

Product Specification Sheet

11-Beta-hydroxysteroid dehydrogenase-2 (11β-HSD2) Antibodies

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| Cat. # BHSD23-S | Rabbit Anti-Human 11β-HSD2 antiserum #3 | SIZE: 100 ul |
| Cat. # BHSD23-A | Rabbit Anti-Human 11β-HSD2 IgG #3 (Affinity pure) | SIZE: 100 ug |
| Cat. # BHSD23-P | Human 11β-HSD2 Control/blocking peptide | SIZE: 100 ug |

11β-hydroxysteroid dehydrogenase (11β-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 (**11β-HSD1** and **11β-HSD2**) of 11β-HSD with two different functions regarding glucocorticoid availability, have been identified. The decreased 11β-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 11β-HSD2 gene. The glucocorticoids can also be produced locally by **11β-HSD1** and increased visceral accumulation of glucocorticoids results in visceral obesity, insulin resistant diabetes, hyperlipidemia and hyperphagia.

11βHSD-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 11β-HSD2 are in the lumen and cytoplasm of ER, respectively. 11β-HSD2 irreversibly catalyzes the dehydrogenation of active 11β-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 11β-HSD2 is >80% identical. In mouse, the over-all aa seq of 11β-HSD2 is >80% identical to that of 11β-HSD2.

Source of Antigen and Antibodies

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| Antigen | A 19-aa peptide (designated BHSD23-P or control peptide) Gene Accession # P80365, human 11β-HSD2 (1) conjugated to KLH Epitope location ~ N-terminal |
| Ab Host/type | Rabbit, Polyclonal unpurified antiserum (#BHSD23-S) and IgG, purified over antigen-agarose (Cat # BHSD23-A) |
| 2-Ab | Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available). |
| -ve control | # 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 1 mg/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 -200C 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) (see refs 2).

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

Histochemistry & Immunofluorescence: We recommend the use of affinity pure antibody at 2-20 ug/ml (see refs 2).

Specificity & Cross-reactivity

The human **BHSD23-P** peptide is not well conserved in mouse and rat 11β-HSD2. We recommend the use of cat # BHD21-A and BHD22-A for rat and mouse 11β-HSD2, respectively. No significant sequence homology of **BHSD23-P** is seen with 11β-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 specificity (see detailed protocol at web site)

General References: (1) Albiston AL (1994) Mol. Cell. Endocrinol. 105, R11; Mune T (1995) Nat. Genet. 10, 394; Masuzaki (2001) Science 294, 2166; Blum . (2000) BBRC. 276, 428.

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

Antiserum (unpurified)

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

BHSD23-S-A-P 71208S

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