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CYP27B1 Antibody (C-term) Blocking Peptide

Synthetic peptide
Catalog # BP9056b

Specification

CYP27B1 Antibody (C-term) Blocking Peptide - Product Information

Primary Accession O15528

CYP27B1 Antibody (C-term) Blocking Peptide - 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
The synthetic peptide sequence used to generate the antibody AP9056b was selected from the C-term region of human CYP27B1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.

Format
Peptides are lyophilized in a solid powder format. Peptides can be reconstituted in solution using the appropriate buffer as needed.

Storage
Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C.

Precautions
This product is for research use only. Not for use in diagnostic or therapeutic procedures.

CYP27B1 Antibody (C-term) Blocking Peptide - 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:9486994, PubMed:<a href="http://www.uniprot.org/citations/22862690"

target="_blank">22862690, PubMed:10566658, PubMed:12050193). 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.

CYP27B1 Antibody (C-term) Blocking Peptide - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Blocking Peptides

CYP27B1 Antibody (C-term) Blocking Peptide - Images

CYP27B1 Antibody (C-term) Blocking Peptide - 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.

CYP27B1 Antibody (C-term) Blocking Peptide - References

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