

# CYP4A10/31/32 (P-16): sc-240278

## 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). CYP4A10 (Cytochrome P450 4A10) is a 509 amino acid protein, CYP4A31 is a 443 amino acid protein, and CYP4A32 is a 509 amino acid protein. All three proteins belong to the Cytochrome P450 family and are encoded by genes that map to mouse chromosome 4 D1.

## REFERENCES

- Henderson, C.J., et al. 1994. Deduced amino acid sequence of a murine cytochrome P-450 Cyp4a protein: developmental and hormonal regulation in liver and kidney. *Biochim. Biophys. Acta* 1200: 182-190.
- Zhang, F., et al. 2002. Arachidonate CYP hydroxylases of kidney contribute to formation of hypertension and maintenance of blood pressure. *Acta Pharmacol. Sin.* 23: 497-502.
- Nakagawa, K., et al. 2003. Androgen-mediated induction of the kidney arachidonate hydroxylases is associated with the development of hypertension. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 284: R1055-R1062.
- Hercule, H.C., et al. 2003. Contribution of cytochrome P450 4A isoforms to renal functional response to inhibition of nitric oxide production in the rat. *J. Physiol.* 551: 971-979.
- Nelson, D.R., et al. 2004. Comparison of cytochrome P450 (CYP) genes from the mouse and human genomes, including nomenclature recommendations for genes, pseudogenes and alternative-splice variants. *Pharmacogenetics* 14: 1-18.
- Ng, V.Y., et al. 2007. Cytochrome P450 eicosanoids are activators of peroxisome proliferator-activated receptor  $\alpha$ . *Drug Metab. Dispos.* 35: 1126-1134.
- Church, D.M., et al. 2009. Lineage-specific biology revealed by a finished genome assembly of the mouse. *PLoS Biol.* 7: e1000112.

## CHROMOSOMAL LOCATION

Genetic locus: *Cyp4a10/Cyp4a31/Cyp4a32* (mouse) mapping to 4 D1.

## SOURCE

CYP4A10/31/32 (P-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of CYP4A10 of mouse origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-240278 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CYP4A10/31/32 (P-16) is recommended for detection of CYP4A10 of mouse and rat origin and CYP4A31 and CYP4A32 of mouse 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); non cross-reactive with other mouse CYP4A family members; may cross-react with rat CYP4A12.

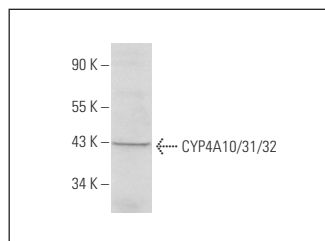
Molecular Weight of CYP4A10/31/32: 58/55/64 kDa.

Positive Controls: mouse heart extract: sc-2254.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



CYP4A10/31/32 (P-16): sc-240278. Western blot analysis of CYP4A10/31/32 expression in mouse heart tissue 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](http://www.scbt.com) or our catalog for detailed protocols and support products.