

## 3 $\beta$ -HSD2 (m2): 293T Lysate: sc-117973

### BACKGROUND

3 $\beta$ -hydroxysteroid dehydrogenase (3 $\beta$ -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 $\beta$ -HSD proteins, designated type I (3 $\beta$ -HSD) and type II (3 $\beta$ -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 $\beta$ -HSD2 is the type II protein that catalyzes the oxidative conversion of  $\delta^5$ -ene-3 $\beta$ -hydroxysteroid, as well as the conversion of various ketosteroids. Defects in the gene encoding 3 $\beta$ -HSD2 are the cause of adrenal hyperplasia type 2 (AH2), a form of recessive congenital adrenal hyperplasia that is characterized by excess androgen which can lead to ambiguous genitalia and rapid somatic growth.

### REFERENCES

1. Thomas, J.L., et al. 2002. Structure/function relationships responsible for the kinetic differences between human type 1 and type 2 3 $\beta$ -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 $\beta$ -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 $\beta$ 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 $\beta$ -hydroxysteroid dehydrogenase. *J. Mol. Endocrinol.* 33: 253-261.
5. Carbanaru, G., et al. 2004. The hormonal phenotype of nonclassic 3 $\beta$ -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 $\beta$ -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 $\beta$ -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. Xing, Y., et al. 2008. The farnesoid X receptor regulates transcription of 3 $\beta$ -hydroxysteroid dehydrogenase type 2 in human adrenal cells. *Mol. Cell. Endocrinol.* 299: 153-162.

### CHROMOSOMAL LOCATION

Genetic locus: Hsd3b2 (mouse) mapping to 3 F2.2.

### RESEARCH USE

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

### PRODUCT

3 $\beta$ -HSD2 (m2): 293T Lysate represents a lysate of mouse 3 $\beta$ -HSD2 transfected 293T cells and is provided as 100  $\mu$ g protein in 200  $\mu$ l SDS-PAGE buffer.

### APPLICATIONS

3 $\beta$ -HSD2 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive 3 $\beta$ -HSD2 antibodies. Recommended use: 10-20  $\mu$ l per lane.

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

### 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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.