

#3716 Store at -20C

HIF-1 α Antibody



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB	H Mk	Endogenous	120	Rabbit	#Q16665	3091

Product Usage Information	Application Western Blotting	Dilution 1:1000
Storage	Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 μ g/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.	
Specificity / Sensitivity	HIF-1 α Antibody detects endogenous levels of total HIF-1 α protein. The antibody does not cross-react with other family members at physiological conditions, and does not detect significant levels of hydroxylated HIF-1 α .	
Source / Purification	Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ser664 of human HIF-1 α protein. Antibodies are purified by protein A and peptide affinity chromatography.	
Background	<p>Hypoxia-inducible factor 1 (HIF1) is a heterodimeric transcription factor that plays a critical role in the cellular response to hypoxia (1). The HIF1 complex consists of two subunits, HIF-1α and HIF-1β, which are basic helix-loop-helix proteins of the PAS (Per, ARNT, Sim) family (2). HIF1 regulates the transcription of a broad range of genes that facilitate responses to the hypoxic environment, including genes regulating angiogenesis, erythropoiesis, cell cycle, metabolism, and apoptosis. The widely expressed HIF-1α is typically degraded rapidly in normoxic cells by the ubiquitin/proteasomal pathway. Under normoxic conditions, HIF-1α is proline hydroxylated leading to a conformational change that promotes binding to the von Hippel-Lindau protein (VHL) E3 ligase complex; ubiquitination and proteasomal degradation follows (3,4). Both hypoxic conditions and chemical hydroxylase inhibitors (such as desferrioxamine and cobalt) inhibit HIF-1α degradation and lead to its stabilization. In addition, HIF-1α can be induced in an oxygen-independent manner by various cytokines through the PI3K-AKT-mTOR pathway (5-7).</p> <p>HIF-1β is also known as AhR nuclear translocator (ARNT) due to its ability to partner with the aryl hydrocarbon receptor (AhR) to form a heterodimeric transcription factor complex (8). Together with AhR, HIF-1β plays an important role in xenobiotics metabolism (8). In addition, a chromosomal translocation leading to a TEL-ARNT fusion protein is associated with acute myeloblastic leukemia (9). Studies also found that ARNT/HIF-1β expression levels decrease significantly in pancreatic islets from patients with type 2 diabetes, suggesting that HIF-1β plays an important role in pancreatic β-cell function (10).</p>	
Background References	<ol style="list-style-type: none">1. Sharp, F.R. and Bernaudin, M. (2004) <i>Nat Rev Neurosci</i> 5, 437-48.2. Wang, G.L. et al. (1995) <i>Proc Natl Acad Sci U S A</i> 92, 5510-4.3. Jaakkola, P. et al. (2001) <i>Science</i> 292, 468-72.4. Maxwell, P.H. et al. (1999) <i>Nature</i> 399, 271-5.5. Fukuda, R. et al. (2002) <i>J Biol Chem</i> 277, 38205-11.6. Jiang, B.H. et al. (2001) <i>Cell Growth Differ</i> 12, 363-9.7. Laughner, E. et al. (2001) <i>Mol Cell Biol</i> 21, 3995-4004.8. Walisser, J.A. et al. (2004) <i>Proc Natl Acad Sci U S A</i> 101, 16677-82.9. Salomon-Nguyen, F. et al. (2000) <i>Proc Natl Acad Sci U S A</i> 97, 6757-62.10. Gunton, J.E. et al. (2005) <i>Cell</i> 122, 337-49.	

Species Reactivity	Species reactivity is determined by testing in at least one approved application (e.g., western blot).
Western Blot Buffer	IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.
Applications Key	WB: Western Blotting

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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