SANTA CRUZ BIOTECHNOLOGY, INC.

CYP2R1 (C-15): sc-48985

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. There are currently 57 known active cytochrome P450 (CYP) genes and 58 known pseudogenes present in the human genome. CYP2R1 is a 501 amino acid protein which belongs to the CYP2 family of cytochrome P450 proteins. These proteins are usually involved in the metabolism of foreign compounds. CYP2R1 acts as a major vitamin D 25-hydroxylase. A homozygous mutation in the CYP2R1 gene eliminates the vitamin D_3 25-hydroxylase activity of the CYP2R1 protein, causing 25-hydroxyvitamin D_3 deficiency. Mani-festations of 25-hydroxyvitamin D_3 deficiency include abnormally low plasma levels of 25-hydroxyvitamin D_3 and various symptoms of vitamin D deficiency, including skeletal abnormalities, hypophosphatemia and hypocalcemia.

CHROMOSOMAL LOCATION

Genetic locus: CYP2R1 (human) mapping to 11p15.2; Cyp2r1 (mouse) mapping to 7 F1.

SOURCE

CYP2R1 (C-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of CYP2R1 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-48985 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP2R1 (C-15) is recommended for detection of CYP2R1 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), 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).

CYP2R1 (C-15) is also recommended for detection of CYP2R1 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for CYP2R1 siRNA (h): sc-60481, CYP2R1 siRNA (m): sc-60482, CYP2R1 shRNA Plasmid (h): sc-60481-SH, CYP2R1 shRNA Plasmid (m): sc-60482-SH, CYP2R1 shRNA (h) Lentiviral Particles: sc-60481-V and CYP2R1 shRNA (m) Lentiviral Particles: sc-60482-V.

Molecular Weight of CYP2R1: 57 kDa.

Positive Controls: KNRK whole cell lysate: sc-2214 or NCI-H460 whole cell lysate: sc-364235.

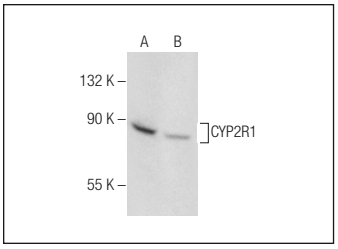
STORAGE

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

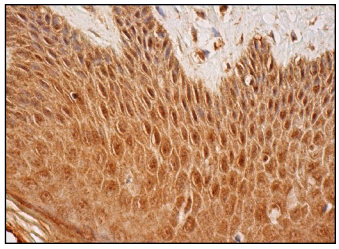
RESEARCH USE

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

DATA



CYP2R1 (C-15): sc-48985. Western blot analysis of CYP2R1 expression in KNRK (**A**) and NCI-H460 (**B**) whole cell lysates.



CYP2R1 (C-15): sc-48985. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vulva/anal skin tissue showing cytoplasmic and nuclear staining of epidermal cells.

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. Petta, S., et al. 2010. Low vitamin D serum level is related to severe fibrosis and low responsiveness to interferon-based therapy in genotype 1 chronic hepatitis C. Hepatology 51: 1158-1167.
4. Foresta, C., et al. 2011. Bone mineral density and testicular failure: evidence for a role of vitamin D 25-hydroxylase in human testis. J. Clin. Endocrinol. Metab. 96: E646-E652.
5. Blomberg Jensen, M., et al. 2012. Expression of the vitamin D metabolizing enzyme CYP24A1 at the annulus of human spermatozoa may serve as a novel marker of semen quality. Int. J. Androl. 35: 499-510.
6. Mukawa, C. and Taniguchi, T. 2012. Effects of propofol with hyperthermia in a rat model of endotoxemic shock. Acta Anaesthesiol. Scand. 56: 866-871.
7. 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.

PROTOCOLS

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