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CYP4A11 (4A22) Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP7884b

Product Information

Application	WB, IF, E
Primary Accession	Q02928
Reactivity	Human
Predicted	Mouse, Rat, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB17537
Calculated MW	59348
Antigen Region	407-435

Additional Information

Gene ID	1579
Other Names	Cytochrome P450 4A11, 20-hydroxyeicosatetraenoic acid synthase, 20-HETE synthase, CYP4AII, CYPIVA11, Cytochrome P-450HK-omega, Cytochrome P450HL-omega, Fatty acid omega-hydroxylase, Lauric acid omega-hydroxylase, CYP4A11, CYP4A2
Target/Specificity	This CYP4A11 (4A22) antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 407-435 amino acids from the C-terminal region of human CYP4A11 (4A22).
Dilution	WB~~1:1000 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	CYP4A11 (4A22) Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CYP4A11 {ECO:0000303|PubMed:8274222, ECO:0000312|HGNC:HGNC:2642}

Function	A cytochrome P450 monooxygenase involved in the metabolism of fatty acids and their oxygenated derivatives (oxylipins) (PubMed:10553002, PubMed:10660572, PubMed:15611369, PubMed:1739747, PubMed:7679927, PubMed:8914854). 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) (PubMed:10553002, PubMed:10660572, PubMed:15611369, PubMed:1739747, PubMed:7679927, PubMed:8914854). Catalyzes predominantly the oxidation of the terminal carbon (omega-oxidation) of saturated and unsaturated fatty acids, the catalytic efficiency decreasing in the following order: dodecanoic > tetradecanoic > (9Z)-octadecenoic > (9Z,12Z)- octadecadienoic > hexadecanoic acid (PubMed:10553002, PubMed:10660572). Acts as a major omega-hydroxylase for dodecanoic (lauric) acid in liver (PubMed:15611369, PubMed:1739747, PubMed:7679927, PubMed:8914854). Participates in omega-hydroxylation of (5Z,8Z,11Z,14Z)-eicosatetraenoic acid (arachidonate) to 20-hydroxyeicosatetraenoic acid (20-HETE), a signaling molecule acting both as vasoconstrictive and natriuretic with overall effect on arterial blood pressure (PubMed:10620324, PubMed:10660572, PubMed:15611369). Can also catalyze the oxidation of the penultimate carbon (omega-1 oxidation) of fatty acids with lower efficiency (PubMed:7679927). May contribute to the degradation of saturated very long-chain fatty acids (VLCFAs) such as docosanoic acid, by catalyzing successive omega-oxidations to the corresponding dicarboxylic acid, thereby initiating chain shortening (PubMed:18182499). Omega-hydroxylates (9R,10S)-epoxy-octadecanoate stereoisomer (PubMed:15145985). Plays a minor role in omega-oxidation of long-chain 3-hydroxy fatty acids (PubMed:18065749). Has little activity toward prostaglandins A1 and E1 (PubMed:7679927).
Cellular Location	Endoplasmic reticulum membrane; Peripheral membrane protein. Microsome membrane; Peripheral membrane protein
Tissue Location	Expressed in liver (PubMed:7679927). Expressed in S2 and S3 segments of proximal tubules in cortex and outer medulla of kidney (PubMed:10660572, PubMed:7679927).

Background

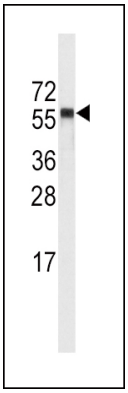
CYP4A11 is a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. This protein localizes to the endoplasmic reticulum and hydroxylates medium-chain fatty acids such as laurate and myristate.

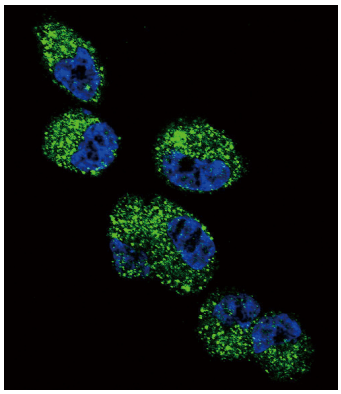
References

Sugimoto,K., Hypertension 52 (6), 1142-1148 (2008)
Ward,N.C., Hypertension 51 (5), 1393-1398 (2008)
Nelson,D.R., Pharmacogenetics 14 (1), 1-18 (2004)

Images

Western blot analysis of anti-CYP4A11 (4A22) Antibody (C-term) (Cat.#AP7884b) in NCI-H460 cell line lysates (35ug/lane).CYP4A11(arrow) was detected using the purified Pab.





Confocal immunofluorescent analysis of CYP4A11 (4A22) Antibody (C-term)(Cat#AP7884b) with NCI-H460 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green).DAPI was used to stain the cell nuclear (blue).

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