SANTA CRUZ BIOTECHNOLOGY, INC.

17β-HSD (A-5): sc-376719

BACKGROUND

17β-hydroxysteroid dehydrogenase type 1 (17β-HSD) catalyzes the final step in the formation of estradiol and testosterone from estrone and androstenedione, respectively. Ovarian granulosa cells and breast tissue both express 17β-HSD. Other tissues that express 17β-HSD include testis, placenta, uterus, prostate and adipose tissue. 17β-HSD functions as a homodimer and prefers NADP(H) over NAD(H) for oxidation and reduction. The gene encoding human 17β-HSD maps to chromosome 17q21.2. The importance of 17β-HSD to estradiol production suggests the specific inhibition of 17β-HSD may aid in breast cancer therapy. Breast cancer patients with an amplification of 17β-HSD expression statistically have a worse outcome than those without. 17β-HSD amplification in tamoxifen-treated patients correlates to decreased breast cancer survival.

CHROMOSOMAL LOCATION

Genetic locus: HSD17B1 (human) mapping to 17q21.2.

SOURCE

17β-HSD (A-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 265-299 near the C-terminus of 17β-HSD of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-376719 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

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

APPLICATIONS

17β-HSD (A-5) is recommended for detection of 17β-HSD of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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 17β-HSD siRNA (h): sc-41381, 17β-HSD shRNA Plasmid (h): sc-41381-SH and 17β-HSD shRNA (h) Lentiviral Particles: sc-41381-V.

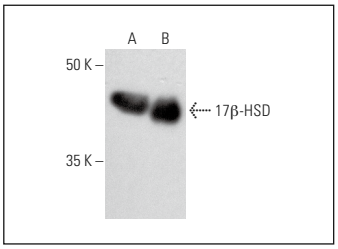
Molecular Weight of 17β-HSD: 35 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, human placenta extract: sc-363772 or BT-20 cell lysate: sc-2223.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



17β-HSD (A-5): sc-376719. Western blot analysis of 17β-HSD expression in BT-20 whole cell lysate (**A**) and human placenta tissue extract (**B**).

SELECT PRODUCT CITATIONS

1. Oktem, O., et al. 2017. FSH stimulation promotes progesterone synthesis and output from human granulosa cells without luteinization. Hum. Reprod. 32: 643-652.
2. Abdel-Maksoud, F.M., et al. 2019. Prenatal exposures to bisphenol A and di (2-ethylhexyl) phthalate disrupted seminiferous tubular development in growing male rats. Reprod. Toxicol. 88: 85-90.
3. Bildik, G., et al. 2020. hCG improves luteal function and promotes progesterone output through the activation of JNK pathway in the luteal granulosa cells of the stimulated IVF cycles. Biol. Reprod. 102: 1270-1280.
4. Jeminiwa, B.O., et al. 2021. Gonadal sex steroid hormone secretion after exposure of male rats to estrogenic chemicals and their combinations. Mol. Cell. Endocrinol. 533: 111332.
5. Wang, Q., et al. 2023. Role of ROS/JAK2/STAT3 signaling pathway in di-n-butyl phthalate-induced testosterone synthesis inhibition and antagonism of lycopene. Food Chem. Toxicol. 175: 113741.
6. Mararajah, S., et al. 2024. *Chlorophytum borivilianum* aqueous root extract prevents deterioration of testicular function in mice and preserves human sperm function in hydrogen peroxide (H_2O_2)-induced oxidative stress. J. Ethnopharmacol. 318: 117026.

RESEARCH USE

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