SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2B1/2B2 (9.14): sc-73546

BACKGROUND

The cytochrome P450 (CYP2) superfamily is one of three enzyme systems which metabolize the fatty acid arachadonic acid (AA) to vascular tone regulators. CYP2 are monooxygenase enzymes that require several cofactors such as nicotinamide adenine dinucleotide phosphate (NADPH) and P450 reductase. Epoxygenases are members of the CYP2 family that metabolize AA to epoxy-eicosatrienoic acid, and ω-hydroxylases are members of the CYP2 family that produce 19- and 20-hydroxyeicosatetraenoic acids. The CYP2 family members are part of the microsomal drug metabolising system responsible for oxidation of many therapeutic agents as well as steroids, fatty acids and many other endogenous substances. CYP2B1 and CYP2B2 are members of the CYP2 family that comprise the major phenobarbital-inducible hepatic cytochromes P450s. CYP2B1 converts ifosfamide to its active cytotoxic compounds, while CYP2B2 mediates phenobarbital inducibility.

REFERENCES

1. Paquet, Y., et al. 2000. Mutational analysis of the CYP2B2 phenobarbital response unit and inhibitory effect of the constitutive androstane receptor on phenobarbital responsiveness. J. Biol. Chem. 275: 38427-38436.
2. Liu, S., et al. 2001. Functional analysis of the phenobarbital-responsive unit in rat CYP2B2. Biochem. Pharmacol. 62: 21-28.

CHROMOSOMAL LOCATION

Genetic locus: Cyp2b10 (mouse) mapping to 7 A3.

SOURCE

CYP2B1/2B2 (9.14) is a mouse monoclonal antibody raised against liver cytochrome P4502B1 and 2B2 of rat 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.

APPLICATIONS

CYP2B1/2B2 (9.14) is recommended for detection of CYP2B10 of mouse origin, and CYP2B1 and CYP2B2 of rat 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)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for CYP2B10 siRNA (m): 142671, CYP2B10 shRNA Plasmid (m): sc-142671-SH and CYP2B10 shRNA (m) Lentiviral Particles: sc-142671-V.

Molecular Weight of CYP2B1/2B2: 50 kDa.

Positive Controls: rat liver extract: sc-2395 or mouse liver extract: sc-2256.

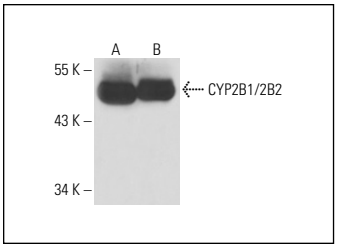
STORAGE

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

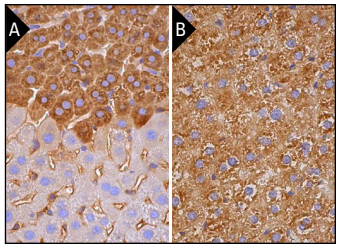
RESEARCH USE

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

DATA



CYP2B1/2B2 (9.14): sc-73546. Western blot analysis of CYP2B1/2B2 expression in rat liver (**A**) and mouse liver (**B**) tissue extracts.



CYP2B1/2B2 (9.14): sc-73546. Immunoperoxidase staining of formalin fixed, paraffin-embedded mouse liver tissue showing cytoplasmic staining of hepatocytes and hepatic sinusoidal cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded rat liver tissue showing cytoplasmic staining of hepatocytes (**B**).

SELECT PRODUCT CITATIONS

1. Alanazi, M.S., et al. 2010. Molecular characterization of the *Camelus dromedarius* putative cytochrome P450s genes. Protein J. 29: 306-313.
2. Roos, R., et al. 2011. Hepatic effects of a highly purified 2,2',3,4,4',5,5'-heptachlorbiphenyl (PCB 180) in male and female rats. Toxicology 284: 42-53.
3. Krolewski, R.C., et al. 2013. Global expression profiling of globose basal cells and neurogenic progression within the olfactory epithelium. J. Comp. Neurol. 521: 833-859.
4. Vichi, S., et al. 2015. Cell type-specific expression and localization of cytochrome P450 isoforms in tridimensional aggregating rat brain cell cultures. Toxicol. In Vitro 30: 176-184.
5. Wang, D., et al. 2017. Effects of tetrahydroberberine and tetrahydropalmatine on hepatic cytochrome P450 expression and their toxicity in mice. Chem. Biol. Interact. 268: 47-52.
6. Shi, C., et al. 2017. Peroxisome proliferator-activated receptor α activation suppresses cytochrome P450 induction potential in mice treated with gemfibrozil. Basic Clin. Pharmacol. Toxicol. 121: 169-174.
7. Dovrtelova, G., et al. 2018. Effect of endocannabinoid oleamide on rat and human liver cytochrome P450 enzymes in *in vitro* and *in vivo* models. Drug Metab. Dispos. 46: 913-923.
8. Wei, Y., et al. 2018. Generation and characterization of a CYP2C11-null rat model by using the CRISPR/Cas9 method. Drug Metab. Dispos. 46: 525-531.
9. Zhou, H., et al. 2019. CYP2D1 gene knockout reduces the metabolism and efficacy of venlafaxine in rats. Drug Metab. Dispos. 47: 1425-1432.
10. Li, Y., et al. 2023. METTL3 exacerbates insulin resistance in hepatocytes by regulating m^6A modification of cytochrome P450 2B6. Nutr. Metab. 20: 40.

PROTOCOLS

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