SANTA CRUZ BIOTECHNOLOGY, INC.

HIF-1α (C-19): sc-8711

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of HIF-1α 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.

Blocking peptide available for competition studies, sc-8711 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8711 X, 200 µg/0.1 ml.

APPLICATIONS

HIF-1α (C-19) is recommended for detection of HIF-1α of mouse, rat, human and *Xenopus* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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-1α (C-19) is also recommended for detection of HIF-1α in additional species, including equine, canine, bovine, porcine and avian.

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 (C-19) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HIF-1α: 132 kDa.

Positive Controls: HeLa + $COCL_2$ whole cell lysate: sc-24679 or K-562 whole cell lysate: sc-2203.

SELECT PRODUCT CITATIONS

1. Sengupta, S., et al. 2001. Ligand-dependent interaction of the glucocorticoid receptor with p53 enhances their degradation by Hdm2. Genes Dev. 15: 2367-2380.
2. Sutton, T.A., et al. 2008. p53 regulates renal expression of HIF-1α and pVHL under physiological conditions and after ischemia-reperfusion injury. Am. J. Physiol. Renal Physiol. 295: F1666-F1677.
3 Krishnan, J., et al. 2008. Essential role of developmentally activated hypoxia-inducible factor 1alpha for cardiac morphogenesis and function. Circ. Res. 103: 1139-1146.
4. Frew, I.J., et al. 2008. pVHL and PTEN tumour suppressor proteins cooperatively suppress kidney cyst formation. EMBO J. 27: 1747-1757.
5. Krishnan, J., et al. 2009. Activation of a HIF1α-PPARγ axis underlies the integration of glycolytic and lipid anabolic pathways in pathologic cardiac hypertrophy. Cell Metab. 9: 512-524.
6. Rhoads, R.P., et al. 2009. Satellite cell-mediated angiogenesis *in vitro* coincides with a functional hypoxia-inducible factor pathway. Am. J. Physiol., Cell Physiol. 296: C1321-C1328.
7. Huang, Y.F., et al. 2010. Pharmacological and genetic accumulation of hypoxia-inducible factor-1α enhances excitatory synaptic transmission in hippocampal neurons through the production of vascular endothelial growth factor. J. Neurosci. 30: 6080-6093.
8. Bolat, F., et al. 2010. Expression of vascular endothelial growth factor (VEGF), hypoxia inducible factor 1 α (HIF-1α), and transforming growth factors β1 (TGFβ1) and β3 (TGFβ3) in gestational trophoblastic disease. Pathol. Res. Pract. 206: 19-23.
9. Husted, R.F., et al. 2011. Oxygen regulation of the epithelial Na channel in the collecting duct. Am. J. Physiol. Renal Physiol. 300: F412-F424.
10. Mladenova, D., et al. 2011. The NSAID sulindac is chemopreventive in the mouse distal colon but carcinogenic in the proximal colon. Gut 60: 350-360.
11. Krishnan, J., et al. 2012. Dietary obesity-associated Hif1α activation in adipocytes restricts fatty acid oxidation and energy expenditure via suppression of the Sirt2-NAD^+ system. Genes Dev. 26: 259-270.

STORAGE

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

RESEARCH USE

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