=$ primary transcript ENST00000693140 IncRNA

88,855 .. 98,103
9249 bp




[^0]:    MluI
    TTCTTGGGAAGTTAAATGAAACGCGTAGGTGGGCAGTACTGTTCTAAGGACTTGGCCAGTGACGTAAAGGATTTGCATTA
     AAGAACCCTTCAATTTACTTTGCGCATCCACCCGTCATGACAAGATTCCTGAACCGGTCACTGCATTTCCTAAACGTAAT

[^1]:    = primary transcript ENST00000465436

