

Product Specification Sheet

11-Beta-hydroxysteroid dehydrogenase-1 (11β-HSD1) Antibodies

Cat. # BHSD11-S	Rabbit Anti-Mouse 11β-HSD1 antiserum #1	SIZE: 100 ul
Cat. # BHSD11-A	Rabbit Anti-Mouse 11β-HSD1 IgG #1 (Aff pure)	SIZE: 100 ug
Cat. # BHSD11-P	Mouse 11β-HSD1 Control/blocking peptide	SIZE: 100 ug

11-Beta-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**; ~18% sequence identity) of 11β-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.

11βHSD-1 (variously termed as HSD11L; mouse, 292 aa, rat 287 aa, human 292 aa) is a ~35 kDa glycosylated membrane-protein, oriented into the lumen of endoplasmic reticulum. This isoform is the sole 11β-reductase in the body and exerts two separate enzymatic activities: 11-beta-dehydrogenase (cortisol to cortisone) and 11-oxoreductase (cortisone to cortisol) in vitro; however, in vivo, it acts mainly as reductase producing active cortisol. The enzyme also plays an important role in xenobiotic carbonyl compound detoxification processes. 11β-HSD1 is expressed in a wide array of tissues, with highest level in Liver and adipose tissues. The increased adipocyte 11β-HSD1 is a common mechanism for visceral obesity and metabolic syndrome.

Source of Antigen and Antibodies

Antigen	A 16-aa peptide (designated BHSD11-P or control peptide) Gene Accession # P50172, of mouse 11β-HSD1 (1) conjugated to KLH Epitope location ~ N-terminal
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#BHSD11-S) and IgG, purified over antigen-agarose (Cat # BHSD11-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 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) (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 **BHSD11-P** peptide is 100% conserved in the mouse and rat, 87% in ovine, and 81% in human and chicken, 75% in pig, and 68% in rabbit 11β-HSD1. No significant sequence homology of **BHSD11-P** is seen with 11β-HSD2 or other proteins. Antibody reactivity in various species is not established. 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) (1) Rajan V (1995) J. Steroid Biochem. Mol. Biol. 52, 141; Oppermann UC (1995) Eur. J. Biochem. 227, 202; Tannin GM (1991) JBC 266, 16653; Agarwal AK (1989) JBC 264, 18939; Masuzaki (2001) Science 294, 2166; Odermatt (1999) J. Bio. Chem. 274, 28762; Blum . (2000) BBRC. 276, 428.

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

Related material available from ADI

BHSD11-S-A-P 7128S

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