SANTA CRUZ BIOTECHNOLOGY, INC.

CYP27B1 (H-90): sc-67261

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 pseudo-vitamin D deficiency rickets (PDDR), an autosomal recessive disease characterized by early onset of rickets with hypocalcemia and muscle weakness.

CHROMOSOMAL LOCATION

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

SOURCE

CYP27B1 (H-90) is a rabbit polyclonal antibody raised against amino acids 221-310 mapping within an internal region of CYP27B1 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.

APPLICATIONS

CYP27B1 (H-90) is recommended for detection of CYP27B1 of human, mouse and, to a lesser extent, rat 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).

CYP27B1 (H-90) is also recommended for detection of CYP27B1 in additional species, including porcine.

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: CYP27B1 (m): 293T Lysate: sc-119570 or mouse kidney extract: sc-2255.

RESEARCH USE

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

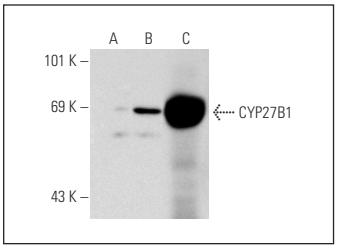
PROTOCOLS

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

STORAGE

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

DATA



CYP27B1 (H-90): sc-67261. Western blot analysis of CYP27B1 expression in non-transfected: sc-117752 (**A**) and mouse CYP27B1 transfected: sc-119570 (**B**) 293T whole cell lysates and mouse kidney tissue extract (**C**).

SELECT PRODUCT CITATIONS

1. Blomberg Jensen, M., et al. 2010. Vitamin D receptor and vitamin D metabolizing enzymes are expressed in the human male reproductive tract. Hum. Reprod. 25: 1303-1311.
2. Blomberg Jensen, M., et al. 2010. Expression of the vitamin D receptor, 25-hydroxylases, 1α-hydroxylase and 24-hydroxylase in the human kidney and renal clear cell cancer. J. Steroid Biochem. Mol. Biol. 121: 376-382.
3. Geng, S., et al. 2010. Effects of 25-hydroxyvitamin D_3 on proliferation and osteoblast differentiation of human marrow stromal cells require CYP27B1/1α-hydroxylase. J. Bone Miner. Res. 26: 1145-1153.
4. Jorgensen, A., et al. 2012. Influence of vitamin D on cisplatin sensitivity in testicular germ cell cancer-derived cell lines and in a NTera2 xenograft model. J. Steroid Biochem. Mol. Biol. 136: 238-246.
5. Blomberg Jensen, M., et al. 2012. Vitamin D metabolism and effects on pluripotency genes and cell differentiation in testicular germ cell tumors *in vitro* and *in vivo*. Neoplasia 14: 952-963.
6. Suetani, R.J., et al. 2012. A comparison of vitamin D activity in paired non-malignant and malignant human breast tissues. Mol. Cell. Endocrinol. 362: 202-210.
7. Zhu, H.J., et al. 2012. Impaired N-cadherin-mediated adhesion increases the risk of inducible ventricular arrhythmias in isolated rat hearts. Sci. Res. Essays 7: 2983-2991.
8. Latus, J., et al. 2013. Involvement of α-klotho, fibroblast growth factor-, vitamin-D- and calcium-sensing receptor in 53 patients with primary hyperparathyroidism. Endocrine 44: 255-263.
9. Chiang, K.C., et al. 2015. Hepatocellular carcinoma cells express 25(OH)D-1α-hydroxylase and are able to convert 25(OH)D to $1\alpha,25(OH)_2D$, leading to the 25(OH)D-induced growth inhibition. J. Steroid Biochem. Mol. Biol. 154: 47-52.