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# HIF PHD3 (EG188e/d5): sc-517601

## BACKGROUND

Prolyl hydroxylase domain proteins HIF PHD1, HIF PHD2 and HIF PHD3 (known as PHD1, PHD2 and PHD3 in rodents, respectively) can hydroxylate HIF- $\alpha$  subunits. Hypoxia-inducible factor (HIF) is a transcriptional regulator important in several aspects of oxygen homeostasis. The prolyl hydroxylases catalyze the posttranslational formation of 4-hydroxyproline in HIF- $\alpha$  proteins. HIF PHD1, which is widely expressed, with highest levels of expression in testis, functions as a cellular oxygen sensor and is important in cell growth regulation. HIF PHD1 can localize to the nucleus or the cytoplasm and is also detected in hormone responsive tissues, such as normal and cancerous mammary, ovarian and prostate epithelium. HIF PHD1 is encoded by EGLN2, which maps to chromosome 19q13.3. HIF PHD2 is regarded as the main cellular oxygen sensor, as RNA interference against HIF PHD2, but not HIF PHD1 or HIF PHD3, is enough to stabilize HIF-1 $\alpha$  in normoxia. HIF PHD2, a direct HIF target gene, is expressed mainly in skeletal muscle, heart, kidney and brain. HIF PHD3 may play a role in the regulation of cell growth in muscle cells and in apoptosis in neuronal tissue. HIF PHD3 is widely expressed, although the highest levels can be detected in placenta and heart.

## REFERENCES

1. Appelhoff, R.J., et al. 2004. Differential function of the prolyl hydroxylases PHD1, PHD2, and PHD3 in the regulation of hypoxia-inducible factor. *J. Biol. Chem.* 279: 38458-38465.
2. Aprelikova, O., et al. 2004. Regulation of HIF prolyl hydroxylases by hypoxia-inducible factors. *J. Cell. Biochem.* 92: 491-501.
3. Marxsen, J.H., et al. 2004. Hypoxia-inducible factor-1 (HIF-1) promotes its degradation by induction of HIF- $\alpha$ -prolyl-4-hydroxylases. *Biochem. J.* 381: 761-767.
4. Metzén, E., et al. 2005. Regulation of the prolyl hydroxylase domain protein 2 (phd2/egln-1) gene: identification of a functional hypoxia-responsive element. *Biochem. J.* 387: 711-717.

## CHROMOSOMAL LOCATION

Genetic locus: EGLN3 (human) mapping to 14q13.1.

## SOURCE

HIF PHD3 (EG188e/d5) is a mouse monoclonal antibody raised against amino acids 1-100 of HIF PHD3 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HIF PHD3 (EG188e/d5) is available conjugated to agarose (sc-517601 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-517601 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-517601 PE), fluorescein (sc-517601 FITC), Alexa Fluor<sup>®</sup> 488 (sc-517601 AF488), Alexa Fluor<sup>®</sup> 546 (sc-517601 AF546), Alexa Fluor<sup>®</sup> 594 (sc-517601 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-517601 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-517601 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-517601 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HIF PHD3 (EG188e/d5) is recommended for detection of HIF PHD3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for HIF PHD3 siRNA (h): sc-45799, HIF PHD3 shRNA Plasmid (h): sc-45799-SH and HIF PHD3 shRNA (h) Lentiviral Particles: sc-45799-V.

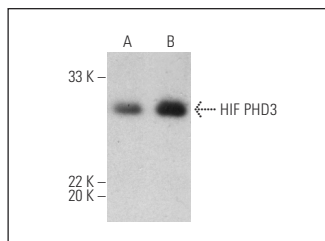
Molecular Weight of HIF PHD3: 27 kDa.

Positive Controls: CoCl<sub>2</sub> treated Hep G2 whole cell lysate.

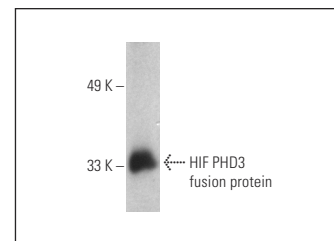
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



HIF PHD3 (EG188e/d5): sc-517601. Western blot analysis of HIF PHD3 expression in untreated (A) and CoCl<sub>2</sub> treated (B) Hep G2 whole cell lysates.



HIF PHD3 (EG188e/d5): sc-517601. Western blot analysis of partial human recombinant HIF PHD3 fusion protein. Detection reagent used: m-IgG $\kappa$  BP-HRP: sc-516102.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

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