

### 11-Beta-hydroxysteroid dehydrogenase-2 (11 $\beta$ -HSD2) Antibodies

Cat. # BHSD21-S	Rabbit Anti-Rat 11 $\beta$ -HSD2 antiserum #1	<b>SIZE:</b> 100 ul
Cat. # BHSD21-A	Rabbit Anti-Rat 11 $\beta$ -HSD2 IgG #1 (Aff pure)	<b>SIZE:</b> 100 ug
Cat. # BHSD21-P	Rat 11 $\beta$ -HSD2 Control/blocking peptide	<b>SIZE:</b> 100 ug

11 $\beta$ -hydroxysteroid dehydrogenase (11 $\beta$ -HSD) is a microsomal short chain dehydrogenase/reductase (SDR) which catalyzes the inter-conversion of biologically active glucocorticoid (cortisol in human and corticosterone in rats and mice) and inactive glucocorticoid (cortisone and 11-dehydrocorticosterone). Two tissue specific isoforms (**11 $\beta$ -HSD1** and **11 $\beta$ -HSD2**) of 11 $\beta$ -HSD with two different functions regarding glucocorticoid availability, have been identified. The decreased 11 $\beta$ -hydroxy oxidation of cortisol results in Apparent Mineralocorticoid Excess (AME) disorder which is manifested by hypertension, hypokalemia, low plasma renin activity, and responsiveness to spironolactone. AME is principally a disorder of juveniles and children with this condition oxidize cortisol to cortisone poorly but carry out the reverse process unimpaired. AME arises from mutations in the 11 $\beta$ -HSD2 gene. The glucocorticoids can also be produced locally by **11 $\beta$ -HSD1** and increased visceral accumulation of glucocorticoids results in visceral obesity, insulin resistant diabetes, hyperlipidemia and hyperphagia.

**11 $\beta$ HSD-2** (rat 400-aa, mouse 396-aa, human 405-aa) is a ~41 kDa glycosylated membrane-protein present in the endoplasmic reticulum (ER). The N-terminal and C-terminal (catalytic domain) of 11 $\beta$ -HSD2 are in the lumen and cytoplasm of ER, respectively. 11 $\beta$ -HSD2 irreversibly catalyzes the dehydrogenation of active 11 $\beta$ -hydroxycorticoids before they occupy mineralocorticoid receptors (MR) and thus confers aldosterone selectivity for inherently nonselective MR. The enzyme is expressed in a wide array of tissues, with highest level mineralocorticoid target cells such as the renal and outer medullary collecting ducts. In mouse, rat and Human, the over-all aa seq of 11 $\beta$ -HSD2 is >80% identical. In mouse, the over-all aa seq of 11 $\beta$ -HSD2 is >80% identical to that of 11 $\beta$ -HSD2.

#### Source of Antigen and Antibodies

<b>Antigen</b>	A 19-aa peptide (designated <b>BHSD21-P or control peptide</b> ) Gene Accession # P51661, mapping near the C-terminus of <b>rat 11<math>\beta</math>-HSD2</b>
<b>Ab Host/type</b>	Rabbit, polyclonal Aff pure IgG1 ( <b>cat #BHSD21--A</b> ) purified over the antigen column
<b>2-ab</b>	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available)
<b>-ve control</b>	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as -ve control

#### Form & Storage of Antibodies/Peptide Control

##### Antiserum (unpurified)

100ul solution lyophilized powder  
Supplied in Buffer: 0.05% azide  
**Reconstitute powder in 100 ul PBS**

##### Affinity pure IgG

100 ug/100ul solution lyophilized powder  
Supplied in Buffer: PBS+0.1% BSA  
**Reconstitute powder in PBS at 1mg/ml**

##### Control/blocking peptide

100 ug/100 ul solution lyophilized powder  
Supplied in Buffer: PBS pH 7.5,  
**Reconstitute powder in PBS at 1 mg/ml.**

##### Storage

**Short-term:** unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

**Long-term:** at -20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

**Stability:** 6-12 months at -20oC or below.

**Shipping:** 4oC for solutions and room temp for powder

#### Recommended Usage

**Western Blotting** (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure using Chemiluminescence technique).

**ELISA** (1:10K-1:100K; using 50-100 ng of control peptide/well).

**Histochemistry & Immunofluorescence:** not tested. We recommend the use of affinity pure antibody at 2-20 ug/ml.

#### Specificity & Cross-reactivity

The rat **BHSD21-P** peptide is not well conserved in mouse and human 11 $\beta$ -HSD2. We recommend the use of cat # BHD22-A and BHD23-A for mouse and human 11 $\beta$ -HSD2, respectively. No significant sequence homology of **BHSD21-P** is seen with 11 $\beta$ -HSD1 or other proteins. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody

**General References:** (1) Zhou MY et al (1995) Endocrinol. 136, 3729-3734; Albiston AL et al (1994) Mol. Cell. Endocrinol. 105, R11; Agarwal AK et al (1995) Genomics 29, 195, Brown RW et al (1996) Biochem. J. 313, 1007, Mune T et al (1995) nat. Genet. 10, 394; Masuzaki et al. (2001) Science 294, 2166; Odermatt et al. (1999) J. Bio. Chem. 274, 28762; Blum et al. (2000) BBRC. 276, 428.

*\*This product is for In vitro research use only.*

#### Related material available from ADI

BHSD21-S-A-P 71208S

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