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HSD11B2 Polyclonal Antibody

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP57774

Product Information

Application	WB, IHC-P, IF
Primary Accession	P80365
Reactivity	Rat, Dog
Host	Rabbit
Clonality	Polyclonal
Calculated MW	44127
Physical State	Liquid
Immunogen	KLH conjugated synthetic peptide derived from human HSD11B2
Epitope Specificity	151-250/405
Isotype	IgG
Purity	affinity purified by Protein A
Buffer	Preservative: 0.02% Proclin300, Constituents: 1% BSA, 0.01M PBS, pH7.4.
SUBCELLULAR LOCATION	Microsome. Endoplasmic reticulum.
SIMILARITY	Belongs to the short-chain dehydrogenases/reductases (SDR) family.
SUBUNIT	Interacts with ligand-free cytoplasmic NR3C2.
DISEASE	Defects in HSD11B2 are the cause of apparent mineralocorticoid excess (AME) [MIM:218030]. An autosomal recessive form of low-renin hypertension. It is usually diagnosed within the first years of life and is characterized by polyuria and polydipsia, failure to thrive, hypernatremia, severe hypertension with low renin and aldosterone levels, profound hypokalemia with metabolic alkalosis, and most often nephrocalcinosis.
Important Note	This product as supplied is intended for research use only, not for use in human, therapeutic or diagnostic applications.
Background Descriptions	There are at least two isozymes of the corticosteroid 11-beta-dehydrogenase, a microsomal enzyme complex responsible for the interconversion of cortisol and cortisone. The type I isozyme has both 11-beta-dehydrogenase (cortisol to cortisone) and 11-oxoreductase (cortisone to cortisol) activities. The type II isozyme, encoded by this gene, has only 11-beta-dehydrogenase activity. In aldosterone-selective epithelial tissues such as the kidney, the type II isozyme catalyzes the glucocorticoid cortisol to the inactive metabolite cortisone, thus preventing illicit activation of the mineralocorticoid receptor. In tissues that do not express the mineralocorticoid receptor, such as the placenta and testis, it protects cells from the growth-inhibiting and/or pro-apoptotic effects of cortisol, particularly during embryonic development. Mutations in this gene cause the syndrome of apparent mineralocorticoid excess and hypertension. [provided by RefSeq, Feb 2010]

Additional Information

Gene ID	3291

Other Names	Corticosteroid 11-beta-dehydrogenase isozyme 2, 1.1.1.-, 11-beta-hydroxysteroid dehydrogenase type 2, 11-DH2, 11-beta-HSD2, 11-beta-hydroxysteroid dehydrogenase type II, 11-HSD type II, 11-beta-HSD type II, NAD-dependent 11-beta-hydroxysteroid dehydrogenase, 11-beta-HSD, Short chain dehydrogenase/reductase family 9C member 3, HSD11B2 (HGNC:5209)
Target/Specificity	Found in placenta, kidney, pancreas, prostate, ovary, small intestine and colon.
Dilution	WB=1:500-2000,IHC-P=1:100-500,IF=1:100-500
Format	0.01M TBS(pH7.4) with 1% BSA, 0.09% (W/V) sodium azide and 50% Glyce
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	HSD11B2 (HGNC:5209)
Function	Catalyzes the conversion of biologically active 11beta-hydroxyglucocorticoids (11beta-hydroxysteroid) such as cortisol, to inactive 11-ketoglucocorticoids (11-oxosteroid) such as cortisone, in the presence of NAD(+) (PubMed:10497248, PubMed:12788846, PubMed:17314322, PubMed:22796344, PubMed:27927697, PubMed:30902677, PubMed:33387577, PubMed:7859916, PubMed:8538347). Functions as a dehydrogenase (oxidase), thereby decreasing the concentration of active glucocorticoids, thus protecting the nonselective mineralocorticoid receptor from occupation by glucocorticoids (PubMed:10497248, PubMed:12788846, PubMed:17314322, PubMed:33387577, PubMed:7859916). Plays an important role in maintaining glucocorticoids balance during preimplantation and protects the fetus from excessive maternal corticosterone exposure (By similarity). Catalyzes the oxidation of 11beta-hydroxytestosterone (11beta,17beta-dihydroxyandrost-4-ene-3-one) to 11-ketotestosterone (17beta-hydroxyandrost-4-ene-3,11-dione), a major bioactive androgen (PubMed:22796344, PubMed:27927697). Catalyzes the conversion of 11beta-hydroxyandrostenedione (11beta-hydroxyandrost- 4-ene-3,17-dione) to 11-ketoandrostenedione (androst-4-ene-3,11,17- trione), which can be further metabolized to 11-ketotestosterone (PubMed:27927697). Converts 7-beta-25-dihydroxycholesterol to 7-oxo-25- hydroxycholesterol in vitro (PubMed:30902677). 7-beta-25- dihydroxycholesterol (not 7-oxo-25-hydroxycholesterol) acts as a ligand for the G-protein-coupled receptor (GPCR) Epstein-Barr virus-induced gene 2 (EBI2) and may thereby regulate immune cell migration (PubMed:30902677). May protect ovulating oocytes and fertilizing spermatozoa from the adverse effects of cortisol (By similarity).
Cellular Location	Microsome. Endoplasmic reticulum
Tissue Location	Expressed in kidney, placenta, pancreas, prostate, ovary, small intestine and colon, and in lower levels in the spleen and testis (PubMed:7859916). At midgestation, expressed at high levels in placenta and in fetal kidney and, at much lower levels, in fetal lung and testis (PubMed:8530071).