SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4A11 (M25-P2A10): sc-101385

BACKGROUND

Cytochrome P450 proteins are heme-thiolate monooxygenases that mediate NADPH-dependent electron transport and function to oxidize a variety of structurally unrelated compounds, including steroids, fatty acids and xenobiotics. Specifically, Cytochrome P450s are responsible for metabolizing arachidonic acid to hydroxyeicosatetraenoic acid (a regulator of blood pressure) and epoxyeicosatrienoic acid (a molecule involved in signaling events). Cytochrome P450 4A11 (CYP4A11), also known as CP4Y, CYP4A2, P450HL-ω or CYP4AII, is a 519 amino acid protein that is expressed in kidney and liver. Localized to the membrane of the endoplasmic reticulum, CYP4A11 uses heme as a cofactor to catalyze the oxygen-dependent hydroxylation of medium-chain fatty acids, such as myristate, laurate and palmitate, thereby playing an important role in fatty acid metabolism. CYP4A11 exists as two isoforms that are produced by alternative splicing events.

REFERENCES

1. Imaoka, S., et al. 1993. Complete cDNA sequence and cDNA-directed expression of CYP4A11, a fatty acid omega-hydroxylase expressed in human kidney. DNA Cell Biol. 12: 893-899.
2. Powell, P.K., et al. 1998. Metabolism of arachidonic acid to 20-hydroxy-5, 8, 11, 14-eicosatetraenoic acid by P450 enzymes in human liver: involvement of CYP4F2 and CYP4A11. J. Pharmacol. Exp. Ther. 285: 1327-1336.
3. Chang, Y.T. and Loew, G.H. 1999. Homology modeling and substrate binding study of human CYP4A11 enzyme. Proteins 34: 403-415.
4. Lasker, J.M., et al. 2000. Formation of 20-hydroxyeicosatetraenoic acid, a vasoactive and natriuretic eicosanoid, in human kidney. Role of CYP4F2 and CYP4A11. J. Biol. Chem. 275: 4118-4126.
5. Hoch, U. and Ortiz De Montellano, P.R. 2001. Covalently linked heme in cytochrome P4504a fatty acid hydroxylases. J. Biol. Chem. 276: 11339-11346.

CHROMOSOMAL LOCATION

Genetic locus: CYP4A11 (human) mapping to 1p33.

SOURCE

CYP4A11 (M25-P2A10) is a mouse monoclonal antibody raised against a synthetic peptide corresponding to amino acids 499-507 of CYP4A11 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP4A11 (M25-P2A10) is available conjugated to agarose (sc-101385 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-101385 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101385 PE), fluorescein (sc-101385 FITC), Alexa Fluor® 488 (sc-101385 AF488), Alexa Fluor® 546 (sc-101385 AF546), Alexa Fluor® 594 (sc-101385 AF594) or Alexa Fluor® 647 (sc-101385 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101385 AF680) or Alexa Fluor® 790 (sc-101385 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP4A11 (M25-P2A10) is recommended for detection of CYP4A11 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with CYP4A22.

Suitable for use as control antibody for CYP4A11 siRNA (h): sc-88588, CYP4A11 shRNA Plasmid (h): sc-88588-SH and CYP4A11 shRNA (h) Lentiviral Particles: sc-88588-V.

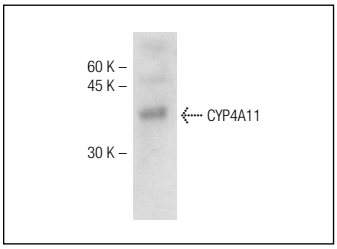
Molecular Weight of CYP4A11: 52 kDa.

Positive Controls: human liver microsomes cell extract.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



CYP4A11 (M25-P2A10): sc-101385. Western blot analysis of CYP4A11 expression in human liver microsomes cell extract.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.