

11 β -HSD1 (D-5): sc-518168

BACKGROUND

Glucocorticoid hormone action in target tissues is modulated by 11 β -hydroxysteroid dehydrogenase (11 β -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 11 β -HSD exist: a low-affinity NADP-dependent dehydrogenase/oxoreductase (11 β -HSD1) and a high-affinity NAD-dependent dehydrogenase (11 β -HSD2). The glycosylated 11 β -HSD1 protein activates cortisol from cortisone, which is widely expressed in mammals, and is most highly expressed in the liver. 11 β -HSD2 inactivates cortisol to cortisone and is expressed in placenta, aldosterone target tissues (kidney, parotid, colon and skin) and pancreas. 11 β -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, 11 β -HSD2 plays a crucial role in modulating mineralocorticoid and glucocorticoid receptor occupancy by glucocorticoids.

REFERENCES

1. Tannin, G.M., et al. 1991. The human gene for 11 β -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 11 β -hydroxysteroid dehydrogenase type 2 enzyme. *Mol. Cell. Endocrinol.* 105: R11-R17.
3. Brown, R.W., et al. 1996. Cloning and production of antisera to human placental 11 β -hydroxysteroid dehydrogenase type 2. *Biochem. J.* 313: 1007-1017.

CHROMOSOMAL LOCATION

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

SOURCE

11 β -HSD1 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 90-112 of 11 β -HSD1 of mouse origin.

PRODUCT

Each vial contains 200 μ g IgG κ light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

11 β -HSD1 (D-5) is available conjugated to agarose (sc-518168 AC), 500 μ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-518168 HRP), 200 μ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-518168 PE), fluorescein (sc-518168 FITC), Alexa Fluor[®] 488 (sc-518168 AF488), Alexa Fluor[®] 546 (sc-518168 AF546), Alexa Fluor[®] 594 (sc-518168 AF594) or Alexa Fluor[®] 647 (sc-518168 AF647), 200 μ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-518168 AF680) or Alexa Fluor[®] 790 (sc-518168 AF790), 200 μ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Alexa Fluor[®] is a trademark of Molecular Probes, Inc., Oregon, USA

APPLICATIONS

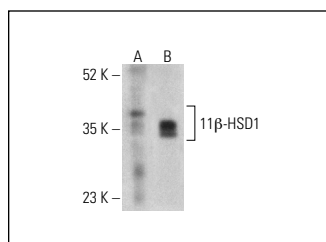
11 β -HSD1 (D-5) is recommended for detection of 11 β -HSD1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

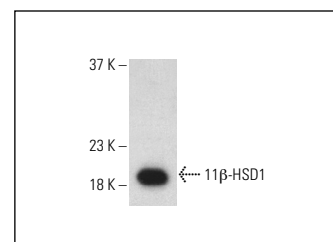
Molecular Weight of 11 β -HSD1: 34 kDa.

Positive Controls: human liver extract: sc-363766 or Hep G2 cell lysate: sc-2227.

DATA



11 β -HSD1 (D-5): sc-518168. Western blot analysis of 11 β -HSD1 expression in human liver tissue extract (A) and Hep G2 whole cell lysate (B). Detection reagent used: m-IgG κ BP-HRP: sc-525408.



11 β -HSD1 (D-5): sc-518168. Western blot analysis of mouse recombinant 11 β -HSD1. Detection reagent used: m-IgG κ BP-HRP: sc-516102.

SELECT PRODUCT CITATIONS

1. Ji, B., et al. 2022. Effects of prenatal hypoxia on placental glucocorticoid barrier: mechanistic insight from experiments in rats. *Reprod. Toxicol.* 110: 78-84.
2. Besli, N., et al. 2024. Research into how carvacrol and metformin affect several human proteins in a hyperglycemic condition: a comparative study in silico and *in vitro*. *Arch. Biochem. Biophys.* 758: 110062.

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.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.