SANTA CRUZ BIOTECHNOLOGY, INC.

HIF PHD2 (H-8): sc-271835

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

Genetic locus: EGLN1 (human) mapping to 1q42.2; Egln1 (mouse) mapping to 8 E2.

SOURCE

HIF PHD2 (H-8) is a mouse monoclonal antibody raised against amino acids 240-288 mapping within an internal region of HIF PHD2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HIF PHD2 (H-8) is available conjugated to agarose (sc-271835 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271835 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271835 PE), fluorescein (sc-271835 FITC), Alexa Fluor® 488 (sc-271835 AF488), Alexa Fluor® 546 (sc-271835 AF546), Alexa Fluor® 594 (sc-271835 AF594) or Alexa Fluor® 647 (sc-271835 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271835 AF680) or Alexa Fluor® 790 (sc-271835 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

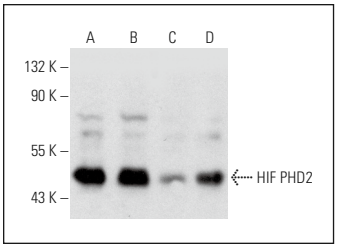
HIF PHD2 (H-8) is recommended for detection of HIF PHD2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HIF PHD2 siRNA (h): sc-45537, HIF PHD2 siRNA (m): sc-45538, HIF PHD2 shRNA Plasmid (h): sc-45537-SH, HIF PHD2 shRNA Plasmid (m): sc-45538-SH, HIF PHD2 shRNA (h) Lentiviral Particles: sc-45537-V and HIF PHD2 shRNA (m) Lentiviral Particles: sc-45538-V.

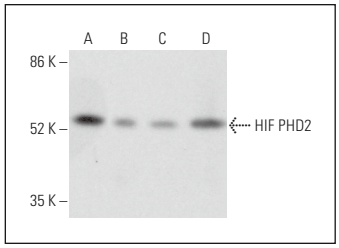
Molecular Weight of HIF PHD2: 46 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, ES-2 cell lysate: sc-24674 or PANC-1 whole cell lysate: sc-364380.

DATA



HIF PHD2 (H-8): sc-271835. Western blot analysis of HIF PHD2 expression in ES-2 (**A**), PANC-1 (**B**), U-2 OS (**C**) and MG-63 (**D**) whole cell lysates.



HIF PHD2 (H-8): sc-271835. Western blot analysis of HIF PHD2 expression in HeLa (**A**), A549 (**B**), Hep G2 (**C**) and MCF7 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Gong, H., et al. 2015. HIF2α signaling inhibits adherens junctional disruption in acute lung injury. J. Clin. Invest. 125: 652-664.
2. Yamazaki, R., et al. 2017. Antifibrotic effects of cyclosporine A on TGF-β1-treated lung fibroblasts and lungs from bleomycin-treated mice: role of hypoxia-inducible factor-1α. FASEB J. 31: 3359-3371.
3. Zhao, L., et al. 2019. Intrabody against prolyl hydroxylase 2 promotes angiogenesis by stabilizing hypoxia-inducible factor-1α. Sci. Rep. 9: 11861.
4. Wu, C.S., et al. 2020. ASC modulates HIF-1α stability and induces cell mobility in OSCC. Cell Death Dis. 11: 721.
5. Moorthy, B.T., et al. 2022. The evolutionarily conserved arginyltransferase 1 mediates a pVHL-independent oxygen-sensing pathway in mammalian cells. Dev. Cell 57: 654-669.e9.
6. Gambardella, J., et al. 2023. Experimental evidence and clinical implications of Warburg effect in the skeletal muscle of Fabry disease. iScience 26: 106074.

RESEARCH USE

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