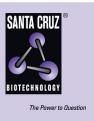
SANTA CRUZ BIOTECHNOLOGY, INC.

11β-HSD1 (C-17): sc-19259



BACKGROUND

Glucocorticoid hormone action in target tissues is modulated by 11β-hydroxysteroid dehydrogenase (11β-HSD), which catalyzes the interconversion of hormonally active C11-hydroxylated corticosteroids (cortisol, corticosterone) and their inactive C11-keto metabolites (cortisone, 11-dehydrocorticosterone). At least two isoforms of 11β-HSD exist: a low-affinity NADP-dependent dehydrogenase/oxoreductase (11β-HSD1) and a high-affinity NAD-dependent dehydrogenase (11β-HSD2). The glycosylated 11β-HSD1 protein activates cortisol from cortisone, which is widely expressed in mammals, and is most highly expressed in the liver. 11β-HSD2 inactivates cortisol to cortisone and is expressed in placenta, aldosterone target tissues (kidney, parotid, colon and skin) and pancreas. $11\beta\text{-HSD1}$ may play a role in glucose homeostasis and pathogenesis of a number of disorders including Insulin resistance and obesity. 11 β -HSD2 associates with differentiation or maturation in human colonic epithelia and may serve as a marker in development and disease. In addition, 11β-HSD2 plays a crucial role in modulating mineralcorticoid and glucocorticoid receptor occupancy by glucocorticoids.

REFERENCES

- Tannin, G.M., et al. 1991. The human gene for 11β-hydroxysteroid dehydrogenase. Structure, tissue distribution, and chromosomal localization. J. Biol. Chem. 266: 16653-16658.
- 2. Albiston, A.L., et al. 1994. Cloning and tissue distribution of the human 11β -hydroxysteroid dehydrogenase type 2 enzyme. Mol. Cell. Endocrinol. 105: 11-17.
- 3. Brown, R.W., et.al. 1996. Cloning and production of antisera to human placental 11β -hydroxysteroid dehydrogenase type 2. Biochem. J. 313: 1007-1017.
- Takahashi, K., et al. 1998. 11β-hydroxysteroid dehydrogenase type II in human colon: a new marker of fetal development and differentiation in neoplasms. Anticancer Res. 18: 3381-3388.
- Stewart, P.M. and Krozowski, Z.S. 1999. 11β-hydroxysteroid dehydrogenase. Vitam. Horm. 57: 249-324.
- Arcuri, F., et al. 1999. Expression of 11β-hydroxysteroid dehydrogenase in early pregnancy: implications in human trophoblast-endometrial interactions. Semin. Reprod. Endocrinol. 17: 53-61.
- 7. Rauz, S., et al. 2001. Expression and putative role of 11 β -hydroxysteroid dehydrogenase isozymes within the human eye. Invest. Ophthalmol. Vis. Sci. 42: 2037-2042.
- Walker, E.A., et al. 2001. Functional expression, characterization, and purification of the catalytic domain of human 11-β-hydroxysteroid dehydrogenase type 1. J. Biol. Chem. 276: 21343-21350.
- Morton, N.M., et al. 2001. Improved lipid and lipoprotein profile, hepatic Insulin senstivity and glucose tolerance in 11β-hydroxysteroid dehydrogenase type 1 null mice. J. Biol. Chem. 276: 41293-41300.

CHROMOSOMAL LOCATION

Genetic locus: HSD11B1 (human) mapping to 1q32.2; Hsd11b1 (mouse) mapping to 1 H6.

SOURCE

11 β -HSD1 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of 11 β -HSD1 of mouse origin.

PRODUCT

Each vial contains 200 μg lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-19259 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

11 β -HSD1 (C-17) is recommended for detection of 11 β -hydroxysteroid dehydrogenase type 1 of mouse, human and, to a lesser extent, rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

11β-HSD1 (C-17) is also recommended for detection of 11β-hydroxysteroid dehydrogenase type 1 in additional species, including equine and bovine.

Suitable for use as control antibody for 11 β -HSD1 siRNA (h): sc-41377, 11 β -HSD1 siRNA (m): sc-41378, 11 β -HSD1 shRNA Plasmid (h): sc-41377-SH, 11 β -HSD1 shRNA Plasmid (m): sc-41378-SH, 11 β -HSD1 shRNA (h) Lentiviral Particles: sc-41377-V and 11 β -HSD1 shRNA (m) Lentiviral Particles: sc-41378-V.

Molecular Weight of 11_B-HSD1: 34 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluo-rescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

 Ma, R., et al. 2012. Differential expression of placental 11β-hydroxysteroid dehydrogenases in pregnant women with diet-treated gestational diabetes mellitus. Steroids 77: 798-805.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.