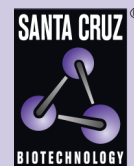


# 3 $\beta$ -HSD (37-2): sc-100466



The Power to Question

## 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 skin and placenta, 3 $\beta$ -HSD is the type I protein that catalyzes the oxidative conversion of  $\delta^5$ -ene-3- $\beta$ -hydroxy steroid, as well as the conversion of various ketosteroids. Defects in the gene encoding 3 $\beta$ -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 $\beta$ -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 $\beta$ -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.

## CHROMOSOMAL LOCATION

Genetic locus: HSD3B1/HSD3B2 (human) mapping to 1p12.

## SOURCE

3 $\beta$ -HSD (37-2) is a mouse monoclonal antibody raised against recombinant 3 $\beta$ -HSD of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

3 $\beta$ -HSD (37-2) is recommended for detection of 3 $\beta$ -HSD and 3 $\beta$ -HSD2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of 3 $\beta$ -HSD: 42 kDa.

Positive Controls: 3 $\beta$ -HSD (h2): 293T Lysate: sc-173046, CCD-1064Sk cell lysate: sc-2263 or MES-SA/Dx5 cell lysate: sc-2284.

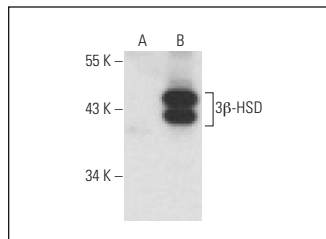
## RESEARCH USE

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

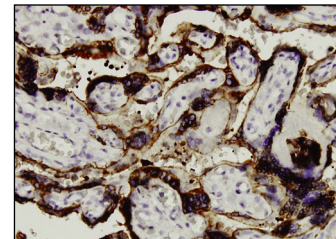
## STORAGE

Store at 4 $^{\circ}$  C, **\*\*DO NOT FREEZE\*\***. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## DATA



3 $\beta$ -HSD (37-2): sc-100466. Western blot analysis of 3 $\beta$ -HSD expression in non-transfected: sc-117752 (A) and human 3 $\beta$ -HSD transfected: sc-173046 (B) 293T whole cell lysates.



3 $\beta$ -HSD (37-2): sc-100466. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human placenta tissue showing membrane and cytoplasmic localization.

## SELECT PRODUCT CITATIONS

1. Eguizabal, C., et al. 2011. Complete meiosis from human induced pluripotent stem cells. *Stem Cells* 29: 1186-1195.
2. Sousa, L.M., et al. 2012. Vascular endothelial growth factor A (VEGFA) modulates bovine placenta steroidogenesis *in vitro*. *Placenta* 33: 788-794.
3. Gibson, D.A., et al. 2013. Endometrial intracrinology—generation of an estrogen-dominated microenvironment in the secretory phase of women. *J. Clin. Endocrinol. Metab.* 98: E1802-E1806.
4. Chang, X., et al. 2014. Orexin-A stimulates 3 $\beta$ -hydroxysteroid dehydrogenase expression and cortisol production in H295R human adrenocortical cells through the AKT pathway. *Int. J. Mol. Med.* 34: 1523-1528.
5. Mazzoni, T.S., et al. 2014. Male gonadal differentiation and the paedomorphic evolution of the testis in Teleostei. *Anat. Rec* 297: 1137-1162.
6. Zschockelt, L., et al. 2015. Comparative analysis of intraluteal steroidogenic enzymes emphasises the functionality of fresh and persistent corpora lutea during pro—and metoestrus in the lynx. *J. Steroid Biochem. Mol. Biol.* 154: 75-84.
7. Mesa, H., et al. 2015. The mystery of the vanishing Reinke crystals. *Hum. Pathol.* 46: 600-606.
8. Mazzoni, T.S., et al. 2015. The basement membrane and the sex establishment in the juvenile hermaphroditism during gonadal differentiation of the *Gymnocorymbus ternetzi* (Teleostei: Characiformes: Characidae). *Anat. Rec.* 298: 1984-2010.
9. Braun, B.C. and Jewgenow, K. 2017. Expression of steroidogenic enzymes and steroid receptors in foetal gonads of domestic cat—Sex similarities and differences. *Reprod. Domest. Anim.* 52: 130-136.

## CONJUGATES

See **3 $\beta$ -HSD (A-1): sc-515120** for 3 $\beta$ -HSD antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor<sup>®</sup> 488, 546, 594, 647, 680 and 790.