

5 α -Reductase 1 siRNA (m): sc-41397

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, which is expressed mainly in the skin; and type 2, which 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 -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 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 (mouse) mapping to 13 C1.

PRODUCT

5 α -Reductase 1 siRNA (m) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see 5 α -Reductase 1 shRNA Plasmid (m): sc-41397-SH and 5 α -Reductase 1 shRNA (m) Lentiviral Particles: sc-41397-V as alternate gene silencing products.

For independent verification of 5 α -Reductase 1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-41397A, sc-41397B and sc-41397C.

STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

5 α -Reductase 1 siRNA (m) is recommended for the inhibition of 5 α -Reductase 1 expression in mouse cells.

SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 μ M in 66 μ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor 5 α -Reductase 1 gene expression knockdown using RT-PCR Primer: 5 α -Reductase 1 (m)-PR: sc-41397-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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

PROTOCOLS

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