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

CYP1A1 Antibody (Center)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7993C

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	P04798
Reactivity	Human, Mouse
Predicted	Rat, Bovine, Canine
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB16935
Calculated MW	58165
Antigen Region	252-280

Additional Information

Gene ID	1543
Other Names	Cytochrome P450 1A1, CYPIA1, Cytochrome P450 form 6, Cytochrome P450-C, Cytochrome P450-P1, CYP1A1
Target/Specificity	This CYP1A1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 252-280 amino acids from the Central region of human CYP1A1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CYP1A1 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

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 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: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:15041462, PubMed:19965576, PubMed: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). Displays an absolute stereoselectivity in the epoxidation of eicosapentaenoic acid (EPA) producing the 17(R),18(S) enantiomer (PubMed: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). May also participate in eicosanoids metabolism by converting hydroperoxide species into oxo metabolites (lipoxygenase-like reaction, NADPH-independent) (PubMed: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.

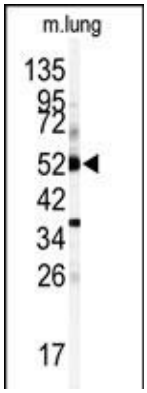
Background

CYP1A1 is a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which 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 some polycyclic aromatic hydrocarbons (PAHs), some of which are found in cigarette smoke. The enzyme's endogenous substrate is unknown; however, it is able to metabolize some PAHs to carcinogenic intermediates. CYP1A1 gene has been associated with lung cancer risk.

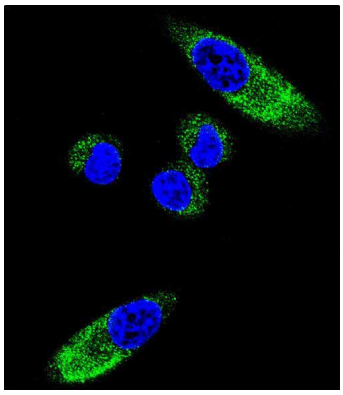
References

Delpisheh,A., Eur. J. Obstet. Gynecol. Reprod. Biol. 143 (1), 38-42 (2009) Zhuo,W., Cancer Invest. 27 (1), 86-95 (2009)

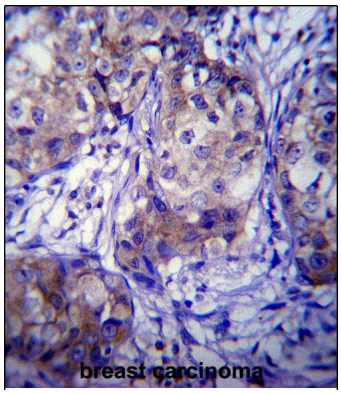
Images



Western blot analysis of anti-CYP1A1 Antibody (Center) (Cat.#AP7993c) in mouse lung tissue lysates (35ug/lane). CYP1A1 (arrow) was detected using the purified Pab.



Confocal immunofluorescent analysis of CYP1A1 Antibody (Center)(Cat#AP7993c) with MDA-MB231 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).



CYP1A1 Antibody (Center) (Cat. #AP7993c)immunohistochemistry analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CYP1A1 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.