SANTA CRUZ BIOTECHNOLOGY, INC.

5α-Reductase 2 (H-100): sc-20659

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Steroid 5α-Reductase is an important enzyme in androgen physiology because it catalyzes the conversion of testosterone into the more potent 5α-dihydrotestosterone, which mediates androgen effects on target tissues. The enzyme exists as two isoforms, type 1 and type 2. Type 1 isozyme is expressed mainly in the skin and type 2 is expressed mainly in the prostate. In cultured human skin cells, 5α-reductase 1 shows heterogeneity of protein, and has different levels of transcriptional and translational expression. 5α-reductase 1 is expressed in all portions of the hair follicle, whereas 5α-reductase 2 is expressed only in mesenchymal portions. In addition, 5α-reductase 1 is mainly expressed in human breast carcinoma and may play a role in the *in situ* production and actions of the potent androgen 5α-dihydrotestosterone, including inhibition of cancer cell proliferation in hormone-dependent human breast carcinoma. The 5α-reductase-3α-hydroxysteroid dehydrogenase complex is present in the human brain, suggesting that the complex may be involved in the synthesis of neuroactive steroids or the catabolism of neurotoxic steroids.

REFERENCES

1. Bonkhoff, H., et al. 1996. Differential expression of 5α-Reductase isoenzymes in the human prostate and prostatic carcinomas. Prostate 29: 261-267.
2. Taylor, M.F., et al. 1997. Expression of rat steroid 5α-Reductase (isozyme-1) in *Spodoptera frugiperda*, SF21, insect cells: expression of rat steroid 5α-Reductase. Steroids 62: 373-378.
3. Chen, W., et al. 1998. Evidence of heterogeneity and quantitative differences of the type 1 5α-Reductase expression in cultured human skin cells—evidence of its presence in melanocytes. J. Invest. Dermatol. 110: 84-89.
4. Suzuki, T., et al. 2001. 5α-Reductases in human breast carcinoma: possible modulator of *in situ* androgenic actions. J. Clin. Endocrinol. Metab. 86: 2250-2257.

CHROMOSOMAL LOCATION

Genetic locus: SRD5A2 (human) mapping to 2p23.1; Srd5a2 (mouse) mapping to 17 E2.

SOURCE

5α-Reductase 2 (H-100) is a rabbit polyclonal antibody raised against amino acids 61-160 mapping near the N-terminus of 5α-Reductase 2 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

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

APPLICATIONS

5α-Reductase 2 (H-100) is recommended for detection of 5α-Reductase 2 of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, 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 5α-Reductase 2 siRNA (h): sc-41398, 5α-Reductase 2 shRNA Plasmid (h): sc-41398-SH and 5α-Reductase 2 shRNA (h) Lentiviral Particles: sc-41398-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Hsieh, Y.C., et al. 2006. Flutamide restores cardiac function after trauma-hemorrhage via an estrogen-dependent pathway through upregulation of PGC-1. Am. J. Physiol. Heart Circ. Physiol. 290: H416-H423.
2. Wistuba, J., et al. 2006. Meiosis in autologous ectopic transplants of immature testicular tissue grafted to *Callithrix jacchus*. Biol. Reprod. 74: 706-713.
3. Fromont, G., et al. 2012. BCAR1 expression improves prediction of biochemical reccurence after radical prostatectomy. Prostate 72: 1359-1365.
4. Sanchez, P., et al. 2013. Expression of steroid 5α-reductase isozymes in prostate of adult rats after environmental stress. FEBS J. 280: 93-101.
5. Peng, C.C., et al. 2013. Action mechanism of ginkgo biloba leaf extract intervened by exercise therapy in treatment of benignprostate hyperplasia. Evid. Based Complement. Alternat. Med. 2013: 408734.

RESEARCH USE

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