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CYP4F2 Polyclonal Antibody

Catalog # AP69418

Product Information

Application	WB, IHC-P
Primary Accession	P78329
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Calculated MW	59853

Additional Information

Gene ID	8529
Other Names	CYP4F2; Leukotriene-B(4) omega-hydroxylase 1; CYPIVF2; Cytochrome P450 4F2; Cytochrome P450-LTB-omega; Leukotriene-B(4) 20-monooxygenase 1
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/40000. Not yet tested in other applications. IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

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

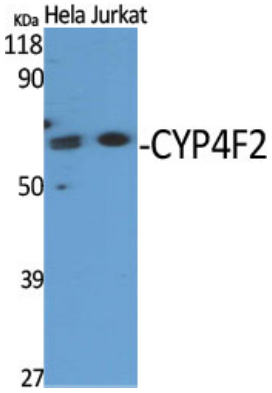
Tissue Location

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

Background

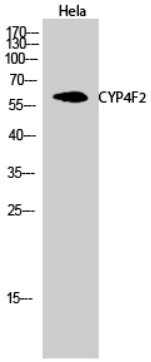
Omega-hydroxylase that oxidizes a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. Plays a key role in vitamin K catabolism by mediating omega-hydroxylation of vitamin K1 (phylloquinone), and menaquinone-4 (MK-4), a form of vitamin K2. Hydroxylation of phylloquinone and MK-4 probably regulates blood coagulation (PubMed:19297519, PubMed:24138531). Also shows arachidonic acid omega-hydroxylase activity in kidney, by mediating conversion of arachidonic acid to 20-hydroxyeicosatetraenoic acid (20-HETE), possibly influencing blood pressure control (PubMed:10660572, PubMed:17341693, PubMed:18574070). Also acts as a leukotriene-B(4) omega-hydroxylase by mediating conversion of leukotriene-B(4) (LTB4) to its omega-hydroxylated metabolite 20-hydroxyleukotriene- B(4) (20-OH LTB4) (PubMed:8026587, PubMed:9799565).

Images



Western Blot analysis of various cells using CYP4F2 Polyclonal Antibody

Western Blot analysis of Hela cells using CYP4F2 Polyclonal Antibody



Citations

- Insights into the metabolic characteristics of aminopropanediol analogues of SYLs as S1P modulators: from structure to metabolism