10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

CYP7B1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8786c

Product Information

Application	WB, IHC-P, FC, IF, E
Primary Accession	O75881
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17087
Calculated MW	58256
Antigen Region	252-281

Additional Information

Gene ID	9420
Other Names	25-hydroxycholesterol 7-alpha-hydroxylase, Cytochrome P450 7B1, Oxysterol 7-alpha-hydroxylase, CYP7B1
Target/Specificity	This CYP7B1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 252-281 amino acids from the Central region of human CYP7B1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 IF~~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	CYP7B1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CYP7B1 {ECO:0000303|PubMed:24491228, ECO:0000312|HGNC:HGNC:2652}
Function	A cytochrome P450 monooxygenase involved in the metabolism of endogenous oxysterols and steroid hormones, including neurosteroids

(PubMed:10588945, PubMed:24491228). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via cytochrome P450 reductase (CPR; NADPH-ferrihemoprotein reductase) (PubMed:10588945, PubMed:24491228). Catalyzes the hydroxylation of carbon hydrogen bonds of steroids with a preference for 7-alpha position (PubMed:10588945, PubMed:24491228). Usually metabolizes steroids carrying a hydroxy group at position 3, functioning as a 3- hydroxy steroid 7-alpha hydroxylase (PubMed:24491228). Hydroxylates oxysterols, including 25-hydroxycholesterol and (25R)-cholest-5-ene- 3beta,26-diol toward 7-alpha hydroxy derivatives, which may be transported to the liver and converted to bile acids (PubMed:10588945, PubMed:9802883). Via its product 7-alpha,25-dihydroxycholesterol, a ligand for the chemotactic G protein-coupled receptor GPR183/EBI2, regulates B cell migration in germinal centers of lymphoid organs, thus guiding efficient maturation of plasma B cells and overall antigen- specific humoral immune response (By similarity). 7-alpha hydroxylates neurosteroids, including 3beta-hydroxyandrost-5-en-17-one (dehydroepiandrosterone) and pregnenolone, both involved in hippocampus-associated memory and learning (PubMed:24491228). Metabolizes androstanoids toward 6- or 7-alpha hydroxy derivatives (PubMed:24491228).

Cellular Location

Endoplasmic reticulum membrane; Multi-pass membrane protein. Microsome membrane; Multi- pass membrane protein

Tissue Location

Widely expressed. Expressed in brain, testis, ovary, prostate, liver, colon, kidney, small intestine, thymus and spleen.

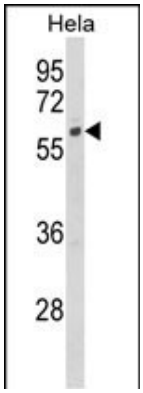
Background

CYP7B1 is a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. This endoplasmic reticulum membrane protein catalyzes the first reaction in the cholesterol catabolic pathway of extrahepatic tissues, which converts cholesterol to bile acids. This enzyme likely plays a minor role in total bile acid synthesis, but may also be involved in the development of atherosclerosis, neurosteroid metabolism and sex hormone synthesis.

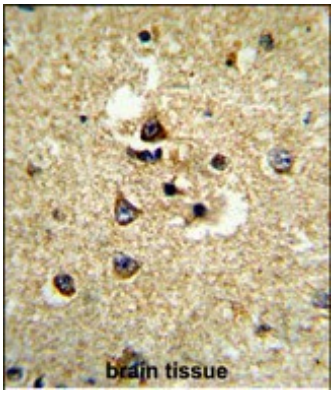
References

Schwarz,M., et.al., Curr. Opin. Lipidol. 9 (2), 113-118 (1998)

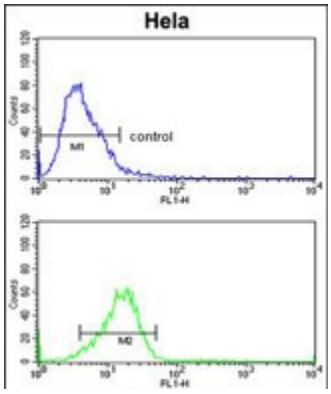
Images



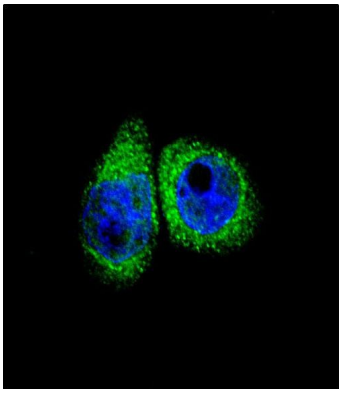
Western blot analysis of CYP7B1 Antibody (Center) (Cat. #AP8786c) in Hela cell line lysates (35ug/lane). CYP7B1 (arrow) was detected using the purified Pab.



Formalin-fixed and paraffin-embedded human brain tissue reacted with CALR 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.



CYP7B1 Antibody (Center) (Cat. #AP8786c) flow cytometric analysis of Hela cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.



Confocal immunofluorescent analysis of CYP7B1 Antibody (Center) (Cat. #AP8786c) with Hela cell followed by Alexa Fluor® 488-conjugated goat anti-rabbit IgG (green). DAPI was used to stain the cell nuclear (blue).