SANTA CRUZ BIOTECHNOLOGY, INC.

CYP4A1 (clo1): sc-53248

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

In animals, P450 enzymes serve two major functions: biosynthesis of steroids, fatty acids and bile acids; and the metabolism of endogenous and a wide variety of exogenous substrates, such as toxins and drugs. The four major families involved in drug metabolism are CYP 1, 2, 3 and 4. The hepatic CYP4A enzymes are important fatty acid and prostaglandin ω-hydroxylases that are highly inducible by fibric acid hypolipidemic agents and other peroxisome proliferators. In humans, 4A1, 4A2 and 4A3 have been cloned from liver, kidney and testis and are detected in renal, hepatic and brain microvessels.

REFERENCES

1. Kimura, S., et al. 1989. The rat clofibrate-inducible CYP4A gene subfamily I. Complete intron and exon sequence of the CYP4A1 and CYP4A2 genes, unique exon organization, and identification of a conserved 19 bp upstream element. DNA 8: 503-516.
2. Aldridge, T.C., et al. 1995. Identification and characterization of DNA elements implicated of CYP4A1 transcription. Biochem. J. 306: 473-479.

SOURCE

CYP4A1 (clo1) is a mouse monoclonal antibody raised against liver cytochrome P450 2C11 and 4A1 of rat origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

CYP4A1 (clo1) is available conjugated to agarose (sc-53248 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-53248 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53248 PE), fluorescein (sc-53248 FITC), Alexa Fluor® 488 (sc-53248 AF488), Alexa Fluor® 546 (sc-53248 AF546), Alexa Fluor® 594 (sc-53248 AF594) or Alexa Fluor® 647 (sc-53248 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53248 AF680) or Alexa Fluor® 790 (sc-53248 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

CYP4A1 (clo1) is recommended for detection of CYP4A1 of mouse, rat and human 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)].

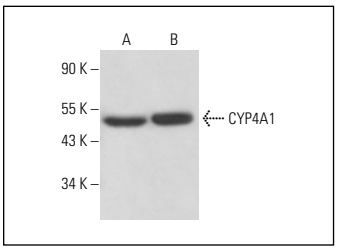
Molecular Weight of CYP4A1: 50 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, rat kidney extract: sc-2394 or rat liver extract: sc-2395.

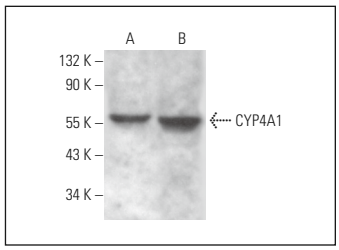
RECOMMENDED SUPPORT REAGENTS

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



CYP4A1 (clo1): sc-53248. Western blot analysis of CYP4A1 expression in rat liver (**A**) and rat kidney (**B**) tissue extracts.



CYP4A1 (clo1): sc-53248. Western blot analysis of CYP4A1 expression in NIH/3T3 (**A**) and Caki-1 (**B**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Chang, C.J., et al. 2011. Kaempferol regulates the lipid-profile in high-fat diet-fed rats through an increase in hepatic PPARα levels. Planta Med. 77: 1876-1882.
2. Liu, I.M., et al. 2012. Regulation of obesity and lipid disorders by extracts from *Angelica acutiloba* root in high-fat diet-induced obese rats. Phytother. Res. 26: 223-230.
3. Chang, C.J., et al. 2012. Myricetin increases hepatic peroxisome proliferator-activated receptor α protein expression and decreases plasma lipids and adiposity in rats. Evid. Based Complement. Alternat. Med. 2012: 787152.
4. Tzeng, T.F., et al. 2012. Vinegar-baked radix bupleuri regulates lipid disorders via a pathway dependent on peroxisome-proliferator-activated receptor-α in high-fat-diet-induced obese rats. Evid. Based Complement. Alternat. Med. 2012: 827278.
5. 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.
6. Tiwari, S., et al. 2020. Gender-specific changes in energy metabolism and protein degradation as major pathways affected in livers of mice treated with ibuprofen. Sci. Rep. 10: 3386.
7. Chen, K., et al. 2022. Natural garlic organosulfur compounds prevent metabolic disorder of lipid and glucose by increasing gut commensal *Bacteroides acidifaciens*. J. Agric. Food Chem. 70: 5829-5837.

RESEARCH USE

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