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ALKBH5 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP18410c

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	Q6P6C2
Other Accession	D3ZKD3, Q3TSG4, E1BH29, NP_060228.3
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Rat, Bovine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB38474
Calculated MW	44256
Antigen Region	302-330

Additional Information

Gene ID	54890
Other Names	RNA demethylase ALKBH5, 11411-, Alkylated DNA repair protein alkB homolog 5, Alpha-ketoglutarate-dependent dioxygenase alkB homolog 5, ALKBH5, ABH5, OFOXD1
Target/Specificity	This ALKBH5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 302-330 amino acids from the Central region of human ALKBH5.
Dilution	WB~~1:1000 IHC-P~~1:100 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. 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	ALKBH5 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ALKBH5 {ECO:0000303|PubMed:23177736, ECO:0000312|HGNC:HGNC:25996}

Function	Dioxygenase that specifically demethylates N(6)- methyladenosine (m6A) RNA, the most prevalent internal modification of messenger RNA (mRNA) in higher eukaryotes (PubMed:23177736, PubMed:24489119, PubMed:24616105, PubMed:24778178, PubMed:34048572, PubMed:36944332, PubMed:37257451, PubMed:37369679). Demethylates RNA by oxidative demethylation, which requires molecular oxygen, alpha-ketoglutarate and iron (PubMed:21264265, PubMed:23177736, PubMed:24489119, PubMed:24616105, PubMed:24778178). Demethylation of m6A mRNA affects mRNA processing, translation and export (PubMed:23177736, PubMed:34048572, PubMed:36944332, PubMed:37257451). Can also demethylate N(6)-methyladenosine in single-stranded DNA (in vitro) (PubMed:24616105). Required for the late meiotic and haploid phases of spermatogenesis by mediating m6A demethylation in spermatocytes and round spermatids: m6A demethylation of target transcripts is required for correct splicing and the production of longer 3'-UTR mRNAs in male germ cells (By similarity). Involved in paraspeckle assembly, a nuclear membraneless organelle, by undergoing liquid-liquid phase separation (PubMed:37369679, PubMed:37474102). Paraspeckle assembly is coupled with m6A demethylation of RNAs, such as NEAT1 non-coding RNA (PubMed:37474102). Also acts as a negative regulator of T-cell development: inhibits gamma-delta T-cell proliferation via demethylation of JAG1 and NOTCH2 transcripts (By similarity). Inhibits regulatory T-cell (Treg) recruitment by mediating demethylation and destabilization of CCL28 mRNAs (By similarity).
Cellular Location	Nucleus speckle Note=Promotes formation and localizes to paraspeckles, a nuclear membraneless organelle.
Tissue Location	Widely expressed, with highest expression in lung, followed by testis, pancreas, spleen and ovary

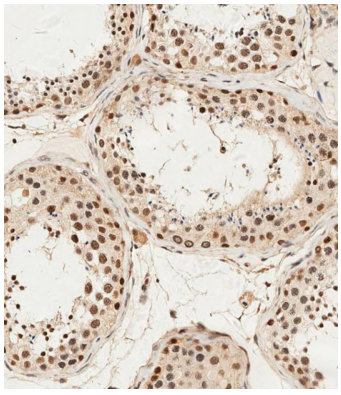
Background

Probable dioxygenase that requires molecular oxygen, alpha-ketoglutarate and iron (By similarity).

References

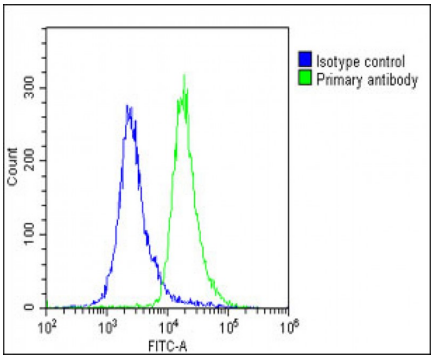
Olsen, J.V., et al. Cell 127(3):635-648(2006)
Bi, W., et al. Genome Res. 12(5):713-728(2002)

Images

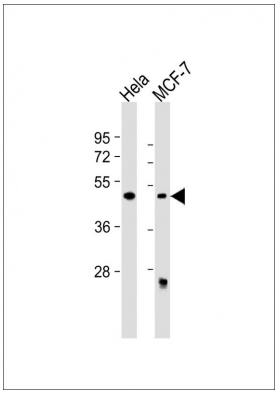


AP18410c staining ALKBH5 in human testis tissue sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Samples were incubated with primary antibody (1/100) for 1 hours at room temperature. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.

Overlay histogram showing U-2 OS cells stained with



AP18410c(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AP18410c, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Rabbit IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(1583138) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was rabbit IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



All lanes : Anti-ALKBH5 Antibody (Center) at 1:500 dilution Lane 1: Hela whole cell lysate Lane 2: MCF-7 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 44 kDa Blocking/Dilution buffer: 5% NFDM/TBST.