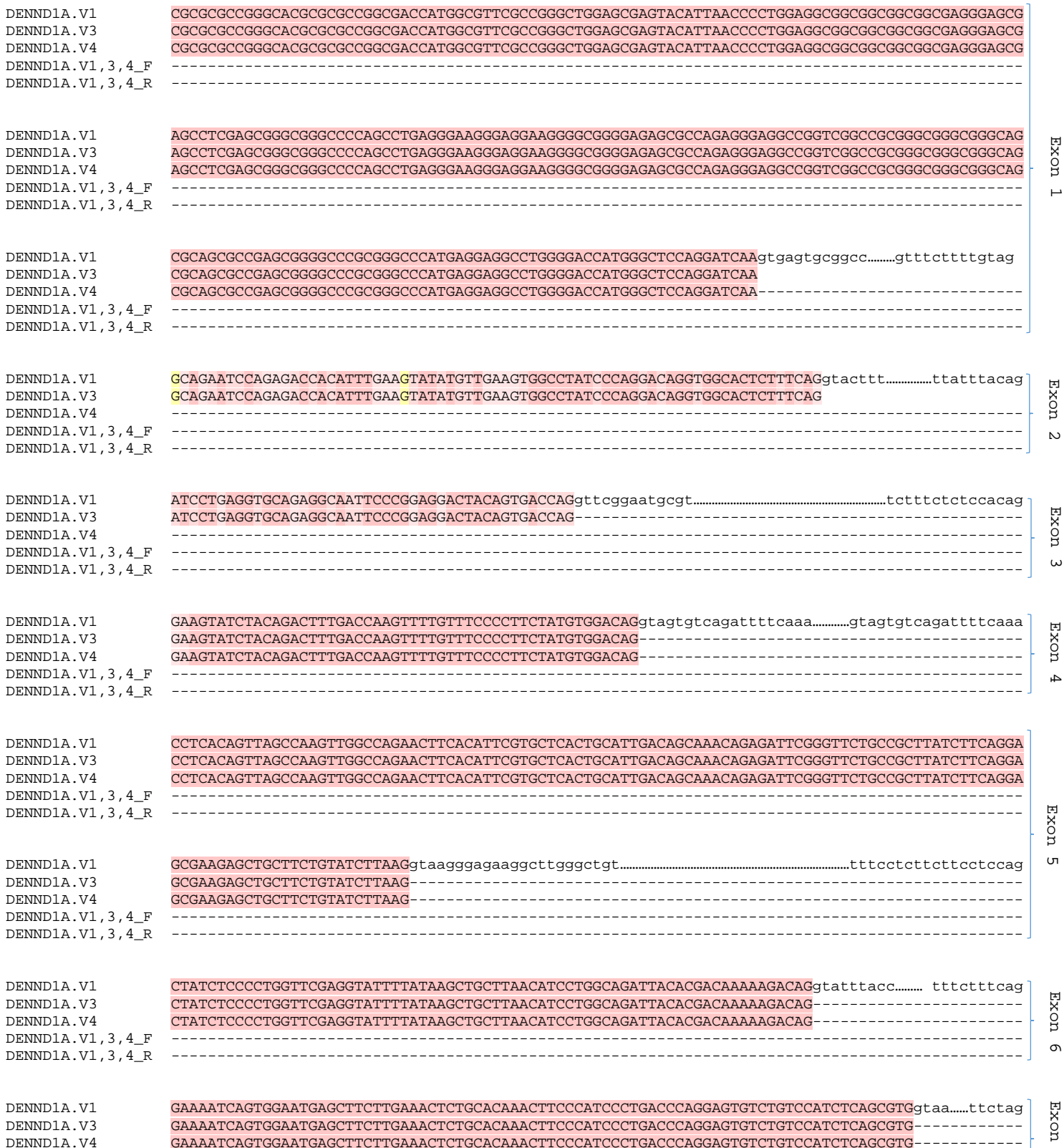


Fig S3. Alignment of the exons of human *DENNDIA V1, V3 and V4* and *DENNDIA.VI,3,4* primer sequences. Alignment was generated with CLUSTAL O (1.2.4) multiple sequence alignment based on sequences available at Ensembl Asia with transcript ID: human *DENNDIA.V1* (ENST00000373624.6) and at NCBI PubMed with accession numbers: *DENNDIA.V3* (NM_001352964) and *DENNDIA.V4* (NM_001352965). The alignment was analysed with T-COFFEE (1) and colored based the consistency: red (high), yellow (average); green and blue (poor). Consistency is estimated from CORE index. Aqua highlighted areas represent the primer sequences. represent intronic areas not shown so as to reduce the size of this file.

1. Notredame C, Higgins DG, Heringa J. T-Coffee: A novel method for fast and accurate multiple sequence alignment. *J Mol Biol.* 2000;302(1):205-17. doi: 10.1006/jmbi.2000.4042.



DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 **CATTCTTATTTTACTGTGCCTGATACCAGAGAACTTCCCAGCATACCTGAGAAT**gtaagtacttggg.....cttctttctcctag
DENND1A.V3 **CATTCTTATTTTACTGTGCCTGATACCAGAGAACTTCCCAGCATACCTGAGAAT**-----
DENND1A.V4 **CATTCTTATTTTACTGTGCCTGATACCAGAGAACTTCCCAGCATACCTGAGAAT**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 8

DENND1A.V1 **AGAAATCTGACAGAATATTTTGTGGCTGTGGATGTTAACAACATGTTGCATCTGTACGCCAGTATGCTGTACGAACGCCGGATACTCATCATT**
DENND1A.V3 **AGAAATCTGACAGAATATTTTGTGGCTGTGGATGTTAACAACATGTTGCATCTGTACGCCAGTATGCTGTACGAACGCCGGATACTCATCATT**
DENND1A.V4 **AGAAATCTGACAGAATATTTTGTGGCTGTGGATGTTAACAACATGTTGCATCTGTACGCCAGTATGCTGTACGAACGCCGGATACTCATCATT**
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 9

DENND1A.V1 **TGCAGCAAACCTCAGCACT**gtgagtagacagtcttaagact.....ctctgctttgctctgttccag
DENND1A.V3 **TGCAGCAAACCTCAGCACT**-----
DENND1A.V4 **TGCAGCAAACCTCAGCACT**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 **CTGACTGCCTGCATCCACGGGTCTGCGGCGATGCTCTACCCCATGTACTGGCAGCACGTGTACATCCCCGTGCTGCCGCCGCATCTGCTGGAC**
DENND1A.V3 **CTGACTGCCTGCATCCACGGGTCTGCGGCGATGCTCTACCCCATGTACTGGCAGCACGTGTACATCCCCGTGCTGCCGCCGCATCTGCTGGAC**
DENND1A.V4 **CTGACTGCCTGCATCCACGGGTCTGCGGCGATGCTCTACCCCATGTACTGGCAGCACGTGTACATCCCCGTGCTGCCGCCGCATCTGCTGGAC**
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 10

DENND1A.V1 **TACTGCTG**gtaagggtggctggcctgtcctctgcttctcctttgcctg.....aaagcagctgtgtgtctctgtttctcttccacag
DENND1A.V3 **TACTGCTG**-----
DENND1A.V4 **TACTGCTG**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 **TGCTCCCATGCCCCACCTCATAGGAATCCATTTAAGTTAATGGAG**gtaagttggcttcttct.....gtaagttggcttcttct
DENND1A.V3 **TGCTCCCATGCCCCACCTCATAGGAATCCATTTAAGTTAATGGAG**-----
DENND1A.V4 **TGCTCCCATGCCCCACCTCATAGGAATCCATTTAAGTTAATGGAG**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 11

DENND1A.V1 **AAAGTCAGAAACATGGCCCTGGATGATGTCGTGATCCTGAATGTGGACACCAACACCCTGGAAACCCCTTCGATGACCTCCAGAGCCTCCCA**
DENND1A.V3 **AAAGTCAGAAACATGGCCCTGGATGATGTCGTGATCCTGAATGTGGACACCAACACCCTGGAAACCCCTTCGATGACCTCCAGAGCCTCCCA**
DENND1A.V4 **AAAGTCAGAAACATGGCCCTGGATGATGTCGTGATCCTGAATGTGGACACCAACACCCTGGAAACCCCTTCGATGACCTCCAGAGCCTCCCA**
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 12

DENND1A.V1 **AACGACGTG**gtaggtaatgagcttgcgaggatctcacttctg.....tgtgtttctctctctccatcaccag
DENND1A.V3 **AACGACGTG**-----
DENND1A.V4 **AACGACGTG**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 **ATCTCTTCCCTGAAGAACAGGCTGAAAAAGGTCTCCACAACCCTGGGGATGGTGTGGCCAGAGCGTTCTCAAGGCCAGGCTGCTTTCTTC**
DENND1A.V3 **ATCTCTTCCCTGAAGAACAGGCTGAAAAAGGTCTCCACAACCCTGGGGATGGTGTGGCCAGAGCGTTCTCAAGGCCAGGCTGCTTTCTTC**
DENND1A.V4 **ATCTCTTCCCTGAAGAACAGGCTGAAAAAGGTCTCCACAACCCTGGGGATGGTGTGGCCAGAGCGTTCTCAAGGCCAGGCTGCTTTCTTC**
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 13

DENND1A.V1 **GGTAGCTACCGAAACGCTCTGAAAAATCGAGCCG**gtgagtagccttggcatgtca.....cccacctctcccctctgcacttcccag
DENND1A.V3 **GGTAGCTACCGAAACGCTCTGAAAAATCGAGCCG**-----
DENND1A.V4 **GGTAGCTACCGAAACGCTCTGAAAAATCGAGCCG**-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 **GAGGAGCCGATCACTTTCTGTGAGGAAGCCTTCGTGTCCACTACCGTCCGGAGCCATGAGGCAGTTCTGCAGAACGCCACACAGCTGCAG**
DENND1A.V3 **GAGGAGCCGATCACTTTCTGTGAGGAAGCCTTCGTGTCCACTACCGTCCGGAGCCATGAGGCAGTTCTGCAGAACGCCACACAGCTGCAG**
DENND1A.V4 **GAGGAGCCGATCACTTTCTGTGAGGAAGCCTTCGTGTCCACTACCGTCCGGAGCCATGAGGCAGTTCTGCAGAACGCCACACAGCTGCAG**
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 14

DENND1A.V1 **CTCTTCAAGCAG**gtgctccctccctggctggcctgggtctgg.....ttgtacgagctgtgtgcttttgttctcttcttctatag
DENND1A.V3 **CTCTTCAAGCAG**-----
DENND1A.V4 **CTCTTCAAGCAG**-----

Exon 14

DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TTTATTGATGGTTCGATTAGATCTTCTCAATTCGGCGAAGGTTTCAGTGATGTTTTGAAGAGGAAATCAACATGGGCGAGTACGCTGgt...ag
DENND1A.V3 TTTATTGATGGTTCGATTAGATCTTCTCAATTCGGCGAAGGTTTCAGTGATGTTTTGAAGAGGAAATCAACATGGGCGAGTACGCTG-----
DENND1A.V4 TTTATTGATGGTTCGATTAGATCTTCTCAATTCGGCGAAGGTTTCAGTGATGTTTTGAAGAGGAAATCAACATGGGCGAGTACGCTG-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 15

DENND1A.V1 GCAGTGACAAACTGTACCATCAGTGGCTCTCCACTGTCCGGgttaagcatgcaccaattcaga.....aattgctaattgacatttttattatag
DENND1A.V3 GCAGTGACAAACTGTACCATCAGTGGCTCTCCACTGTCCGG-----
DENND1A.V4 GCAGTGACAAACTGTACCATCAGTGGCTCTCCACTGTCCGG-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 16

DENND1A.V1 AAAGGAAGTGGAGCAATCTGAATACTGTAAGACCAAAGCAAATCCGGCCATGAAGACTGTCTACAAGTTCgtaagtact.....tttcatgcag
DENND1A.V3 AAAGGAAGTGGAGCAATCTGAATACTGTAAGACCAAAGCAAATCCGGCCATGAAGACTGTCTACAAGTTC-----
DENND1A.V4 AAAGGAAGTGGAGCAATCTGAATACTGTAAGACCAAAGCAAATCCGGCCATGAAGACTGTCTACAAGTTC-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 17

DENND1A.V1 GCAAAAGATCATGCAAAAATGGGAATAAAAGAGGTGAAAAACCGCTTGAAGCAAAAAGgtacttgaagttatt.....ccttctccctacag
DENND1A.V3 GCAAAAGATCATGCAAAAATGGGAATAAAAGAGGTGAAAAACCGCTTGAAGCAAAAAG-----
DENND1A.V4 GCAAAAGATCATGCAAAAATGGGAATAAAAGAGGTGAAAAACCGCTTGAAGCAAAAAG-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 18

DENND1A.V1 GACATTGCCGAGAATGGCTGCGCCCCACCCAGAAGAGCAGCTGCCAAAGACTGCACCGTCCCCACTGGTGGAGGCCAAGGACCCCAAGCTC
DENND1A.V3 GACATTGCCGAGAATGGCTGCGCCCCACCCAGAAGAGCAGCTGCCAAAGACTGCACCGTCCCCACTGGTGGAGGCCAAGGACCCCAAGCTC
DENND1A.V4 GACATTGCCGAGAATGGCTGCGCCCCACCCAGAAGAGCAGCTGCCAAAGACTGCACCGTCCCCACTGGTGGAGGCCAAGGACCCCAAGCTC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CGAGAAGACCGCGGCCAATCACAGTCCACTTTGGACAGgtgtgtaccctggccctct.....ttccactttaatgcagctgcagagactgcgt
DENND1A.V3 CGAGAAGACCGCGGCCAATCACAGTCCACTTTGGACAG-----CTGCAGAGACTGCCT
DENND1A.V4 CGAGAAGACCGCGGCCAATCACAGTCCACTTTGGACAG-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 19

DENND1A.V1 cccaccgaccgcctccaagatacagcgctcgaggccgtgagtagctgg.....ccccctgtacctcctctag
DENND1A.V3 CCCACCCGACCGCCTCCAAGATACAGCGCTCGAGGCCCG-----
DENND1A.V4 -----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GTGCGCCACCTCGTCCACATGTTGTTAAGAGACCAAAGAGCAACATCGCAGTGAAGGCCGAGGACGCTCTGTGCCAGCCCTGAGCAgtg...
DENND1A.V3 GTGCGCCACCTCGTCCACATGTTGTTAAGAGACCAAAGAGCAACATCGCAGTGAAGGCCGAGGACGCTCTGTGCCAGCCCTGAGCA-----
DENND1A.V4 GTGCGCCACCTCGTCCACATGTTGTTAAGAGACCAAAGAGCAACATCGCAGTGAAGGCCGAGGACGCTCTGTGCCAGCCCTGAGCA-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 cccagcctgtaaaagccttgcgacactatgcggtcttcctctccgaagactcctctgatgatgaatgccagcggaagaggcccgagctc
DENND1A.V3 -----CCTGGTAAAGCCCTTGCACACTATGCGGCTTCCTCTCCGAAGACTCCTCTGATGATGAATGCCAGCGGAAGAGGGCCCGAGCTC
DENND1A.V4 -----CCTGGTAAAGCCCTTGCACACTATGCGGCTTCCTCTCCGAAGACTCCTCTGATGATGAATGCCAGCGGAAGAGGGCCCGAGCTC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 20

DENND1A.V1 tggcttaccgagagctttttcttctccgctcccttgaatggtctctccttcc.....cctgctctgtccccgacag
DENND1A.V3 TGGCTTACCAGAGACTTTTTCTCTCCGCTCCCTTTGAATGG-----
DENND1A.V4 TGGCTTACCAGAGACTTTTTCTCTCCGCTCCCTTTGAATGG-----
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCCGCAGCCGTATCGGACACTCAGGGAGTCAGACAGCGCGAAGGCGACGAGGACAGAGTCCAGAGCAGCAAGTGCAGCAAGTCCACAGGCC
DENND1A.V3 GCCGCAGCCGTATCGGACACTCAGGGAGTCAGACAGCGCGAAGGCGACGAGGACAGAGTCCAGAGCAGCAAGTGCAGCAAGTCCACAGGCC
DENND1A.V4 GCCGCAGCCGTATCGGACACTCAGGGAGTCAGACAGCGCGAAGGCGACGAGGACAGAGTCCAGAGCAGCAAGTGCAGCAAGTCCACAGGCC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

Exon 21

DENND1A.V1 TGTCCAGCTCCCCGTACCAGGCTGCCAGCATCGACCTTCTGGAAGAGCTCTTCAGCAACCTGGACATGGAGGCCGACTGCAGCCACTGGG
DENND1A.V3 TGTCCAGCTCCCCGTACCAGGCTGCCAGCATCGACCTTCTGGAAGAGCTCTTCAGCAACCTGGACATGGAGGCCGACTGCAGCCACTGGG
DENND1A.V4 TGTCCAGCTCCCCGTACCAGGCTGCCAGCATCGACCTTCTGGAAGAGCTCTTCAGCAACCTGGACATGGAGGCCGACTGCAGCCACTGGG

DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CCAGGCCAAGAGCTTAGAGGACCTTCGTGCCCCCAAAGACCTGAGGGAGCAGCCAGGGACCTTTGACTATCAGgtatggc.....ccaacag
DENND1A.V3 CCAGGCCAAGAGCTTAGAGGACCTTCGTGCCCCCAAAGACCTGAGGGAGCAGCCAGGGACCTTTGACTATCAG
DENND1A.V4 CCAGGCCAAGAGCTTAGAGGACCTTCGTGCCCCCAAAGACCTGAGGGAGCAGCCAGGGACCTTTGACTATCAG
DENND1A.V1,3,4_F CAGCCAGGGACCTTTGACTA
DENND1A.V1,3,4_R -----

DENND1A.V1 AGGCTGGATCTGGGCGGGAGTGAGAGGAGCCGCGGGGTGACAGTGGCCTTGAAGCTTACCCACCCGTACAACAAGCTCTGGAGCCTGGGCCAG
DENND1A.V3 AGGCTGGATCTGGGCGGGAGTGAGAGGAGCCGCGGGGTGACAGTGGCCTTGAAGCTTACCCACCCGTACAACAAGCTCTGGAGCCTGGGCCAG
DENND1A.V4 AGGCTGGATCTGGGCGGGAGTGAGAGGAGCCGCGGGGTGACAGTGGCCTTGAAGCTTACCCACCCGTACAACAAGCTCTGGAGCCTGGGCCAG
DENND1A.V1,3,4_F CACCCGTACAACAAGCTCTG
DENND1A.V1,3,4_R -----

DENND1A.V1 GACGACATGGCCATCCCAGCAAGCCCCAGCTGCCTCCCCTGAGAAGCCCTCGGCCCTGCTCGGGAACCTCCCTGGCCCTGCCTCGAAGGCC
DENND1A.V3 GACGACATGGCCATCCCAGCAAGCCCCAGCTGCCTCCCCTGAGAAGCCCTCGGCCCTGCTCGGGAACCTCCCTGGCCCTGCCTCGAAGGCC
DENND1A.V4 GACGACATGGCCATCCCAGCAAGCCCCAGCTGCCTCCCCTGAGAAGCCCTCGGCCCTGCTCGGGAACCTCCCTGGCCCTGCCTCGAAGGCC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CAGAACCAGGACAGCATCCTGAACCCAGTGACAAGGAGGAGGTGCCACCCCTACTCTGGGCAGCATCACCATCCCCCGGCCCAAGGCAG
DENND1A.V3 CAGAACCAGGACAGCATCCTGAACCCAGTGACAAGGAGGAGGTGCCACCCCTACTCTGGGCAGCATCACCATCCCCCGGCCCAAGGCAG
DENND1A.V4 CAGAACCAGGACAGCATCCTGAACCCAGTGACAAGGAGGAGGTGCCACCCCTACTCTGGGCAGCATCACCATCCCCCGGCCCAAGGCAG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GAAGACCCAGAGCTGGGCATCGTGCCTCCACCGCCATTCCCGCCCGGCCAAGCTCCAGGCTGCCGGCGCCGCACTTGGTGACGTCTCAGA
DENND1A.V3 GAAGACCCAGAGCTGGGCATCGTGCCTCCACCGCCATTCCCGCCCGGCCAAGCTCCAGGCTGCCGGCGCCGCACTTGGTGACGTCTCAGA
DENND1A.V4 GAAGACCCAGAGCTGGGCATCGTGCCTCCACCGCCATTCCCGCCCGGCCAAGCTCCAGGCTGCCGGCGCCGCACTTGGTGACGTCTCAGA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCGGCTGCAGACGGATCGGGACAGGCGAGTGCCTGAGTCCAGGGCTCCTGCCTGGTGTGTGCCCAAGGCCCCACTGAACTGCTCCAGCC
DENND1A.V3 GCGGCTGCAGACGGATCGGGACAGGCGAGTGCCTGAGTCCAGGGCTCCTGCCTGGTGTGTGTGCCCAAGGCCCCACTGAACTGCTCCAGCC
DENND1A.V4 GCGGCTGCAGACGGATCGGGACAGGCGAGTGCCTGAGTCCAGGGCTCCTGCCTGGTGTGTGTGCCCAAGGCCCCACTGAACTGCTCCAGCC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCTCAGCCCTGGCCCCGGGGCTGCAGGCACGAGCAGTACGCCTGCTCGCCCTCCTGGACCCGCTCAGCACAGCCTGGTCAGGCAGCACCCCT
DENND1A.V3 GCTCAGCCCTGGCCCCGGGGCTGCAGGCACGAGCAGTACGCCTGCTCGCCCTCCTGGACCCGCTCAGCACAGCCTGGTCAGGCAGCACCCCT
DENND1A.V4 GCTCAGCCCTGGCCCCGGGGCTGCAGGCACGAGCAGTACGCCTGCTCGCCCTCCTGGACCCGCTCAGCACAGCCTGGTCAGGCAGCACCCCT
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CCCGTACGCCCCGCCACCCCGAATGTAGCCACCCCAATTCACCCCAATTCAGCTTCCCCCTGCAGGGACACCCACCCATTCACACAGCC
DENND1A.V3 CCCGTACGCCCCGCCACCCCGAATGTAGCCACCCCAATTCACCCCAATTCAGCTTCCCCCTGCAGGGACACCCACCCATTCACACAGCC
DENND1A.V4 CCCGTACGCCCCGCCACCCCGAATGTAGCCACCCCAATTCACCCCAATTCAGCTTCCCCCTGCAGGGACACCCACCCATTCACACAGCC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 ACCACTCAACCCTTTGTCCCATCCATGCCAGCAGCCCCACCCACCTGCCCTGGTCTCCACACCAGCCGGGCTTTTCGGGGCCCTCCAGC
DENND1A.V3 ACCACTCAACCCTTTGTCCCATCCATGCCAGCAGCCCCACCCACCTGCCCTGGTCTCCACACCAGCCGGGCTTTTCGGGGCCCTCCAGC
DENND1A.V4 ACCACTCAACCCTTTGTCCCATCCATGCCAGCAGCCCCACCCACCTGCCCTGGTCTCCACACCAGCCGGGCTTTTCGGGGCCCTCCAGC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TTCCCTGGGGCCGGCTTTTTCGCTCCGGCCTCCTGCTGTCCAGTGTGGCTTCTGTGCCCTCACAGGCTCTCAGCCCAACCTCTCCGCCCTCTC
DENND1A.V3 TTCCCTGGGGCCGGCTTTTTCGCTCCGGCCTCCTGCTGTCCAGTGTGGCTTCTGTGCCCTCACAGGCTCTCAGCCCAACCTCTCCGCCCTCTC
DENND1A.V4 TTCCCTGGGGCCGGCTTTTTCGCTCCGGCCTCCTGCTGTCCAGTGTGGCTTCTGTGCCCTCACAGGCTCTCAGCCCAACCTCTCCGCCCTCTC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CATGCCAACCTCTTTGGCCAGATGCCATGGGCACCCACACGAGCCCTACAGCCGCTGGGTCCCCAGCAGTTGCCCCGTCGAGGATCCG
DENND1A.V3 CATGCCAACCTCTTTGGCCAGATGCCATGGGCACCCACACGAGCCCTACAGCCGCTGGGTCCCCAGCAGTTGCCCCGTCGAGGATCCG
DENND1A.V4 CATGCCAACCTCTTTGGCCAGATGCCATGGGCACCCACACGAGCCCTACAGCCGCTGGGTCCCCAGCAGTTGCCCCGTCGAGGATCCG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 AACGTTGCCCTGGCCCGCTCAAGTGCCAGGGTGTCTGAGACCAAGCAGGGGTGGCCCTGAGGCTGGAGACCCCCGCTTCTGCCTCCAG
DENND1A.V3 AACGTTGCCCTGGCCCGCTCAAGTGCCAGGGTGTCTGAGACCAAGCAGGGGTGGCCCTGAGGCTGGAGACCCCCGCTTCTGCCTCCAG
DENND1A.V4 AACGTTGCCCTGGCCCGCTCAAGTGCCAGGGTGTCTGAGACCAAGCAGGGGTGGCCCTGAGGCTGGAGACCCCCGCTTCTGCCTCCAG

DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCCCCCTCAAGGCCTGGAGCCAACACTGCAGCCCTCTGCTCCTCAACAGGCCAGAGACCCCTTTGAGGATTTGTTACAGAAAACCAAGCAAGA
DENND1A.V3 GCCCCCTCAAGGCCTGGAGCCAACACTGCAGCCCTCTGCTCCTCAACAGGCCAGAGACCCCTTTGAGGATTTGTTACAGAAAACCAAGCAAGA
DENND1A.V4 GCCCCCTCAAGGCCTGGAGCCAACACTGCAGCCCTCTGCTCCTCAACAGGCCAGAGACCCCTTTGAGGATTTGTTACAGAAAACCAAGCAAGA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CGTGAGCCCGAGTCCGGCCCTGGCCCCGGCCCCAGACTCGGTGGAGCAGCTCAGGAAGCAGTGGGAGACCTTCGAGTGAGCCGGGCCCTGAGG
DENND1A.V3 CGTGAGCCCGAGTCCGGCCCTGGCCCCGGCCCCAGACTCGGTGGAGCAGCTCAGGAAGCAGTGGGAGACCTTCGAGTGAGCCGGGCCCTGAGG
DENND1A.V4 CGTGAGCCCGAGTCCGGCCCTGGCCCCGGCCCCAGACTCGGTGGAGCAGCTCAGGAAGCAGTGGGAGACCTTCGAGTGAGCCGGGCCCTGAGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GTGGGGGATGCACCGAGGCCCGAGGGTCCGTCCACTGCTGCGGTTCCGAGGCTCCCCGCCACTCTCTCTGCCCAGGTTCTGCTGGTGGGA
DENND1A.V3 GTGGGGGATGCACCGAGGCCCGAGGGTCCGTCCACTGCTGCGGTTCCGAGGCTCCCCGCCACTCTCTCTGCCCAGGTTCTGCTGGTGGGA
DENND1A.V4 GTGGGGGATGCACCGAGGCCCGAGGGTCCGTCCACTGCTGCGGTTCCGAGGCTCCCCGCCACTCTCTCTGCCCAGGTTCTGCTGGTGGGA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 AGGGATGGGACCCCTCTGCTGCCCTCCTCCCTCCACACTGCCATCTCTGATGCTGGCCCTGGGGAATGGCACCAGTTCAGCCTGG
DENND1A.V3 AGGGATGGGACCCCTCTGCTGCCCTCCTCCCTCCACACTGCCATCTCTGATGCTGGCCCTGGGGAATGGCACCAGTTCAGCCTGG
DENND1A.V4 AGGGATGGGACCCCTCTGCTGCCCTCCTCCCTCCACACTGCCATCTCTGATGCTGGCCCTGGGGAATGGCACCAGTTCAGCCTGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GAATCAACCCAGTTCCTGAGTGCCCATCCACCCCGCGGTTGCTCTCCTCGGCACCCCTTGATGGGTTTGGACTAAAGAGGTGAGCTGGG
DENND1A.V3 GAATCAACCCAGTTCCTGAGTGCCCATCCACCCCGCGGTTGCTCTCCTCGGCACCCCTTGATGGGTTTGGACTAAAGAGGTGAGCTGGG
DENND1A.V4 GAATCAACCCAGTTCCTGAGTGCCCATCCACCCCGCGGTTGCTCTCCTCGGCACCCCTTGATGGGTTTGGACTAAAGAGGTGAGCTGGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CAATGATATTGCTCCAGACCGAGTCCCTACCCACCTTCCCCCGAAGTGTCCCAAGAGGCTCCGAAGGCCTCCCTCCGAGCCAGCTCTCCTG
DENND1A.V3 CAATGATATTGCTCCAGACCGAGTCCCTACCCACCTTCCCCCGAAGTGTCCCAAGAGGCTCCGAAGGCCTCCCTCCGAGCCAGCTCTCCTG
DENND1A.V4 CAATGATATTGCTCCAGACCGAGTCCCTACCCACCTTCCCCCGAAGTGTCCCAAGAGGCTCCGAAGGCCTCCCTCCGAGCCAGCTCTCCTG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TCTCCTCCACAGCCAGGCCCTGCACGCCACCTCCTCGGACACAGGTGACAGGGTTACCCTCCAGTTTGGACTCATCTGCACGAGACACAGGT
DENND1A.V3 TCTCCTCCACAGCCAGGCCCTGCACGCCACCTCCTCGGACACAGGTGACAGGGTTACCCTCCAGTTTGGACTCATCTGCACGAGACACAGGT
DENND1A.V4 TCTCCTCCACAGCCAGGCCCTGCACGCCACCTCCTCGGACACAGGTGACAGGGTTACCCTCCAGTTTGGACTCATCTGCACGAGACACAGGT
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 AGCTTGGGGTTGAAGTTAGGACTCCTCCTGGGCTGGAGGATTTACCTGGTGGGGCACTTCAGACTGTTTCTAGCAATATACACACAGTTCT
DENND1A.V3 AGCTTGGGGTTGAAGTTAGGACTCCTCCTGGGCTGGAGGATTTACCTGGTGGGGCACTTCAGACTGTTTCTAGCAATATACACACAGTTCT
DENND1A.V4 AGCTTGGGGTTGAAGTTAGGACTCCTCCTGGGCTGGAGGATTTACCTGGTGGGGCACTTCAGACTGTTTCTAGCAATATACACACAGTTCT
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TTCTGTGTCTTACCCCAAACCTTCAGTTGATTCTGACCTGGGAGGATCTGGGGACCAGGGGCTTGGGCTGCCTTGTGATACACAGCCCC
DENND1A.V3 TTCTGTGTCTTACCCCAAACCTTCAGTTGATTCTGACCTGGGAGGATCTGGGGACCAGGGGCTTGGGCTGCCTTGTGATACACAGCCCC
DENND1A.V4 TTCTGTGTCTTACCCCAAACCTTCAGTTGATTCTGACCTGGGAGGATCTGGGGACCAGGGGCTTGGGCTGCCTTGTGATACACAGCCCC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 AGCCACCCTGCACGGGGGCTGCGAGCACCAGCAACTTTGATTTATAGAAGGAAAATGGAAACCCCATCTGAGTATTTTGGGAGGAGCCCCCA
DENND1A.V3 AGCCACCCTGCACGGGGGCTGCGAGCACCAGCAACTTTGATTTATAGAAGGAAAATGGAAACCCCATCTGAGTATTTTGGGAGGAGCCCCCA
DENND1A.V4 AGCCACCCTGCACGGGGGCTGCGAGCACCAGCAACTTTGATTTATAGAAGGAAAATGGAAACCCCATCTGAGTATTTTGGGAGGAGCCCCCA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCCCTCATCCAGCTCTGGCAGCTGATACCTCCAGTACTCCCTCACTGTCAAAGCTGGGGCTCAGCCTCTTGTGATCTGGAGCTTTGTGGG
DENND1A.V3 GCCCTCATCCAGCTCTGGCAGCTGATACCTCCAGTACTCCCTCACTGTCAAAGCTGGGGCTCAGCCTCTTGTGATCTGGAGCTTTGTGGG
DENND1A.V4 GCCCTCATCCAGCTCTGGCAGCTGATACCTCCAGTACTCCCTCACTGTCAAAGCTGGGGCTCAGCCTCTTGTGATCTGGAGCTTTGTGGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CAAAGCTGAGAAGCTGCAACCCAGATTTCAACCCAAAAGGTCAAGCTGAATGCCTCAGACTGATGTGGAAGGCAGCTGGCCTTCTGGGTTG
DENND1A.V3 CAAAGCTGAGAAGCTGCAACCCAGATTTCAACCCAAAAGGTCAAGCTGAATGCCTCAGACTGATGTGGAAGGCAGCTGGCCTTCTGGGTTG
DENND1A.V4 CAAAGCTGAGAAGCTGCAACCCAGATTTCAACCCAAAAGGTCAAGCTGAATGCCTCAGACTGATGTGGAAGGCAGCTGGCCTTCTGGGTTG

DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GAACGAGGCAGTGGCCCTGAGCCCTTCTCCAGGGCCAGGTAGAAAGGACAAACTTGGTCTCTGCCTCGGGGAAGCAGGAGGAGGGCTAGAAG
DENND1A.V3 GAACGAGGCAGTGGCCCTGAGCCCTTCTCCAGGGCCAGGTAGAAAGGACAAACTTGGTCTCTGCCTCGGGGAAGCAGGAGGAGGGCTAGAAG
DENND1A.V4 GAACGAGGCAGTGGCCCTGAGCCCTTCTCCAGGGCCAGGTAGAAAGGACAAACTTGGTCTCTGCCTCGGGGAAGCAGGAGGAGGGCTAGAAG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 CCAGTCCCTCCCCACCTGCCCAGAGCTCCAGGCCAGCACAGAAATTCCTGAGGCCAACGTACCAAAGTTAGATTGAATGTTTATTATCTTTC
DENND1A.V3 CCAGTCCCTCCCCACCTGCCCAGAGCTCCAGGCCAGCACAGAAATTCCTGAGGCCAACGTACCAAAGTTAGATTGAATGTTTATTATCTTTC
DENND1A.V4 CCAGTCCCTCCCCACCTGCCCAGAGCTCCAGGCCAGCACAGAAATTCCTGAGGCCAACGTACCAAAGTTAGATTGAATGTTTATTATCTTTC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TTTTTCCTTTTTACCTTATTGATTTGATGAATCTTGAATGGATTCAATTTCCATAAACCAAGTTAAAGTATGGCCCGACCATTAAAGAAAACA
DENND1A.V3 TTTTTCCTTTTTACCTTATTGATTTGATGAATCTTGAATGGATTCAATTTCCATAAACCAAGTTAAAGTATGGCCCGACCATTAAAGAAAACA
DENND1A.V4 TTTTTCCTTTTTACCTTATTGATTTGATGAATCTTGAATGGATTCAATTTCCATAAACCAAGTTAAAGTATGGCCCGACCATTAAAGAAAACA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 ACCATCTGAGACACGCAGGAAATGTGAGCATTTGACCCGAGCTCTCATTTCTATTGTGAAGGGTCAGACACAGTCTACCCAGGGGTGTC
DENND1A.V3 ACCATCTGAGACACGCAGGAAATGTGAGCATTTGACCCGAGCTCTCATTTCTATTGTGAAGGGTCAGACACAGTCTACCCAGGGGTGTC
DENND1A.V4 ACCATCTGAGACACGCAGGAAATGTGAGCATTTGACCCGAGCTCTCATTTCTATTGTGAAGGGTCAGACACAGTCTACCCAGGGGTGTC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TGGGGGACAAGGGGGTCTCTGGAGATGTCACCCAGGGAGCCCCCTCTATGTCTGAGAGGCTGCCACTGCTGCACATGCTCAGTGAGGCTTGGC
DENND1A.V3 TGGGGGACAAGGGGGTCTCTGGAGATGTCACCCAGGGAGCCCCCTCTATGTCTGAGAGGCTGCCACTGCTGCACATGCTCAGTGAGGCTTGGC
DENND1A.V4 TGGGGGACAAGGGGGTCTCTGGAGATGTCACCCAGGGAGCCCCCTCTATGTCTGAGAGGCTGCCACTGCTGCACATGCTCAGTGAGGCTTGGC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GGCCATCCTGGCACATGGCTCTTCTGGGTCAACCGTGACCTGTCTGGCTCAGGAATGGGCTCTGGCTGCTGGGGGAGCCGTGTCACTCCTGG
DENND1A.V3 GGCCATCCTGGCACATGGCTCTTCTGGGTCAACCGTGACCTGTCTGGCTCAGGAATGGGCTCTGGCTGCTGGGGGAGCCGTGTCACTCCTGG
DENND1A.V4 GGCCATCCTGGCACATGGCTCTTCTGGGTCAACCGTGACCTGTCTGGCTCAGGAATGGGCTCTGGCTGCTGGGGGAGCCGTGTCACTCCTGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 GCCATGGGGGCACCTCCTGGGCACTTAGGTGTTTCAGCATAGATTCCAGTTTCGCACCCTGGGCAGACCCCCAGGCCCATCCGGGATAGGGC
DENND1A.V3 GCCATGGGGGCACCTCCTGGGCACTTAGGTGTTTCAGCATAGATTCCAGTTTCGCACCCTGGGCAGACCCCCAGGCCCATCCGGGATAGGGC
DENND1A.V4 GCCATGGGGGCACCTCCTGGGCACTTAGGTGTTTCAGCATAGATTCCAGTTTCGCACCCTGGGCAGACCCCCAGGCCCATCCGGGATAGGGC
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 AGAGGAGGTGCTGGCGCCCCAGGGAAGGAGGTGTGTACCCCAAGGCCCCCTGGCTGTGCTGAGGGGCTGGGGTGAGCGCTCCATGTTTACA
DENND1A.V3 AGAGGAGGTGCTGGCGCCCCAGGGAAGGAGGTGTGTACCCCAAGGCCCCCTGGCTGTGCTGAGGGGCTGGGGTGAGCGCTCCATGTTTACA
DENND1A.V4 AGAGGAGGTGCTGGCGCCCCAGGGAAGGAGGTGTGTACCCCAAGGCCCCCTGGCTGTGCTGAGGGGCTGGGGTGAGCGCTCCATGTTTACA
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----

DENND1A.V1 TGAGCACTGCTGCCTCTTCACTTGTGGGACTTTTTGCAAACCAAGGATGAACTTTGTGTGCATTCAATAAAATCATCTTGGGGAAGAGG
DENND1A.V3 TGAGCACTGCTGCCTCTTCACTTGTGGGACTTTTTGCAAACCAAGGATGAACTTTGTGTGCATTCAATAAAATCATCTTGGGGAAGAGG
DENND1A.V4 TGAGCACTGCTGCCTCTTCACTTGTGGGACTTTTTGCAAACCAAGGATGAACTTTGTGTGCATTCAATAAAATCATCTTGGGGAAGAGG
DENND1A.V1,3,4_F -----
DENND1A.V1,3,4_R -----