

**Product Name: Cytochrome P450 3A4 (12D7) Rabbit  
Monoclonal Antibody  
Catalog #: AMRe09714**



## Summary

<b>Production Name</b>	Cytochrome P450 3A4 (12D7) Rabbit Monoclonal Antibody
<b>Description</b>	Rabbit Monoclonal Antibody
<b>Host</b>	Rabbit
<b>Application</b>	WB,ELISA
<b>Reactivity</b>	Human

## Performance

<b>Conjugation</b>	Unconjugated
<b>Modification</b>	Unmodified
<b>Isotype</b>	IgG
<b>Clonality</b>	Monoclonal
<b>Form</b>	Liquid
<b>Storage</b>	Store at 4°C short term. Aliquot and store at -20°C long term. Avoid freeze/thaw cycles.
<b>Buffer</b>	Rabbit IgG in phosphate buffered saline , pH 7.4, 150mM NaCl, 0.02% New type preservative N and 50% glycerol. Store at +4°C short term. Store at -20°C long term. Avoid freeze / thaw cycle.
<b>Purification</b>	Affinity purification

## Immunogen

<b>Gene Name</b>	CYP3A4 {ECO:0000303 PubMed:11470997, ECO:0000312 HGNC:HGNC:2637}
<b>Alternative Names</b>	CYP3A4; CYP11A3; CYP11A4; Cytochrome P450 3A3; Cytochrome P450 HLP; Cytochrome P450 NF-25; Cytochrome P450-PCN1; Nifedipine oxidase;
<b>Gene ID</b>	1576.0
<b>SwissProt ID</b>	P08684.

## Application

<b>Dilution Ratio</b>	WB 1:1000-1:5000
<b>Molecular Weight</b>	57kDa

## 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. The enzyme also hydroxylates etoposide. A cytochrome P450 monooxygenase involved in the metabolism of sterols, steroid hormones, retinoids and fatty acids (PubMed:[10681376](http://www.uniprot.org/citations/10681376)), PubMed:[11093772](http://www.uniprot.org/citations/11093772)), PubMed:[11555828](http://www.uniprot.org/citations/11555828)), PubMed:[14559847](http://www.uniprot.org/citations/14559847)), PubMed:[12865317](http://www.uniprot.org/citations/12865317)), PubMed:[15373842](http://www.uniprot.org/citations/15373842)), PubMed:[15764715](http://www.uniprot.org/citations/15764715)), PubMed:[20702771](http://www.uniprot.org/citations/20702771)), PubMed:[19965576](http://www.uniprot.org/citations/19965576)), PubMed:[21490593](http://www.uniprot.org/citations/21490593)), PubMed:[21576599](http://www.uniprot.org/citations/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:[2732228](http://www.uniprot.org/citations/2732228)), PubMed:[14559847](http://www.uniprot.org/citations/14559847)), PubMed:[12865317](http://www.uniprot.org/citations/12865317)), PubMed:[15373842](http://www.uniprot.org/citations/15373842)), PubMed:[15764715](http://www.uniprot.org/citations/15764715)), PubMed:[21576599](http://www.uniprot.org/citations/21576599)), PubMed:[21490593](http://www.uniprot.org/citations/21490593)). 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](http://www.uniprot.org/citations/11555828)), PubMed:[14559847](http://www.uniprot.org/citations/14559847)), PubMed:[12865317](http://www.uniprot.org/citations/12865317)). Plays a role in the metabolism of androgens, particularly in oxidative deactivation of testosterone (PubMed:[2732228](http://www.uniprot.org/citations/2732228)), PubMed:[15373842](http://www.uniprot.org/citations/15373842)), PubMed:[15764715](http://www.uniprot.org/citations/15764715)), PubMed:[15764715](http://www.uniprot.org/citations/15764715)).

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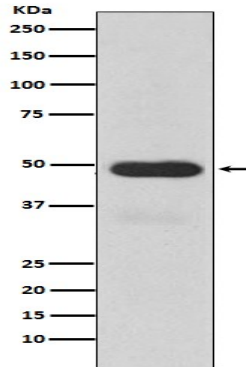
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<http://www.uniprot.org/citations/22773874>). Metabolizes testosterone to less biologically active 2beta- and 6beta- hydroxytestosterones (PubMed: <http://www.uniprot.org/citations/2732228> >2732228, PubMed: <http://www.uniprot.org/citations/15373842> >15373842, PubMed: <http://www.uniprot.org/citations/15764715> >15764715). 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: <http://www.uniprot.org/citations/21576599> >21576599). Catalyzes bisallylic hydroxylation of polyunsaturated fatty acids (PUFA) (PubMed: <http://www.uniprot.org/citations/9435160> >9435160). Catalyzes the epoxidation of double bonds of PUFA with a preference for the last double bond (PubMed: <http://www.uniprot.org/citations/19965576> >19965576). Metabolizes endocannabinoid arachidonylethanolamide (anandamide) to 8,9-, 11,12-, and 14,15- epoxyeicosatrienoic acid ethanolamides (EpETRE-EAs), potentially modulating endocannabinoid system signaling (PubMed: <http://www.uniprot.org/citations/20702771> >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: <http://www.uniprot.org/citations/10681376> >10681376). Further metabolizes atRA toward 4-hydroxyretinoate and may play a role in hepatic atRA clearance (PubMed: <http://www.uniprot.org/citations/11093772> >11093772). Responsible for oxidative metabolism of xenobiotics. Acts as a 2-exo- monooxygenase for plant lipid 1,8-cineole (eucalyptol) (PubMed: <http://www.uniprot.org/citations/11159812> >11159812). Metabolizes the majority of the administered drugs. Catalyzes sulfoxidation of the anthelmintics albendazole and fenbendazole (PubMed: <http://www.uniprot.org/citations/10759686> >10759686). Hydroxylates antimalarial drug quinine (PubMed: <http://www.uniprot.org/citations/8968357> >8968357). Acts as a 1,4-cineole 2-exo-monooxygenase (PubMed: <http://www.uniprot.org/citations/11695850> >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: <http://www.uniprot.org/citations/29461981> >29461981).

## Research Area

## Image Data

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Western blot analysis of Cytochrome P450 3A4 expression in Human fetal liver lysate.

**Note**

For research use only.