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# Anti-PHD3 Rabbit Monoclonal Antibody

Catalog # ABO16131

## Product Information

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|---|---|
| **Application** | WB, IF, ICC, IP |
| **Primary Accession** | Q9H6Z9 |
| **Host** | Rabbit |
| **Isotype** | IgG |
| **Reactivity** | Rat, Human, Mouse |
| **Clonality** | Monoclonal |
| **Format** | Liquid |
| **Description** | Anti-PHD3 Rabbit Monoclonal Antibody . Tested in WB, ICC/IF, IP applications. This antibody reacts with Human, Mouse, Rat. |

## Additional Information

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| **Gene ID** | 112399 |
| **Other Names** | Prolyl hydroxylase EGLN3, 1.14.11.-, Egl nine homolog 3, 1.14.11.29, HPH-1, Hypoxia-inducible factor prolyl hydroxylase 3, HIF-PH3, HIF-prolyl hydroxylase 3, HPH-3, Prolyl hydroxylase domain-containing protein 3, PHD3, EGLN3 {ECO:0000303\|PubMed:16098468, ECO:0000312\|HGNC:HGNC:14661} |
| **Calculated MW** | 27261 |
| **Application Details** | WB 1:500-1:2000<br>ICC/IF 1:50-1:200<br>IP 1:50 |
| **Source** | Eukaryota |
| **Contents** | Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA. |
| **Clone Names** | Clone: 27E10 |
| **Immunogen** | A synthesized peptide derived from human PHD3 |
| **Purification** | Affinity-chromatography |
| **Storage** | Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles. |

## Protein Information

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|---|---|
| **Name** | EGLN3 {ECO:0000303\|PubMed:16098468, ECO:0000312\|HGNC:HGNC:14661} |

**Function**

Prolyl hydroxylase that mediates hydroxylation of proline residues in target proteins, such as PKM, TELO2, ATF4, GPX4 and HIF1A (PubMed:19584355, PubMed:20978507, PubMed:21483450, PubMed:21575608, PubMed:21620138, PubMed:22797300, PubMed:40281343). 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, PubMed: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, PubMed:12181324). Also hydroxylates HIF2A (PubMed:11595184, PubMed:12181324). Has a preference for the CODD site for both HIF1A and HIF2A (PubMed:11595184, PubMed:12181324). Hydroxylation on the NODD site by EGLN3 appears to require prior hydroxylation on the CODD site (PubMed:11595184, PubMed:12181324). Hydroxylated HIFs are then targeted for proteasomal degradation via the von Hippel-Lindau ubiquitination complex (PubMed:11595184, PubMed: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 hypoxy- inducible genes (PubMed:11595184, PubMed:12181324). Acts as an inhibitor of ferroptosis by mediating hydroxylation of GPX4, thereby preventing GPX4 degradation via chaperone-mediated autophagy (PubMed:40281343). GPX4 hydroxylation is promoted by PSAT1, which provides 2-oxoglutarate substrate to EGLN3 (PubMed:40281343). ELGN3 is the most important isozyme in limiting physiological activation of HIFs (particularly HIF2A) in hypoxia. Also hydroxylates PKM in hypoxia, limiting glycolysis (PubMed:21483450, PubMed:21620138). 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 TELO2, 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).

**Cellular Location**

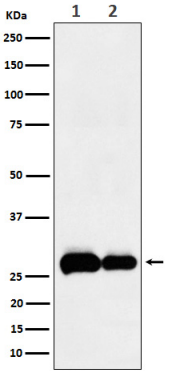
Nucleus. Cytoplasm Note=Colocalizes with WDR83 in the cytoplasm {ECO:0000250|UniProtKB:Q62630}

**Tissue Location**

Widely expressed at low levels. Expressed at higher levels in adult heart (cardiac myocytes, aortic endothelial cells and coronary artery smooth muscle), lung and placenta, and in fetal spleen, heart and skeletal muscle. Also expressed in pancreas. Localized to pancreatic acini and islet cells.

## Images

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




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