

PRODUCT INFORMATION

Target	PHD3
Synonyms	HIFP4H3; HIFPH3; PHD3
Description	Recombinant protein of human egl nine homolog 3 (<i>C. elegans</i>) (EGLN3)
Delivery	1 week
Uniprot ID	Q9H6Z9
Expression Host	HEK293T
Tag	C-Myc/DDK
Molecular Characterization	N/A
Molecular Weight	27.1 kDa
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Formulation & Reconstitution	25 mM Tris.HCl, pH 7.3, 100 mM glycine, 10% glycerol
Storage & Shipping	Store at -80°C.
Background	<p>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]</p>
Usage	Research use only
Conjugate	Unconjugated

