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CYP4A11 (4A22) Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP7884b

Specification

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - Product Information

Primary Accession Q02928

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP7884b was selected from the 4A22 region of human CYP4A11 (4A22). A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - 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:<a

href="http://www.uniprot.org/citations/10553002" target="_blank">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).

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - Protocols

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

- Blocking Peptides

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - Images

CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - 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.

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CYP4A11 (4A22) Antibody (C-term) Blocking Peptide - 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)