SANTA CRUZ BIOTECHNOLOGY, INC.

CYP7A1 (E-10): sc-518007

BACKGROUND

P450 enzymes constitute a family of monooxygenase enzymes that are involved in the metabolism of a wide array of endogenous and xenobiotic compounds. P450 enzymes can be classified, based on their sequence similarities, into distinct subfamilies, which include CYP1A and CYP2A. Other P450 family members include CYP19, also designated aromatase (P450arom), which catalyzes the conversion of C19 steroids to estrogens in various tissues, including placenta, gonads, adipose tissue, skin and brain. CYP19 expression is controlled by hormonally regulated promoters in different tissues and increased aromatase activity is associated with familial gynecomastia. Also, a polymorphic allele of CYP19 (repeat (TTTA)12) is present in a majority of breast cancer patients. P450 cholesterol 7α-hydroxylase, CYP7A1, is the rate limiting enzyme of bile acid synthesis in the liver, and its expression is mediated by the bile acid receptor FXR. CYP27A1 catalyzes vitamin D_3 25-hydroxylation and is localized to the mitochondria in kidney and liver.

CHROMOSOMAL LOCATION

Genetic locus: CYP7A1 (human) mapping to 8q12.1; Cyp7a1 (mouse) mapping to 4 A1.

SOURCE

CYP7A1 (E-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 86-108 within an internal region of CYP7A1 of human 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.

CYP7A1 (E-10) is available conjugated to agarose (sc-518007 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-518007 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518007 PE), fluorescein (sc-518007 FITC), Alexa Fluor® 488 (sc-518007 AF488), Alexa Fluor® 546 (sc-518007 AF546), Alexa Fluor® 594 (sc-518007 AF594) or Alexa Fluor® 647 (sc-518007 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-518007 AF680) or Alexa Fluor® 790 (sc-518007 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

CYP7A1 (E-10) is recommended for detection of CYP7A1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for CYP7A1 siRNA (h): sc-41490, CYP7A1 siRNA (m): sc-41491, CYP7A1 shRNA Plasmid (h): sc-41490-SH, CYP7A1 shRNA Plasmid (m): sc-41491-SH, CYP7A1 shRNA (h) Lentiviral Particles: sc-41490-V and CYP7A1 shRNA (m) Lentiviral Particles: sc-41491-V.

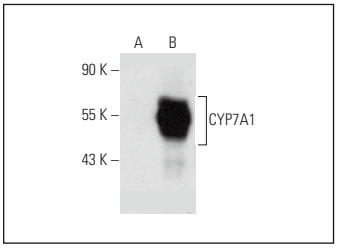
Molecular Weight of CYP7A1: 58 kDa.

Positive Controls: human CYP7A1 transfected HEK293T whole cell lysate, mouse liver extract: sc-2256 or rat liver extract: sc-2395.

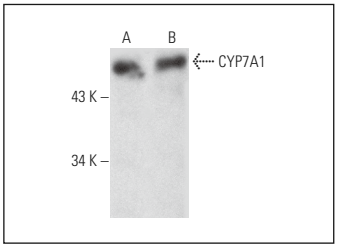
STORAGE

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

DATA



CYP7A1 (E-10): sc-518007. Western blot analysis of CYP7A1 expression in non-transfected (**A**) and human CYP7A1 transfected (**B**) HEK293T whole cell lysates.



CYP7A1 (E-10): sc-518007. Western blot analysis of CYP7A1 expression in mouse liver (**A**) and rat liver (**B**) tissue extracts.

SELECT PRODUCT CITATIONS

1. Chen, Y.S., et al. 2019. Ursodeoxycholic acid regulates hepatic energy homeostasis and white adipose tissue macrophages polarization in leptin-deficiency obese mice. Cells 8: 253.
2. Xing, C., et al. 2020. Sleep disturbance induces increased cholesterol level by NR1D1 mediated CYP7A1 inhibition. Front. Genet. 11: 610496.
3. Zhao, J., et al. 2021. Bicyclol alleviates signs of BDL-induced cholestasis by regulating bile acids and autophagy-mediated HMGB1/p62/Nrf2 pathway. Front. Pharmacol. 12: 686502.
4. Rivas, M., et al. 2021. HDAC1-dependent repression of markers of hepatocytes and P21 is involved in development of pediatric liver cancer. Cell. Mol. Gastroenterol. Hepatol. 12: 1669-1682.
5. Wang, L., et al. 2021. Disordered farnesoid X receptor signaling is associated with liver carcinogenesis in Abcb11-deficient mice. J. Pathol. 255: 412-424.
6. Xue, M., et al. 2021. Effect of fucoidan on ethanol-induced liver injury and steatosis in mice and the underlying mechanism. Food Nutr. Res. E-published.
7. Li, X., et al. 2022. Kaempferol acts on bile acid signaling and gut microbiota to attenuate the tumor burden in $Apc^{Min/+}$ mice. Eur. J. Pharmacol. 918: 174773.
8. Wang, R., et al. 2022. Inulin activates FXR-FGF15 signaling and further increases bile acids excretion in non-alcoholic fatty liver disease mice. Biochem. Biophys. Res. Commun. 600: 156-162.
9. Li, X., et al. 2022. *Penthorum chinense* Pursh. extract attenuates non-alcholic fatty liver disease by regulating gut microbiota and bile acid metabolism in mice. J. Ethnopharmacol. 294: 115333.

RESEARCH USE

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