

# HIF-1 $\alpha$ (H1 $\alpha$ 67): sc-53546

## BACKGROUND

Cell growth and viability is compromised by oxygen deprivation (hypoxia). Hypoxia-inducible factors, including HIF-1 $\alpha$ , HIF-1 $\beta$  (also designated Arnt 1), EPAS-1 (also designated HIF-2 $\alpha$ ) and HIF-3 $\alpha$ , 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 $\alpha$  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 $\alpha$  dependent, whereas expression of others, such as p27, GADD 153 or HO-1, is HIF-1 $\alpha$  independent. EPAS-1 and HIF-3 $\alpha$  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-1 $\alpha$  (H1 $\alpha$  67) is a mouse monoclonal antibody raised against amino acids 432-528 of HIF-1 $\alpha$  of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HIF-1 $\alpha$  (H1 $\alpha$  67) is available conjugated to either Alexa Fluor<sup>®</sup> 546 (sc-53546 AF546) or Alexa Fluor<sup>®</sup> 594 (sc-53546 AF594), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-53546 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-53546 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HIF-1 $\alpha$  (H1 $\alpha$  67) is recommended for detection of HIF-1 $\alpha$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ 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 $\alpha$  (H1 $\alpha$  67) is also recommended for detection of HIF-1 $\alpha$  in additional species, including porcine.

Suitable for use as control antibody for HIF-1 $\alpha$  siRNA (h): sc-35561, HIF-1 $\alpha$  siRNA (m): sc-35562, HIF-1 $\alpha$  siRNA (r): sc-45919, HIF-1 $\alpha$  shRNA Plasmid (h): sc-35561-SH, HIF-1 $\alpha$  shRNA Plasmid (m): sc-35562-SH, HIF-1 $\alpha$  shRNA Plasmid (r): sc-45919-SH, HIF-1 $\alpha$  shRNA (h) Lentiviral Particles: sc-35561-V, HIF-1 $\alpha$  shRNA (m) Lentiviral Particles: sc-35562-V and HIF-1 $\alpha$  shRNA (r) Lentiviral Particles: sc-45919-V.

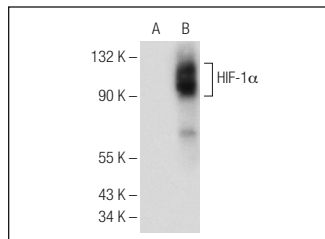
Molecular Weight of HIF-1 $\alpha$ : 132 kDa.

Positive Controls: HIF-1 $\alpha$  (m): 293T Lysate: sc-120778, K-562 whole cell lysate: sc-2203 or HeLa + CoCl<sub>2</sub> cell lysate: sc-24679.

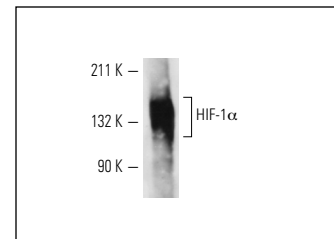
## STORAGE

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

## DATA



HIF-1 $\alpha$  (H1 $\alpha$  67): sc-53546. Western blot analysis of HIF-1 $\alpha$  expression in non-transfected: sc-117752 (A) and mouse HIF-1 $\alpha$  transfected: sc-120778 (B) 293T whole cell lysates.



HIF-1 $\alpha$  (H1 $\alpha$  67): sc-53546. Western blot analysis of HIF-1 $\alpha$  expression in CoCl<sub>2</sub> treated HeLa immunoprecipitated with HIF-1 $\alpha$  (H1 $\alpha$  67): sc-53546 and detected with HIF-1 $\alpha$  (H-206): sc-10790.

## SELECT PRODUCT CITATIONS

1. Yang, Q.C., et al. 2007. Overexpression of hypoxia-inducible factor-1 $\alpha$  in human osteosarcoma: correlation with clinicopathological parameters and survival outcome. *Jpn. J. Clin. Oncol.* 37: 127-134.
2. Ribeiro, S., et al. 2016. Pathological and molecular mechanisms underlying resistance to recombinant human erythropoietin therapy in the remnant kidney rat model of chronic kidney disease associated anemia. *Biochimie* 125: 150-162.
3. Perini, S., et al. 2016. Enhanced expression of melanoma progression markers in mouse model of sleep apnea. *Rev. Port. Pneumol.* 22: 209-213.
4. Ortmann, B., et al. 2016. CDK-dependent phosphorylation of PHD1 on serine 130 alters its substrate preference in cells. *J. Cell Sci.* 129: 191-205.
5. Yang, S.L., et al. 2017. Hepatitis B virus X protein and hypoxia-inducible factor-1 $\alpha$  stimulate Notch gene expression in liver cancer cells. *Oncol. Rep.* 37: 348-356.
6. Qiao, H., et al. 2017. A-synuclein induces microglial cell migration through stimulating HIF-1 $\alpha$  accumulation. *J. Neurosci. Res.* E-published.
7. Dallérac, G., et al. 2017. Updating temporal expectancy of an aversive event engages striatal plasticity under amygdala control. *Nat. Commun.* 8: 13920.
8. Chen, C.C., et al. 2017. Hypoxia and hyperoxia differentially control proliferation of rat neural crest stem cells via distinct regulatory pathways of the HIF1 $\alpha$ -CXCR4 and TP53-TPM1 proteins. *Dev. Dyn.* 246: 162-185.
9. Kwiatkowska, J., et al. 2017. Expression of hypoxia inducible factor 1 $\alpha$  and antioxidant enzymes: superoxide dismutases-1 and -2 in ischemic porcine endometrium. *Reprod. Biol.* 17: 289-293.

## RESEARCH USE

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

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