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Anti-Cytochrome P450 4F2 Antibody

Catalog # AP51151

Product Information

Application	WB, IHC, IF/IC
Primary Accession	P78329
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	59853

Additional Information

Gene ID	8529
Other Names	Leukotriene-B(4) omega-hydroxylase 1; CYPIVF2; Cytochrome P450 4F2; Cytochrome P450-LTB-omega; Leukotriene-B(4) 20-monooxygenase 1
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the N-term region of human Cytochrome P450 4F2. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500 IF/IC~~N/A
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	CYP4F2 {ECO:0000303|PubMed:10492403, ECO:0000312|HGNC:HGNC:2645}
Function	A cytochrome P450 monooxygenase involved in the metabolism of various endogenous substrates, including fatty acids, eicosanoids and vitamins (PubMed:10660572, PubMed:10833273, PubMed:11997390, PubMed:17341693, PubMed:18574070, PubMed:18577768). 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 (CPR; NADPH-ferrihemoprotein reductase). Catalyzes predominantly the oxidation of the terminal carbon (omega-oxidation) of long- and very long-chain fatty acids. Displays high omega-hydroxylase activity toward polyunsaturated fatty acids (PUFAs) (PubMed:18577768). Participates in the conversion of arachidonic acid to omega-hydroxyeicosatetraenoic acid (20-HETE), a signaling molecule acting both as vasoconstrictive and natriuretic with overall effect on arterial blood pressure (PubMed:10660572, PubMed:17341693, PubMed:18574070). Plays a

role in the oxidative inactivation of eicosanoids, including both pro-inflammatory and anti- inflammatory mediators such as leukotriene B4 (LTB4), lipoxin A4 (LXA4), and several HETEs (PubMed:10660572, PubMed:10833273, PubMed:17341693, PubMed:18574070, PubMed:18577768, PubMed:8026587, PubMed:9799565). Catalyzes omega-hydroxylation of 3-hydroxy fatty acids (PubMed:18065749). Converts monoepoxides of linoleic acid leukotoxin and isoleukotoxin to omega-hydroxylated metabolites (PubMed:15145985). Contributes to the degradation of very long-chain fatty acids (VLCFAs) by catalyzing successive omega-oxidations and chain shortening (PubMed:16547005, PubMed:18182499). Plays an important role in vitamin metabolism by chain shortening. Catalyzes omega-hydroxylation of the phytyl chain of tocopherols (forms of vitamin E), with preference for gamma-tocopherols over alpha-tocopherols, thus promoting retention of alpha-tocopherols in tissues (PubMed:11997390). Omega-hydroxylates and inactivates phylloquinone (vitamin K1), and menaquinone-4 (MK-4, a form of vitamin K2), both acting as cofactors in blood coagulation (PubMed:19297519, PubMed:24138531).

Cellular Location

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

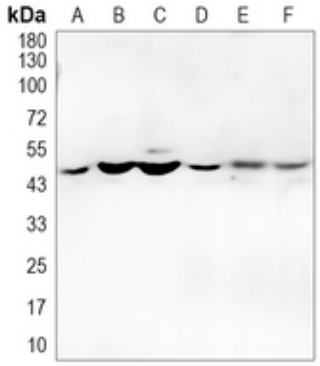
Tissue Location

Liver. Also present in kidney: specifically expressed in the S2 and S3 segments of proximal tubules in cortex and outer medulla (PubMed:10660572).

References

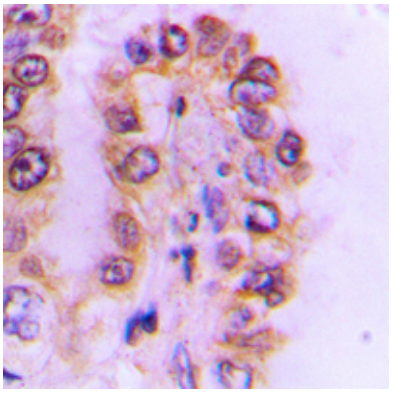
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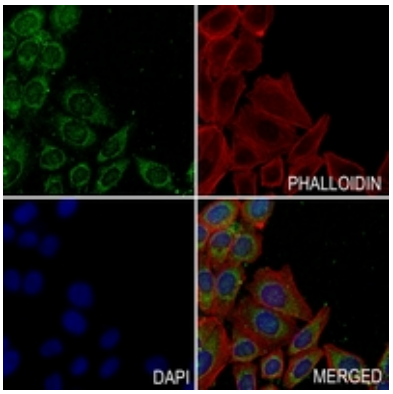
Images



Western blot analysis of Cytochrome P450 4F2 expression in HEK293T (A), Hela (B), MCF7 (C), mouse lung (D), mouse kidney (E), rat lung (F) whole cell lysates. (Predicted band size: 21; 59 kD; Observed band size: 50 kD)

Immunohistochemical analysis of Cytochrome P450 4F2 staining in human liver cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.





Immunofluorescent analysis of Cytochrome P450 4F2 staining in MCF7 cells. Formalin-fixed cells were permeabilized with 0.1% Triton X-100 in TBS for 5-10 minutes and blocked with 3% BSA-PBS for 30 minutes at room temperature. Cells were probed with the primary antibody in 3% BSA-PBS and incubated overnight at 4 °C in a hidified chamber. Cells were washed with PBST and incubated with a AF488-conjugated secondary antibody (green) in PBS at room temperature in the dark. Phalloidin - AF594 was used to stain Actin filaments (red). DAPI was used to stain the cell nuclei (blue).

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