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

Anti-CYP3A4 Picoband Antibody

Catalog # ABO11673

Product Information

Application	WB, IHC-P
Primary Accession	P08684
Host	Rabbit
Reactivity	Human
Clonality	Polyclonal
Format	Lyophilized
Description	Rabbit IgG polyclonal antibody for Cytochrome P450 3A4(CYP3A4) detection. Tested with WB, IHC-P in Human.
Reconstitution	Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Additional Information

Gene ID	1576
Other Names	Cytochrome P450 3A4, 1.14.13.-, 1, 8-cineole 2-exo-monooxygenase, 1.14.13.157, Albendazole monooxygenase, 1.14.13.32, Albendazole sulfoxidase, CYPIIIA3, CYPIIIA4, Cholesterol 25-hydroxylase, 1.14.14.1, Cytochrome P450 3A3, Cytochrome P450 HLp, Cytochrome P450 NF-25, Cytochrome P450-PCN1, Nifedipine oxidase, Quinine 3-monooxygenase, 1.14.13.67, Taurochenodeoxycholate 6-alpha-hydroxylase, 1.14.13.97, CYP3A4, CYP3A3
Calculated MW	57343
Application Details	Immunohistochemistry(Paraffin-embedded Section), 0.5-1 □g/ml, Human, By Heat Western blot, 0.1-0.5 □g/ml, Human
Subcellular Localization	Endoplasmic reticulum membrane; Single-pass membrane protein. Microsome membrane ; Single-pass membrane protein.
Tissue Specificity	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:19359404 and PubMed:18545703). 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). .
Source	Eukaryota

Protein Name	Cytochrome P450 3A4
Contents	Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na2HPO4, 0.05mg NaN3.
Immunogen	A synthetic peptide corresponding to a sequence in the middle region of human CYP3A4 (237-277aa NICVFPREVTNFLRKSVKRMKESRLEDTQKHRVDFLQLMID).
Purification	Immunogen affinity purified.
Cross Reactivity	No cross reactivity with other proteins
Storage	At -20˚C for one year. After r˚Constitution, at 4˚C for one month. It˚Can also be aliquotted and stored frozen at -20˚C for a longer time.Avoid repeated freezing and thawing.

Protein Information

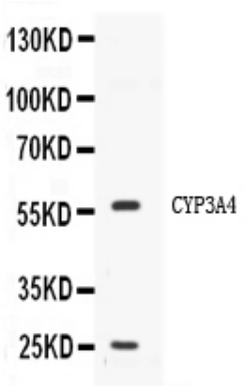
Name	CYP3A4 {ECO:0000303|PubMed:11470997, ECO:0000312|HGNC:HGNC:2637}
Function	A cytochrome P450 monooxygenase involved in the metabolism of sterols, steroid hormones, retinoids and fatty acids (PubMed:10681376, PubMed:11093772, PubMed:11555828, PubMed:12865317, PubMed:14559847, PubMed:15373842, PubMed:15764715, PubMed:19965576, PubMed:20702771, PubMed:21490593, PubMed: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 hydroxyestrogens 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 arachidonoylethanolamide (anandamide) to 8,9-, 11,12-, and 14,15-epoxyeicosatrienoic acid ethanolamides (EpETrE-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).

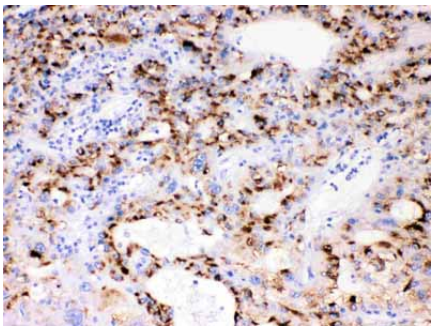
Background

Cytochrome P450 3A4 (abbreviated CYP3A4), is an important enzyme in the body, mainly found in the liver and in the intestine. This gene encodes a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. This protein localizes to the endoplasmic reticulum and its expression is induced by glucocorticoids and some pharmacological agents. This enzyme is involved in the metabolism of approximately half the drugs in use today, including acetaminophen, codeine, cyclosporin A, diazepam and erythromycin. The enzyme also metabolizes some steroids and carcinogens. This gene is part of a cluster of cytochrome P450 genes on chromosome 7q21.1. Previously another CYP3A gene, CYP3A3, was thought to exist; however, it is now thought that this sequence represents a transcript variant of CYP3A4. Alternatively spliced transcript variants encoding different isoforms have been identified.

Images



Western blot analysis of CYP3A4 expression in HELA whole cell lysates (lane 1). CYP3A4 at 57KD was detected using rabbit anti- CYP3A4 Antigen Affinity purified polyclonal antibody (Catalog # ABO11673) at 0.5 ??g/mL. The blot was developed using chemiluminescence (ECL) method .



CYP3A4 was detected in paraffin-embedded sections of human liver cancer tissues using rabbit anti- CYP3A4 Antigen Affinity purified polyclonal antibody (Catalog # ABO11673) at 1 □¼g/mL. The immunohistochemical section was developed using SABC method .

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