

Product datasheet for SC112867

PHD3 (EGLN3) (NM_022073) Human Untagged Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	PHD3 (EGLN3) (NM_022073) Human Untagged Clone
Tag:	Tag Free
Symbol:	PHD3
Synonyms:	HIFP4H3; HIFPH3; PHD3
Mammalian Cell Selection:	None
Vector:	<u>pCMV6-XL5</u>
E. coli Selection:	Ampicillin (100 ug/mL)
Fully Sequenced ORF:	>OriGene ORF within SC112867 sequence for NM_022073 edited (data generated by NextGen Sequencing)

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ATGCCCCGGGACACATCATGAGGCTGGACCTGGAGAAAATTGCCCTGGAGTACATCGTG
CCCTGTCTGCACGAGGTGGGCTTCTGCTACCTGGACAACCTCCTGGGCGAGGTGGTGGGC
GACTGCGTCCTGGAGCGCGTCAAGCAGCTGCACTGCACCGGGGCCCTGCCGGACGGCCAG
CTGGCGGGGCCGCGCGCCGGCGTCTCCAAGCGACACCTGCGGGGCGACCAGATCACGTGG
ATCGGGGGCAACGAGGAGGGCTGCGAGGCCATCAGCTTCTCCTGTCCCTCATCGACAGG
CTGGTCTCTACTGCGGGAGCCGGCTGGGCAAATACTACGTCAAGGAGAGGTCTAAGGCA
ATGGTGGCTTGTATCCGGGAAATGGAACAGTTATGTTCCGACGTGGACAACCCCAAC
GGTGATGGTCGTCATCACCTGCATCTACTATCTGAACAAGAATTGGGATGCCAAGCTA
CATGGTGGATCCTGCGGATATTTCCAGAGGGGAAATCATTCATAGCAGATGTGGAGCCC
ATTTTTGACAGACTCCTGTTCTTCTGGTCAGATCGTAGGAACCCACACGAAGTGCAGCCC
TCTTACGCAACCAGATATGCTATGACTGTCTGGTACTTTGATGCTGAAGAAAGGGCAGAA
GCCAAAAGAAATTCAGGAATTTAACTAGGAAAATGAATCTGCCTCACTGAAGACTGA

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Clone variation with respect to NM_022073.3



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5' Read Nucleotide Sequence:	<p>>OriGene 5' read for NM_022073 unedited</p> <pre> NGGTCGAATTTGTATACGACTCATATAGGGCGGCCGCAATTCGCACGAGGGCTCGCCGG GCCAGTCCGGAACGGGTCGTGGAGCTCCGCACCACTCCCCTGGTTCCCGAAGGCAGATC CCTTCTCCCGAGAGTTGCGAGAACTTTCCCTTGTCCCGACGCTGCAGCGGCTCGGGTA CCGTGGCAGCCGAGGTTTCTGAACCCCGGGCCACGCTCCCGCGCCTCGGCTTCGCGT CGTGTAGATCGTTCCTCTCTGGTTGCACGCTGGGGATCCCGGACCTCGATTCTGCGGGC GAGATGCCCTGGGACACATCATGAGGCTGGACCTGGAGAAAATTGCCCTGGAGTACATC GTGCCCTGTCTGCACGAGGTGGGCTTCTGCTACCTGGACAACCTCCTGGGCGAGGTGGTG GGCAGTGCCTGAGCGCGTCAAGCAGCTGCACTGCACCGGGGCCCTGCGGGACGGC CAGCTGGCGGGCCGCGCGCCGGCTCTCAAGCGACACCTGCGGGGCGACCAGATCACG TGGATCGGGGCAACGAGGAGGGCTGCGAGGCCATCAGCTTCTCCTGTCCCTCATCGAC AGGCTGGTCTCTACTGCGGGAGCCGGCTGGGCAAATACTACGTCAAGGAGAGGTCTAAG GCAATGGTGGCTTGTATCCGGGAAATGGAACAGGTTATGTTCCGCACGTGGACAACCC AACGGTGTGGTGCATCACCTGCATCTACTATCTGAACAAGAATTGGGATGCCAAG CTACATGGTGGGATCCTGCGGGATATTCCAGAGGGGAAATCATTATAGCAGATGTGGA GCCCATTTTTGACAGACTCCTGTCTTCTGGTTCAGATCGTAGGAACCCACACGAAGTGA GCCCTCTACGCAACCA </pre>
3' Read Nucleotide Sequence:	<p>>OriGene 3' read for NM_022073 unedited</p> <pre> GGTAAGAGGCTGCCTTCGAGNNCNGAAAAATCTTTTTTTTTTTGTGGTGCCATCTTTA TTCAGAAGTCATTATTTTAGCACAAGGAGCTGAGGCAGAAAATCCAGGTTGCAGGACTGG GAAAAAAGGAGTGTCTGCCCATGGGACACTTATAAATTGTTCACTATGACAGCAGCCCT TTCTAGAGGTATTAATGGCATTAGGTGGTGGTATTCTCCAGAAACCCCAACAGCCCTGGA TTAAGAACATCTGAAATTTGTTAGATGACACAAATTTCTCTGTTTCTGCTGTTAAGGC TTCCGTGATGCCTCTCTGTGGCATCTACCACCTCCATTTTTTTCTTTTCAAACCTCCTCC TTTCAAATCAGGAAGTATACATAAAGTCAAGTAAGGGTCATTCCCTCGTGTGCTCCTA GGCTCTTCTTTGATAGTATTACCGAATCTATCAGGTAACCGCTGGCCGAGTAGGATGT CTGCAGGAATTTCTGGAGTTAGCAAATAACTTCATCTGGCAAAGAGAGTATCTGAAGATC AACACAGTCTTGGCAAGAAAACATGAAGTACCACACACAAGACAGGGATGTGAAGGATGC AAGAAGTAGCAGGGAGATTGTTGTCACTGAAGAGGCCATCTTTGGATCTCAAAGAATTTA AGAGAATTCAGGAACCGTTACTAAAATGAACAAGGCCAGCAGATTTTCAGAGCACGGTTCAG TCTTCAGTGAGGGCAGATTCAGGTTTCTAGTTAAATTCCTGGAATTTCTTTGGCTTCT GCCCTTCTTTCAGCATCAAAGTACCAGACAGTATAGCATATCTGGGTGCGTAAGAAGGC TGCACTTCGTGTGGGTCCTACGATCTGACCAGAGAACAGAGTCTGTCCAATGGGCTCCC CATCTGCTATGAAG </pre>
Restriction Sites:	NotI-NotI
ACCN:	NM_022073
Insert Size:	1650 bp
OTI Disclaimer:	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
Components:	The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM_022073.2](#), [NP_071356.1](#)

RefSeq Size: 2765 bp

RefSeq ORF: 720 bp

Locus ID: 112399

UniProt ID: [Q9H6Z9](#)

Cytogenetics: 14q13.1

Domains: 2OG-Fell_Oxy, P4Hc

Protein Families: Druggable Genome

Protein Pathways: Pathways in cancer, Renal cell carcinoma

Gene Summary: Cellular oxygen sensor that catalyzes, under normoxic conditions, the post-translational formation of 4-hydroxyproline in hypoxia-inducible factor (HIF) alpha proteins. Hydroxylates a specific proline found in each of the oxygen-dependent degradation (ODD) domains (N-terminal, NODD, and C-terminal, CODD) of HIF1A. Also hydroxylates HIF2A. Has a preference for the CODD site for both HIF1A and HIF2A. Hydroxylation on the NODD site by EGLN3 appears to require prior hydroxylation on the CODD site. Hydroxylated HIFs are then targeted for proteasomal degradation via the von Hippel-Lindau ubiquitination complex. Under hypoxic conditions, the hydroxylation reaction is attenuated allowing HIFs to escape degradation resulting in their translocation to the nucleus, heterodimerization with HIF1B, and increased expression of hypoxia-inducible genes. EGLN3 is the most important isozyme in limiting physiological activation of HIFs (particularly HIF2A) in hypoxia. Also hydroxylates PKM in hypoxia, limiting glycolysis. Under normoxia, hydroxylates and regulates the stability of ADRB2. Regulator of cardiomyocyte and neuronal apoptosis. In cardiomyocytes, inhibits the anti-apoptotic effect of BCL2 by disrupting the BAX-BCL2 complex. In neurons, has a NGF-induced proapoptotic effect, probably through regulating CASP3 activity. Also essential for hypoxic regulation of neutrophilic inflammation. Plays a crucial role in DNA damage response (DDR) by hydroxylating TELO2, promoting its interaction with ATR which is required for activation of the ATR/CHK1/p53 pathway. Target proteins are preferentially recognized via a LXXLAP motif.[UniProtKB/Swiss-Prot Function]

Transcript Variant: This variant (1) represents the longer transcript and encodes the longer isoform (1).