SANTA CRUZ BIOTECHNOLOGY, INC.

# CYP27A1 (D-12): sc-393222

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 endo-genous 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 7$\alpha$-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. Bulun, S.E., et al. 1997. Endocrine disorders associated with inappropriately high aromatase expression. J. Steroid Biochem. Mol. Biol. 61: 133-139.
3. Peterson, J.A., et al. 1997. P450BM-3; a tale of two domains—or is it three? Steroids 62: 117-123.
4. Braunstein, G.D. 1999. Aromatase and gynecomastia. Endocr. Relat. Cancer 6: 315-324.
5. Kristensen, V.N., et al. 2000. Genetic variants of CYP19 (aromatase) and breast cancer risk. Oncogene 19: 1329-1333.
6. Repa, J.J., et al. 2000. Regulation of absorption and ABC1-mediated efflux of cholesterol by RXR heterodimers. Science 289: 1524-1529.
7. Sawada, N., et al. 2000. Metabolism of vitamin $D_3$ by human CYP27A1. Biochem. Biophys. Res. Commun. 273: 977-984.


## CHROMOSOMAL LOCATION

Genetic locus: CYP27A1 (human) mapping to 2q35.

## SOURCE

CYP27A1 (D-12) is a mouse monoclonal antibody raised against amino acids 335-451 mapping within an internal region of CYP27A1 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.

## STORAGE

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

## APPLICATIONS

CYP27A1 (D-12) is recommended for detection of CYP27A1 of 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 CYP27A1 siRNA (h): sc-41500, CYP27A1 shRNA Plasmid (h): sc-41500-SH and CYP27A1 shRNA (h) Lentiviral Particles: sc-41500-V.

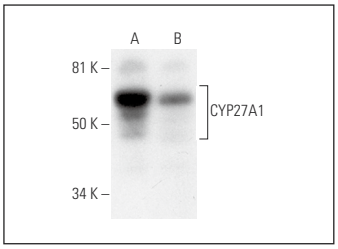
Molecular Weight of CYP27A1: 60 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, human kidney extract: sc-363764 or Caco-2 cell lysate: sc-2262.

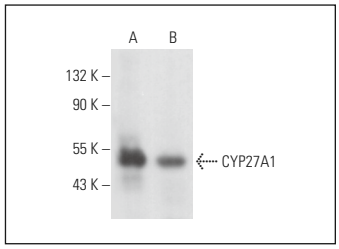
## RECOMMENDED SUPPORT REAGENTS

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). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## DATA




CYP27A1 (D-12): sc-393222. Western blot analysis of CYP27A1 expression in Hep G2 (**A**) and Caco-2 (**B**) whole cell lysates.




CYP27A1 (D-12): sc-393222. Western blot analysis of CYP27A1 expression in human adrenal gland (**A**) and human kidney (**B**) tissue extracts.

## SELECT PRODUCT CITATIONS


1. Serviddio, G., et al. 2016. Effects of dietary fatty acids and cholesterol excess on liver injury: a lipidomic approach. Redox Biol. 9: 296-305.


## RESEARCH USE

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

## PROTOCOLS

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