VHL cDNA Clone – Von Hippel-Lindau Tumor Suppressor (Human)

PRODUCT OVERVIEW

Product Name	VHL, cDNA Clone
Full Product Name	VHL cDNA Clone
Product Gene Name	VHL cdna clone
Sequence	atgccccgga gggcggagaa ctgggacgag gccgaggtag gcgcggagga ggcaggcgtc gaagagtacg gccctgaaga agacggcggg gaggagtcgg gcgccgagga gtccggcccg gaagagtccg gcccggagga actgggcgcc gaggaggaga tggaggccgg gcggccgcgg cccgtgctgc gctcggtgaa ctcgcgcgag ccctcccagg tcatcttctg caatcgcagt ccgcgcgtcg tgctgcccgt atggctcaac ttcgacggcg agccgcagcc ctacccaacg ctgccgcctg gcacgggccg ccgcatctac agctaccgag tgtatactct gaaagagcga tgcctccagg ttgtccggag cctagtcaag cctgagaatt acaggagact ggacatcgtc aggtcgctct acgaagatct ggaagaccac ccaaatgtgc agaaagacct ggagcggctg acacaggagc gcattgcaca tcaacggatg ggagattga
Molecular Weight	18,532 Da
OMIM	144700
Vector	Please Inquire
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for VHL cdna clone	MBS1276717 is a cDNA clone targeting VHL.
Other Notes	Small volumes of VHL cdna clone vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for VHL. It may not necessarily be applicable to this product.

NCBI GI #	37573994
NCBI GeneID	7428
NCBI Accession #	BC058831
UniProt Secondary Accession #	Q13599; Q6PDA9; B2RE45
UniProt Related Accession #	P40337
NCBI Official Full Name	Homo sapiens von Hippel-Lindau tumor suppressor, mRNA
NCBI Official Synonym Full Names	von Hippel-Lindau tumor suppressor
NCBI Official Symbol	VHL
NCBI Official Synonym Symbols	RCA1; VHL1; pVHL; HRCA1
UniProt Protein Name	Von Hippel-Lindau disease tumor suppressor
UniProt Synonym Protein Names	Protein G7; pVHL
Protein Family	Protein
UniProt Gene Name	VHL
UniProt Entry Name	VHL_HUMAN

NCBI Protein Information	von Hippel-Lindau disease tumor suppressor
NCBI Summary for VHL	Von Hippel-Lindau syndrome (VHL) is a dominantly inherited familial cancer syndrome predisposing to a variety of malignant and benign tumors. A germline mutation of this gene is the basis of familial inheritance of VHL syndrome. The protein encoded by this gene is a component of the protein complex that includes elongin B, elongin C, and cullin-2, and possesses ubiquitin ligase E3 activity. This protein is involved in the ubiquitination and degradation of hypoxia-inducible-factor (HIF), which is a transcription factor that plays a central role in the regulation of gene expression by oxygen. RNA polymerase II subunit POLR2G/RPB7 is also reported to be a target of this protein. Alternatively spliced transcript variants encoding distinct isoforms have been observed. [provided by RefSeq, Jul 2008]
UniProt Comments for VHL	VHL: Involved in the ubiquitination and subsequent proteasomal degradation via the von Hippel-Lindau ubiquitination complex. Seems to act as target recruitment subunit in the E3 ubiquitin ligase complex and recruits hydroxylated hypoxia- inducible factor (HIF) under normoxic conditions. Involved in transcriptional repression through interaction with HIF1A, HIF1AN and histone deacetylases. Ubiquitinates, in an oxygen-responsive manner, ADRB2. Component of the VCB (VHL-Elongin BC-CUL2) complex; this complex acts as a ubiquitin-ligase E3 and directs proteasome- dependent degradation of targeted proteins. Interacts with CUL2; this interaction is dependent on the integrity of the trimeric VBC complex. Interacts (via the beta domain) with HIF1A (via the NTAD domain); this interaction mediates degradation of HIF1A in normoxia and, in hypoxia, prevents ubiqitination and degradation of HIF1A by mediating hypoxia-induced translocation to the nucleus, a process which requires a hypoxia-dependent regulatory signal. Interacts with ADRB2; the interaction, in normoxia, is dependent on hydroxylation of ADRB2 and the subsequent VCB- mediated ubiquitination and degradation of ADRB2. Under hypoxia, hydroxylation, interaction with VHL, ubiquitination and subsequent degradation of ADRB2 are dramatically decreased. Interacts with RNF139, USP33 and PHF17. Found in a complex composed of LIMD1, VHL, EGLN1/PHD2, TCEB2 AND CUL2. Isoform 1 and isoform 3 interact with LIMD1 (via LIM zinc-binding 2), AJUBA (via LIM domains) and WTIP (via LIM domains). Interacts with EPAS1. Expressed in the adult and fetal brain and kidney. 3 isoforms of the human protein are produced by alternative splicing. Protein type: Tumor suppressor; Ubiquitin ligase Chromosomal Location of Human Ortholog: 3p25.3 Cellular Component: cytosol; nucleoplasm; nucleus; VCB complex Molecular Function: enzyme binding; protein binding; transcription factor binding; ubiquitin-protein ligase activity Biological Process: negative regulation of cell proliferation; negative regulation of transcription from RNA polymerase II promoter; positive regulation of transcription, DNA-dependent; protein ubiquitination; proteolysis; regulation of transcription, DNA-dependent Disease: Erythrocytosis, Familial, 2; Pheochromocytoma; Renal Cell Carcinoma, Nonpapillary; Von Hippel-lindau Syndrome
Research Articles on VHL	**1.** AR-suppressed miRNA-145 is a key player in renal cell carcinoma progression by regulating HIF2alpha/VEGF/MMP9/CCND1 expression levels, irrespective of VHL status.
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