SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2S1 (G-1): sc-365806

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. CYP2S1, a member of the CYP2 subfamily, is expressed in a wide variety of epithelial cells in extrahepatic tissues, specifically the respiratory tract, gastrointestinal tract, skin and other tissues frequently exposed to xenobiotics. CYP2S1 localizes to the endoplasmic reticulum where it metabolizes both endogenous and exogenous substrates such as retinoic acid, aromatic hydrocarbons and some cellular substances. CYP2S1 is also involved in the metabolism of topical drugs and mediates the response to photochemotherapy in psoriasis. Dioxin induces CYP2S1, while aryl hydrocarbon receptor (AHR) and aryl hydrocarbon nuclear translocator (ARNT) regulate this induction.

REFERENCES

1. Rylander, T., et al. 2001. Identification and tissue distribution of the novel human cytochrome P450 2S1 (CYP2S1). Biochem. Biophys. Res. Commun. 281: 529-535.
2. Smith, G., et al. 2003. Cutaneous expression of cytochrome P450 CYP2S1: individuality in regulation by therapeutic agents for psoriasis and other skin diseases. Lancet 361: 1336-1343.
3. Saarikoski, S.T., et al. 2004. Identification of genetic polymorphisms of CYP2S1 in a Finnish Caucasian population. Mutat. Res. 554: 267-277.
4. Choudhary, D., et al. 2005. Expression patterns of mouse and human CYP orthologs (families 1-4) during development and in different adult tissues. Arch. Biochem. Biophys. 436: 50-61.
5. Ingelman-Sundberg, M., et al. 2005. The human genome project and novel aspects of cytochrome P450 research. Toxicol. Appl. Pharmacol. 207: 52-56.
6. Karlgren, M., et al. 2005. Novel extrahepatic cytochrome P450s. Toxicol. Appl. Pharmacol. 207: 57-61.
7. Saarikoski, S.T., et al. 2005. CYP2S1: a short review. Toxicol. Appl. Pharmacol. 207: 62-69.

CHROMOSOMAL LOCATION

Genetic locus: CYP2S1 (human) mapping to 19q13.2; Cyp2s1 (mouse) mapping to 7 A3.

SOURCE

CYP2S1 (G-1) is a mouse monoclonal antibody specific for an epitope mapping between amino 473-504 at the C-terminus of CYP2S1 of human origin.

PRODUCT

Each vial contains 200 µg IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-365806 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

CYP2S1 (G-1) is recommended for detection of CYP2S1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CYP2S1 siRNA (h): sc-60483, CYP2S1 siRNA (m): sc-60484, CYP2S1 shRNA Plasmid (h): sc-60483-SH, CYP2S1 shRNA Plasmid (m): sc-60484-SH, CYP2S1 shRNA (h) Lentiviral Particles: sc-60483-V and CYP2S1 shRNA (m) Lentiviral Particles: sc-60484-V.

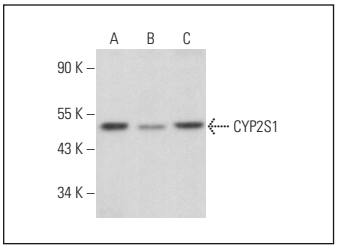
Molecular Weight of CYP2S1: 56 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, A549 cell lysate: sc-2413 or 3T3-L1 cell lysate: sc-2243.

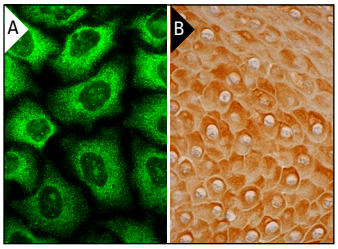
RECOMMENDED SUPPORT REAGENTS

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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



CYP2S1 (G-1): sc-365806. Western blot analysis of CYP2S1 expression in HeLa (**A**), A549 (**B**) and 3T3-L1 (**C**) whole cell lysates.



CYP2S1 (G-1): sc-365806. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells (**B**).

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.