

# Cytochrome P450 1A1/2 Antibody

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP51141

## **Product Information**

Application	WB, IP, ICC, IHC-P
Primary Accession	<u>P04798</u>
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	58165

#### **Additional Information**

Gene ID	1543
Other Names	Cytochrome P450 1A1, CYPIA1, Cytochrome P450 form 6, Cytochrome P450-C, Cytochrome P450-P1, CYP1A1
Dilution	WB~~1:1000 IP~~N/A ICC~~N/A IHC-P~~N/A
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

## **Protein Information**

Name	CYP1A1 {ECO:0000303 PubMed:10681376, ECO:0000312 HGNC:HGNC:2595}
Function	A cytochrome P450 monooxygenase involved in the metabolism of various endogenous substrates, including fatty acids, steroid hormones and vitamins (PubMed:10681376, PubMed:11555828, PubMed:12865317, PubMed:14559847, PubMed:15041462, PubMed:15805301, PubMed:18577768, PubMed:19965576, PubMed:20972997). 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 (NADPHhemoprotein reductase) (PubMed:10681376, PubMed:11555828, PubMed:12865317, PubMed:10681376, PubMed:15041462, PubMed:12865317, PubMed:14559847, PubMed:15041462, PubMed:20972997). Catalyzes the hydroxylation of carbon-hydrogen bonds. 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 C15-alpha and C16- alpha positions (PubMed:1155828, PubMed:12865317, PubMed:14559847, PubMed:15805301). Displays different regioselectivities for polyunsaturated fatty acids (PUFA) hydroxylation

	(PubMed: <u>15041462</u> , PubMed: <u>18577768</u> ). Catalyzes the epoxidation of double bonds of certain PUFA (PubMed: <u>15041462</u> , PubMed: <u>19965576</u> , PubMed: <u>20972997</u> ). Converts arachidonic acid toward epoxyeicosatrienoic acid (EET) regioisomers, 8,9-, 11,12-, and 14,15-EET, that function as lipid mediators in the vascular system (PubMed: <u>20972997</u> ). Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer (PubMed: <u>15041462</u> ). May play an important role in all-trans retinoic acid biosynthesis in extrahepatic tissues. Catalyzes two successive oxidative transformation of all-trans retinol to all-trans retinal and then to the active form all-trans retinoic acid (PubMed: <u>10681376</u> ). May also participate in eicosanoids metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent) (PubMed: <u>21068195</u> ).
Cellular Location	Endoplasmic reticulum membrane {ECO:0000250 UniProtKB:P00185}; Peripheral membrane protein {ECO:0000250 UniProtKB:P00185}. Mitochondrion inner membrane {ECO:0000250 UniProtKB:P00185}; Peripheral membrane protein {ECO:0000250 UniProtKB:P00185}. Microsome membrane {ECO:0000250 UniProtKB:P00185}; Peripheral membrane protein {ECO:0000250 UniProtKB:P00185}. Cytoplasm {ECO:0000250 UniProtKB:P00185}
Tissue Location	Lung, lymphocytes and placenta.

### 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 oxidizes a variety of structurally unrelated compounds, including steroids, fatty acids, and xenobiotics.

#### References

Jaiswal A.K.,et al.Nucleic Acids Res. 13:4503-4520(1985). Jaiswal A.K.,et al.Science 228:80-83(1985). Kawajiri K.,et al.Eur. J. Biochem. 159:219-225(1986). Corchero J.,et al.Pharmacogenetics 11:1-6(2001). Graebsch C.,et al.Submitted (FEB-2006) to the EMBL/GenBank/DDBJ databases.

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