

Product Name: PHD3 (11Y3) Rabbit Monoclonal Antibody
Catalog #: AMRe16061

Summary

Production Name	PHD3 (11Y3) Rabbit Monoclonal Antibody
Description	Rabbit Monoclonal Antibody
Host	Rabbit
Application	WB,IHC-P,ICC/IF,IP,IF-P
Reactivity	Human,Mouse,Rat

Performance

Conjugation	Unconjugated
Modification	Unmodified
Isotype	IgG
Clonality	Monoclonal
Form	Liquid
Storage	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles. Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% New type
Buffer	preservative N and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.
Purification	Affinity purification

Immunogen

Gene Name	EGLN3
Alternative Names	Egl nine homolog 3; EGLN3; Factor responsive smooth muscle protein; HIF Prolyl Hydroxylase 3; HIFP4H3; HIFPH3; P4H3; PHD3; SM20;
Gene ID	112399.0
SwissProt ID	Q9H6Z9.

Application

Dilution Ratio	WB 1:1000, IHC-P/IF-P 1:50, ICC/IF 1:50, IP 1:20
Molecular Weight	27kDa

Background

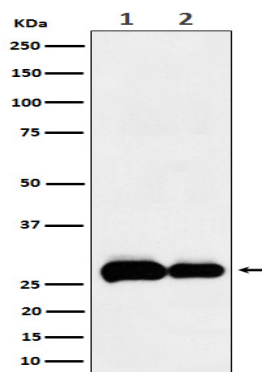
Catalyzes the post-translational formation of 4-hydroxyproline in hypoxia-inducible factor (HIF) alpha proteins. Hydroxylates HIF-1 alpha at 'Pro-564', and HIF-2 alpha. Functions as a cellular oxygen sensor and, under normoxic conditions, targets HIF through the hydroxylation for proteasomal degradation via the von Hippel-Lindau ubiquitination complex. Prolyl hydroxylase that mediates hydroxylation of proline residues in target proteins, such as PKM, TELO2, ATF4 and HIF1A (PubMed: [19584355](http://www.uniprot.org/citations/19584355), PubMed: [21620138](http://www.uniprot.org/citations/21620138), PubMed: [21483450](http://www.uniprot.org/citations/21483450), PubMed: [22797300](http://www.uniprot.org/citations/22797300), PubMed: [20978507](http://www.uniprot.org/citations/20978507), PubMed: [21575608](http://www.uniprot.org/citations/21575608)). 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 (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). Hydroxylates a specific proline found in each of the oxygen-dependent degradation (ODD) domains (N- terminal, NODD, and C-terminal, CODD) of HIF1A (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). Also hydroxylates HIF2A (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). Has a preference for the CODD site for both HIF1A and HIF2A (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). Hydroxylation on the NODD site by EGLN3 appears to require prior hydroxylation on the CODD site (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). Hydroxylated HIFs are then targeted for proteasomal degradation via the von Hippel-Lindau ubiquitination complex (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). 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 (PubMed: [11595184](http://www.uniprot.org/citations/11595184), PubMed: [12181324](http://www.uniprot.org/citations/12181324)). ELGN3 is the most important isozyme in limiting physiological activation of HIFs (particularly HIF2A) in hypoxia. Also hydroxylates PKM in hypoxia, limiting glycolysis (PubMed: [21620138](http://www.uniprot.org/citations/21620138), PubMed: [21620138](http://www.uniprot.org/citations/21620138)).

Product Name: PHD3 (11Y3) Rabbit Monoclonal Antibody
Catalog #: AMRe16061

<http://www.uniprot.org/citations/21483450> target="_blank">21483450). Under normoxia, hydroxylates and regulates the stability of ADRB2 (PubMed:19584355). Regulator of cardiomyocyte and neuronal apoptosis. In cardiomyocytes, inhibits the anti-apoptotic effect of BCL2 by disrupting the BAX-BCL2 complex (PubMed:20849813). In neurons, has a NGF-induced proapoptotic effect, probably through regulating CASP3 activity (PubMed:16098468). Also essential for hypoxic regulation of neutrophilic inflammation (PubMed:21317538). Plays a crucial role in DNA damage response (DDR) by hydroxylating TEL2, promoting its interaction with ATR which is required for activation of the ATR/CHK1/p53 pathway (PubMed:22797300). Also mediates hydroxylation of ATF4, leading to decreased protein stability of ATF4 (Probable).

Research Area

Image Data



Western blot analysis of PHD3 expression in (1) A549 cell lysate; (2) NIH/3T3 cell lysate.

Note

For research use only.