

Product Specification Sheet

**Hypoxia-inducible factor-1 alpha (HIF-1 $\alpha$ ) Antibodies**

**Cat.** HIF1A11-M      **Mouse** Monoclonal Anti-Human HIF-1 alpha IgG # 1      **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**

<b>Antigen</b>	Recombinant GST-fusion human HIF-1 $\alpha$ protein (432-528aa sequence)
<b>Ab Host/type</b>	Mouse, monoclonal IgG2b Aff pure IgG ( <b>cat # HIF1A11-M</b> ) purified over Protein A/G Agarose
<b>Buffer</b>	PBS, 0.2% BSA and azide 0.05%

**Form & Storage of Antibodies/Peptide Control**

**Affinity pure IgG** are supplied as 100 ug/500 Soln.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). HIF1A11-M detected ~120 kDa bands representing post translationally modified forms of HIF-1 $\alpha$ . 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. HIF-1 alpha is nuclear protein.

**Specificity & Cross-reactivity**

HIF1A11-M recognizes human, mouse, rat, sheep and ferret HIF-1 $\alpha$ . Other species not tested.

**General References:**

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; Nguyen, S. V et al (1999) Biochem. Biophys. Res. Comm. 265, 382; Feldser, D et al. (1999) Cancer Res. 59, 3915.

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

**Related materials available from ADI**

**HIF 1 $\alpha$ , HIF-2 $\alpha$  and HIF-1 $\beta$  antibodies.**

HIF1A11-M 41004A