

Gene: VHL - Sequence: NG_008212.3
 Transcript: NM_000551.3 - Protein: NP_000542.1
 Date : February 26, 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: 5553 | Length: 552

```

. . . . .
cacttgaacccaggagttcgagaccagcctaggaacatagcgagactccgtttcaaaca

. . . . .
acaaataaaaataattagtcgggcatggtggtgcgcgcctacagtaccaactactcgggga

. . . . .
ggctgaggcgagacgatcgcttgagccaggagggtcaaggctgcagtgagccaagctcgc

. . . . .
gccactgcactccagccgggacagagtgagaccctgtctcaaaaaaaaaaaaaaacac

. . . . .
caaaccttagagggcgaaaaaaatatttatagtggaatacagtaacgagttggcctag

|-209      |-199      |-189      |-179      |-169      |-159
CCTCGCCTCCGTTACAACGGCCTACGGTGCTGGAGGATCCTTCTGCGCACGCGCACAGCC

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

|-89       |-79       |-69       |-59       |-49       |-39
GAGGTCGACTCGGGAGCGCGCACGCAGCTCCGCCCGCGTCCGACCCGCGGATCCC GCGG

|-29       |-19       |-9        |1         |11        |21
CGTCCGCCCGGGTGGTCTGGATCGCGGAGGGAATGCCCCGAGGGCGGAGAACTGGGAC
                                M P R R A E N W D
                                |1

|31        |41        |51        |61        |71        |81
GAGGCCGAGGTAGGCGCGGAGGAGGCAGGCGTCAAGAGTACGGCCCTGAAGAAGACGGC
E A E V G A E E A G V E E Y G P E E D G
|11        |21

```


Exon 2 | Start: 9880 | End: 10002 | Length: 122

```
. . . . .
cccaggctggagtgagtgaggcgcatctcggctcacggcaagctccacctcctgggttca

. . . . .
caccattctcctgcctcagcctcccgagtagctgggactacaggcgctcgccaccacacc

. . . . .
tggctaattttttgtatttttagtagagacgaggtttcaccacgttagccaggacggtc

. . . . .
ttgatctcctgacctcatgatccgcctgcctcggcctccaaagtgtgggattacaggt

. . . . .
gtgggccaccgtgccagccaccgggtgtggctctttaacaacctttgcttgtccgatag

|341      |351      |361      |371      |381      |391
GTCACCTTTGGCTCTTCAGAGATGCAGGGACACACGATGGGCTTCTGGTTAACCAAACCTG
  H  L  W  L  F  R  D  A  G  T  H  D  G  L  L  V  N  Q  T  E
           |121                                |131

|401      |411      |421      |431      |441      |451
AATTATTTGTGCCATCTCTCAATGTTGACGGACAGCCTATTTTGGCAATATCACACTGC
  L  F  V  P  S  L  N  V  D  G  Q  P  I  F  A  N  I  T  L  P
           |141                                |151

|461      . . . . .
CAGgtactgacgttttactttttaaaaagataagggttggttggttaagtacaggatagac
V

. . . . .
cacttgaaaaattaagcccagttctcaatttttgctgatgtcaggcacgttatccaatc

. . . . .
tttttgatcctattctctaccataaataaaatggaagtgatgtattgtacgttatgtg

. . . . .
ttaaagggttatggtgtctcaaaagcactttgggctcttaagagacaagcgaaattaaa

. . . . .
gtatcatatcataggttagttttgtagaattgtagaattacgaatgccttttgtttccct

.
ggc
```

Exon 3 | Start: 13153 | End: 17036 | Length: 3883

.
gcaggcctttttaaggcttcggcctagaattgccagtgctcgcttcacattcagtta

.
gttaaagcaatcacaagcccagccatttcaagtgaaattactacagaggcatgaacac

.
catgaggtgtccatagggggccatcagcataacacactgccacatacatgcactcacttt

.
ttttctttaacctaagtgagatccatcagtagtacaggtagttgttggtggcaaagcctctt

.
gttcgttccttgtagtactgagaccctagtctgccactgaggatttggttttgccttcag

471	481	491	501	511	521
TGTATACTCTGAAAGAGCGATGCCTCCAGGTTGTCCGAGCCTAGTCAAGCCTGAGAATT					
Y T L K E R C L Q V V R S L V K P E N Y					
	161			171	

531	541	551	561	571	581
ACAGGAGACTGGACATCGTCAGGTCGCTCTACGAAGATCTGGAAGACCACCCAAATGTGC					
R R L D I V R S L Y E D L E D H P N V Q					
	181			191	

591	601	611	621	631	641
AGAAAGACCTGGAGCGCTGACACAGGAGCGCATTGCACATCAACGGATGGGAGATTGAA					
K D L E R L T Q E R I A H Q R M G D *					
	201			211	

*11	*21	*31	*41	*51	*61
GATTTCTGTTGAAACTTACACTGTTTCATCTCAGCTTTTGATGGTACTGATGAGTCTTGA					

*71	*81	*91	*101	*111	*121
TCTAGATACAGGACTGGTTCCTTCCTTAGTTTCAAAGTGTCTCATTCTCAGAGTAAATA					

*131	*141	*151	*161	*171	*181
GGCACCATTGCTTAAAGAAAGTAACTGACTTCACTAGGCATTGTGATGTTTAGGGGCA					

*191	*201	*211	*221	*231	*241
AACATCACAAAATGTAATTTAATGCCTGCCATTAGAGAAGTATTTATCAGGAGAAGGTG					

*251	*261	*271	*281	*291	*301
GTGGCATTTTTGCTTCCTAGTAAGTCAGGACAGCTTGTATGTAAGGAGGTTTGTATAAGT					

*311	*321	*331	*341	*351	*361
AATTCAGTGGGAATTGCAGCATATCGTTTAATTTTAAGAAGGCATTGGCATCTGCTTTTA					
*371	*381	*391	*401	*411	*421
ATGGATGTATAATACATCCATTCTACATCCGTAGCGGTTGGTGAAGTGTCTGCCTCCTGC					
*431	*441	*451	*461	*471	*481
TTTGGGAAGACTGAGGCATCCGTGAGGCAGGACAAGTCTTCTCCTCTTTGAGACCCCA					
*491	*501	*511	*521	*531	*541
GTGCCTGCACATCATGAGCCTTCAGTCAGGGTTGTGTCAGAGGAACAAACCAGGGGACACT					
*551	*561	*571	*581	*591	*601
TTGTTAGAAAGTGCTTAGAGGTTCTGCCTCTATTTTGTGGGGGTGGGAGAGGGGACC					
*611	*621	*631	*641	*651	*661
TTAAATGTGTACAGTGAACAAATGTCTTAAAGGAATCATTTTGTAGGAAGCATTTT					
*671	*681	*691	*701	*711	*721
TATAATTTTCTAAGTCGTGCACCTTCTCGGTCCACTCTTGTGAAGTGCTGTTTTATTAC					
*731	*741	*751	*761	*771	*781
TGTTTCTAAACTAGGATTGACATTCTACAGTTGTGATAATAGCATTTTGTAACTTGCCA					
*791	*801	*811	*821	*831	*841
TCCGCACAGAAAATACGAGAAAATCTGCATGTTTGATTATAGTATTAATGGACAAATAAG					
*851	*861	*871	*881	*891	*901
TTTTTGCTAAATGTGAGTATTTCTGTTCTTTTGTAAATATGTGACATTCTGATTGAT					
*911	*921	*931	*941	*951	*961
TTGGGTTTTTTTGTGTTGTTGTTTGTGTTTTGTTTTGTTTTGAGATGGAGTCTCACT					
*971	*981	*991	*1001	*1011	*1021
CTTGTCACCCAGGCTGGAGTGCAGTGGCGCCATCTCGGCTCACTGCAACCTCTGCCTCCT					
*1031	*1041	*1051	*1061	*1071	*1081
GGGTTACGTAATCCTCCTGAGTAGCTGGGATTACAGGCGCCTGCCACCACGCTGGCCAA					
*1091	*1101	*1111	*1121	*1131	*1141
TTTTTGTACTTTTAGTAGAGACAGTGTTCGCCATGTTGGCCAGGCTGGTTTCAAACCTCC					
*1151	*1161	*1171	*1181	*1191	*1201
TGACCTCAGGTGATCCGCCCACCTCAGCCTCCCAAAATGGTGGGATTACAGGTGTGTGGG					

*1211	*1221	*1231	*1241	*1251	*1261
CCACCGTGCCTGGCTGATT	CAGCATTTTT	TATCAGGCAGGACCAGGTGGCACTTCCACCT			
*1271	*1281	*1291	*1301	*1311	*1321
CCAGCCTCTGGTCCTACCAATGGATT	CATGGAGTAGCCTGGACTGTTTCATAGTTTTCTA				
*1331	*1341	*1351	*1361	*1371	*1381
AATGTACAAATTCTTATAGGCTAGACTTAGATT	CATTAACCTCAAATTCAATGCTTCTATC				
*1391	*1401	*1411	*1421	*1431	*1441
AGACTCAGTTTTTTGTA	ACTAATAGATTTTTTTTCCACTTTTGTTCTACTCCTTCCCTA				
*1451	*1461	*1471	*1481	*1491	*1501
ATAGCTTTTTTAAAAAATCTCCCCAGTAGAGAAACATTTG	AAAAGACAGAAACTAAAA				
*1511	*1521	*1531	*1541	*1551	*1561
AGGAAGAAAAAAGATCCCTATTAGATA	CACTTCTTAAATACAATCACATTAAACATTTTGA				
*1571	*1581	*1591	*1601	*1611	*1621
GCTATTTCCCTTCCAGCCTTTTTAGGGCAGATTTTGGTTGGTTTTTACATAGTTGAGATTG					
*1631	*1641	*1651	*1661	*1671	*1681
TACTGTTCATACAGTTTTATACCCTTTTT	CATTAACTTTATAACTTAAATATTGCTCTA				
*1691	*1701	*1711	*1721	*1731	*1741
TGTTAGTATAAGCTTTTCACAAACATTAGTATAGTCTCCCTTTTATAATTAATGTTTGTG					
*1751	*1761	*1771	*1781	*1791	*1801
GGTATTTCTTGGCATGCATCTTTAATTCCTTATCCTAGCCTTTGGGCACAATTCCTGTGC					
*1811	*1821	*1831	*1841	*1851	*1861
TCAAAAATGAGAGTGACGGCTGGCATGGTGGCTCCCGCCTGTAATCCAGTACTTTGGAA					
*1871	*1881	*1891	*1901	*1911	*1921
AGCCAAGGTAAGAGGATTGCTTGAGCCCAGAACTTCAAGATGAGCCTGGGCTCATAGTGA					
*1931	*1941	*1951	*1961	*1971	*1981
GAACCCATCTATACAAAAAATTTTTAAAAATTAGCATGGCGGCACACATCTGTAATCCTA					
*1991	*2001	*2011	*2021	*2031	*2041
GCTACTTGGCAGGCTGAGGTGAGAAGATCATTGGAGTTTAGGAATTGGAGGCTGCAGTGA					
*2051	*2061	*2071	*2081	*2091	*2101
GCCATGAGTATGCCACTGCACTCCAGCCTGGGGGACAGAGCAAGACCCTGCCTCAAAAAA					
*2111	*2121	*2131	*2141	*2151	*2161

AAAAAAAAAAAAAAAAATCAGGCCGGGCATGGTGGCTCACGCCTGTAATCCCAGCACTTTG

 |*2171 |*2181 |*2191 |*2201 |*2211 |*2221
GGAGGTCGAGGTGGGCAGATCACCTGAGGTCAGGAGTTCGAGACCAGCCTGGCCAACATG

 |*2231 |*2241 |*2251 |*2261 |*2271 |*2281
GTAAACCCCATTTTCTACTAAAAAATACAAGAATTAGCTGGGTGTGGTGGCGCATGCCTG

 |*2291 |*2301 |*2311 |*2321 |*2331 |*2341
TAATCCTAGCTACTCAGGAGGCTGAGGCAGGAGAATCACTTGAACCCAGGAGGCGAAGAT

 |*2351 |*2361 |*2371 |*2381 |*2391 |*2401
TGCAGTGAGCTGATATCGCACCATTGTACTCCAGCCTGTGTGACAGAGCAATACTCTTGT

 |*2411 |*2421 |*2431 |*2441 |*2451 |*2461
CTCAAAAAAAAAAAAAAATTCAAATCAGAGTGAAGTGAATGAGAACTCCAGTTTTCTT

 |*2471 |*2481 |*2491 |*2501 |*2511 |*2521
CTACTCCGAATTTCAACTGATTTTAGCTCCTCCTTTCAACATTCAACAAATAGTCTTTT

 |*2531 |*2541 |*2551 |*2561 |*2571 |*2581
TTTTTTTTTTTTTTTTTTTTTTTTTTTGGAGATGGAGTCTCACTCTGTTGCCAGGCTGGAGTG

 |*2591 |*2601 |*2611 |*2621 |*2631 |*2641
CAGTGGTGCGATCTCTGCTCACTACAAGCTCTGCCTCCCGAGTTCAAGTGATTCTCCTGG

 |*2651 |*2661 |*2671 |*2681 |*2691 |*2701
CTCACCTCCTGAGTAGCTGGGATTACAGGCGCTGCCACCATGCCTGGCTAATTTTGTG

 |*2711 |*2721 |*2731 |*2741 |*2751 |*2761
TTTTTAGTGGAGACGGGGTTTACCATGTTGTCCAGGATGGTCTTGATCTCCTGACCTTG

 |*2771 |*2781 |*2791 |*2801 |*2811 |*2821
TGATCCACCCACCTCAGCCTCCCAAAGTGCTGGGATTACAGGTGTGAGCCACCGCGTCCA

 |*2831 |*2841 |*2851 |*2861 |*2871 |*2881
GCCAGCTTTATTATTTTTTTTAAGCTGTCTTTGTGTCAAAATGATAGTTCATGCTCCTCT

 |*2891 |*2901 |*2911 |*2921 |*2931 |*2941
TGTTAAACCTGCAGGCCGAGCACAGTGGCTCATGCCTGTAATCCCAGCATTTTGGGAGA

 |*2951 |*2961 |*2971 |*2981 |*2991 |*3001
CCAAGGCGGATGGATCACCTGAGGTCAGGAGCTGAAGACCAGCCTGGCTAACATGGTGAA

 |*3011 |*3021 |*3031 |*3041 |*3051 |*3061
ACCTCATCTCCACTTAAAAATACAAAAATTGCCGGCCGCGGCGGCTCATGCCTGTAATCCC

*3071	*3081	*3091	*3101	*3111	*3121
AGCACTTTGGGAGGCCTAGGCGGGTGGATCACGAGGTCAGGAAATCGAGACCATCCTGGC					
*3131	*3141	*3151	*3161	*3171	*3181
TAACACGGGTGAAACCCCGTCTCTATTAATAAATAAGAAAAATTAGGCGGGCGTGGTGGT					
*3191	*3201	*3211	*3221	*3231	*3241
GAGCGCCTGTAGTCCCAGCTACTCGAGAGCCTGAGGCAGGAGAATGGCATGAACCTGGAA					
*3251	*3261	*3271	*3281	*3291	*3301
GGCGGAGCTTGCAGTGAGCTGAGATGGTGCCACTGCACTCTAACCTGGGCGACAGAGTGA					
*3311	*3321	*3331	*3341	*3351	*3361
GACACCGTCTCAAAAAAAAAACAAAAACAAAAATTATCCAGGTGTGGCGGTGGGCGCC					
*3371	*3381	*3391	*3401	*3411	*3421
TGTGAGGCAGGCGAATCTCTTGAACCCGGGAGGCGGAGGTTGCAGTGAGCCAAGATCACA					
*3431	*3441	*3451	*3461	*3471	*3481
CCATTGCACTCCAGCCTGGGCAACAAGAGTGAAATTCCATCTCAAAAAGAAACCAAAAAA					
*3491	*3501	*3511	*3521	*3531	*3541
ACAAAAAAAAAACATGCCGTTTGAGTACTGTGTTTTTGGTGTGTGTCCAAGGAAAATTAAA					
*3551	*3561	*3571	*3581	*3591	*3601
AACCTGTAGCATGAATAATGTTTGTTTTCATTTCGAATCTGTGAATGTATTAAATATA					
*3611	*3621	*3631	*3641	*3651	*3661
TCGCTCTTAAGAGACGGTGAAGTTCCTATTTCAGTTTTTTTTTTTTTTTTTTTTTTTAA					
*3671	*3681	*3691	*3701	.	.
AGCTGTTTTTTAATACATTAAATGGTGCTGAGTAAAGGAAATAGGcagggtgtgtgtgtgt					
.
ggtgttttaactaggcgcttctctctcagagagttttgaaacctgtttacataaaggccc					
.
aggatgggaaggagatccaaacataagccaccagcctcattccaagtctcttctatttcc					
.
aaccctggatTTTTTTTTTTTatttaacattgtttcttttagctttatttttcttataaa					
.
agaaatgtatcactataaaaaattacacactacagaaaaatattaagaagaaaaacattc					

.
acatcggaacaaagtttttcccatgaaaacagaacccaaaag

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