

## PHD3 Rabbit pAb

CatalogNo: YN6103

### Key Features

#### Host Species

- Rabbit

#### Reactivity

- Human, Mouse, Rat

#### Applications

- WB

#### MW

- 26kD (Calculated)

#### Isotype

- IgG

### Storage

**Storage\*** -15°C to -25°C/1 year(Do not lower than -25°C)

**Formulation** Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% sodium azide.

### Recommended Dilution Ratios

WB 1:500-2000

### Basic Information

**Clonality** Polyclonal

### Immunogen Information

**Immunogen** Synthesized peptide derived from human PHD3. AA range:1-37

**Specificity** This antibody detects endogenous levels of PHD3 at Human, Mouse, Rat

### Target Information

**Gene name** EGLN3

**Protein Name** Egl nine homolog 3 (HPH-1) (Hypoxia-inducible factor prolyl hydroxylase 3) (HIF-PH3) (HIF-prolyl hydroxylase 3) (HPH-3) (Prolyl hydroxylase domain-containing protein 3) (PHD3)

Organism	Gene ID	UniProt ID
Human	<a href="#">112399</a> ;	<a href="#">Q9H6Z9</a> ;
Mouse	<a href="#">112407</a> ;	<a href="#">Q91UZ4</a> ;
Rat	<a href="#">54702</a> ;	<a href="#">Q62630</a> ;

**Cellular Localization** Nucleus . Cytoplasm . Colocalizes with WDR83 in the cytoplasm. .

**Tissue specificity** 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.

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

## Validation Data

## Contact information

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