

HIF-1 α (28b): sc-13515

BACKGROUND

Cell growth and viability is compromised by oxygen deprivation (hypoxia). Hypoxia-inducible factors, including HIF-1 α , HIF-1 β (also designated Arnt 1), EPAS-1 (also designated HIF-2 α) and HIF-3 α , induce glycolysis, erythropoiesis and angiogenesis in order to restore oxygen homeostasis. Hypoxia-inducible factors are members of the Per-Arnt-Sim (PAS) domain transcription factor family. In response to hypoxia, HIF-1 α is upregulated and forms a heterodimer with Arnt 1 to form the HIF-1 complex. The HIF-1 complex recognizes and binds to the hypoxia responsive element (HRE) of hypoxia-inducible genes, thereby activating transcription. Hypoxia-inducible expression of some genes, such as Glut-1, p53, p21 or Bcl-2, is HIF-1 α dependent, whereas expression of others, such as p27, GADD 153 or HO-1, is HIF-1 α independent. EPAS-1 and HIF-3 α have also been shown to form heterodimeric complexes with Arnt 1 in response to hypoxia.

REFERENCES

1. Wang, G.L., et al. 1995. Hypoxia-inducible factor 1 is a basic-helix-loop-helix-PAS heterodimer regulated by cellular O₂ tension. *Proc. Natl. Acad. Sci. USA* 92: 5510-5514.
2. Tian, H., et al. 1997. Endothelial PAS domain protein 1 (EPAS1), a transcription factor selectively expressed in endothelial cells. *Genes Dev.* 11: 72-82.
3. Luo, G., et al. 1997. Molecular characterization of the murine HIF-1 α locus. *Gene Expr.* 6: 287-299.

CHROMOSOMAL LOCATION

Genetic locus: HIF1A (human) mapping to 14q23.2; Hif1a (mouse) mapping to 12 C3.

SOURCE

HIF-1 α (28b) is a mouse monoclonal antibody epitope mapping within amino acids 329-530 of HIF-1 α of human origin.

PRODUCT

Each vial contains 200 μ g IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13515 X, 200 μ g/0.1 ml.

HIF-1 α (28b) is available conjugated to agarose (sc-13515 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13515 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13515 PE), fluorescein (sc-13515 FITC), Alexa Fluor[®] 488 (sc-13515 AF488), Alexa Fluor[®] 546 (sc-13515 AF546), Alexa Fluor[®] 594 (sc-13515 AF594) or Alexa Fluor[®] 647 (sc-13515 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-13515 AF680) or Alexa Fluor[®] 790 (sc-13515 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

HIF-1 α (28b) is recommended for detection of HIF-1 α of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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).

HIF-1 α (28b) is also recommended for detection of HIF-1 α in additional species, including bovine and porcine.

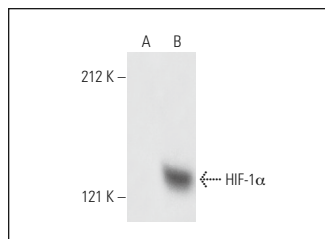
Suitable for use as control antibody for HIF-1 α siRNA (h): sc-35561, HIF-1 α siRNA (m): sc-35562, HIF-1 α shRNA Plasmid (h): sc-35561-SH, HIF-1 α shRNA Plasmid (m): sc-35562-SH, HIF-1 α shRNA (h) Lentiviral Particles: sc-35561-V and HIF-1 α shRNA (m) Lentiviral Particles: sc-35562-V.

HIF-1 α (28b) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

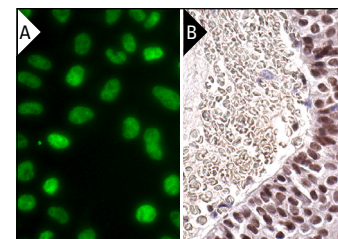
Molecular Weight of HIF-1 α : 132 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or HeLa + CoCl₂ cell lysate: sc-24679.

DATA



HIF-1 α (28b): sc-13515. Western blot analysis of HIF-1 α expression in extracts prepared from control (A) and CoCl₂-treated HeLa (B) cultures.



HIF-1 α (28b): sc-13515. Immunofluorescence staining of formalin-fixed HeLa cells showing nuclear localization. Kindly provided by Yang Xiang, Ph.D., Division of Newborn Medicine, Boston Children's Hospital, Cell Biology Department, Harvard Medical School (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human urinary bladder tissue showing nuclear staining of urothelial cells (B).

SELECT PRODUCT CITATIONS

1. Kunz, M., et al. 2003. Mechanisms of hypoxic gene regulation of angiogenesis factor Cyr61 in melanoma cells. *J. Biol. Chem.* 278: 45651-45660.
2. Pratheeshkumar, P., et al. 2021. Prognostic value and function of KLF5 in papillary thyroid cancer. *Cancers* 13: 185.
3. Lung, J., et al. 2022. Lipid droplets in lung cancers are crucial for the cell growth and starvation survival. *Int. J. Mol. Sci.* 23: 12533.
4. Wei, G., et al. 2023. Extracellular vesicle-derived circWhsc1 promotes cardiomyocyte proliferation and heart repair by activating TRIM59/STAT3/cyclin B2 pathway. *J. Adv. Res.* 53: 199-218.

RESEARCH USE

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