SANTA CRUZ BIOTECHNOLOGY, INC.

GnRHR2 siRNA (h): sc-108007

BACKGROUND

Gonadotropin-releasing hormone (GnRH) is released in a pulsatile manner that varies with the reproductive cycle. This hypothalamic hormone is transported to the pituitary, where it binds to specific receptors and regulates the synthesis and release of luteinizing hormone (LH) and follicle-stimulating hormone (FSH). GnRHR2 (gonadotropin-releasing hormone (type 2) receptor 2), also known as GnRH-II-R, is a 379 amino acid multi-pass membrane protein that is expressed in a variety of tissues, where it functions as a G protein-coupled receptor for GnRH. Localized to the cell membrane, GnRHR2 mediates its own receptor activity via association with G proteins, thereby activating a phosphatidylinositol-calcium second messenger system that regulates GnRHR2 function. GnRHR2 is thought to have potent antiproliferative effects on ovarian and endometrial cancer cells, suggesting a possible role in tumor suppression. Due to alternative splicing events, GnRHR2 is expressed as two isoforms.

REFERENCES

1. Neill, J.D., et al. 2001. A gonadotropin-releasing hormone (GnRH) receptor specific for GnRH II in primates. Biochem. Biophys. Res. Commun. 282: 1012-1018.
2. Faurholm, B., et al. 2001. The genes encoding the type II gonadotropin-releasing hormone receptor and the ribonucleoprotein RBM8A in humans overlap in two genomic loci. Genomics 78: 15-18.
3. van Biljon, W., et al. 2002. Type II gonadotropin-releasing hormone receptor transcripts in human sperm. Biol. Reprod. 67: 1741-1749.
4. Neill, J.D. 2002. GnRH and GnRH receptor genes in the human genome. Endocrinology 143: 737-743.
5. Gründker, C., et al. 2002. Expression of gonadotropin-releasing hormone II (GnRH-II) receptor in human endometrial and ovarian cancer cells and effects of GnRH-II on tumor cell proliferation. J. Clin. Endocrinol. Metab. 87: 1427-1430.

CHROMOSOMAL LOCATION

Genetic locus: GNRHR2 (human) mapping to 1q21.1.

PRODUCT

GnRHR2 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 GnRHR2 shRNA Plasmid (h): sc-108007-SH and GnRHR2 shRNA (h) Lentiviral Particles: sc-108007-V as alternate gene silencing products.

For independent verification of GnRHR2 (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-108007A, sc-108007B and sc-108007C.

PROTOCOLS

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

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

GnRHR2 siRNA (h) is recommended for the inhibition of GnRHR2 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.

GENE EXPRESSION MONITORING

GnRHR2 (67-R): sc-100301 is recommended as a control antibody for monitoring of GnRHR2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor GnRHR2 gene expression knockdown using RT-PCR Primer: GnRHR2 (h)-PR: sc-108007-PR (20 µl, 538 bp). 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.