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CYP51A1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP8874C

Product Information

Application	IHC-P, FC, WB, E
Primary Accession	Q16850
Other Accession	Q4R8S6
Reactivity	Human
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17075
Calculated MW	57278
Antigen Region	250-279

Additional Information

Gene ID	1595
Other Names	Lanosterol 14-alpha demethylase, LDM, CYPLI, Cytochrome P450 51A1, Cytochrome P450-14DM, Cytochrome P45014DM, Cytochrome P450LI, Sterol 14-alpha demethylase, CYP51A1, CYP51
Target/Specificity	This CYP51A1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 250-279 amino acids from the Central region of human CYP51A1.
Dilution	IHC-P~~1:100~500 FC~~1:10~50 WB~~1:1000 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	CYP51A1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CYP51A1 (HGNC:2649)

Synonyms	CYP51
Function	Sterol 14alpha-demethylase that plays a critical role in the cholesterol biosynthesis pathway, being cholesterol the major sterol component in mammalian membranes as well as a precursor for bile acid and steroid hormone synthesis (PubMed:20149798, PubMed:8619637, PubMed:9559662). Cytochrome P450 monooxygenase that catalyzes the three-step oxidative removal of the 14alpha-methyl group (C-32) of sterols such as lanosterol (lanosta-8,24-dien-3beta-ol) and 24,25- dihydrolanosterol (DHL) in the form of formate, and converts the sterols to 4,4-dimethyl-5alpha-cholesta-8,14,24-trien-3beta-ol and 4,4-dimethyl-8,14-cholestadien-3beta-ol, respectively, which are intermediates of cholesterol biosynthesis (PubMed:20149798, PubMed:8619637, PubMed:9559662). Can also demethylate substrates not intrinsic to mammals, such as eburicol (24-methylene-24,25- dihydrolanosterol), but at a lower rate than DHL (PubMed:9559662).
Cellular Location	Endoplasmic reticulum membrane {ECO:0000250|UniProtKB:Q64654}; Single-pass membrane protein. Microsome membrane {ECO:0000250|UniProtKB:Q64654}; Single-pass membrane protein
Tissue Location	Ubiquitously expressed with highest levels in testis, ovary, adrenal, prostate, liver, kidney and lung

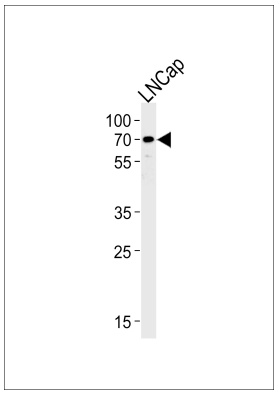
Background

CYP51A1 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 protein participates in the synthesis of cholesterol by catalyzing the removal of the 14alpha-methyl group from lanosterol.

References

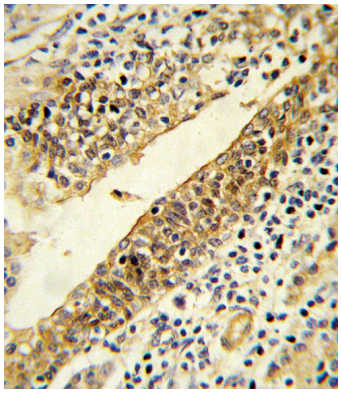
Matsuura,K., et.al., J. Biol. Chem. 280 (10), 9088-9096 (2005)
Wang,Y.,et.al., J. Biol. Chem. 283 (39), 26332-26339 (2008)

Images

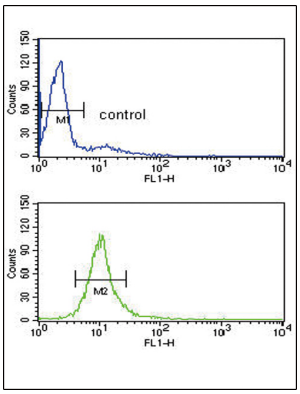


Western blot analysis of lysate from LNCap cell line, using CYP51A1 Antibody (Center)(Cat. #AP8874c). AP8874c was diluted at 1:1000 at each lane. A goat anti-rabbit IgG H&L(HRP) at 1:5000 dilution was used as the secondary antibody. Lysate at 35ug.

Formalin-fixed and paraffin-embedded human prostate carcinoma reacted with PAX3 Antibody (N-term), 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.



CYP51A1 Antibody (Center) (Cat. #AP8874c) flow cytometry analysis of HL-60 cells (bottom histogram) compared to a negative control cell (top histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.