

Cytochrome P450 3A4 Antibody
Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP51149

Specification

Cytochrome P450 3A4 Antibody - Product Information

Application	WB, E
Primary Accession	P08684
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	57 KDa

Cytochrome P450 3A4 Antibody - Additional Information

Gene ID 1576

Other Names

Cytochrome P450 3A4, 11413-, 8-cineole 2-exo-monooxygenase, Albendazole monooxygenase, Albendazole sulfoxidase, CYP11A3, CYP11A4, Cytochrome P450 3A3, Cytochrome P450 HLp, Cytochrome P450 NF-25, Cytochrome P450-PCN1, Nifedipine oxidase, Quinine 3-monooxygenase, Taurochenodeoxycholate 6-alpha-hydroxylase, CYP3A4, CYP3A3

Format

0.01M PBS, pH 7.2, 0.09% (W/V) Sodium azide, Glycerol 50%

Storage

Store at -20 °C. Stable for 12 months from date of receipt

Cytochrome P450 3A4 Antibody - Protein Information

Name CYP3A4 {ECO:0000303|PubMed:11470997, ECO:0000312|HGNC:HGNC:2637}

Function

A cytochrome P450 monooxygenase involved in the metabolism of sterols, steroid hormones, retinoids and fatty acids (PubMed: [10681376](http://www.uniprot.org/citations/10681376) target="_blank">10681376, PubMed: [11093772](http://www.uniprot.org/citations/11093772) target="_blank">11093772, PubMed: [11555828](http://www.uniprot.org/citations/11555828) target="_blank">11555828, PubMed: [12865317](http://www.uniprot.org/citations/12865317) target="_blank">12865317, PubMed: [14559847](http://www.uniprot.org/citations/14559847) target="_blank">14559847, PubMed: [15373842](http://www.uniprot.org/citations/15373842) target="_blank">15373842, PubMed: [15764715](http://www.uniprot.org/citations/15764715) target="_blank">15764715, PubMed: [19965576](http://www.uniprot.org/citations/19965576) target="_blank">19965576, PubMed: [20702771](http://www.uniprot.org/citations/20702771) target="_blank">20702771, PubMed: [21490593](http://www.uniprot.org/citations/21490593) target="_blank">21490593, PubMed: [21576599](http://www.uniprot.org/citations/21576599) target="_blank">21576599). 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 (NADPH--hemoprotein reductase). Catalyzes the hydroxylation of carbon-hydrogen bonds (PubMed:12865317, PubMed:14559847, PubMed:15373842, PubMed:15764715, PubMed:21490593, PubMed:21576599, PubMed:2732228). Exhibits high catalytic activity for the formation of hydroxysterogens from estrone (E1) and 17beta- estradiol (E2), namely 2-hydroxy E1 and E2, as well as D-ring hydroxylated E1 and E2 at the C-16 position (PubMed:11555828, PubMed:12865317, PubMed:14559847). Plays a role in the metabolism of androgens, particularly in oxidative deactivation of testosterone (PubMed:15373842, PubMed:15764715, PubMed:22773874, PubMed:2732228). Metabolizes testosterone to less biologically active 2beta- and 6beta- hydroxytestosterones (PubMed:15373842, PubMed:15764715, PubMed:2732228). Contributes to the formation of hydroxycholesterols (oxysterols), particularly A-ring hydroxylated cholesterol at the C- 4beta position, and side chain hydroxylated cholesterol at the C-25 position, likely contributing to cholesterol degradation and bile acid biosynthesis (PubMed:21576599). Catalyzes bisallylic hydroxylation of polyunsaturated fatty acids (PUFA) (PubMed:9435160). Catalyzes the epoxidation of double bonds of PUFA with a preference for the last double bond (PubMed:19965576). Metabolizes endocannabinoid arachidonylethanolamide (anandamide) to 8,9-, 11,12-, and 14,15- epoxyeicosatrienoic acid ethanolamides (EpETE-EAs), potentially modulating endocannabinoid system signaling (PubMed:20702771). Plays a role in the metabolism of retinoids. Displays high catalytic activity for oxidation of all-trans-retinol to all-trans-retinal, a rate- limiting step for the biosynthesis of all-trans-retinoic acid (atRA) (PubMed:10681376). Further metabolizes atRA toward 4-hydroxyretinoate and may play a role in hepatic atRA clearance (PubMed:11093772). Responsible for oxidative metabolism of xenobiotics. Acts as a 2-exo- monooxygenase for plant lipid 1,8-cineole (eucalyptol) (PubMed:11159812). Metabolizes the majority of the administered drugs. Catalyzes sulfoxidation of the anthelmintics albendazole and fenbendazole (PubMed:10759686). Hydroxylates antimalarial drug quinine (PubMed:8968357). Acts as a 1,4-cineole 2-exo-monooxygenase (PubMed:11695850). Also involved in vitamin D catabolism and calcium homeostasis. Catalyzes the inactivation of the active hormone calcitriol (1-alpha,25-dihydroxyvitamin D(3)) (PubMed:29461981).

Cellular Location

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

Tissue Location

Expressed in prostate and liver. According to some authors, it is not expressed in brain (PubMed:19094056). According to others, weak levels of expression are measured in some brain locations (PubMed:18545703, PubMed:19359404). Also expressed in epithelium of the small intestine and large intestine, bile duct, nasal mucosa, kidney, adrenal cortex, epithelium of the gastric mucosa with intestinal metaplasia, gallbladder, intercalated ducts of the pancreas, chief cells of the parathyroid and the corpus luteum of the ovary (at protein level).

Cytochrome P450 3A4 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Cytochrome P450 3A4 Antibody - Images

Cytochrome P450 3A4 Antibody - Background

Cytochromes P450 are a group of heme-thiolate monooxygenases. In liver microsomes, this enzyme is involved in an NADPH-dependent electron transport pathway. It performs a variety of oxidation reactions (e.g. caffeine 8-oxidation, omeprazole sulphoxidation, midazolam 1'-hydroxylation and midazolam 4- hydroxylation) of structurally unrelated compounds, including steroids, fatty acids, and xenobiotics. Acts as a 1,8-cineole 2- exo-monooxygenase. The enzyme also hydroxylates etoposide.

Cytochrome P450 3A4 Antibody - References

Molowa D.T., et al. Proc. Natl. Acad. Sci. U.S.A. 83:5311-5315(1986).
Gonzalez F.J., et al. DNA 7:79-86(1988).
Beaune P.H., et al. Proc. Natl. Acad. Sci. U.S.A. 83:8064-8068(1986).
Spurr N.K., et al. Hum. Genet. 81:171-174(1989).
Bork R.W., et al. J. Biol. Chem. 264:910-919(1989).