

Anti-CYP1A1 Picoband Antibody
Catalog # ABO12231**Specification**

Anti-CYP1A1 Picoband Antibody - Product Information

Application	WB, IHC-P, IHC-F
Primary Accession	P04798
Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Format	Lyophilized

Description

Rabbit IgG polyclonal antibody for Cytochrome P450 1A1(CYP1A1) detection. Tested with WB, IHC-P, IHC-F in Human;Mouse;Rat.

Reconstitution

Add 0.2ml of distilled water will yield a concentration of 500ug/ml.

Anti-CYP1A1 Picoband Antibody - Additional Information

Gene ID 1543

Other Names

Cytochrome P450 1A1, 1.14.14.1, CYP1A1, Cytochrome P450 form 6, Cytochrome P450-C, Cytochrome P450-P1, CYP1A1

Calculated MW

58165 MW KDa

Application Details

Immunohistochemistry(Frozen Section), 0.5-1 µg/ml, Human, Mouse,
-
Immunohistochemistry(Paraffin-embedded Section), 0.5-1 µg/ml, Human, Mouse, Rat, By
Heat
Western blot, 0.1-0.5 µg/ml, Human, Mouse, Rat

Subcellular Localization

Endoplasmic reticulum membrane; Peripheral membrane protein. Microsome membrane;
Peripheral membrane protein.

Tissue Specificity

Lung, lymphocytes and placenta.

Protein Name

Cytochrome P450 1A1

Contents

Each vial contains 5mg BSA, 0.9mg NaCl, 0.2mg Na₂HPO₄, 0.05mg Na₃.

Immunogen

E.coli-derived human CYP1A1 recombinant protein (Position: H183-D320). Human CYP1A1 shares

81.2% amino acid (aa) sequence identity with both mouse and rat CYP1A1.

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.

Sequence Similarities

Belongs to the cytochrome P450 family.

Anti-CYP1A1 Picoband Antibody - 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 (NADPH--hemoprotein reductase) (PubMed:10681376, PubMed:11555828, PubMed:12865317, PubMed:14559847, PubMed:15041462, PubMed:15805301, PubMed:18577768, PubMed:19965576, PubMed:20972997). Catalyzes

the hydroxylation of carbon-hydrogen bonds. Exhibits high catalytic activity for the formation of hydroxysteroids 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:11555828, PubMed:12865317, PubMed:14559847, PubMed:15805301). Displays different regioselectivities for polyunsaturated fatty acids (PUFA) hydroxylation (PubMed:15041462, PubMed:18577768). Catalyzes the epoxidation of double bonds of certain PUFA (PubMed:<a

[15041462](http://www.uniprot.org/citations/15041462), PubMed: [19965576](http://www.uniprot.org/citations/19965576), PubMed: [20972997](http://www.uniprot.org/citations/20972997)). 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: [20972997](http://www.uniprot.org/citations/20972997)). Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer (PubMed: [15041462](http://www.uniprot.org/citations/15041462)). 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: [10681376](http://www.uniprot.org/citations/10681376)). May also participate in eicosanoids metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent) (PubMed: [21068195](http://www.uniprot.org/citations/21068195)).

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

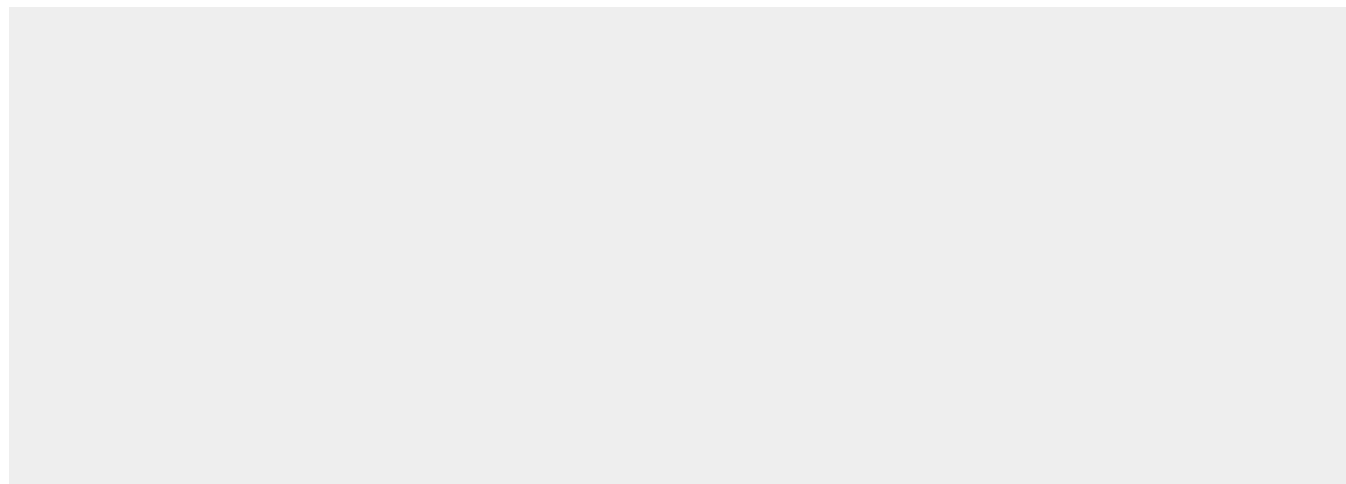
Lung, lymphocytes and placenta.

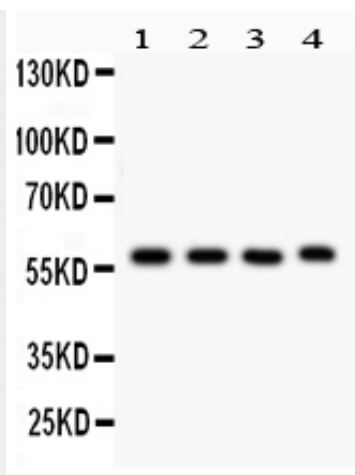
Anti-CYP1A1 Picoband Antibody - Protocols

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

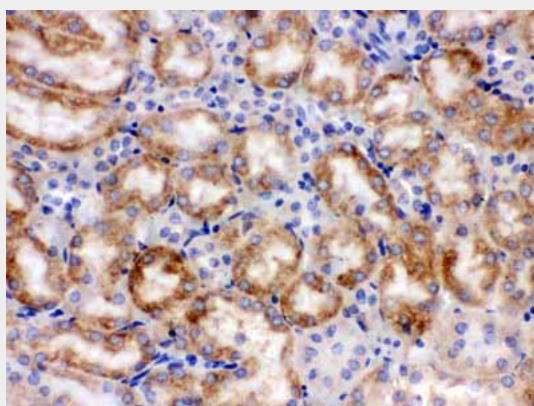
- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

Anti-CYP1A1 Picoband Antibody - Images

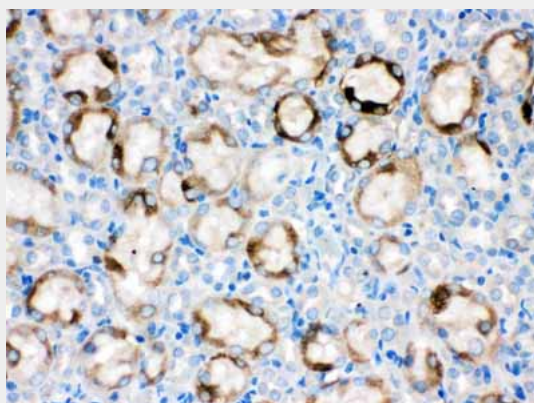




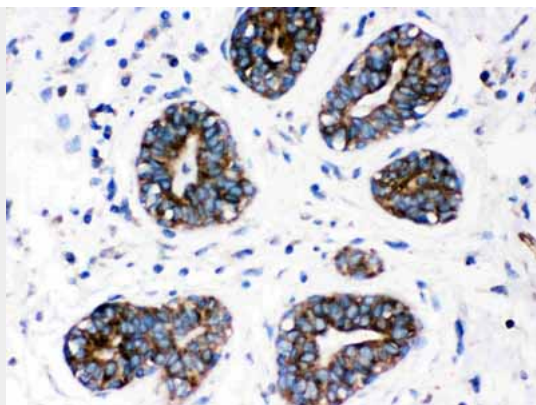
Anti- CYP1A1 Picoband antibody, ABO12231, Western blotting
All lanes: Anti CYP1A1 (ABO12231) at 0.5ug/ml
Lane 1: Rat Lung Tissue Lysate at 50ug
Lane 2: Mouse Lung Tissue Lysate at 50ug
Lane 3: Human Placenta Tissue Lysate at 50ug
Lane 4: JURKAT Whole Cell Lysate at 40ug
Predicted bind size: 58KD
Observed bind size: 58KD



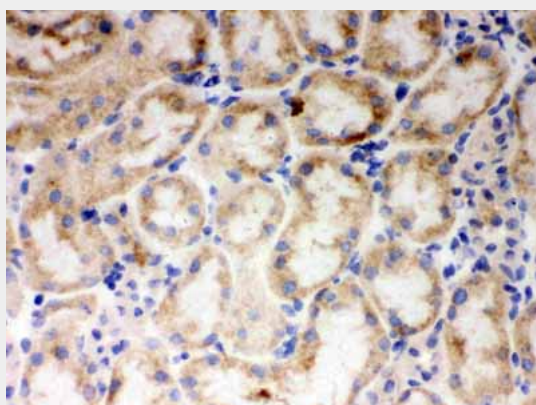
Anti- CYP1A1 Picoband antibody, ABO12231, IHC(P)
IHC(P): Mouse Kidney Tissue



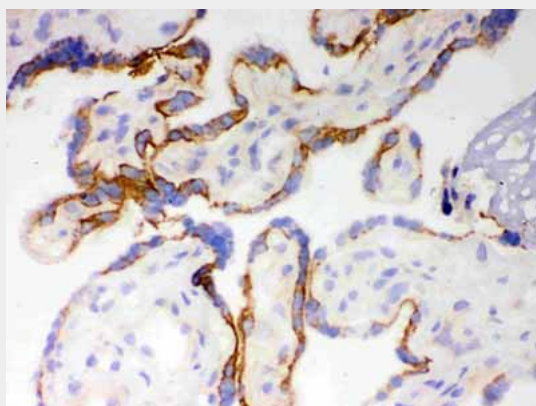
Anti- CYP1A1 Picoband antibody, ABO12231, IHC(P)
IHC(P): Rat Kidney Tissue



Anti- CYP1A1 Picoband antibody, ABO12231,IHC(P)IHC(P): Human Mammary Cancer Tissue



Anti- CYP1A1 Picoband antibody, ABO12231,IHC(F)IHC(F): Mouse Kidney Tissue



Anti- CYP1A1 Picoband antibody, ABO12231,IHC(F)IHC(F): Human Placenta Tissue

Anti-CYP1A1 Picoband Antibody - Background

CYP1A1 is involved in phase I xenobiotic and drug metabolism (one substrate of it is theophylline). It is inhibited by fluoroquinolones and macrolides and induced by aromatic hydrocarbons. CYP1A1 is also known as AHH (aryl hydrocarbon hydroxylase). It is involved in the metabolic activation of aromatic hydrocarbons (polycyclic aromatic hydrocarbons, PAH), for example, benzo(a)pyrene (BP), by transforming it to an epoxide. In this reaction, the oxidation of benzo[a]pyrene is catalysed by CYP1A1 to form BP-7,8-epoxide, which can be further oxidized by epoxide hydrolase (EH) to form BP-7,8-dihydrodiol. Finally CYP1A1 catalyses this intermediate to form BP-7,8-dihydrodiol-9,10-epoxide, which is the ultimate carcinogen. However, an in vivo experiment with gene-deficient mice has found that the hydroxylation of benzo(a)pyrene by CYP1A1 can have an overall protective effect on the DNA, rather than contributing to potentially carcinogenic DNA

modifications. This effect is likely due to the fact that CYP1A1 is highly active in the intestinal mucosa, and thus inhibits infiltration of ingested benzo(a)pyrene carcinogen into the systemic circulation.