SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4A22 (I-11): sc-131486

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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). CYP4A22 (cytochrome P450, family 4, subfamily A, polypeptide 22) is a 519 amino acid protein that is encoded by a gene located within a cluster of cytochrome P450 genes on chromosome 1. Sharing 96% sequence similarity with CYP4A11 (a related family member), CYP4A22 is thought to play a role in fatty acid metabolism, possibly mediating kidney function and blood pressure.

REFERENCES

1. 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.
2. 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.
3. Bellamine, A., et al. 2003. Characterization of the CYP4A11 gene, a second CYP4A gene in humans. Arch. Biochem. Biophys. 409: 221-227.
4. 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.
5. 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.
6. Zhang, F., et al. 2005. Long-term modifications of blood pressure in normotensive and spontaneously hypertensive rats by gene delivery of rAAV-mediated cytochrome P450 arachidonic acid hydroxylase. Cell Res. 15: 717-724.
7. Yaghini, et al. 2005. Contribution of arachidonic acid metabolites derived via cytochrome P4504A to angiotensin II-induced neointimal growth. Hypertension 45: 1182-1187.
8. Hiratsuka, M., et al. 2006. Genetic polymorphisms and haplotype structures of the CYP4A22 gene in a Japanese population. Mutat. Res. 599: 98-104.

CHROMOSOMAL LOCATION

Genetic locus: CYP4A22 (human) mapping to 1p33.

STORAGE

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

PROTOCOLS

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

SOURCE

CYP4A22 (I-11) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CYP4A22 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-131486 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP4A22 (I-11) is recommended for detection of CYP4A22 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 CYP4 family members.

Suitable for use as control antibody for CYP4A22 siRNA (h): sc-88027, CYP4A22 shRNA Plasmid (h): sc-88027-SH and CYP4A22 shRNA (h) Lentiviral Particles: sc-88027-V.

Molecular Weight of CYP4A22: 59 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

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) 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.

RESEARCH USE

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