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MOUSE ANTI-RAT CYTOCHROME P450 ALDOSTERONE SYNTHASE (CYP11B2) MONOCLONAL ANTIBODY

CATALOG NUMBER: MAB6021 **QUANTITY:** 500 µL

LOT NUMBER:

ALTERNATE NAMES: CYP11B2, Steroid 11/18-beta-hydroxylase, Steroid 18-oxidase

CLONE NAME: 1G5 **HOST/ISOTYPE:** $IgG_{1\kappa}$

BACKGROUND: Aldosterone synthase (or 18-hydroxylase) is a steroid hydroxylase cytochrome P450 oxidase enzyme involved in the generation of aldosterone. 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. (Pascoe, L, et al. (1992) "Mutations in the human CYP11B2 (aldosterone synthase) gene causing corticosterone methyloxidase II deficiency." PNAS, USA. 89:496-5000).

SPECIFICITY: Antibody 1G5 reacts with rat cytochrome p450 aldosterone synthase, no cross reactivity to other cytochrome p450 has been reported.

IMMUNOGEN: Aldo-1-MAP (aa 175-192) (KVRQNARGSLTMDVQQSL-MAP

APPLICATIONS: Western blot: recognizes ~48kDa band in adrenal zona glomerulosa mitochondrial preparations. The enzyme is expressed best in adrenal zona glomerulosa tissues, expression in kidney is virtually undetectable.
Immunohistochemistry: 1:50-1:200 , ABC, enzymatic detection; clone works best with STF fixed tissues that are paraffin embedded. STF is available from Streck Laboratories, www.streck.com. Formalin fixation has been successfully reported but working dilutions are much lower (see Fujisawa, et al). Recommended counter stain is Gill's Haematoxylin.
Immunocytochemistry: acetone fixed cells, 1:20-1:200.
ELISA
Optimal working dilutions must be determined by end user.

SPECIES REACTIVITY: Rat and mouse. Other species have not been tested.

CONTROL: The best control is adrenal zona glomerulosa of rats on a 7-14 days low sodium diet where the gene is overexpressed.

PRESENTATION: Unpurified tissue culture supernatant containing 50% glycerol and 0.1% sodium azide as

a preservative.

STORAGE/HANDLING: Maintain at -20°C in undiluted aliquots for up to 12 months after date of receipt. Avoid repeated freeze/thaw cycles.

REFERENCES:

Siragy, HM, and Xue, C. (2008) Local renal aldosterone production induces inflammation and matrix formation in kidneys of diabetic rats. Experimental Physiology, *(in press)*

Fujisawa, G. et al (2006) Mineralocorticoid receptor antagonist spironolactone prevents pig serum-induced hepatic fibrosis in rats. *Translational Research* 148(3):149-156. Rat, IH(P), formalin fixed.

Xue, C. and Siragy, HM. (2005) Local Renal Aldosterone System and Its Regulation by Salt, Diabetes, and Angiotensin II Type 1 Receptor. *Hypertension* 46:584. (IH, & IB, rat, frozen, with STF fixative).

Mackenzie, et al. (2000). Expression of 11beta-hydroxylase and aldosterone synthase genes in rat brain. *J. Mol. Endocr.* **24** : 321-328.

Wotus, C., et al. (1998). Development of adrenal zonation in fetal rats defined by expression of aldosterone synthase and 11b-hydroxylase. *Endocrinology* **139** : 4397-4403.

Important Note: *During shipment, small volumes of product will occasionally become entrapped in the seal of the product vial. For products with volumes of 200 µL or less, we recommend gently tapping the vial on a hard surface or briefly centrifuging the vial in a tabletop centrifuge to dislodge any liquid in the container's cap.*

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