

CYP27B1 (E-7): sc-518129

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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3. 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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5. Diesel, B., et al. 2005. Vitamin D₃ metabolism in human glioblastoma multiforme: functionality of CYP27B1 splice variants, metabolism of calcidiol, and effect of calcitriol. *Clin. Cancer Res.* 11: 5370-5380.
6. 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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8. 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.

CHROMOSOMAL LOCATION

Genetic locus: Cyp27b1 (mouse) mapping to 10 D3.

SOURCE

CYP27B1 (E-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 264-286 of CYP27B1 of mouse origin.

PRODUCT

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

APPLICATIONS

CYP27B1 (E-7) is recommended for detection of CYP27B1 of mouse and rat origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

Suitable for use as control antibody for CYP27B1 siRNA (m): sc-60480, CYP27B1 shRNA Plasmid (m): sc-60480-SH and CYP27B1 shRNA (m) Lentiviral Particles: sc-60480-V.

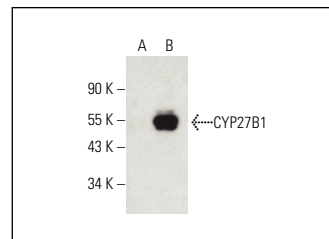
Molecular Weight of CYP27B1: 56 kDa.

Positive Controls: CYP27B1 (m): 293T Lysate: sc-119570.

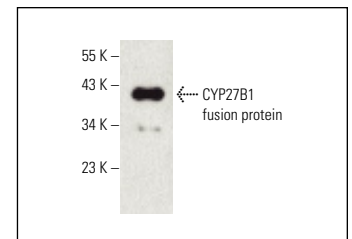
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



CYP27B1 (E-7): sc-518129. Western blot analysis of CYP27B1 expression in non-transfected: sc-117752 (A) and mouse CYP27B1 transfected: sc-119570 (B) 293T whole cell lysates. Detection reagent used: m-IgG κ BP-HRP: sc-516102.



CYP27B1 (E-7): sc-518129. Western blot analysis of mouse recombinant CYP27B1 fusion protein. Detection reagent used: m-IgG κ BP-HRP: sc-516102.

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.