

Product Specification Sheet

Hypoxia-inducible factor-1 alpha (HIF-1 α) Antibodies

Cat. HIF1A13-M **Mouse** Monoclonal Anti-Human HIF-1 alpha IgG # 3 **SIZE:** 100 ug
FORM: Soln Lyophilized

HIF is a transcriptional complex that plays a central role in mammalian oxygen homeostasis, the posttranslational modification by prolyl hydroxylation as a key regulatory event that targets HIF-alpha subunits for proteasomal destruction via the von Hippel-Lindau ubiquitylation complex. The transcriptional complex is composed of an alpha-beta heterodimer; HIF-beta being a constitutive nuclear protein that dimerises with oxygen regulated HIF-alpha subunits. In normoxia, 4-hydroxylation of human HIF-alpha at Pro402 or Pro564 by a set of HIF prolyl hydroxylase isoenzymes (PHD 1-3) mediates HIF1-alpha recognition by von Hippel-Lindau ubiquitin ligase complex leading to its proteasomal destruction. In hypoxia (deprivation of oxygen), lack of hydroxylase activity enables HIF-alpha subunits to escape destruction and become transcriptionally active. Thus HIF hydroxylases provide a focus for understanding cellular responses to hypoxia and target for therapeutic manipulation. There are several HIF factors, which include HIF 1-alpha, HIF 1-beta, HIF 2-alpha

HIF 1-alpha: A 812aa protein in rat and 836aa long in mouse and human (chr 14q21-14q24) Mol.wt of ~96kD. A master transcriptional regulator of the adaptive response to hypoxia. Under hypoxic conditions activates the transcription of over 40 genes, including, erythropoietin, glucose transporters, glycolytic enzymes, vascular endothelial growth factor, and other genes whose protein products increase oxygen delivery or facilitate metabolic adaptation to hypoxia. Plays an essential role in embryonic vascularization, tumor angiogenesis and pathophysiology of ischemic disease. It is ubiquitous in expression as cytoplasmic in normoxia, nuclear translocation in response to hypoxia.

Source of Antigen and Antibodies

Antigen	Recombinant Human purified HIF-1 alpha protein (530-826 aa GST fusion protein)
Ab Host/type	Mouse, monoclonal IgG1 Aff pure IgG (cat # HIF1A13-M) purified over Protein A/G Agarose
Buffer	PBS, 0.2% BSA, 0.05% azide

Form & Storage of Antibodies/

Affinity pure IgG are supplied as 100 ug/500 ul Solution in 20mM Sodium phosphate, 150mM NaCl, 0.2% BSA and 0.05% sodium azide as preservative or in powder form. **Lyophilized products** should be reconstituted in

100 ul water and gently mixed for 15 min at room temp. All peptide/antibody received in solution or reconstituted from lyophilized vials should be stored frozen at -20°C or below in suitable aliquots. It is not recommended to store diluted solutions. Avoid repeated freeze and thaw.

Recommended Usage

Western Blotting (1:200-1:2000 using Chemiluminescence technique). HIF1A13-M detected ~120 kDa bands representing post translationally modified forms of HIF-1 α . Mammalian cells cultured under reduced (hypoxic) conditions.

ELISA (1:10K-1:30K).

Histochemistry & Immunofluorescence: not tested. We recommend the use of antibody at 5-10 ug/ml.

Specificity & Cross-reactivity

HIF1A13-M recognizes only human HIF-1 α protein. Other species not tested.

General References:

Talks et al. Am J Pathol 157: 411-421; Kaelin, W. G et al (1999) Nature 399, 203; Iyer, N. V et al (1998) Genes and Dev. 12, 149; Semenza, G. L et al (1998) J Lab Clin. Med. 131, 207.

*This Product is for *in vitro* research use only.

Related materials available from ADI

HIF 1 α , HIF-2 α and HIF-1 β antibodies.

HIF1A13-M 41004A

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