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HIF1Alpha Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7759C

Product Information

Application	WB, IHC-P, IF, FC, E
Primary Accession	Q16665
Other Accession	O35800, Q61221, Q9XTA5
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine, Rabbit, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB14548
Calculated MW	92670
Antigen Region	519-547

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 HIF1Alpha antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 519-547 amino acids from the Central region of human HIF1Alpha.
Dilution	WB~~1:250 IHC-P~~1:100~500 IF~~1:10~50 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	HIF1Alpha Antibody (Center) 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:11292861, PubMed:11566883, PubMed:15465032, PubMed:16973622, PubMed:17610843, PubMed:18658046, PubMed:20624928, PubMed:22009797, PubMed:30125331, PubMed:9887100). 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:11292861, PubMed:11566883, PubMed:15465032, PubMed:16973622, PubMed:17610843, PubMed:20624928, PubMed:22009797, PubMed:30125331, PubMed:9887100). Plays an essential role in embryonic vascularization, tumor angiogenesis and pathophysiology of ischemic disease (PubMed:22009797). 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:16543236, PubMed:9887100). Activity is enhanced by interaction with NCOA1 and/or NCOA2 (PubMed:10594042). Interaction with redox regulatory protein APEX1 seems to activate CTAD and potentiates activation by NCOA1 and CREBBP (PubMed:10202154, PubMed:10594042). Involved in the axonal distribution and transport of mitochondria in neurons during hypoxia (PubMed:19528298).
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

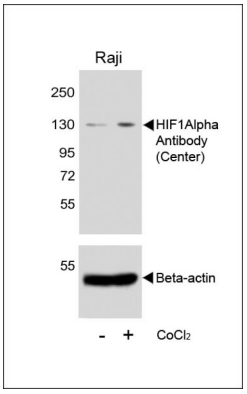
Hypoxia-inducible factor-1 (HIF1) is a transcription factor found in mammalian cells cultured under reduced oxygen tension that plays an essential role in cellular and systemic homeostatic responses to hypoxia. HIF1 is a heterodimer composed of an alpha subunit and a beta subunit. The beta subunit has 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.

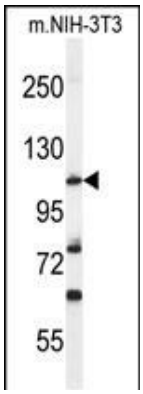
References

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)

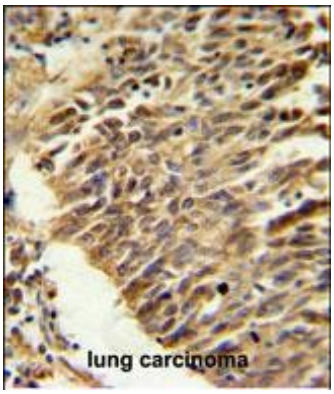
Images

Western blot analysis of lysates from Raji cell line, untreated or treated with CoCl2(0. 1mM), using HIF1Alpha Antibody (Center)(Cat. #AP7759c)(upper) or Beta-actin (lower).

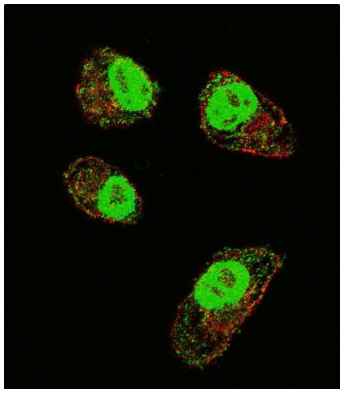




Western blot analysis of HIF1Alpha Antibody (Center) (Cat. #AP7759c) in mouse NIH-3T3 cell line lysates (35ug/lane). HIF1Alpha (arrow) was detected using the purified Pab.

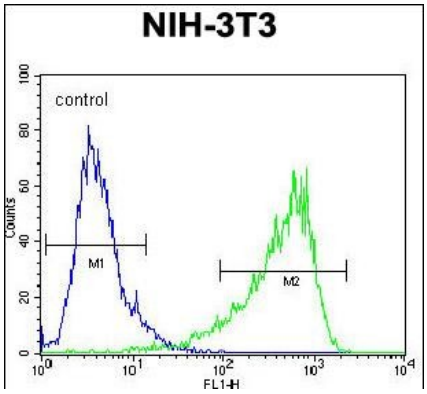


HIF1Alpha Antibody (Center)(Cat. #AP7759c) IHC analysis in formalin fixed and paraffin embedded lung carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining. This data demonstrates the use of the HIF1Alpha Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of HIF1Alpha Antibody (Center)(Cat#AP7759c) with MDA-MB231 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).Actin filaments have been labeled with Alexa Fluor 555 phalloidin (red).

HIF1Alpha Antibody (Center) (Cat. #AP7759c) flow cytometric analysis of NIH-3T3 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Citations

- Inhibition of deubiquitination by PR-619 induces apoptosis and autophagy via ubi-protein aggregation-activated ER stress in oesophageal squamous cell carcinoma
- AT-533, a novel Hsp90 inhibitor, inhibits breast cancer growth and HIF-1α/VEGF/VEGFR-2-mediated angiogenesis in vitro and in vivo
- Hypoxia-inducible factor-1alpha and MAPK co-regulate activation of hepatic stellate cells upon hypoxia stimulation.
- Targeting the overexpressed USP7 inhibits esophageal squamous cell carcinoma cell growth by inducing NOXA-Mediated Apoptosis.
- Mitochondrial Dysfunctions Regulated Radioresistance through Mitochondria-to-Nucleus Retrograde Signaling Pathway of NF-κB/PI3K/AKT2/mTOR.
- Protective effect of salidroside against bone loss via hypoxia-inducible factor-1α pathway-induced angiogenesis.

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