SANTA CRUZ BIOTECHNOLOGY, INC.

HIF PHD3 (H-59): sc-98792

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The Power to Question

BACKGROUND

Prolyl hydroxylase domain proteins HIF PHD1, HIF PHD2 and HIF PHD3 (known as PHD1, PHD2 and PHD3 in rodents, respectively) can hydroxylate HIF-α 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-α 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-1α 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-α-prolyl-4-hydroxylases. Biochem. J. 381: 761-767.
4. Metzen, 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.
5. SWISS-PROT/TrEMBL (Q9H6Z9). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: EGLN3 (human) mapping to 14q13.1; Egln3 (mouse) mapping to 12 C1.

SOURCE

HIF PHD3 (H-59) is a rabbit polyclonal antibody raised against amino acids 19-77 mapping near the N-terminus of HIF PHD3 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

HIF PHD3 (H-59) is recommended for detection of HIF PHD3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HIF PHD3 (H-88) is also recommended for detection of HIF PHD3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for HIF PHD3 siRNA (h): sc-45799, HIF PHD3 siRNA (m): sc-45800, HIF PHD3 shRNA Plasmid (h): sc-45799-SH, HIF PHD3 shRNA Plasmid (m): sc-45800-SH, HIF PHD3 shRNA (h) Lentiviral Particles: sc-45799-V and HIF PHD3 shRNA (m) Lentiviral Particles: sc-45800-V.

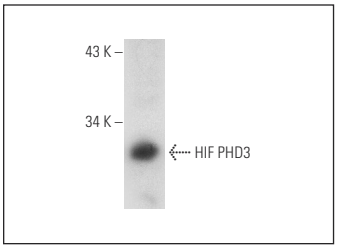
Molecular Weight of HIF PHD3: 27 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



HIF PHD3 (H-59): sc-98792. Western blot analysis of HIF PHD3 expression in A-431 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Stahr, A., et al. 2012. Morg1$^{+/-}$ heterozygous mice are protected from experimentally induced focal cerebral ischemia. Brain Res. 1482: 22-31.

RESEARCH USE

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