SANTA CRUZ BIOTECHNOLOGY, INC.

CYP7A1 (H-58): sc-25536

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 D3 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 (H-58) is a rabbit polyclonal antibody raised against amino acids 447-504 of CYP7A1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Available as agarose conjugate for immunoprecipitation, sc-25536 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

CYP7A1 (H-58) is recommended for detection of CYP7A1 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)], 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).

CYP7A1 (H-58) is also recommended for detection of CYP7A1 in additional species, including equine and canine.

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: Jurkat whole cell lysate: sc-2204.

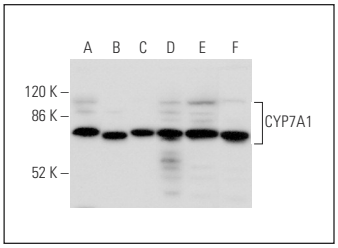
STORAGE

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.

DATA



CYP7A1 (H-58): sc-25536. Western blot analysis of CYP7A1 expression in BxPC-3 (**A**), U-251-MG (**B**), Hep G2 (**C**), HeLa (**D**), K-562 (**E**) and Jurkat (**F**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Gutiérrez-Juárez, R., et al. 2006. Critical role of stearoyl-CoA desaturase-1 (SCD1) in the onset of diet-induced hepatic Insulin resistance. J. Clin. Invest. 116: 1686-1695.
2. Ma, K., et al. 2009. Circadian dysregulation disrupts bile acid homeostasis. PLoS ONE 4: e6843.
3. Li, Q., et al. 2010. NO-1886 suppresses diet-induced Insulin resistance and cholesterol accumulation through STAT5-dependent upregulation of IGF1 and CYP7A1. J. Endocrinol. 204: 47-56.
4. Kamei, A., et al. 2010. Dietary iron-deficient anemia induces a variety of metabolic changes and even apoptosis in rat liver: a DNA microarray study. Physiol. Genomics 42: 149-156.
5. He, J., et al. 2011. PXR prevents cholesterol gallstone disease by regulating biosynthesis and transport of bile salts. Gastroenterology 140: 2095-2106.
6. Letona, A.Z., et al. 2011. CLA-enriched diet containing t10,c12-CLA alters bile acid homeostasis and increases the risk of cholelithiasis in mice. J. Nutr. 141: 1437-1444.
7. Sohi, G., et al. 2011. Maternal protein restriction elevates cholesterol in adult rat offspring due to repressive changes in histone modifications at the cholesterol 7α-hydroxylase promoter. Mol. Endocrinol. 25: 785-798.