SANTA CRUZ BIOTECHNOLOGY, INC.

CYP27B1 (H-9): sc-365044

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The cytochrome P450 proteins are monooxygenases that catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. P450 enzymes are classified into subfamilies based on their sequence similarities. CYP27B1, a 508 amino acid protein that belongs to the XXVIIB subfamily of the cytochrome P450 family, localizes to the mitochondrion and is expressed in the kidney. The CYP27B1 protein catalyzes the conversion of 25-hydroxyvitamin D_3 (25(OH)D) to 1_α-25-dihydroxyvitamin D_3 ($1,25(OH)_2D$) and functions in calcium metabolism, normal bone growth and tissue differentiation. Mutations in the gene which encodes for CYP27B1 cause vitamin D-dependent rickets type 1 (VDDR-1), also designated pseudovitamin D deficiency rickets (PDDR), an autosomal recessive disease characterized by early onset of rickets with hypocalcemia and muscle weakness.

REFERENCES

1. Dardenne, O., et al. 2001. Targeted inactivation of the 25-hydroxyvitamin D_3-1_α-hydroxylase gene (CYP27B1) creates an animal model of pseudovitamin D-deficiency rickets. Endocrinology 142: 3135-3141.
2. Sawada, N., et al. 2001. Structure-function analysis of CYP27B1 and CYP27A1. Studies on mutants from patients with vitamin D-dependent rickets type I (VDDR-I) and cerebrotendinous xanthomatosis (CTX). Eur. J. Biochem. 268: 6607-6615.
3. Dardenne, O., et al. 2003. Correction of the abnormal mineral ion homeostasis with a high-calcium, high-phosphorus, high-lactose diet rescues the PDDR phenotype of mice deficient for the 25-hydroxyvitamin D-1_α-hydroxylase (CYP27B1). Bone 32: 332-340.
4. Diesel, B., et al. 2005. Vitamin D_3 metabolism in human glioblastoma multiforme: functionality of CYP27B1 splice variants, metabolism of calcidiol, and effect of calcitriol. Clin. Cancer Res. 11: 5370-5380.

CHROMOSOMAL LOCATION

Genetic locus: CYP27B1 (human) mapping to 12q14.1; Cyp27b1 (mouse) mapping to 10 D3.

SOURCE

CYP27B1 (H-9) is a mouse monoclonal antibody raised against amino acids 211-310 mapping within an internal region of CYP27B1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 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.

PROTOCOLS

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

APPLICATIONS

CYP27B1 (H-9) is recommended for detection of CYP27B1 of mouse 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), immunohistochemistry (including paraffin-embedded sections) (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 CYP27B1 siRNA (h): sc-60479, CYP27B1 siRNA (m): sc-60480, CYP27B1 shRNA Plasmid (h): sc-60479-SH, CYP27B1 shRNA Plasmid (m): sc-60480-SH, CYP27B1 shRNA (h) Lentiviral Particles: sc-60479-V and CYP27B1 shRNA (m) Lentiviral Particles: sc-60480-V.

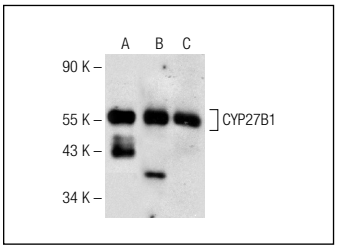
Molecular Weight of CYP27B1: 56 kDa.

Positive Controls: Human tonsil tissue extract: sc-364263, mouse kidney extract: sc-2255 or human fetal kidney tissue extract.

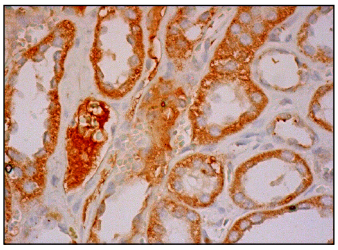
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-mouse IgG-FITC: sc-2010 (dilution range: 1:100-1:400) or goat anti-mouse IgG-TR: sc-2781 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2050 or ABC: sc-2017 mouse IgG Staining Systems.

DATA



CYP27B1 (H-9): sc-365044. Western blot analysis of CYP27B1 expression in 293 whole cell lysate (**A**) and human fetal kidney (**B**) and human tonsil (**C**) tissue extracts.



CYP27B1 (H-9): sc-365044. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules.

RESEARCH USE

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