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CYP11B2 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11213C

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P19099
Other Accession	NP_000489
Reactivity	Human, Rat, Mouse
Predicted	Canine, Rabbit
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB16930
Calculated MW	57560
Antigen Region	120-147

Additional Information

Gene ID	1585
Other Names	Cytochrome P450 11B2, mitochondrial, Aldosterone synthase, ALDOS, Aldosterone-synthesizing enzyme, CYPXIB2, Cytochrome P-450Aldo, Cytochrome P-450C18, Steroid 18-hydroxylase, CYP11B2
Target/Specificity	This CYP11B2 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 120-147 amino acids from the Central region of human CYP11B2.
Dilution	WB~~1:1000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	CYP11B2 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	CYP11B2 {ECO:0000303|PubMed:1346492, ECO:0000312|HGNC:HGNC:2592}

Function	A cytochrome P450 monooxygenase that catalyzes the biosynthesis of aldosterone, the main mineralocorticoid in the human body responsible for salt and water homeostasis, thus involved in blood pressure regulation, arterial hypertension, and the development of heart failure (PubMed:11856349, PubMed:12530636, PubMed:1518866, PubMed:15356073, PubMed:1594605, PubMed:1775135, PubMed:22446688, PubMed:23322723, PubMed:9814482, PubMed:9814506). Catalyzes three sequential oxidative reactions of 11-deoxycorticosterone (21-hydroxyprogesterone), namely 11-beta hydroxylation, followed by two successive oxidations at C18 yielding 18-hydroxy and then 18-oxo intermediates (that would not leave the enzyme active site during the consecutive hydroxylation reactions), ending with the formation of aldosterone (PubMed:11856349, PubMed:12530636, PubMed:1518866, PubMed:1594605, PubMed:1775135, PubMed:22446688, PubMed:23322723, PubMed:9814506). Can also produce 18-hydroxycortisol and 18- oxocortisol, derived from successive oxidations of cortisol at C18, normally found at very low levels, but significantly increased in primary aldosteronism, the most common form of secondary hypertension (PubMed:15356073, PubMed:9814482). Mechanistically, uses molecular oxygen inserting one oxygen atom into a substrate 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:11856349, PubMed:1594605, PubMed:23322723, PubMed:23685396, PubMed:9814506). Besides its role in the biosynthesis of mineralocorticoids and glucocorticoids, it can also participate in the androgen metabolic pathway, converting testosterone (17beta-hydroxy-4-androsten-3-one) to 11beta,17beta-dihydroxyandrost-4-ene-3-one (PubMed:23685396). Can also use progesterone as substrate (PubMed:33189850).
Cellular Location	Mitochondrion inner membrane {ECO:0000250|UniProtKB:P14137}; Peripheral membrane protein {ECO:0000250|UniProtKB:P14137}
Tissue Location	Expressed sporadically in the zona glomerulosa (zG) of the adrenal cortex (conventional zonation), as well as in aldosterone-producing cell clusters (APCCs) composed of morphological zG cells in contact with the capsule (variegated zonation)

Background

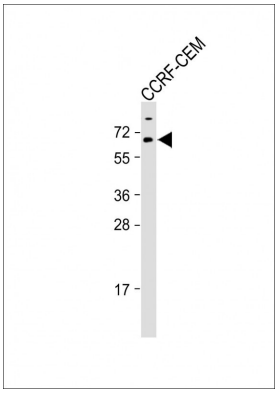
This gene encodes a member of the cytochrome P450 superfamily of enzymes. The cytochrome P450 proteins are monooxygenases which catalyze many reactions involved in drug metabolism and synthesis of cholesterol, steroids and other lipids. This protein localizes to the mitochondrial inner membrane. The enzyme has steroid 18-hydroxylase activity to synthesize aldosterone and 18-oxocortisol as well as steroid 11 beta-hydroxylase activity. Mutations in this gene cause corticosterone methyl oxidase deficiency.

References

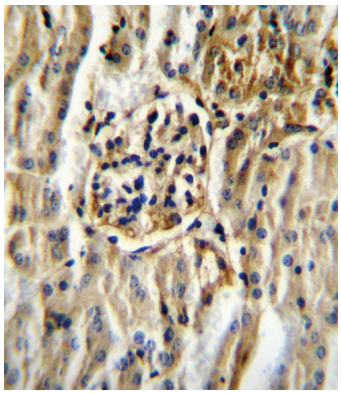
Wang, B., et al. Urology 76 (4), 1018 (2010) : Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010) Huriletemuer, H., et al. Neurosciences (Riyadh) 15(3):184-189(2010) Cheng, X., et al. Clin. Exp. Hypertens. 32(5):301-307(2010) Nelson, D.R., et al. Pharmacogenetics 14(1):1-18(2004)

Images

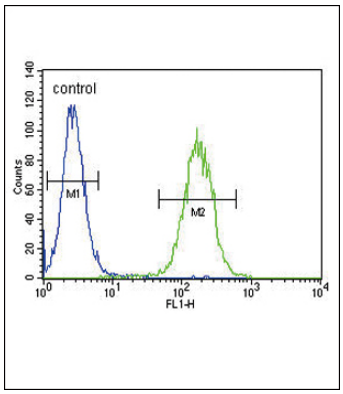
All lanes : Anti-CYP11B2 Antibody (Center) at 1:1000



dilution Lane 1: CCRF-CEM whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size : 62kDa Blocking/Dilution buffer: 5% NFDM/TBST.



CYP11B2 Antibody (Center) (Cat. #AP11213c)immunohistochemistry analysis in formalin fixed and paraffin embedded mouse kidney tissue followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of CYP11B2 Antibody (Center) for immunohistochemistry. Clinical relevance has not been evaluated.



CYP11B2 Antibody (Center) (Cat. #AP11213c) flow cytometric analysis of CEM cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.

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