

# CYP27B1 (G-5): sc-515903

## 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 D<sub>3</sub> (25(OH)D) to 1- $\alpha$ ,25-dihydroxyvitamin D<sub>3</sub> (1,25(OH)<sub>2</sub>D) 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

CYP27B1 (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 468-486 near the C-terminus of CYP27B1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgM 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.

## RESEARCH USE

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

## APPLICATIONS

CYP27B1 (G-5) is recommended for detection of CYP27B1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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.

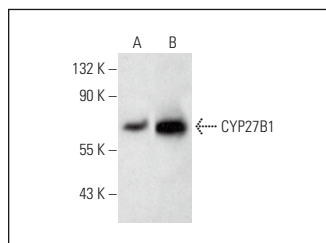
Molecular Weight of CYP27B1: 56 kDa.

Positive Controls: Y79 cell lysate: sc-2240 or human kidney extract: sc-363764.

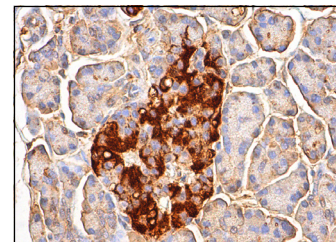
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  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 L-Agarose: sc-2336 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgG $\kappa$  BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohisto-mount: sc-45086, or Organo/Limonene Mount: sc-45087.

## DATA



CYP27B1 (G-5): sc-515903. Western blot analysis of CYP27B1 expression in Y79 whole cell lysate (A) and human kidney tissue extract (B).



CYP27B1 (G-5): sc-515903. Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of Islets of Langerhans.

## SELECT PRODUCT CITATIONS

1. Liu, K., et al. 2021. Expression of vitamin D 1 $\alpha$ -hydroxylase in human gingival fibroblasts *in vivo*. *PeerJ* 9: e10279.
2. Lian, P., et al. 2021. Vitamin D receptor and 1 $\alpha$ -hydroxylase are highly expressed in lungs of mice infected with H9N2 avian influenza viruses. *J. Steroid Biochem. Mol. Biol.* 211: 105907.
3. Kim, M.J., et al. 2022. Vitamin D receptor expression and its clinical significance in papillary thyroid cancer. *Technol. Cancer Res. Treat.* 21: 15330338221089933.
4. Xu, Q.H., et al. 2023. Altered vitamin D metabolism is involved in the dysregulation of  $\gamma$  $\delta$ T cell function and their crosstalk with trophoblasts in recurrent pregnancy loss. *Am. J. Reprod. Immunol.* 89: e13581.
5. Paliu, I.A., et al. 2023. CYP27B1 enzyme in psoriasis: a preliminary study of immunohistochemical observations. *Life* 14: 15.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.