

Gene: SDHB - Sequence: NG_012340.1
 Transcript: NM_003000.2 - Protein: NP_002991.2
 Date : March 2, 2015

1st line: Base numbering. Full stops for intronic +/- 5, 10, 15...
 2nd line: Base sequence. lower case Introns, upper case Exons
 3rd line: Amino acid sequence. Printed on FIRST base of codon
 4th line: Amino acid numbering. Numbered on 1st and increments of 10

Exon 1 | Start: 5001 | End: 5223 | Length: 222

```

. . . . .
cgggaggcggaggttgcaagtgcagccaagatcgcgccattgcactccagcccggaaacag

. . . . .
tcgcgagactccatctcaaacaacaaacaaaaattccaggaataaagaggttgaaatcgg

. . . . .
ggcagggaccggataggatggctccgccccatctaagtcttagccccaccccctgaaag

. . . . .
tcgccctgcctctcagactcctcccctttctgagaagggtcacgggggaagccaaatgggc

. . . . .
atgcgcgcgtactgcgctattgcgcacgctcgctgtgcttgccccgccttcctccgccc

|-149      |-139      |-129      |-119      |-109      |-99
ACCCGGGAAACCGGAAGCCGCTCCCACTTGTTGCTCGTACGCGGCTAGTGGGTCTCTCA

|-89      |-79      |-69      |-59      |-49      |-39
GTGGATGTAGGCTGGGCGCCGCGATGTTTCGACGGGACACCGGCGGAGAGCGACCTCGGGG

|-29      |-19      |-9       |1        |11       |21
TTAAGGGGTGGGGCTGACGTCAGGAGCCAAGATGGCGGCGGTGGTCGCCCTCTCCTTGAG
                        M A A V V A L S L R
                        |1

|31      |41      |51      |61      |71      . . .
GCGCCGGTTGCCGGCCACAACCCTTGCGGAGCCTGCCTGCAGgtgagtcctggagcctc
R R L P A T T L G G A C L Q
|11      |21

. . . . .
agagaggggaaaagtgcaggaaagccacagagactgcctggagctgatggggctgcggagag

```

actgaggaagcatagggcaaggcctcagggagatggaggacctcctccccctggtgcagt
gctttggtttggcttcgagcatccctgtcaagttatctttctgcgcctcgcagcagcttg
tgagttagggcacgggcaatttttacagctaagggcgcgggggggggggacggttcagaa
aggggacttgaattgctcaaggtcacatggcaagcgaatgact

Exon 2 | Start: 14283 | End: 14410 | Length: 127

.
tctttatattcatcgtgaatgtttaatttaactcttggttcactacaaagtaagttctgtg

.
aagatgaagggtttttgtgtattaagtgtgtgtcactagcccctaataccatgtctgata

.
tattagcatatgataggtgcttaataacttggttgatattgaatgcctgccttttctaaga

.
agattatgtgtcagtaatgtgtgagtttatatccagcgttacatctgttggtgccagcaaa

.
atggaattatcttgatatttctaatttttttttctttttgtgaactttaaaaaatttcag

 |81 |91 |101 |111 |121 |131
GCCTCCCGAGGAGCCCAGACAGCTGCAGCCACAGCTCCCCGTATCAAGAAATTTGCCATC
A S R G A Q T A A A T A P R I K K F A I
 |31 |41

 |141 |151 |161 |171 |181 |191
TATCGATGGGACCCAGACAAGGCTGGAGACAAACCTCATATGCAGACTTATGAAGTTGAC
Y R W D P D K A G D K P H M Q T Y E V D
 |51 |61

.
CTTAATAAgtgagtatctctgtgaaagccagctattgaaggagagttcttgatttgattt
L N K

.
agggacatgcttttcacatccttggaaggcttaaaaatctgagatcatccgatggctctg

.
tttttaaacaagaatgagcttgggcgggcacggtggctcacgcctataatcccagcac

.
tttgggaggctcaggcgggcagatcatctgaggttgggagttcaagaccaatgtggccaa

.
catggtgaaactcccctctctactaaaaatacagaaattagctgggtatagtggctcatg

. .
cctgtaat

Exon 3 | Start: 26026 | End: 26111 | Length: 85

```
. . . . .
gagcttcagaagtaaaaaacaaaaactcggccactgtatggaagttgtgtcatacttgtc

. . . . .
tactactacttttagctttccatttcctagaaatgtgtttgcactgtgatcatcaaaatag

. . . . .
aactgtgcagtacttaaaatgtaagaatctgcaaaaacaaaactacagaacaaattccga

. . . . .
aggtgacctgagaagaccaaattggataagctaatacatccaggtgtctccgattatatta

. . . . .
tgataaagtgtagggaggttgaacgttacataaaataccactggatatttttctttgttag

|201      |211      |221      |231      |241      |251
ATGTGGCCCCATGGTATTGGATGCTTTAATCAAGATTAAGAATGAAGTTGACTCTACTTT
 C G P M V L D A L I K I K N E V D S T L
      |71                      |81

|261      |271      |281      . . . . .
GACCTTCCGAAGATCATGCAGAGAAGgtgagcatttcattcctgttgggctccagatact
 T F R R S C R E G
      |91

. . . . .
tgtggctcttccaaagaggcttgggctggccaaagctgatagagacatctggaaaacagct

. . . . .
gcagctctctgctgggtgaacttgctgtgcaacctaattccttttcttgggtaaattgcat

. . . . .
ccaaaattctaaccatggtgcaagttctggtttctgagtttactttccttcaggagcatt

. . . . .
ctatcctgtggttactgcatctggcggtcctgtgagctgctccacgcttcaaggcctag

. . . . .
ctaggacctgctggctggcaccttcc
```

Exon 4 | Start: 30435 | End: 30571 | Length: 136

```
. . . . .
ccatggtgccagcagcgcccaggcctctggcctcctccagtgccatacttggcatgtggc

. . . . .
ttctaacctcaaggttgccacatggtcatagagtagtttttggaaactcaagccattagaa

. . . . .
ccacattcgaggcaggaagaaggaaggaagggagaaaagccaacaggcacctctgtcaga

. . . . .
ggaatgttgcatgtcagtgtgcccctgatggcacagcaaggaggatccagaagaaagta

. . . . .
tttggggcaggactgattccggatatgggtgaggatgtgttaaagtgtgtctctttcag

      |291      |301      |311      |321      |331      |341
GCATCTGTGGCTCTTGTGCAATGAACATCAATGGAGGCAACACTCTAGCTTGACCCGAA
  I  C  G  S  C  A  M  N  I  N  G  G  N  T  L  A  C  T  R  R
              |101                      |111

      |351      |361      |371      |381      |391      |401
GGATTGACACCAACCTCAATAAGGTCTCAAAAATCTACCCTCTTCCACACATGTATGTGA
  I  D  T  N  L  N  K  V  S  K  I  Y  P  L  P  H  M  Y  V  I
              |121                      |131

      |411      |421      . . . . .
TAAAGGATCTTGTTCCTCgtgagtttctgcatctctctggttttgtttttatttgcattggg
  K  D  L  V  P
              |141

. . . . .
gggcagtgtatgtgtgttacgctattagtttttcagggcaggatttgtttgagtattta

. . . . .
aggctcctcttctagtcagatagtaaatagatgggactgtttcctatattatggcaggag

. . . . .
gaggaccacagtgtcactgagagattagggaaaatctccagatctgagacagtgtggccag

. . . . .
agtttaattaaagaatttgaatggcagaagataaacgcctagaaaatcctccagcagctc

. . . . .
atttggtgaggtttgtt
```

Exon 5 | Start: 31306 | End: 31422 | Length: 116

.
ctacctccctatatatttgaacacctttgctgacgtggtgttttcaagggcagaaaggactg

.
tgggattggcaggtttcccaagtaggtgagggagaggtttcctaaccatgcttaacattg

.
tgaccatttttccttttgtaatctttgcatatattcatgacaaaggaaaagagtctggct

.
tctgctggcatagagtggacgagtagtcagtgccaagaaatggggtaaataaagctga

.
ggtgatgatggaatctgatccttttcttcttcttcttcttcttcttcttcttcttcttaaccacag

 |431 |441 |451 |461 |471 |481
GATTTGAGCAACTTCTATGCACAGTACAAATCCATTGAGCCTTATTTGAAGAAGAAGGAT
D L S N F Y A Q Y K S I E P Y L K K K D
 |151 |161

 |491 |501 |511 |521 |531
GAATCTCAGGAAGGCAAGCAGCAGTATCTGCAGTCCATAGAAGAGCGTGAGAAACTGgtc
E S Q E G K Q Q Y L Q S I E E R E K L
 |171

.
attagtcacctatttatttgtttcaatctgaagaatttattgcaaagatgattgccaggagt

.
gtggcttggcaggggaacataagctgatgcaagccatttagtgattctggagaggaactg

.
gcacaaggggtggggcactcatcctcttagggccgggtgagtagtggaaccctggaatgg

.
cccagagtggaccaaggagctagagccctgtgccccgcctgcaggggcgggtggttgctg

.
tgtggctactccatctttttcaaaagaaaccagtatgtaaattgcctgggctttaa

Exon 6 | Start: 35097 | End: 35198 | Length: 101

```
. . . . .
ttgtttttgtgttcttgttttctatttcttttttagacaagtgagaggttcttgtttatt

. . . . .
aaagggaaagtgcactatacgtggatttaagaaccctgggcagatgtttacatttcactt

. . . . .
gcaagatctttattaatctgctaaatatctgcaaataccccccttgattttgctaagaaa

. . . . .
attcacatgcaagtaggcactttgttcatgcactgaccccaaaggtaacatttaacagc

. . . . .
tgaagacatagcagagtctctcccgtcacaagctcctgcctctcttttctcccatacag

|541      |551      |556      |561      |571      |581      |591
GACGGGCTCTACGAGTGCATTCTCTGTGCCTGCTGTAGCACCAGCTGCCCCAGCTACTGG
D  G  L  Y  E  C  I  L  C  A  C  C  S  T  S  C  P  S  Y  W
|181                                |191

|601      |611      |621      |631      |641      .      .      .
TGGAACGGAGACAAATATCTGGGGCCTGCAGTTCTTATGCAGgtgagggtgctccttaatt
W  N  G  D  K  Y  L  G  P  A  V  L  M  Q
|201                                |211

. . . . .
gctttaagagaaattgaaactcaagcatccagaagtccaagaggacaatagattgctgta

. . . . .
agccagccattctgaggggctggttccctcattgccatccagtccaaacagggttaatt

. . . . .
ggttgcaattgtattcacttgctttcggtaaatctggggccttgctctgcaaattgcctttg

. . . . .
tttcagtgcagtgagggtcaccccaaaggggtgcaaaccatgccttgagatgtttaaaa

. . . . .
tgtatttccgtttgctgggtggtcagaggctccccctctccc
```

Exon 7 | Start: 36441 | End: 36563 | Length: 122

.
ctgggtaggaagctattgagcaatgtgaaataattaggagatgataccacagtgtgtataa

.
ttaagcaccgggtaccaggtgcagtatggatcaaaggtttgaggaccattaatcaag

.
tgaagctacaagtgttggaacctttccttgaaagatggacaagaattaaagagtatgga

.
gatgaggcatctaagctgagtgaattccctttcctctgcactcccagagctttgagttga

.
gccagggtgccgctctggcctgttgattggcagctcagctaatacatccctggttttccag

 |651 |661 |671 |681 |691 |701
GCCTATCGCTGGATGATTGACTCCAGAGATGACTTCACAGAGGAGCGCCTGGCCAAGCTG
A Y R W M I D S R D D F T E E R L A K L
 |221 |231

 |711 |721 |731 |741 |751 |761
CAGGACCCATTCTCTCTATACCGCTGCCACACCATCATGAACTGCACAAGGACCTGTCCT
Q D P F S L Y R C H T I M N C T R T C P
 |241 |251

.
AAGgtacgtgggctggtgaccctcagctctgcctcagagctgacacgccagaagtagca
K

.
tgtgctcacaagaggtgattggcagagagcaaccctagtcatttgagaaggaaaggac

.
cagcatatgcctgtcctttcagtgtgagcctaggggctagtttggtccttagttgcaagg

.
agtagactgactcgggccacctcaggagcaggctttatttgtaggctacacagggaatt

.
gtgggagtttaaggatgcacaggaacccatgagcaggtacctgcgttcaaccttcccagga

.
aac

Exon 8 | Start: 40213 | End: 40449 | Length: 236

.
tctttgagcagtcagagagtgacacctctgccctgggcctgtttacctgttagagtgagcc

.
acacaagaaggaattcaacgtggcagagctcttgccagagggagctgaccatcttcaa

.
gttaaaaaaggtagacagaagagagcccttagcccaacccctatggttttgagggacttg

.
atttgcatcaccttgcttggacactgaaccagctgaggaaggagtttcacccaagattg

.
tgggttttccctttcagtttcagttatcatttggtattgattcttttctcttttttcaag

 |771 |781 |791 |801 |811 |821
GGTCTGAATCCAGGGAAAGCTATTGCAGAGATCAAGAAAATGATGGCAACCTATAAGGAG
G L N P G K A I A E I K K M M A T Y K E
 |261 |271

 |831 |841 |*11 |*21 |*31 |*41
AAGAAAGCTTCAGTTTAACTGTTTCCATGCTAAACATGATTATAACCAGCTCAGAGCTG
K K A S V *
 |281

 |*51 |*61 |*71 |*81 |*91 |*101
AACATAATTTATATCTAATTTGAGTTCCTTTAAAGATCTTGGTTTTCCATGAATACAGCA

 |*111 |*121 |*131 |*141 |*151
TGATAATAAAAAATTTAAGAAATAAATGTTATTCTACTTTATTAACAAAAAAAAAAGaa

.
cctgttcctttacttgccgcaggggaatgtgaagggtgccaggagtccttgtccttgga

.
gatggacagggcttcagagctgagcgggggtgggggtaccctagctggaaggaggtgatg

.
agccgtggaactgacatcagcagggcctgcagcttgttcccagctttgccactcaccagc

.
tagacaaccttggacaagttccttcacctctttgctgctccattcgcccatctgtaagat

.

gggatccataattgtgcctacttcattcatctggtatgagaatgcctggcacttatt

LRG Parser: Version: 1.1, Version Date: 11/02/2015
Reader: Version: 1, Version Date: 11/02/2015
Writer: Version: 1, Version Date: 11/02/2015
Control: Version: 1, Version Date: 11/02/2015