



# CYP27B1 (G-20): sc-49644

## 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- $\alpha$ ,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

1. 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.
2. Dwivedi, P.P., et al. 2005. Identification of growth factor independent-1 (GF1) as a repressor of 25-hydroxyvitamin D 1- $\alpha$  hydroxylase (CYP27B1) gene expression in human prostate cancer cells. *Endocr. Relat. Cancer* 12: 351-365.
3. Kurylowicz, A., et al. 2005. CYP27B1 Gene polymorphism is associated with Graves' disease in a Polish population study. *Thyroid* 15: 1107-1108.
4. Jennings, C.E., et al. 2005. A haplotype of the CYP27B1 promoter is associated with autoimmune Addison's disease but not with Graves' disease in a UK population. *J. Mol. Endocrinol.* 34: 859-863.
5. Anderson, P.H., et al. 2005. Modulation of CYP27B1 and CYP24 mRNA expression in bone is independent of circulating 1,25(OH)2D3 levels. *Bone* 36: 654-662.
6. Yamamoto, K. et al. 2005. Identification of the amino acid residue of CYP27B1 responsible for binding of 25-hydroxyvitamin D3 whose mutation causes vitamin D-dependent rickets type 1. *J. Biol. Chem.* 280: 30511-30516.

## CHROMOSOMAL LOCATION

Genetic locus: CYP27B1 (human) mapping to 12q13.1-q13.3; Cyp27b1 (mouse) mapping to 10 D3.

## SOURCE

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

## PRODUCT

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

Blocking peptide available for competition studies, sc-49644 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

CYP27B1 (G-20) is recommended for detection of CYP27B1 of mouse and rat 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 Hecw2 in mouse.

Suitable for use as control antibody for CYP27B1 siRNA (m): sc-60480.

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.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.