

3 β -HSD2 (h): 293T Lysate: sc-114621

BACKGROUND

3 β -hydroxysteroid dehydrogenase (3 β -HSD), also known as HSD3B1 or HSD3B3, is a bifunctional enzyme that plays a crucial role in the synthesis of all classes of hormonal steroids. Two human 3 β -HSD proteins, designated type I (3 β -HSD) and type II (3 β -HSD2), are expressed by different genes and function in different areas of the body. Localized to the membrane of the endoplasmic reticulum (ER) and expressed in testis, ovaries and adrenal gland, 3 β -HSD2 is the type II protein that catalyzes the oxidative conversion of δ 5-ene-3- β -hydroxy steroid, as well as the conversion of various ketosteroids. Defects in the gene encoding 3 β -HSD are associated with classic salt wasting, genital ambiguity, hypogonadism, insulin-resistant polycystic ovary syndrome (PCOS) and an increased susceptibility to prostate cancer. Additionally, congenital deficiency of 3 β -HSD activity results in a severe depletion of steroid formation which can be lethal in young children.

REFERENCES

1. Thomas, J.L., et al. 2002. Structure/function relationships responsible for the kinetic differences between human type 1 and type 2 3 β -hydroxysteroid dehydrogenase and for the catalysis of the type 1 activity. *J. Biol. Chem.* 277: 42795-42801.
2. Thomas, J.L., et al. 2003. Structure/function relationships responsible for coenzyme specificity and the isomerase activity of human type 1 3 β -hydroxysteroid dehydrogenase/isomerase. *J. Biol. Chem.* 278: 35483-35490.
3. Foti, D.M. and Reichardt, J.K. 2004. YY1 binding within the human HSD3B2 gene intron 1 is required for maximal basal promoter activity: identification of YY1 as the 3 β 1-A factor. *J. Mol. Endocrinol.* 33: 99-119.
4. Thomas, J.L., et al. 2004. Serine 124 completes the Tyr, Lys and Ser triad responsible for the catalysis of human type 1 3 β -hydroxysteroid dehydrogenase. *J. Mol. Endocrinol.* 33: 253-261.
5. Carbanaru, G., et al. 2004. The hormonal phenotype of nonclassic 3 β -hydroxysteroid dehydrogenase (HSD3B) deficiency in hyperandrogenic females is associated with Insulin-resistant polycystic ovary syndrome and is not a variant of inherited HSD3B2 deficiency. *J. Clin. Endocrinol. Metab.* 89: 783-794.
6. Thomas, J.L., et al. 2007. Structure/function of human type 1 3 β -hydroxysteroid dehydrogenase: An intrasubunit disulfide bond in the Rossmann-fold domain and a Cys residue in the active site are critical for substrate and coenzyme utilization. *J. Steroid Biochem. Mol. Biol.* 107: 80-87.
7. Wang, L., et al. 2007. Human 3 β -hydroxysteroid dehydrogenase types 1 and 2: Gene sequence variation and functional genomics. *J. Steroid Biochem. Mol. Biol.* 107: 88-99.
8. Park, J.Y., et al. 2007. Association between polymorphisms in HSD3B1 and UGT2B17 and prostate cancer risk. *Urology* 70: 374-379.
9. Mao, T.L., et al. 2008. HSD3B1 as a novel trophoblast-associated marker that assists in the differential diagnosis of trophoblastic tumors and tumor-like lesions. *Am. J. Surg. Pathol.* 32: 236-242.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: HSD3B2 (human) mapping to 1p12.

PRODUCT

3 β -HSD2 (h): 293T Lysate represents a lysate of human 3 β -HSD2 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

APPLICATIONS

3 β -HSD2 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive 3 β -HSD2 antibodies. Recommended use: 10-20 μ l per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

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.