

CYP27B1 (D-20): sc-49643

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 XXVIIIB 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 D3 (25(OH)D) to 1- α ,25-dihydroxyvitamin D3 (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

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- 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.
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- Dwivedi, P.P., et al. 2005. Identification of growth factor independent-1 (GFI1) as a repressor of 25-hydroxyvitamin D 1- α hydroxylase (CYP27B1) gene expression in human prostate cancer cells. *Endocr. Relat. Cancer* 12: 351-365.
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CHROMOSOMAL LOCATION

Genetic locus: CYP27B1 (human) mapping to 12q14.1.

SOURCE

CYP27B1 (D-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of CYP27B1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-49643 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

CYP27B1 (D-20) is recommended for detection of CYP27B1 of 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); may cross-react with AVP Receptor V2 in human.

CYP27B1 (D-20) is also recommended for detection of CYP27B1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for CYP27B1 siRNA (h): sc-60479, CYP27B1 shRNA Plasmid (h): sc-60479-SH and CYP27B1 shRNA (h) Lentiviral Particles: sc-60479-V.

Molecular Weight of CYP27B1: 56 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

- Hertting, O., et al. 2010. Vitamin D induction of the human antimicrobial Peptide cathelicidin in the urinary bladder. *PLoS One* 5: e15580.

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.