

# CYP4F2 (H-40): sc-67156

## BACKGROUND

The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies based on their sequence similarities. CYP4F isoforms are involved in the oxidation of important cellular mediators, such as leukotriene B<sub>4</sub> (LTB<sub>4</sub>) and prostaglandins. CYP4F2 catalyzes  $\omega$ -hydroxylation of LTB<sub>4</sub> to a less potent proinflammatory eicosanoid, 20-OH-LTB<sub>4</sub>, as well as arachidonic acid. CYP4F2 is expressed in liver and kidney. Its expression is repressed by peroxisomal proliferators and induced by retinoic acid. X-linked adrenoleukodystrophy (X-ALD) is a severe neurodegenerative disorder biochemically characterized by elevated levels of very long-chain fatty acids (VLCFA). CYP4F2 participates in the  $\omega$ -hydroxylation of VLCFAs, which may provide an alternative mode of treatment for X-ALD patients.

## REFERENCES

1. Kikuta, Y., et al. 1999. Expression and molecular cloning of human liver leukotriene B<sub>4</sub>  $\omega$ -hydroxylase (CYP4F2) gene. *DNA Cell Biol.* 18: 723-730.
2. Kikuta, Y., et al. 2000. Characterization of human liver leukotriene B<sub>4</sub>  $\omega$ -hydroxylase P450 (CYP4F2). *J. Biochem.* 127: 1047-1052.
3. Zhang, X., et al. 2000. Promoter activity and regulation of the CYP4F2 leukotriene B<sub>4</sub>  $\omega$ -hydroxylase gene by peroxisomal proliferators and retinoic acid in Hep G2 cells. *Arch. Biochem. Biophys.* 378: 364-376.
4. Zhang, X. and Hardwick, J.P. 2001. Regulation of CYP4F2 leukotriene B<sub>4</sub>  $\omega$ -hydroxylase by retinoic acids in Hep G2 cells. *Biochem. Biophys. Res. Commun.* 279: 864-871.
5. Kikuta, Y., et al. 2002. Prostaglandin and leuko-triene  $\omega$ -hydroxylases. *Prostaglandins Other Lipid Mediat.* 68: 345-362.
6. Le Quéré, V., et al. 2004. Human CYP4F3s are the main catalysts in the oxidation of fatty acid epoxides. *J. Lipid Res.* 45: 1446-1458.
7. Sanders, R.J., et al. 2006.  $\omega$ -oxidation of very long-chain fatty acids in human liver microsomes. Implications for X-linked adrenoleukodystrophy. *J. Biol. Chem.* 281: 13180-13187.

## CHROMOSOMAL LOCATION

Genetic locus: CYP4F2/CYP4F11 (human) mapping to 19p13.12.

## SOURCE

CYP4F2 (H-40) is a rabbit polyclonal antibody raised against amino acids 231-270 mapping within an internal region of CYP4F2 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## APPLICATIONS

CYP4F2 (H-40) is recommended for detection of CYP4F2 and, to a lesser extent, CYP4F11 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); may cross-react with other CYP4F family members.

CYP4F2 (H-40) is also recommended for detection of CYP4F2 and, to a lesser extent, CYP4F11 in additional species, including canine and bovine.

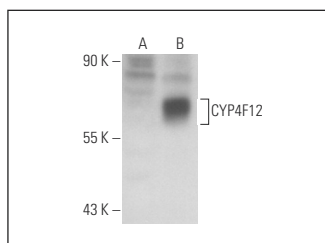
Molecular Weight of CYP4F2: 56 kDa.

Positive Controls: CYP4F12 (h2): 293T Lysate: sc-175639.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CYP4F2 (H-40): sc-67156. Western blot analysis of CYP4F12 expression in non-transfected: sc-117752 (A) and human CYP4F12 transfected: sc-175639 (B) 293T whole cell lysates.

## SELECT PRODUCT CITATIONS

1. Farley, S.M., et al. 2012. Vitamin E decreases extra-hepatic menaquinone-4 concentrations in rats fed menadione or phyloquinone. *Mol. Nutr. Food Res.* 56: 912-922.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.