SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2E1 (H-21): sc-133491

BACKGROUND

The cytochrome P450s are a large and diverse family of monooxygenase enzymes which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies, such as CYP1A and CYP2A, based on sequence similarities. Cytochrome P450 2E1 (CYP2E1) localizes to the endoplasmic reticulum and is induced by ethanol, the diabetic state and starvation. The enzyme metabolizes both endogenous substrates, such as ethanol, acetone and acetal, as well as exogenous substrates including benzene, carbon tetrachloride, ethylene glycol and nitrosamines which are premutagens found in cigarette smoke. CYP2E1 plays an important role in alcohol metabolism and participates in the metabolic activation of various carcinogens. Chronic ethanol consumption results in the induction of hepatic CYP2E1 in humans, which may play an important role in the pathogenesis of alcoholic liver disease. Due to its many substrates, this enzyme may be involved in such varied processes as gluconeogenesis, hepatic cirrhosis, diabetes and cancer.

REFERENCES

1. Itoga, S., et al. 1999. Mutations in the exons and exon-intron junction regions of human cytochrome P4502E1 gene and alcoholism. Alcohol. Clin. Exp. Res. 23: 13S-16S.
2. Li, Z., et al. 2000. Susceptibility to lung cancer in Chinese is associated with genetic polymorphism in cytochrome P4502E1. Zhonghua Zhong Liu Za Zhi. 22: 5-7.
3. Meskar, A., et al. 2001. Alcohol-xenobiotic interactions. Role of cytochrome P4502E1. Pathol. Biol. 49: 696-702.
4. Oneta, C.M., et al. 2002. Dynamics of cytochrome P4502E1 activity in man: induction by ethanol and disappearance during with-drawal phase. J. Hepatol. 36: 47-52.
5. Itoga, S., et al. 2002. Tandem repeat polymorphism of the CYP2E1 gene: an association study with esophageal cancer and lung cancer. Alcohol. Clin. Exp. Res. 26: 15S-19S.

CHROMOSOMAL LOCATION

Genetic locus: CYP2E1 (human) mapping to 10q26.3; Cyp2e1 (mouse) mapping to 7 F5.

SOURCE

CYP2E1 (H-21) is an affinity purified rabbit polyclonal antibody raised against synthetic CYP2E1 peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

STORAGE

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

APPLICATIONS

CYP2E1 (H-21) is recommended for detection of CYP2E1 of mouse, rat and human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

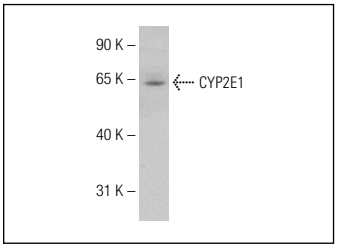
Suitable for use as control antibody for CYP2E1 siRNA (h): sc-105257, CYP2E1 siRNA (m): sc-142699, CYP2E1 shRNA Plasmid (h): sc-105257-SH, CYP2E1 shRNA Plasmid (m): sc-142699-SH, CYP2E1 shRNA (h) Lentiviral Particles: sc-105257-V and CYP2E1 shRNA (m) Lentiviral Particles: sc-142699-V.

Positive Controls: human fetal liver tissue extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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).

DATA



CYP2E1 (H-21): sc-133491. Western blot analysis of CYP2E1 expression in human fetal liver tissue extract.

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. Garcia-Ruiz, I., et al. 2015. *In vitro* treatment of HepG2 cells with saturated fatty acids reproduces mitochondrial dysfunction found in nonalcoholic steatohepatitis. Dis. Model. Mech. 8: 183-191.

RESEARCH USE

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

PROTOCOLS

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