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CYP27B1 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP9056B

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	O15528
Reactivity	Human, Rat, Mouse
Predicted	Mouse, Bovine, Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	56504
Antigen Region	482-508

Additional Information

Gene ID	1594
Other Names	25-hydroxyvitamin D-1 alpha hydroxylase, mitochondrial, 25-OHD-1 alpha-hydroxylase, 25-hydroxyvitamin D(3) 1-alpha-hydroxylase, VD3 1A hydroxylase, Calcidiol 1-monooxygenase, Cytochrome P450 subfamily XXVIIB polypeptide 1, Cytochrome P450C1 alpha, Cytochrome P450VD1-alpha, Cytochrome p450 27B1, CYP27B1, CYP1ALPHA, CYP27B
Target/Specificity	This CYP27B1 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 482-508 amino acids from the C-terminal region of human CYP27B1.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:25 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	CYP27B1 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CYP27B1

Synonyms	CYP1ALPHA, CYP27B
Function	A cytochrome P450 monooxygenase involved in vitamin D metabolism and in calcium and phosphorus homeostasis. Catalyzes the rate-limiting step in the activation of vitamin D in the kidney, namely the hydroxylation of 25-hydroxyvitamin D3/calcidiol at the C1alpha- position to form the hormonally active form of vitamin D3, 1alpha,25- dihydroxyvitamin D3/calcitriol that acts via the vitamin D receptor (VDR) (PubMed:10518789, PubMed:10566658, PubMed:12050193, PubMed:22862690, PubMed:9486994). Has 1alpha-hydroxylase activity on vitamin D intermediates of the CYP24A1-mediated inactivation pathway (PubMed:10518789, PubMed:22862690). Converts 24R,25-dihydroxyvitamin D3/secalciferol to 1-alpha,24,25-trihydroxyvitamin D3, an active ligand of VDR. Also active on 25-hydroxyvitamin D2 (PubMed:10518789). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate, and reducing the second into a water molecule, with two electrons provided by NADPH via FDXR/adrenodoxin reductase and FDX1/adrenodoxin (PubMed:22862690).
Cellular Location	Mitochondrion membrane.
Tissue Location	Kidney.

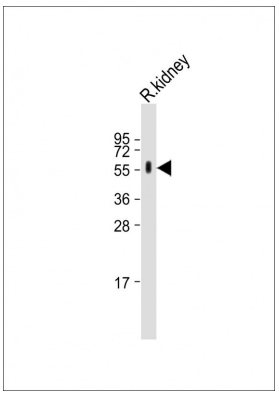
Background

CYP27B1 is a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. The protein encoded by this gene localizes to the inner mitochondrial membrane where it hydroxylates 25-hydroxyvitamin D3 at the 1alpha position. This reaction synthesizes 1alpha,25-dihydroxyvitamin D3, the active form of vitamin D3, which binds to the vitamin D receptor and regulates calcium metabolism. Thus this enzyme regulates the level of biologically active vitamin D and plays an important role in calcium homeostasis. Mutations in this gene can result in vitamin D-dependent rickets type I.

References

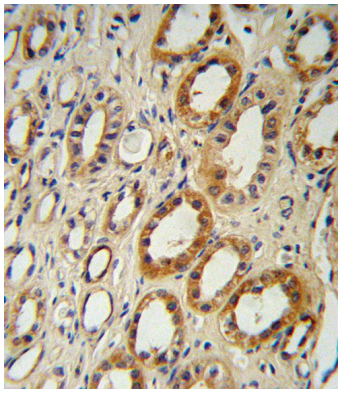
Simon,K.C., et.al., Mult. Scler. 16 (2), 133-138 (2010)
Zhou,S., et.al., Endocrinology 151 (1), 14-22 (2010)

Images

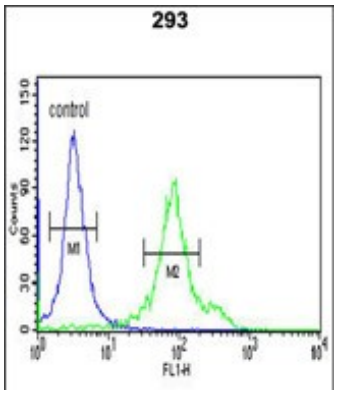


Anti-CYP27B1 Antibody (C-term) at 1:2000 dilution + Rat kidney whole tissue lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 57 kDa Blocking/Dilution buffer: 5% NFDM/TBST.

CYP27B1 Antibody (C-term) (Cat. #AP9056B)immunohistochemistry analysis in formalin



fixed and paraffin embedded human kidney tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CYP27B1 Antibody (C-term) for immunohistochemistry. Clinical relevance has not been evaluated.



CYP27B1 Antibody (C-term) (Cat. #AP9056b) flow cytometric analysis of 293 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

Citations

- Reduced sinonasal levels of 1α-hydroxylase are associated with worse quality of life in chronic rhinosinusitis with nasal polyps.
- Antenatal endotoxin disrupts lung vitamin D receptor and 25-hydroxyvitamin D 1α-hydroxylase expression in the developing rat.
- 25(OH)D Is Effective to Repress Human Cholangiocarcinoma Cell Growth through the Conversion of 25(OH)D to 1α,25(OH)$_2$D$_3$.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.