SANTA CRUZ BIOTECHNOLOGY, INC.

CYP7A1 (N-17): sc-14423

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 7a-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.

REFERENCES

1. Nelson, D.R., et al. 1996. P450 superfamily: update on new sequences, gene mapping, accession numbers and nomenclature. Pharmacogenetics 6: 1-42.
2. Peterson, J.A., et al. 1997. P450BM-3; a tale of two domains—or is it three? Steroids 62: 117-123.

CHROMOSOMAL LOCATION

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

SOURCE

CYP7A1 (N-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region 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.

Blocking peptide available for competition studies, sc-14423 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP7A1 (N-17) 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), 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 (N-17) is also recommended for detection of CYP7A1 in additional species, including equine, canine, bovine, porcine and avian.

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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Wooton-Kee, C.R., et al. 2008. Increased cholesterol 7α-hydroxylase expression and size of the bile acid pool in the lactating rat. Am. J. Physiol. Gastrointest. Liver Physiol. 294: 1009-1016.
2. Zhang, Y., et al. 2008. Osthole regulates enzyme protein expression of CYP7A1 and DGAT2 via activation of PPARα/γ in fat milk-induced fatty liver rats. J. Asian Nat. Prod. Res. 10: 807-812.
3. Ronis, M.J., et al. 2009. Dietary soy protein isolate attenuates metabolic syndrome in rats via effects on PPAR, LXR, and SREBP signaling. J. Nutr. 139: 1431-1438.
4. Chow, E.C., et al. 2009. 1α,25-dihydroxyvitamin D_3 triggered vitamin D receptor and farnesoid X receptor-like effects in rat intestine and liver *in vivo*. Biopharm. Drug Dispos. 30: 457-475.
5. Ronis, M.J., et al. 2010. Rice protein isolate improves lipid and glucose homeostasis in rats fed high fat/high cholesterol diets. Exp. Biol. Med. 235: 1102-1113.
6. Chow, E.C., et al. 2010. Comparative effects of doxercalciferol (1α-hydroxyvitamin D_2) versus calcitriol (1α,25-dihydroxyvitamin D_3) on the expression of transporters and enzymes in the rat *in vivo*. J. Pharm. Sci. 100: 1594-1604.

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.

PROTOCOLS

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