SANTA CRUZ BIOTECHNOLOGY, INC.

HIF-1α (3C144): sc-71247

BACKGROUND

Cell growth and viability is compromised by oxygen deprivation (hypoxia). Hypoxia-inducible factors, including HIF-1α, Arnt 1 (also designated HIF-1β), 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.

CHROMOSOMAL LOCATION

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

SOURCE

HIF-1α (3C144) 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.

APPLICATIONS

HIF-1α (3C144) 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

HIF-1α (3C144) 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.

Molecular Weight of HIF-1α: 132 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, K-562 whole cell lysate: sc-2203 or MDA-MB-231 cell lysate: sc-2232.

RESEARCH USE

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

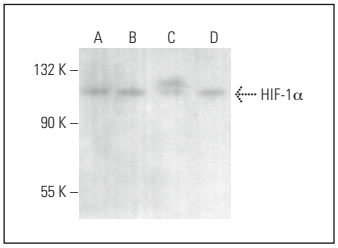
PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

STORAGE

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

DATA



HIF-1α (3C144): sc-71247. Western blot analysis of HIF-1α expression in Jurkat (**A**), K-562 (**B**), MDA-MB-231 (**C**) and RAW 264.7 (**D**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Zhao, Y., et al. 2012. Altered angiogenesis gene expression in gastrointestinal stromal tumors: potential use in diagnosis, outcome prediction, and treatment. Neoplasma 59: 384-392.
2. Bhatnagar, I. and Kim, S.K. 2015. Gliotoxin from *Aspergillus fumigatus* reverses epithelial to mesenchymal transition: implications in renal fibrosis. Int. J. Med. Microbiol. 305: 11-19.
3. Wang, P., et al. 2016. Time-dependent homeostasis between glucose uptake and consumption in astrocytes exposed to $CoCl_2$ treatment. Mol. Med. Rep. 13: 2909-2917.
4. Liu, X., et al. 2017. Hypothermia inhibits the proliferation of bone marrow-derived mesenchymal stem cells and increases tolerance to hypoxia by enhancing SUMOylation. Int. J. Mol. Med. 40: 1631-1638.
5. Wang, W., et al. 2018. E-cadherin is downregulated by microenvironmental changes in pancreatic cancer and induces EMT. Oncol. Rep. 40: 1641-1649.
6. An, Y., et al. 2019. Exosomes from adipose-derived stem cells (ADSCs) overexpressing miR-21 promote vascularization of endothelial cells. Sci. Rep. 9: 12861.
7. Belisario, D.C., et al. 2020. ABCA1/ABCB1 ratio determines chemo- and immune-sensitivity in human osteosarcoma. Cells 9: 647.
8. Clough, E., et al. 2021. Mitochondrial dynamics in SARS-COV2 spike protein treated human microglia: implications for neuro-COVID. J. Neuroimmune Pharmacol. 16: 770-784.
9. Yang, L., et al. 2022. Elucidating the novel mechanism of ligustrazine in preventing postoperative peritoneal adhesion formation. Oxid. Med. Cell. Longev. 2022: 9226022.