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HIF1A

Reactivity: Human Mouse Rat

Tested applications:WB IHC ICC

Recommended Dilution:WB 1:500 - 1:2000 IHC 1:50 - 1:200 ICC 1:50 - 1:200

Calculated MW:93kDa

Observed MW: Refer to Figures

Immunogen:

Recombinant protein of Human Hif1a

Storage Buffer:

Store at -20. Avoid freeze / thaw cycles. Buffer: PBS with 0.02% sodium azide, 50% glycerol, pH7.3.

Concentration:

k

Synonym:

HIF1a ; ARNT interacting protein; HIF 1 alpha; HIF 1alpha; PASD8; MOP1

Catalog #:A1544

Antibody Type:

Monoclonal Antibody

Species: Mouse

Gene ID:3091

Isotype: IgG

Swiss Prot:Q16665

Purity: Affinity purification

For research use only.

Background:

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-1 and HIF-1, 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-1 is typically degraded rapidly in normoxic cells by the ubiquitin/proteasomal pathway. Under normoxic conditions, HIF-1 is proline hydroxylated leading to a conformational change that promotes binding to the von Hippel Lindau protein (VLH) E3 ligase complex; ubiquitination and proteasomal degradation follows (3,4). Both hypoxic conditions and chemical hydroxylase inhibitors (such as desferrioxamine and cobalt) inhibit HIF-1 degradation and lead to its stabilization. In addition, HIF-1 can be induced in an oxygen-independent manner by various cytokines through the PI3K-AKT-mTOR pathway (5-7).HIF-1 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-1 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-1 expression levels decrease significantly in pancreatic islets from patients with type 2 diabetes, suggesting that HIF-1 plays an important role in pancreatic -cell function (10).

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