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CYP11B1 Rabbit pAb

Catalog # AP96987

Product Information

Application	WB
Primary Accession	P15538
Other Accession	P15538
Reactivity	Rat, Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	57573
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human CYP11B1
Epitope Specificity	301-400/503
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	0.01M TBS (pH7.4) with 1% BSA, 0.02% Proclin300 and 50% Glycerol.
SIMILARITY	Belongs to the cytochrome P450 family.
DISEASE	Defects in CYP11B1 are the cause of adrenal hyperplasia type 4 (AH4) [MIM:202010]. AH4 is a form of congenital adrenal hyperplasia, a common recessive disease due to defective synthesis of cortisol. Congenital adrenal hyperplasia is characterized by androgen excess leading to ambiguous genitalia in affected females, rapid somatic growth during childhood in both sexes with premature closure of the epiphyses and short adult stature. Four clinical types: 'salt wasting' (SW, the most severe type), 'simple virilizing' (SV, less severely affected patients), with normal aldosterone biosynthesis, 'non-classic form' or late onset (NC or LOAH), and 'cryptic' (asymptomatic). AH4 patients usually have hypertension. Defects in CYP11B1 are a cause of hyperaldosteronism familial type 1 (FH1) [MIM:103900]. It is a disorder characterized by hypertension, variable hyperaldosteronism, and abnormal adrenal steroid production, including 18-oxocortisol and 18-hydroxycortisol. There is significant phenotypic heterogeneity, and some individuals never develop hypertension. Note=The molecular defect causing hyperaldosteronism familial type 1 is an anti-Lepore-type fusion of the CYP11B1 and CYP11B2 genes. The hybrid gene has the promoting part of CYP11B1, ACTH-sensitive, and the coding part of CYP11B2.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	This gene encodes 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. This protein localizes to the mitochondrial inner membrane and has steroid 11-beta-hydroxylase activity. In addition to this activity, the 18 or 19-hydroxylation of steroids and the aromatization of androstendione to estrone have also been ascribed to cytochrome P450 XIB.

Additional Information

Gene ID	1584
Other Names	CPN1; CYP11B; FHI; P450C11; ALDOS; CPN2; CYP11BL; CYPXIB2; P-450C18; P450C18; P450aldo; C11B1_HUMAN; CYP11B1; CYPXIB1; Cytochrome P-450c11 (Cytochrome P450C11); Steroid 11-beta-hydroxylase, CYP11B1; S11BH; C11B2_HUMAN; CYP11B2; Aldosterone synthase (ALDOS); Aldosterone-synthesizing enzyme; Corticosterone 18-monooxygenase, CYP11B2; Cytochrome P-450Aldo; Cytochrome P-450C18; Steroid 11-beta-hydroxylase, CYP11B2; Steroid 18-hydroxylase; cytochrome P450 family 11 subfamily B member 1; cytochrome P450, subfamily XIB (steroid 11-beta-hydroxylase), polypeptide 1; cytochrome P450, family 11, subfamily B, polypeptide 1; steroid 11-beta-monooxygenase
Dilution	WB=1:500-2000
Storage	Store at -20 °C for one year. Avoid repeated freeze/thaw cycles. When reconstituted in sterile pH 7.4 0.01M PBS or diluent of antibody the antibody is stable for at least two weeks at 2-4 °C.

Protein Information

Name	CYP11B1 {ECO:0000303|PubMed:18215163, ECO:0000312|HGNC:HGNC:2591}
Function	A cytochrome P450 monooxygenase mainly involved in the biosynthesis of adrenal corticoids (PubMed:12530636, PubMed:1518866, PubMed:1775135, PubMed:18215163, PubMed:23322723, PubMed:23685396, PubMed:29277707). Catalyzes a variety of reactions that are essential for many species, including detoxification, defense, and the formation of endogenous chemicals like steroid hormones. Steroid 11beta, 18- and 19-hydroxylase with preferred regioselectivity at 11beta, then 18, and lastly 19 (By similarity). Catalyzes the hydroxylation of 11- deoxycortisol and 11-deoxycorticosterone (21-hydroxyprogesterone) at 11beta position, yielding cortisol or corticosterone, respectively, but cannot produce aldosterone (PubMed:12530636, PubMed:1518866, PubMed:1775135, PubMed:18215163, PubMed:23322723, PubMed:23685396, PubMed:29277707). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate for hydroxylation and reducing the second into a water molecule. Two electrons are provided by NADPH via a two- protein mitochondrial transfer system comprising flavoprotein FDXR (adrenodoxin/ferredoxin reductase) and nonheme iron-sulfur protein FDX1 or FDX2 (adrenodoxin/ferredoxin) (PubMed:18215163, PubMed:23685396). Due to its lack of 18-oxidation activity, it is incapable of generating aldosterone (PubMed:23322723). Besides its role in the biosynthesis of mineralocorticoids and glucocorticoids, it can also participate in the androgen metabolic pathway, converting androst-4-ene-3,17-dione to 11beta-hydroxyandrost-4-ene-3,17-dione, and testosterone (17beta- hydroxy-4-androsten-3-one) to 11beta,17beta-dihydroxyandrost-4-ene-3- one (PubMed:23685396, PubMed:29277707).
Cellular Location	Mitochondrion inner membrane {ECO:0000250|UniProtKB:P14137}; Peripheral membrane protein {ECO:0000250|UniProtKB:P14137}
Tissue Location	Expressed in the zona fasciculata/reticularis of the adrenal cortex.

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