SANTA CRUZ BIOTECHNOLOGY, INC.

HIF-1α (28b): sc-13515

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cell growth and viability is compromised by oxygen deprivation (hypoxia). Hypoxia-inducible factors, including HIF-1α, HIF-1β (also designated Arnt 1), EPAS-1 (also designated HIF-2α) and HIF-3α, 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-1α 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-1α dependent, whereas expression of others, such as p27, GADD 153 or HO-1, is HIF-1α independent. EPAS-1 and HIF-3α 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 O_2 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-1α locus. Gene Expr. 6: 287-299.

CHROMOSOMAL LOCATION

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

SOURCE

HIF-1α (28b) is a mouse monoclonal antibody epitope mapping within amino acids 329-530 of HIF-1α 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. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13515 X, 200 µg/0.1 ml.

HIF-1α (28b) is available conjugated to agarose (sc-13515 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13515 HRP), 200 µg/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 µg/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 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-1α (28b) is recommended for detection of HIF-1α 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 immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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

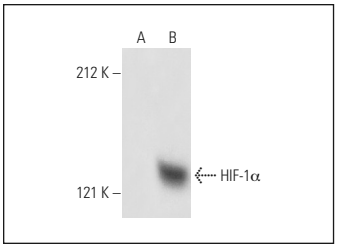
Suitable for use as control antibody for HIF-1α siRNA (h): sc-35561, HIF-1α siRNA (m): sc-35562, HIF-1α shRNA Plasmid (h): sc-35561-SH, HIF-1α shRNA Plasmid (m): sc-35562-SH, HIF-1α shRNA (h) Lentiviral Particles: sc-35561-V and HIF-1α shRNA (m) Lentiviral Particles: sc-35562-V.

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

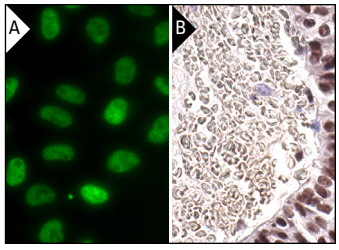
Molecular Weight of HIF-1α: 132 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or HeLa + $CoCl_2$ cell lysate: sc-24679.

DATA



HIF-1α (28b): sc-13515. Western blot analysis of HIF-1α expression in extracts prepared from control (**A**) and $CoCl_2$-treated HeLa (**B**) cultures.



HIF-1α (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. Li, S.J., et al. 2017. MicroRNA-150 regulates glycolysis by targeting von Hippel-Lindau in glioma cells. Am. J. Transl. Res. 9: 1058-1066.
3. He, M., et al. 2017. MiR-143-5p deficiency triggers EMT and metastasis by targeting HIF-1α in gallbladder cancer. Cell. Physiol. Biochem. 42: 2078-2092.
4. Li, J., et al. 2017. Thyroid hormone treatment activates protective pathways in both *in vivo* and *in vitro* models of neuronal injury. Mol. Cell. Endocrinol. 452: 120-130.

RESEARCH USE

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