SANTA CRUZ BIOTECHNOLOGY, INC.

FSHR siRNA (h): sc-35415

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The Power to Question

BACKGROUND

Follicle-stimulating hormone receptor (FSHR) is a 695 amino acid G protein-coupled receptor. FSH binds to the receptor in a hand-clasp fashion via its α and β subunits. While the α subunit of FSH is involved in the binding of FSH to the receptor, the β subunit stabilizes this interaction. Linkage studies suggest that a missense mutation in the FSHR gene can cause reduced FSH binding affinity and lead to a condition known as hypergonadotropic ovarian dysgenesis (ODG). In males however, this mutation does not appear to have a detrimental affect on fertility. It is believed that a mutation in the FSHR gene is also associated with ovarian hyperstimulation syndrome; a condition characterized by the presence of multiple serous and hemorrhagic follicular cysts lined by luteinized cells.

REFERENCES

1. Dias, J.A. 1996. Human follitropin heterodimerization and receptor binding structural motifs: identification and analysis by a combination of synthetic peptide and mutagenesis approaches. Mol. Cell. Endocrinol. 125: 45-54.
2. Sugahara, T., et al. 1996. Expression of biologically active fusion genes encoding the common α subunit and either the CG β or FSH β subunits: role of a linker sequence. Mol. Cell. Endocrinol. 125: 71-77.
3. Stanton, P.G., et al. 1996. Structural and functional characterisation of hFSH and hLH isoforms. Mol. Cell. Endocrinol. 125: 133-141.
4. Baccetti, B., et al. 1998. Localization of human follicle-stimulating hormone in the testis. FASEB J. 12: 1045-1054.
5. Arnold, C.J., et al. 1998. The human follitropin α subunit C-terminus collaborates with a β subunit cystine noose and an α subunit loop to assemble a receptor-binding domain competent for signal transduction. Biochemistry 37: 1762-1768.
6. Beau, I., et al. 1998. The basolateral localization signal of the follicle-stimulating hormone receptor. J. Biol. Chem. 273: 18610-18616.
7. Orio, F., Jr., et al. 2006. Genetic analysis of the follicle stimulating hormone receptor gene in women with polycystic ovary syndrome. J. Endocrinol. Invest. 29: 975-982.
8. Thomas, R.M., et al. 2007. FSH receptor forms oligomers and shows evidence of C-terminal proteolytic processing. Endocrinology 48: 1987-1995.

CHROMOSOMAL LOCATION

Genetic locus: FSHR (human) mapping to 2p16.3.

PRODUCT

FSHR 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 FSHR shRNA Plasmid (h): sc-35415-SH and FSHR shRNA (h) Lentiviral Particles: sc-35415-V as alternate gene silencing products.

For independent verification of FSHR (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-35415A, sc-35415B and sc-35415C.

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

FSHR siRNA (h) is recommended for the inhibition of FSHR 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 FSHR gene expression knockdown using RT-PCR Primer: FSHR (h)-PR: sc-35415-PR (20 µl, 453 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xiong, J., et al. 2022. FSH blockade improves cognition in mice with Alzheimer's disease. Nature 603: 470-476.
2. Yu, Z., et al. 2022. Follicle stimulating hormone promotes production of renin through its receptor in juxtaglomerular cells of kidney. Diabetol. Metab. Syndr. 14: 65.

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.