SANTA CRUZ BIOTECHNOLOGY, INC.

5α-Reductase 2 (1F4): sc-293232

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, which is expressed mainly in the skin; and type 2, which 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.
5. Steckelbroeck, S., et al. 2001. Characterization of the 5α-Reductase-3α-hydroxysteroid dehydrogenase complex in the human brain. J. Clin. Endocrinol. 86: 1324-1331.

CHROMOSOMAL LOCATION

Genetic locus: SRD5A2 (human) mapping to 2p23.1.

SOURCE

5α-Reductase 2 (1F4) is a mouse monoclonal antibody raised against amino acids 28-65 of 5α-Reductase 2 of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 kappa light chain 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 (1F4) is recommended for detection of 5α-Reductase 2 of human 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

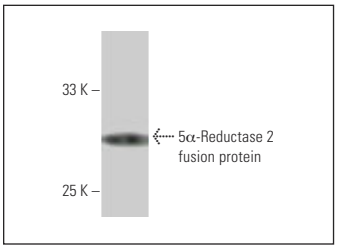
Suitable for use as control antibody for 5α-Reductase 2 siRNA (h): sc-41398, 5α-Reductase 2 shRNA Plasmid (h): sc-41398-SH and 5α-Reductase 2 shRNA (h) Lentiviral Particles: sc-41398-V.

Molecular Weight of 5α-Reductase 2: 28 kDa.

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).

DATA



5α-Reductase 2 (1F4): sc-293232. Western blot analysis of human recombinant 5α-Reductase 2 fusion protein.

SELECT PRODUCT CITATIONS

1. Jang, J., et al. 2021. Resveratrol attenuates the proliferation of prostatic stromal cells in benign prostatic hyperplasia by regulating cell cycle progression, apoptosis, signaling pathways, BPH markers, and NFκB activity. Int. J. Mol. Sci. 22: 5969.
2. D'Amico, R., et al. 2021. Palmitoylethanolamide/baicalein regulates the androgen receptor signaling and NFκB/Nrf2 pathways in benign prostatic hyperplasia. Antioxidants 10: 1014.
3. Horwath, O., et al. 2022. Molecular regulators of muscle mass and mitochondrial remodeling are not influenced by testosterone administration in young women. Front. Endocrinol. 13: 874748.
4. Jang, Y.J., et al. 2023. Effects of alginate oligosaccharide on testosterone-induced benign prostatic hyperplasia in orchiectomized rats. Nutrients 15: 682.

RESEARCH USE

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