

## Conceptual Translation<sup>1</sup> of Human DENND2C (Isoform 1)<sup>2</sup>

*\*The bolded amino acids have been conserved in all 20 orthologs*

ggagcggacccgagtgatacccgaggagactagcttggccacaggagacaacgttgagg 58  
tacagacaggtggcagagaaacaaacatcgggtattgcttaaccacttgcatttccagt 118  
*ex1|ex2*  
tccggctgtatgtacccaaaacttaatccttatatagtagtaccctaaagaggtgctatgaaaat 178  
taattgtgatagtgattgaagtgattggccatagtagtatttaacaaaatatttaaatgaa 238  
gtgtaatcactgttcttctgctgttttaattctcacaataactctgtatgaagtgggtgttca 298  
ataagtagttgatgaatcttttaaaaatttgctaggtctaccataaccaataaccgcagat 358  
*ex2|ex3*  
tgagtggttcaaacgccagagattgatattctcacaagtctggaggctgtagaaatctaa 418  
catcaaggtgccaacagggattattcaagatcaggtttagccattttcaacaaggatca 478  
*ex3|ex4*  
ctgatcaaaattttctttttacaaagagatttacaagttaaacaatgaagggaaaatactg 538  
gaatcatttggattctgcacaggataaagaatacaatatttcacatttacttctaagtgaa 598  
  
cctttgtaagattcatcacttgtcattcaccagttgggaacatggatggttggtttttct 658  
upstream in-frame stop **M** D V G F S 6  
  
cgtaactactgttcagacactgtcaagaagccactgcaaaaacatcaaacaaaaaatttct 718  
R T T V Q T L S R S H C K N **I** K Q K **I** S 26  
  
caatgggaaggaagggctaattggtatatctaatccagaaaagtgggtgtccaaaggacttt 778  
**Q W E** G R A N G I S N P E K W C P K D F 46  
  
ggagtgatataactgtcaccaagagatccgtcttaagaaaaatcctatagctgagaga 838  
G V R Y N C H Q E I R L K K N P I A E R 66  
  
aagagcaaaaacttggatgtaaccagccgtgaaaatgtgggtctagatataaatgaaaat 898  
**K S K N L D V T S R E N V G L D I N E N** 86  
disordered  
  
accaaaagccatgatcaaagtgagaatgaaaataagaacatgaatatgacgatacacac 958  
**T K S H D Q S E N E N K K H E Y D D T H** 106 predSulfyro  
  
ttctttaaaaatgaatcagaatccaactgggtatggttctcgggtcaaagaaattgaaagc 1018  
F F K N E S E S N W V C S R V K E I E S 126  
  
tgtaaagaagatgtcttagatccagagacttcattacctccaggaaacttctataacctca 1078  
C K E D V L D P E T S L **P P G N F Y T** S 146

<sup>1</sup> Bioline Six Frame Translation [[https://www.bioline.com/media/calculator/01\\_13.html](https://www.bioline.com/media/calculator/01_13.html)]

<sup>2</sup> NCBI Nucleotide record for *Homo sapiens* NM\_001256404.2  
[[https://www.ncbi.nlm.nih.gov/nucore/NM\\_001256404.2](https://www.ncbi.nlm.nih.gov/nucore/NM_001256404.2)]

caaatactgtggaagaaaatagaagcacttccccagataaaactcttaaatttggcttta 1138  
Q I L W K K I E A L P P D K L L N L A L 166

gaacattgtgactcttcagaaaaagaactgaacttcagagttctggatagttcatacgg 1198  
E H C D S S E K E L N F R V L D S S Y G 186

ataaccaagagcttagaaaaatatttactctgaacctgaggggcaagaatgtggaccttcc 1258  
I T K S L E N I Y S E P E G Q E C G P S 206

ataaatcctttgccaaaacctcgtaggacattcagatatttatccgaatctggtgttacg 1318  
I N P L P K P R R T F R Y L S E S G V T 226 predProP phosphorylation

cggtataaagaaagaaactgtgacaaaaataactgtgaaaataactcttgtgcacaatct 1378  
P Y K E R N C D K K Y C E N N S C A Q S 246  
disordered

tctttggcctcttctcaggaacctgaaccaagaaatattggtggaaaaatcagaggaaga 1438  
S L A S S Q E P E P K K Y G G K I R G R 266

tctaaaaggaaatcctttgaatttgaggatattcagcactttcgaatcggaactcacag 1498  
ex4|ex5  
S K R K S F E F E D I Q H F R N R N S Q 286 site phosphorylation predProP

acgattcgtgaagaacttgaagaaattctgggtcagcactttattacacacagtctgag 1558  
T I R E E L G R N S G S A L Y Y T Q S E 306

gacaatatctatgaagatatcatatatacccaccaaagaaaatccatatgaagatattcca 1618  
ex5|ex6  
D N I Y E D I I Y P T K E N P Y E D I P 326  
predSulfhyro

gtgcagcctttacctatgtggagatccccttcagcatggaagctaccacccgctaaaagt 1678  
V Q P L P M W R S P S A W K L P P A K S 346

gcttttaaagcacccaagctccctccaaaacctcagttccttcaccggaagactatggaa 1738  
ex6|ex7  
A F K A P K L P P K P Q F L H R K T M E 366

gtaaagaactcacaggcttatttgcggtcaaagcttataaaaagatacaactttgccggtc 1798  
V K N S Q A Y L R S K L T K D T T L P V 386

actttaacggaatggaagcttttccgagctggtgaagttgcaaacacgaaaaggaaaaat 1858  
T L T E W K L F R A G E V A N T K R K N 406

cttccaaggccttgattgaaaatagatgacatatttgaatctaaaagaggggaagaagaag 1918

ex7|ex8

L P R L **V** L K **I** D D I F E S K **R** **G** K K K 426

gtaaagttacattcttacactggaaaggaattacctccgacaaaaaggatgaaaccagtggg 1978

ex8|ex9

V **K** L H S Y T G K E L P P T K G E T S G 446

disordered

aacgaaagtgatgccgagatctgccaagaaatcgccataaacgcttagcacaactgcaa 2038

ex9|ex10

N E **S** D A **E** Y L **P** **K** N R H K **R** L A Q L Q 466

preMolLoc

predProt

ccgtcttccaagaggaatcctcactaccagaccttgagcgggatcttattgaattacag 2098

P S S K **R** N P H Y Q **T** **L** **E** R **D** **L** I E L **Q** 486

gagcagcagctgtttgaactttttgtggtggtgtctctacagaagaaccatcaggaata 2158

**E** **Q** **Q** **L** **F** E L **F** **V** **V** **V** **S** **L** Q K K P S G I 506

uDENN

agctatattccccaggtcatacaacaattccctggcaaggatgatcatggctataagcag 2218

ex10|ex11

S **Y** I **P** Q V I **Q** **Q** F **P** G K D D H G Y K **Q** 526

tccaaagacatggaagagagacttaaagttattccaaaattttgttttcttgattcaaag 2278

S K D M **E** E R **L** K V I **P** K **F** **C** **F** **P** **D** S K 546

gactggatgccaacctcagaactcaagagtgaaacattctcctttgtcttgactggtgaa 2338

ex11|ex12

D W M **P** T S E L K **S** **E** **T** **F** **S** **F** **V** **L** **T** **G** **E** 566

gatggaagccggtggtttggttactgtaagaagctcttggcagtaggcaaaggaaagcga 2398

ex12|ex13

**D** **G** S **R** W **F** G Y C K K L **L** **P** **V** G K **G** K **R** 586

DENN

ctcctgaggtatactgcatggttagtgcctaggtgcttcaatcttttttcaaagatt 2458

ex13|ex14

**L** **P** **E** **V** Y C M V S R L **G** **C** **F** N L **F** S K I 606

ctggatgaagtagagaagagaagagaaatgtctccagcccttgttaccattcatgoga 2518

**L** **D** **E** **V** **E** K R R E M S P A L V Y **P** **F** M R 626

agtgatggaagctcctttccagctcctggagcaccatcacagttaagagttacctc 2578

**S** **V** **M** **E** A P F P A P G R T I T V K S Y L 646

cctggggctggagatgag<sup>gt</sup>ccattgaactctgcccaccactagattccccgattggaacat 2638

ex14|ex15

**P G A G D E S I E L C R P L D S R L E H** 666

gttgattttaaatgtctctttaagtgcctgagtggtgtgtcatctcatccgggtctgtgcc 2698

**V D F K C L F K C L S V C H L I R V C A** 686

tctctccttttgagcgtagggaatctttgttgccaacagcctaag<sup>gc</sup>caccctgtcaaaa 2758

ex15|ex16

**S L L L E R R V I F V A N S L S T L S K** 706

tgtggccatgctgtggttagctacactgtatccgttcacctggcagcatacctatatccca 2818

**C G H A V V A T L Y P F T W Q H T Y I P** 726

gtcctgccagcatctatgattgacatcgtgtgctcacctacaccattccttattggaatc 2878

**V L P A S M I D I V C S P T P F L I G I** 746

ctgtcttgctccttaccacagctccaggacctaccattgaagag<sup>gt</sup>tgctgatagttgat 2938

ex16|ex17

**L S C S L P Q L Q D L P I E E V L I V D** 766

ctctgtgcagacaagttcttacaggag<sup>gg</sup>tatctgatgaggatgaaattctaccacaaaa 2998

ex17|ex18

**L C A D** K F L Q E V S D E D E I L P P K 786

cttcaagctgccctgatgcagatctttggaagaacgaaatgaaatcttgactcaggagcag 3058

**L Q A A L M Q I L E E R N E I L T Q E Q** 806

aatttttcacaag<sup>at</sup>gtgacactcaactctctggtgtccgaagcatttgctcaggtttttt 3118

ex18|ex19

N F S Q D V T **L N S L V S E A F V R F F** 826

*dDENN*

gtggagttggtaggacattattctttgaacatgactgtcactgagcgtggggagcgtggt 3178

**V E L V G H Y S L N M T V T E R G E R V** 846

ttccaaaggggaaccattccgtaagtcccacacctcccgaagtgtacgccacttctggat 3238

**F Q R E P F R K S H T S R S V R H F L D** 866

ctcttcatggaaactcagatgtttgcaggattcatccaggaccgagagcttcggaaaagt 3298

**L F M E T Q M F A G F I Q D R E L R K S** 886

ggagttaaag<sup>gt</sup>tttgtttgagatccgggccatccagtattttggaacaattcctgagtcg 3358

ex19|ex20

G V K **G L F E I R A I Q Y L E T I P E S** 906

gagcccagtgggatgaatagaatTTTTGCGGAGTCTTGGaagcaaaatgaaatTTCTGcaa 3418

ex20|ex21

E P S G M N R I L R S L G S K M K F L Q 926

predProP

aagaaatGaaatctctgattgtctccatcctgaatatacaacagaaagtGCCAAAGAAAA 3478

K K \* 928

tatTTTTCTAAGGGTCAGGATCCCATGAAGTATTCTACAAAATTTCTGAAATTTTAAAAG 3538

gttaaagagcgcgagtcaggctgtagaggaggattctcctggtgctgctgtagtaatcact 3598

ggagaattggtgggaatggctcggcaccatgccatcttactctgtctccatTTTTTTTT 3658

tatagcagcctTTTCTATGTGATTCTTGGGCTCATTCTCTGTTTTGTGCTTTGTCTGTGA 3718

aagtagttgtgtttcacaaggaaaagccttggtggtgttacatttaaaaaatagctcaaa 3778

gatgagaataatgagagaaatgctgagtttaaggtagtagagagacatgatggaaatgga 3838

gaacactagccttatacacataattctcatcactgaactatcatggcccctTTAAACCCA 3898

tgggctgtttgacctgggctaaggaatagactcatcacatatctcattgTTTTGCCTTA 3958

tattatatctaggggaatctcacttaggaggaagccctacttgtaatattataagggtact 4018

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atatcatctcaaccaatccttaaatcaaccttatgagatagatatttgcactctcatttt 4438

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caaggcgcgagtgatcatttgaggtcaggagttcgagaccagcctggcaacatggtgaaac 4558

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gccccaaagttgtacaacacagaactgaagccaagactTTTTATGGACACAGAAAAGTTGG 4858

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aaaaatTTTCTATTAAGTGTACCAGAGCCACTTTTCAGCTCTGAGGATAAGGAACCTTAT 4978

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caccatgTTGGCCAGGCTGGTCTCGAACTCCTGACCTCAGGTGATCCACCCACCTTGGCC 5458

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tgt 5578

ttgattaatgTTATAGCAAATGTCAGTTTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGTGT 5638

tggcacagaaagtattttattcaaccttacaaaactgtgtaagttgtattgtgatacagtt 5698

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aggtctgttggtgttttctgtaaagtgttaggaattctggatatttttgtaaagaatcaa 6118  
gatttgataaaatggtgtttacagatcttttaatg<sup>aataaa</sup>tacataaacccccaca 6178

(poly-A tail added here)  
poly-A signal