

5 α -Reductase 1 (R-17): sc-20399

BACKGROUND

Steroid 5 α -Reductase is an important enzyme in androgen physiology because it catalyzes the conversion of testosterone into the more potent 5 α -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, 5 α -Reductase 1 shows heterogeneity of protein and has different levels of transcriptional and translational expression. 5 α -Reductase 1 is expressed in all portions of the hair follicle, whereas 5 α -Reductase 2 is expressed only in mesenchymal portions. In addition, 5 α -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 5 α -dihydrotestosterone, including inhibition of cancer cell proliferation in hormone-dependent human breast carcinoma. The 5 α -Reductase-3 α -hydroxy-steroid dehydrogenase complex is present in the human brain, suggesting that the complex may be involved in the synthesis of neuro-active steroids or the catabolism of neurotoxic steroids.

REFERENCES

1. Bonkhoff, H., et al. 1996. Differential expression of 5 α -reductase isoenzymes in the human prostate and prostatic carcinomas. *Prostate* 29: 261-267.
2. Taylor, M.F., et al. 1997. Expression of rat steroid 5 α -reductase (isozyme-1) in *Spodoptera frugiperda*, SF21, insect cells: expression of rat steroid 5 α -reductase. *Steroids* 62: 373-378.
3. Chen, W., et al. 1998. Evidence of heterogeneity and quantitative differences of the type 1 5 α -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. 5 α -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 5 α -reductase-3 α -hydroxysteroid dehydrogenase complex in the human brain. *J. Clin. Endocrinol.* 86: 1324-1331.

CHROMOSOMAL LOCATION

Genetic locus: SRD5A1 (human) mapping to 5p15; Srd5a1 (mouse) mapping to 13 B.

SOURCE

5 α -Reductase 1 (R-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 5 α -Reductase 1 of mouse origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-20399 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

5 α -Reductase 1 (R-17) is recommended for detection of 5 α -Reductase 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

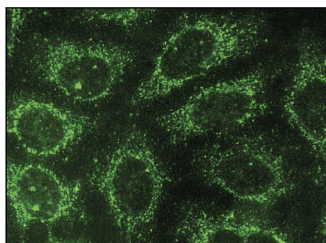
Suitable for use as control antibody for 5 α -Reductase 1 siRNA (h): sc-41396, 5 α -Reductase 1 siRNA (m): sc-41397, 5 α -Reductase 1 shRNA Plasmid (h): sc-41396-SH, 5 α -Reductase 1 shRNA Plasmid (m): sc-41397-SH, 5 α -Reductase 1 shRNA (h) Lentiviral Particles: sc-41396-V and 5 α -Reductase 1 shRNA (m) Lentiviral Particles: sc-41397-V.

Molecular Weight of 5 α -Reductase 1: 26 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker[™] compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz[™] Mounting Medium: sc-24941.

DATA



5 α -Reductase 1 (R-17): sc-20399. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Sánchez, P., et al. 2009. Effects of environmental stress on mRNA and protein expression levels of steroid 5 α -Reductase isozymes in adult rat brain. *Horm. Behav.* 56: 348-353.

STORAGE

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

RESEARCH USE

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