

<b>Catalog Number:</b>	NB100-479SS
<b>Background:</b>	<p>Hypoxia contributes significantly to the pathophysiology of major categories of human disease, including myocardial and cerebral ischemia, cancer, pulmonary hypertension, congenital heart disease and chronic obstructive pulmonary disease.</p> <p>HIF-1 is a nuclear protein involved in mammalian oxygen homeostasis. This occurs as a posttranslational modification by prolyl hydroxylation. HIF-1 is a heterodimer composed of HIF-1 alpha and HIF-1 beta subunits. Both subunits are constantly translated. However, under normoxic conditions, human HIF-1 alpha is hydroxylated at Pro402 or Pro564 by a set of HIF prolyl hydroxylases, is polyubiquitinated, and eventually degraded in proteosomes. Under hypoxic conditions, the lack of hydroxylation prevents HIF degradation and increases transcriptional activity. Therefore, the concentration of HIF-1 alpha increases in the cell. In contrast, HIF-1 beta remains stable under either condition. HIF hydroxylases provide insight into hypoxic cell responses, which may be used to help isolate therapeutic targets.</p>
<b>Alternate Names:</b>	anti-Hypoxia-inducible factor 1 alpha antibody; anti-HIF1 alpha antibody; anti-ARNT interacting protein antibody; anti-Hif1a antibody; anti-ARNT interacting protein antibody; anti-HIF-1alpha antibody; anti-Hypoxia inducible factor 1 alpha antibody; anti-Hypoxia inducible factor 1 alpha subunit basic helix antibody
<b>Research Areas:</b>	10,348,0
<b>Immunogen:</b>	A fusion protein including residues 530-825 of the mouse HIF-1 alpha protein.
<b>Specificity:</b>	This antibody is specific for mouse HIF-1 alpha.
<b>Species Reactivity:</b>	This antibody reacts against human, mouse, rat, and primate protein.
<b>Uses:</b>	<p>This antibody has been tested in Western blot, recognizing a band in hypoxic samples at ~115 kDa. It has only been tested against mouse, rat, human and primate protein. Rat retina and brain cortex have been tested. Rat brain cortex is a bit dirty but this antibody does detect upregulation of HIF-1 alpha in hypoxic samples. This antibody is not recommended for immunoprecipitation. It has also been used for immunohistochemical applications.</p> <p>* Other applications have not been tested.</p>
<b>Dilutions:</b>	<p>Suggested working dilutions *</p> <p>immunohistochemistry 5-10 ug/ml, Western Blot 1:500-1:2000, Immunohistochemistry-Paraffin 5-10 ug/ml, 000</p> <p>* Investigator should determine optimal working dilutions.</p>
<b>Packaging:</b>	0.025 ml Immunogen affinity purified Rabbit antisera.
<b>Concentration:</b>	1.0 mg/ml
<b>Preservative:</b>	0.05% sodium azide
<b>Storage:</b>	Store at 4C. Do not freeze.

- Notes:** You may use COS-7 treated and untreated nuclear extracts for your positive and negative controls for hypoxic upregulation.  
\* The mobility of HIF-1 alpha induced by desferrioxamine or cobalt chloride treatment differs from the mobility of the hypoxia-induced protein. The reason is not known.
- Novus Specific References:**
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  2. Bayele, H.K. et al. PHAGOCYTES: HIF-1 regulates heritable variation and allele expression phenotypes of the macrophage immune response gene SLC11A1 from a Z-DNA-forming microsatellite. Blood. 110:3039-3048, Oct 2007
  3. Kundu, C.N. et al. CANCER BIOLOGY: Adenomatous polyposis coli-mediated hypersensitivity of mouse embryonic fibroblast cell lines to methylmethane sulfonate treatment: implication of base excision repair pathways. Carcinogenesis. 28:2089-2095, Oct 2007
  4. Liao, D., et al. Hypoxia-Inducible Factor-1alpha Is a Key Regulator of Metastasis in a Transgenic Model of Cancer Initiation and Progression. Cancer Res. 2007 67: 563-572.
  5. McLaren, A., et al. Increased expression of HIF-1alpha, nNOS, and VEGF in the cerebral cortex of anemic rats. Am. J. Physiol. Regul. Comp. Physiol. 2007 292:R403-R414.
  6. Ream MA, Chandra R, Peavey M, et al. High oxygen prevents fetal lethality due to lack of catecholamines. Am J Physiol Regulatory Integrative Comp Physiol 2008;295(3):R942-953.
  7. Saini Y, Harkema JR, and LaPres JJ. HIF1alpha is essential for normal intrauterine differentiation of alveolar epithelium and surfactant production in the newborn lung of mice. J Biol Chem 2008:M805927200.
  8. Wirthner R, Wrann S, Balamurugan K, et al. Impaired DNA double-strand break repair contributes to chemoresistance in HIF-1{alpha}-deficient mouse embryonic fibroblasts. Carcinogenesis 2008;29(12):2306-2316.

**Gene Id:** 3091

**Reference Sequence:** Q61221

**Image(s)**