



## 5 $\alpha$ -Reductase 1 (A-18): sc-20396

### BACKGROUND

Steroid 5 $\alpha$ -Reductase is an important enzyme in androgen physiology because it catalyzes the conversion of testosterone into the more potent 5 $\alpha$ -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 $\alpha$ -Reductase 1 shows heterogeneity of protein, ranging from 21-27 kDa, and has different levels of transcriptional and translational expression. 5 $\alpha$ -Reductase 1 is expressed in all portions of the hair follicle, whereas 5 $\alpha$ -Reductase 2 is expressed only in mesenchymal portions. In addition, 5 $\alpha$ -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 $\alpha$ -dihydrotestosterone, including inhibition of cancer cell proliferation in hormone-dependent human breast carcinoma. The 5 $\alpha$ -Reductase-3 $\alpha$ -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

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3. Chen, W., Zouboulis, C.C., Fritsch, M., Blume-Peytavi, U., Kodejia, V., Goerdt, S., Luu-The, V., and Orfanos, C.E. 1998. Evidence of heterogeneity and quantitative differences of the type 1 5 $\alpha$ -Reductase expression in cultured human skin cells—evidence of its presence in melanocytes. *J. Invest. Dermatol.* 110: 84-89.
4. Suzuki, T., Darnel, A.D., Akahira, J.I., Ariga, N., Ogawa, S., Kaneko, C., Takeyama, J., Moriya, T., and Sasano, H. 2001. 5 $\alpha$ -Reductases in human breast carcinoma: possible modulator of *in situ* androgenic actions. *J. Clin. Endocrinol. Metab.* 86: 2250-2257.
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### SOURCE

5 $\alpha$ -Reductase 1 (A-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of 5 $\alpha$ -Reductase 1 of human origin.

### PRODUCT

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

Blocking peptide available for competition studies, sc-20396 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

5 $\alpha$ -Reductase 1 (A-18) is recommended for detection of 5 $\alpha$ -Reductase 1 of 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 $\alpha$ -Reductase 1 siRNA (h): sc-41396.

### 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.

### 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.

### PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.