SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2B1/2B2 (h7): sc-53244

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 omega-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. Venepally, P., et al. 1992. Transcriptional regulatory elements for basal expression of cytochrome P450IIC genes. J. Biol. Chem. 267: 17333-17338.
2. Straub, P., et al. 1993. Preference for aromatic substitutions at tryptophan-120, which is highly conserved and a potential mediator of electron transfer in cytochrome P450 2C2. Biochem. Biophys. Res. Commun. 197: 433-439.
3. Straub, P., et al. 1994. Differential effects of mutations in substrate recognition site 1 of cytochrome P450 2C2 on lauric acid and progesterone hydroxylation. Biochemistry 33: 8029-8034.
4. Ibeanu, G.C. and Goldstein, J.A. 1995. Transcriptional regulation of human CYP2C genes: functional comparison of CYP2C9 and CYP2C18 promoter regions. Biochemistry 34: 8028-8036.
5. Chen, C.D. and Kemper, B. 1996. Different structural requirements at specific proline residue positions in the conserved proline-rich region of cytochrome P450 2C2. J. Biol. Chem. 271: 28607-28611.
6. Chen, C.D., et al. 1998. A conserved proline-rich sequence between the N-terminal signal-anchor and catalytic domains is required for assembly of functional cytochrome P450 2C2. Arch. Biochem. Biophys. 350: 233-238.
7. Doray, B., et al. 1999. Substitutions in the C-terminal portion of the catalytic domain partially reverse assembly defects introduced by mutations in the N-terminal linker sequence of cytochrome P450 2C2. Biochemistry 38: 12180-12186.
8. Ozalp, C., et al. 2006. Identification of membrane-contacting loops of the catalytic domain of cytochrome P450 2C2 by tryptophan fluorescence scanning. Biochemistry 45: 4629-4637.
9. Lewis, D.F., et al. 2006. Investigating human P450s involved in drug metabolism via homology with high-resolution P450 crystal structures of the CYP2C subfamily. Curr. Drug Metab. 7: 589-598.

SOURCE

CYP2B1/2B2 (h7) is a mouse monoclonal antibody raised against liver cytochromes P450 2B1 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 (h7) is recommended for detection of CYP2B1 and CYP2B2 of mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)]; may cross-react with rat CYP2C2.

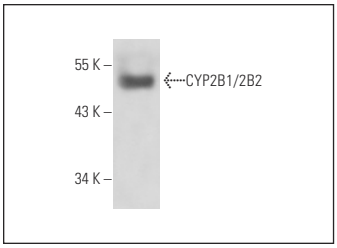
Molecular Weight of CYP2B1/2B2: 50 kDa.

Positive Controls: rat PBL whole cell lysate.

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



CYP2B1/2B2 (h7): sc-53244. Western blot analysis of CYP2B1/2B2 expression in rat PBL whole cell lysate.

SELECT PRODUCT CITATIONS

1. Li, Q., et al. 2019. The sub-chronic impact of mPEG2k-PCLx polymeric nanocarriers on cytochrome P450 enzymes after intravenous administration in rats. Eur. J. Pharm. Biopharm. 142: 101-113.
2. Doan, T.N.K., et al. 2020. Differential effects of 1,25-dihydroxyvitamin D_3 on the expressions and functions of hepatic CYP and UGT enzymes and its pharmacokinetic consequences *in vivo*. Pharmaceutics 12: 1129.

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.