

HIF1A Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP4879d

Product Information

Application	WB, FC, IHC-P, E
Primary Accession	<u>Q16665</u>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB23012
Calculated MW	92670

Additional Information

Gene ID	3091
Other Names	Hypoxia-inducible factor 1-alpha, HIF-1-alpha, HIF1-alpha, ARNT-interacting protein, Basic-helix-loop-helix-PAS protein MOP1, Class E basic helix-loop-helix protein 78, bHLHe78, Member of PAS protein 1, PAS domain-containing protein 8, HIF1A, BHLHE78, MOP1, PASD8
Target/Specificity	This HIF1A antibody is generated from rabbits immunized with HIF1A recombinant protein.
Dilution	WB~~1:1000 FC~~1:10~50 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	HIF1A Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	HIF1A {ECO:0000303 PubMed:7539918, ECO:0000312 HGNC:HGNC:4910}
Function	Functions as a master transcriptional regulator of the adaptive response to hypoxia (PubMed: <u>11292861</u> , PubMed: <u>11566883</u> , PubMed: <u>15465032</u> , PubMed: <u>16973622</u> , PubMed: <u>17610843</u> , PubMed: <u>18658046</u> ,

	PubMed: <u>20624928</u> , PubMed: <u>22009797</u> , PubMed: <u>30125331</u> ,
	PubMed: <u>9887100</u>). Under hypoxic conditions, activates the transcription of
	over 40 genes, including erythropoietin, glucose transporters, glycolytic
	enzymes, vascular endothelial growth factor, HILPDA, and other genes whose
	protein products increase oxygen delivery or facilitate metabolic adaptation
	to hypoxia (PubMed: <u>11292861</u> , PubMed: <u>11566883</u> , PubMed: <u>15465032</u> ,
	PubMed: <u>16973622</u> , PubMed: <u>17610843</u> , PubMed: <u>20624928</u> ,
	PubMed: <u>22009797</u> , PubMed: <u>30125331</u> , PubMed: <u>9887100</u>). Plays an essential
	role in embryonic vascularization, tumor angiogenesis and pathophysiology of
	ischemic disease (PubMed: <u>22009797</u>). Heterodimerizes with ARNT;
	heterodimer binds to core DNA sequence 5'-TACGTG-3' within the hypoxia
	response element (HRE) of target gene promoters (By similarity). Activation
	requires recruitment of transcriptional coactivators such as CREBBP and
	EP300 (PubMed: <u>16543236</u> , PubMed: <u>9887100</u>). Activity is enhanced by
	interaction with NCOA1 and/or NCOA2 (PubMed: <u>10594042</u>). Interaction with
	redox regulatory protein APEX1 seems to activate CTAD and potentiates
	activation by NCOA1 and CREBBP (PubMed: <u>10202154</u> , PubMed: <u>10594042</u>).
	Involved in the axonal distribution and transport of mitochondria in neurons
	during hypoxia (PubMed: <u>19528298</u>).
Cellular Location	Cytoplasm. Nucleus. Nucleus speckle {ECO:0000250 UniProtKB:Q61221}.
	Note=Colocalizes with HIF3A in the nucleus and speckles (By similarity).
	Cytoplasmic in normoxia, nuclear translocation in response to hypoxia
	(PubMed:9822602) {ECO:0000250 UniProtKB:Q61221,
	ECO:0000269 PubMed:9822602}
Tissue Location	Expressed in most tissues with highest levels in kidney and heart.
	Overexpressed in the majority of common human cancers and their
	metastases, due to the presence of intratumoral hypoxia and as a result of
	mutations in genes encoding oncoproteins and tumor suppressors. A higher
	level expression seen in pituitary tumors as compared to the pituitary gland.

Background

Hypoxia-inducible factor-1 (HIF1) is a transcription factor found in mammalian cells cultured under reduced oxygen tension that plays an essential role in cellular and systemic homeostatic responses to hypoxia. HIF1 is a heterodimer composed of an alpha subunit and a beta subunit. The beta subunit has been identified as the aryl hydrocarbon receptor nuclear translocator (ARNT). This gene encodes the alpha subunit of HIF-1. Overexpression of a natural antisense transcript (aHIF) of this gene has been shown to be associated with nonpapillary renal carcinomas.

References

Lee, M.N., et al. J. Natl. Cancer Inst. 102(6):426-442(2010) Mayer, A., et al. Adv. Exp. Med. Biol. 662, 399-405 (2010) Brouwer, E., et al. Clin. Exp. Rheumatol. 27(6):945-951(2009)

Images

All lanes: Anti-HIF1A Antibody at 1:1000 dilution Lane 1: NIH/3T3 whole cell lysate Lane 2: Raji whole cell lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 93 KDa Blocking/Dilution buffer: 5% NFDM/TBST.





Western blot analysis of HIF1A Antibody (Cat. #AP4879d) in K562 cell line lysates (35ug/lane). HIF1A (arrow) was detected using the purified Pab.



HIF1A Antibody (Cat. #AP4879d) flow cytometric analysis of K562 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.