SANTA CRUZ BIOTECHNOLOGY, INC.

17β-HSD3 siRNA (h): sc-61916

BACKGROUND

17β-HSD3 (17β hydroxysteroid dehydrogenase type 3) belongs to the 17β-HSD family of proteins that regulate the availability of steroids within various tissues throughout the body. 17β-HSD3 is expressed predominantly in the testis. It is an NADPH-dependent, membrane-bound enzyme. 17β-HSD3 converts inactive steroids to their active form through its reductive activity. More specifically, 17β-HSD3 catalyzes the conversion of androstenedione to testosterone in the testis. The production of testosterone is necessary for male sex differentiation. Mutations in the gene that encodes this protein can result in an autosomal recessive male to female sex reversal. A deficiency of 17β-HSD3 results in a defect in the biosynthesis of testosterone. 17β-HSD3 inhibitors include 1,4-androstadiene-1,6,17-trione, androsterone 3β-substituted derivatives, glycyrrhizin, glycyrrhetinic acid, losulazine, amphetamine, Methotrexate and S-petasine.

REFERENCES

1. Chen, W., et al. 2002. Cutaneous androgen metabolism: basic research and clinical perspectives. J. Invest. Dermatol. 119: 992-1007.
2. Khan, N., et al. 2004. Human 17β-hydroxysteroid dehydrogenases types 1, 2, and 3 catalyze bi-directional equilibrium reactions, rather than unidirectional metabolism, in HEK-293 cells. Arch. Biochem. Biophys. 429: 50-59.
3. Spires, T.E., et al. 2005. Identification of novel functional inhibitors of 17β-hydroxysteroid dehydrogenase type III (17β-HSD3). Prostate 65: 159-170.
4. Fink, B.E., et al. 2006. Identification of a novel series of tetrahydrodibenzazocines as inhibitors of 17β-hydroxysteroid dehydrogenase type 3. Bioorg. Med. Chem. Lett. 16: 1532-1536.
5. Bertelloni, S., et al. 2006. 17β-hydroxysteroid dehydrogenase-3 deficiency: a rare endocrine cause of male-to-female sex reversal. Gynecol. Endocrinol. 22: 488-494.
6. Luu-The, V., et al. 2006. Characterization of type 12 17β-hydroxysteroid dehydrogenase, an isoform of type 3 17β-hydroxysteroid dehydrogenase responsible for Estradiol formation in women. Mol. Endocrinol. 20: 437-443.

CHROMOSOMAL LOCATION

Genetic locus: HSD17B3 (human) mapping to 9q22.32.

PRODUCT

17β-HSD3 siRNA (h) 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see 17β-HSD3 shRNA Plasmid (h): sc-61916-SH and 17β-HSD3 shRNA (h) Lentiviral Particles: sc-61916-V as alternate gene silencing products.

For independent verification of 17β-HSD3 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-61916A, sc-61916B and sc-61916C.

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 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

17β-HSD3 siRNA (h) is recommended for the inhibition of 17β-HSD3 expression in human 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 µM in 66 µl. 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 17β-HSD3 gene expression knockdown using RT-PCR Primer: 17β-HSD3 (h)-PR: sc-61916-PR (20 µl). 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.