

**CYP3A4 Polyclonal Antibody**  
Catalog # AP69411**Specification****CYP3A4 Polyclonal Antibody - Product Information**

Application	WB
Primary Accession	<a href="#">P08684</a>
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal

**CYP3A4 Polyclonal Antibody - Additional Information**

Gene ID 1576

**Other Names**

CYP3A4; CYP3A3; Cytochrome P450 3A4; 1; 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

**Dilution**

WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/5000. Not yet tested in other applications.

**Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

**Storage Conditions**

-20°C

**CYP3A4 Polyclonal 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</a>, PubMed: [11093772](http://www.uniprot.org/citations/11093772) target="\_blank">11093772</a>, PubMed: [11555828](http://www.uniprot.org/citations/11555828) target="\_blank">11555828</a>, PubMed: [12865317](http://www.uniprot.org/citations/12865317) target="\_blank">12865317</a>, PubMed: [14559847](http://www.uniprot.org/citations/14559847) target="\_blank">14559847</a>, PubMed: [15373842](http://www.uniprot.org/citations/15373842) target="\_blank">15373842</a>, PubMed: [15764715](http://www.uniprot.org/citations/15764715) target="\_blank">15764715</a>, PubMed: [19965576](http://www.uniprot.org/citations/19965576) target="\_blank">19965576</a>, PubMed: [20702771](http://www.uniprot.org/citations/20702771) target="\_blank">20702771</a>, PubMed: [21490593](http://www.uniprot.org/citations/21490593) target="\_blank">21490593</a>, PubMed: [21576599](http://www.uniprot.org/citations/21576599) target="\_blank">21576599</a>). 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:<a href="http://www.uniprot.org/citations/12865317" target="\_blank">12865317</a>, PubMed:<a href="http://www.uniprot.org/citations/14559847" target="\_blank">14559847</a>, PubMed:<a href="http://www.uniprot.org/citations/15373842" target="\_blank">15373842</a>, PubMed:<a href="http://www.uniprot.org/citations/15764715" target="\_blank">15764715</a>, PubMed:<a href="http://www.uniprot.org/citations/21490593" target="\_blank">21490593</a>, PubMed:<a href="http://www.uniprot.org/citations/21576599" target="\_blank">21576599</a>, PubMed:<a href="http://www.uniprot.org/citations/2732228" target="\_blank">2732228</a>). 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:<a href="http://www.uniprot.org/citations/11555828" target="\_blank">11555828</a>, PubMed:<a href="http://www.uniprot.org/citations/12865317" target="\_blank">12865317</a>, PubMed:<a href="http://www.uniprot.org/citations/14559847" target="\_blank">14559847</a>). Plays a role in the metabolism of androgens, particularly in oxidative deactivation of testosterone (PubMed:<a href="http://www.uniprot.org/citations/15373842" target="\_blank">15373842</a>, PubMed:<a href="http://www.uniprot.org/citations/15764715" target="\_blank">15764715</a>, PubMed:<a href="http://www.uniprot.org/citations/22773874" target="\_blank">22773874</a>, PubMed:<a href="http://www.uniprot.org/citations/2732228" target="\_blank">2732228</a>). Metabolizes testosterone to less biologically active 2beta- and 6beta- hydroxytestosterones (PubMed:<a href="http://www.uniprot.org/citations/15373842" target="\_blank">15373842</a>, PubMed:<a href="http://www.uniprot.org/citations/15764715" target="\_blank">15764715</a>, PubMed:<a href="http://www.uniprot.org/citations/2732228" target="\_blank">2732228</a>). 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:<a href="http://www.uniprot.org/citations/21576599" target="\_blank">21576599</a>). Catalyzes bisallylic hydroxylation of polyunsaturated fatty acids (PUFA) (PubMed:<a href="http://www.uniprot.org/citations/9435160" target="\_blank">9435160</a>). Catalyzes the epoxidation of double bonds of PUFA with a preference for the last double bond (PubMed:<a href="http://www.uniprot.org/citations/19965576" target="\_blank">19965576</a>). Metabolizes endocannabinoid arachidonoyl ethanolamide (anandamide) to 8,9-, 11,12-, and 14,15- epoxyeicosatrienoic acid ethanolamides (EpETE-EAs), potentially modulating endocannabinoid system signaling (PubMed:<a href="http://www.uniprot.org/citations/20702771" target="\_blank">20702771</a>). 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:<a href="http://www.uniprot.org/citations/10681376" target="\_blank">10681376</a>). Further metabolizes atRA toward 4-hydroxyretinoate and may play a role in hepatic atRA clearance (PubMed:<a href="http://www.uniprot.org/citations/11093772" target="\_blank">11093772</a>). Responsible for oxidative metabolism of xenobiotics. Acts as a 2-exo- monooxygenase for plant lipid 1,8-cineole (eucalyptol) (PubMed:<a href="http://www.uniprot.org/citations/11159812" target="\_blank">11159812</a>). Metabolizes the majority of the administered drugs. Catalyzes sulfoxidation of the anthelmintics albendazole and fenbendazole (PubMed:<a href="http://www.uniprot.org/citations/10759686" target="\_blank">10759686</a>). Hydroxylates antimalarial drug quinine (PubMed:<a href="http://www.uniprot.org/citations/8968357" target="\_blank">8968357</a>). Acts as a 1,4-cineole 2-exo-monooxygenase (PubMed:<a href="http://www.uniprot.org/citations/11695850" target="\_blank">11695850</a>). Also involved in vitamin D catabolism and calcium homeostasis. Catalyzes the inactivation of the active hormone calcitriol (1-alpha,25-dihydroxyvitamin D(3)) (PubMed:<a href="http://www.uniprot.org/citations/29461981" target="\_blank">29461981</a>).

### Cellular Location

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

### Tissue Location

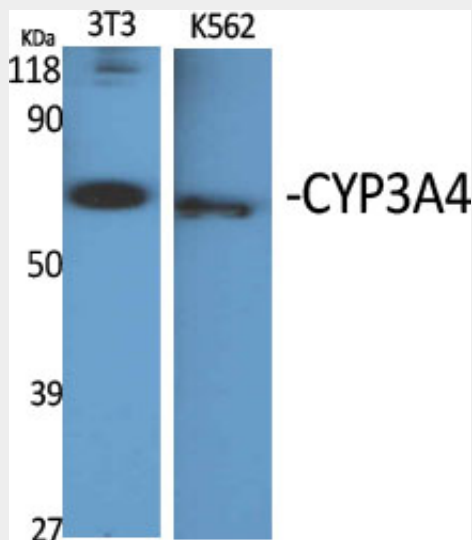
Expressed in prostate and liver. According to some authors, it is not expressed in brain (PubMed:19094056). According to others, weak levels of expression are measured in some brain locations (PubMed:18545703, PubMed:19359404). Also expressed in epithelium of the small intestine and large intestine, 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).

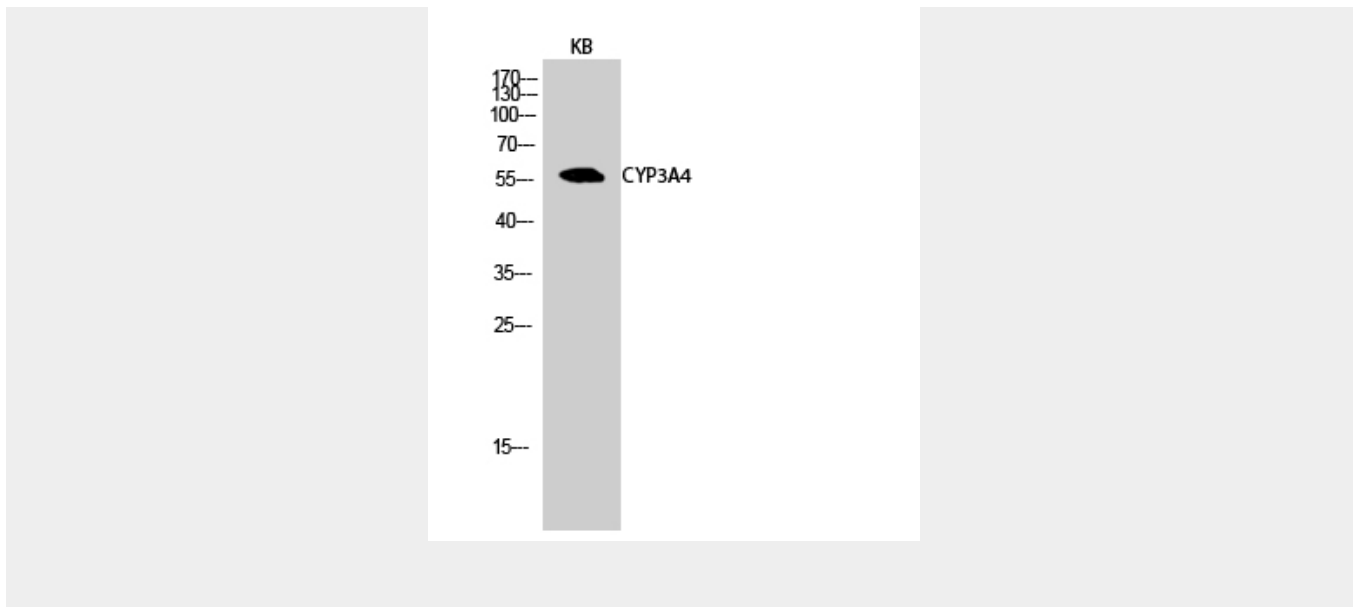
### CYP3A4 Polyclonal Antibody - Protocols

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](#)

### CYP3A4 Polyclonal Antibody - Images





### CYP3A4 Polyclonal 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 sulfoxidation, 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 (PubMed:11159812). Catalyzes 4-beta-hydroxylation of cholesterol. May catalyze 25-hydroxylation of cholesterol in vitro (PubMed:21576599). Catalyzes sulfoxidation of the anthelmintics albendazole and fenbendazole (PubMed:10759686).