

Recombinant Human EGLN3 Protein, Myc/DDK-tagged, C13 and N15-labeled

Cat. No. EGLN3-2544H **Lot. No.** (See product label)

SPECIFICATION

Product Overview	EGLN3 MS Standard C13 and N15-labeled recombinant protein (NP_071356) with a C-terminal MYC/DDK tag, was expressed in HEK293 cells.
Species	Human
Source	HEK293
Description	Prolyl hydroxylase that mediates hydroxylation of proline residues in target proteins, such as PKM, TELO2, ATF4 and HIF1A. Target proteins are preferentially recognized via a LXXLAP motif. 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. ELGN3 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

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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. Also mediates hydroxylation of ATF4, leading to decreased protein stability of ATF4 (Probable).

Molecular Mass	27.3 kDa
AA Sequence	MPLGHIMRLDLEKIALEYIVPCLHEVGFYLDNFLGEVVGDCVLERVKQLHCTGALR DGQLAGPRAGVSKRHLRGDQITWIGGNEEGCEAISFLLSLIDRLVLYCGSRLGKYYV KERSKAMVACYPGNGTGYVRHVDNPNGDGRCITCIYYLNKNWDAKLHGGILRIFPE GKSFIADVEPIFDRLFFWSDRRNPHEVQPSYATRYAMTVWYFDAEERAEAKKKFR NLTRKTESALTEDTRTRPLEQKLISEEDLAANDILDYKDDDDKV
Purity	> 80% as determined by SDS-PAGE and Coomassie blue staining
Stability	Stable for 3 months from receipt of products under proper storage and handling conditions.
Storage	Store at -80 centigrade. Avoid repeated freeze-thaw cycles.
Concentration	50 µg/mL as determined by BCA
Storage Buffer	100 mM glycine, 25 mM Tris-HCl, pH 7.3.

GENE INFORMATION

Gene Name EGLN3 egl-9 family hypoxia inducible factor 3 [Homo sapiens (human)]

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Official Symbol	EGLN3
Synonyms	EGLN3; egl nine homolog 3 (C. elegans); EGL nine (C.elegans) homolog 3; egl nine homolog 3; HIF prolyl hydroxylase 3; HIFPH3; PHD3; HPH-1; HPH-3; HIF-PH3; HIF-prolyl hydroxylase 3; egl nine-like protein 3 isoform; hypoxia-inducible factor prolyl hydroxylase 3; prolyl hydroxylase domain-containing protein 3; FLJ21620; MGC125998; MGC125999;
Gene ID	112399
mRNA Refseq	NM_022073
Protein Refseq	NP_071356
MIM	606426
UniProt ID	Q9H6Z9
SDS-PAGE	