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ADH5 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8562C

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P11766
Other Accession	O19053
Reactivity	Human
Predicted	Rabbit, Mouse, Rat, Bovine, Canine, Chicken
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB22372
Calculated MW	39724
Antigen Region	212-239

Additional Information

Gene ID	128
Other Names	Alcohol dehydrogenase class-3, Alcohol dehydrogenase 5, Alcohol dehydrogenase class chi chain, Alcohol dehydrogenase class-III, Glutathione-dependent formaldehyde dehydrogenase, FALDH, FDH, GSH-FDH, 111-, S-(hydroxymethyl)glutathione dehydrogenase, ADH5 (HGNC:253), ADHX, FDH
Target/Specificity	This ADH5 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 212-239 amino acids from the Central region of human ADH5.
Dilution	WB~~1:1000 IHC-P~~1:100~500 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 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	ADH5 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	ADH5 (HGNC:253)
Synonyms	ADHX, FDH
Function	Catalyzes the oxidation of long-chain primary alcohols and the oxidation of S-(hydroxymethyl) glutathione (PubMed:8460164). Also oxidizes long chain omega-hydroxy fatty acids, such as 20-HETE, producing both the intermediate aldehyde, 20-oxoarachidonate and the end product, a dicarboxylic acid, (5Z,8Z,11Z,14Z)-eicosatetraenedioate (PubMed:16081420). Class-III ADH is remarkably ineffective in oxidizing ethanol (PubMed:8460164). Required for clearance of cellular formaldehyde, a cytotoxic and carcinogenic metabolite that induces DNA damage (PubMed:33355142). Also acts as a S-nitroso-glutathione reductase by catalyzing the NADH-dependent reduction of S- nitrosoglutathione, thereby regulating protein S-nitrosylation (By similarity).
Cellular Location	Cytoplasm.

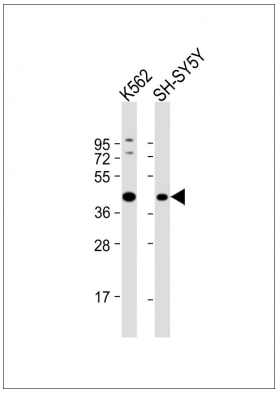
Background

ADH5 is a member of the alcohol dehydrogenase family. Members of this family metabolize a wide variety of substrates, including ethanol, retinol, other aliphatic alcohols, hydroxysteroids, and lipid peroxidation products. This protein forms a homodimer. It has virtually no activity for ethanol oxidation, but exhibits high activity for oxidation of long-chain primary alcohols and for oxidation of S-hydroxymethyl-glutathione, a spontaneous adduct between formaldehyde and glutathione. This enzyme is an important component of cellular metabolism for the elimination of formaldehyde, a potent irritant and sensitizing agent that causes lacrymation, rhinitis, pharyngitis, and contact dermatitis.

References

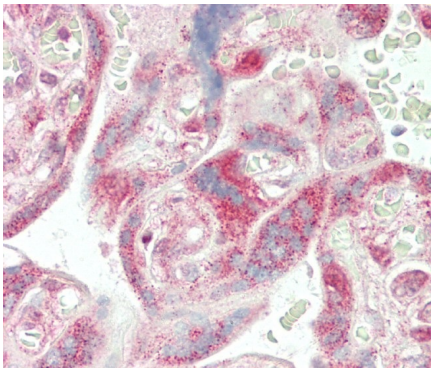
Martins-de-Souza,D., et.al., Eur Arch Psychiatry Clin Neurosci 259 (3), 151-163 (2009)
Iborra,F.J., et.al., J. Histochem. Cytochem. 40 (12), 1865-1878 (1992)

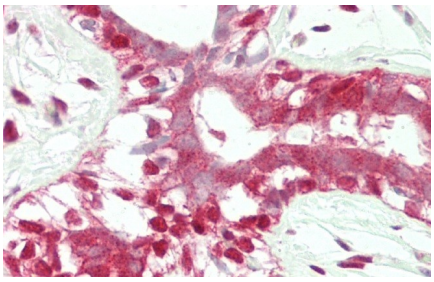
Images



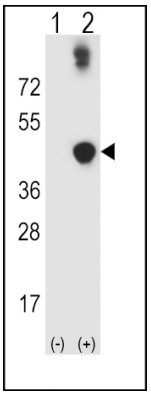
All lanes : Anti-ADH5 Antibody (Center) at 1:4000 dilution Lane 1: K562 whole cell lysate Lane 2: SH-SY5Y whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 40 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

Formalin-fixed and paraffin-embedded H.placenta tissue reacted with ADH5 Antibody (Center) (Cat#AP8562c).

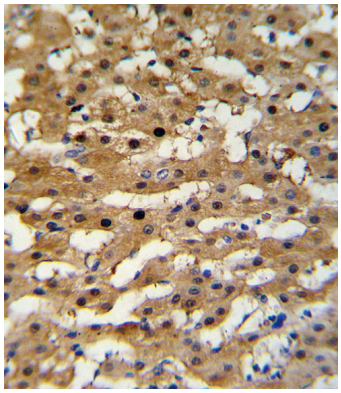




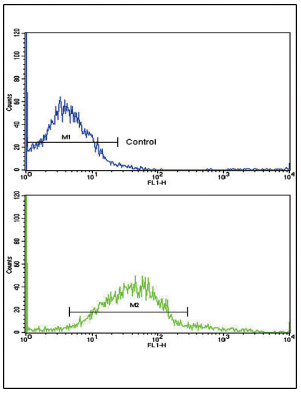
Formalin-fixed and paraffin-embedded H.breast tissue reacted with ADH5 Antibody (Center) (Cat#AP8562c).



Western blot analysis of ADH5 (arrow) using rabbit polyclonal ADH5 Antibody (Center) (Cat. #AP8562c). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected (Lane 2) with the ADH5 gene.



Formalin-fixed and paraffin-embedded human hepatocarcinoma with ADH5 Antibody (Center), which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.



Flow cytometric analysis of K562 cells using ADH5 Antibody (Center)(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'.