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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
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.

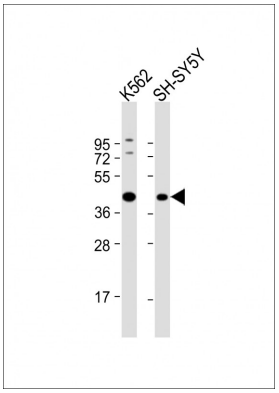
Background

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

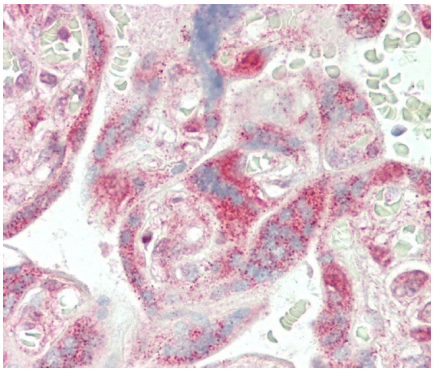
Martins-de-Souza,D., et.al., Eur Arch Psychiatry Clin Neurosci 259 (3), 151-163 (2009)
Iborra,F.J., et.al., J. Histochem. Cytochem. 40 (12), 1865-1878 (1992)

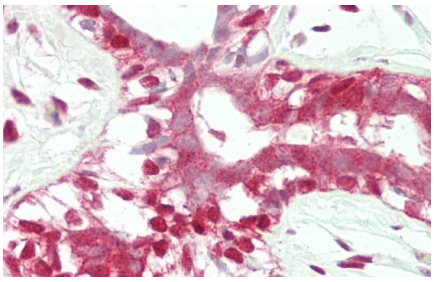
Images



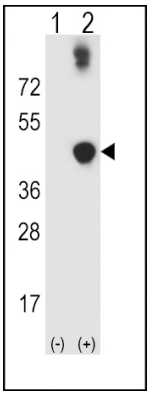
All lanes : Anti-ADH5 Antibody (Center) at 1:4000 dilution Lane 1: K562 whole cell lysate Lane 2: SH-SY5Y whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 40 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

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

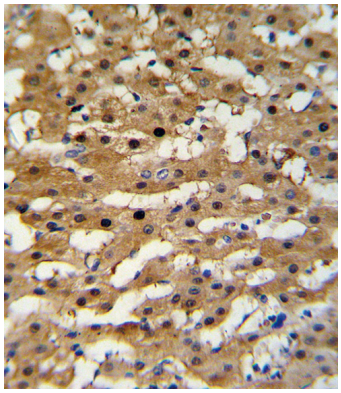




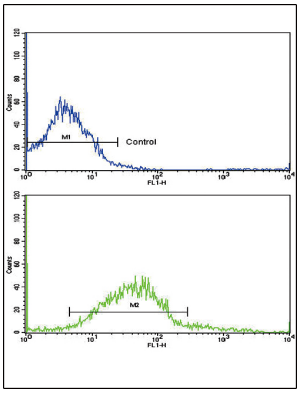
Formalin-fixed and paraffin-embedded H.breast tissue reacted with ADH5 Antibody (Center) (Cat#AP8562c).



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.