SANTA CRUZ BIOTECHNOLOGY, INC.

Relaxin Receptor 2 siRNA (m): sc-40180

BACKGROUND

G protein-coupled receptors (GPRs) are a protein family of transmembrane receptors that transmit an extracellular signal (ligand binding) into an intracellular signal (G protein activation). Relaxin Receptor 2, also known as Relaxin/insulin-like family peptide receptor 2, RXFP2, LGR8, GREAT, GPR106, INSL3R or RXFPR2, is a leucine-rich repeat G protein-coupled receptor that binds Relaxins and INSL3 (insulin-like peptide 3). Expressed in brain, muscle, uterus, kidney, thyroid, testis, bone marrow and peripheral blood cells, Relaxin Receptor 2 localizes to the cell membrane and contains ten LRR (leucine-rich repeats) and an LDL-receptor class A domain. Upon Relaxin or INSL3 binding to Relaxin Receptor 2, adenylate (A) cyclase is activated, leading to an increased intracellular concentration of cAMP. cAMP is a key intracellular regulator; it mediates the activities of numerous hormones and plays an important role in modulating cellular activity. Mutations in the gene encoding Relaxin Receptor 2 can lead to cryptorchidism (impaired testicular descent), a condition associated with a higher risk of infertility and testicular cancer.

REFERENCES

1. Overbeek, P.A., et al. 2001. A transgenic insertion causing cryptorchidism in mice. Genesis 30: 26-35.
2. Gorlov, I.P., et al. 2002. Mutations of the GREAT gene cause cryptorchidism. Hum. Mol. Genet. 11: 2309-2318.
3. Kumagai, J., et al. 2002. INSL3/Leydig Insulin-like peptide activates the LGR8 receptor important in testis descent. J. Biol. Chem. 277: 31283-31286.
4. Hsu, S.Y., et al. 2002. Activation of orphan receptors by the hormone relaxin. Science 295: 671-674.

CHROMOSOMAL LOCATION

Genetic locus: Rxfp2 (mouse) mapping to 5 G3.

PRODUCT

Relaxin Receptor 2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Relaxin Receptor 2 shRNA Plasmid (m): sc-40180-SH and Relaxin Receptor 2 shRNA (m) Lentiviral Particles: sc-40180-V as alternate gene silencing products.

For independent verification of Relaxin Receptor 2 (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-40180A, sc-40180B and sc-40180C.

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

Relaxin Receptor 2 siRNA (m) is recommended for the inhibition of Relaxin Receptor 2 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 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

Relaxin Receptor 2 (H-4): sc-374293 is recommended as a control antibody for monitoring of Relaxin Receptor 2 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 Relaxin Receptor 2 gene expression knockdown using RT-PCR Primer: Relaxin Receptor 2 (m)-PR: sc-40180-PR (20 µl, 524 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Yuan, F.P., et al. 2010. The role of RXFP2 in mediating androgen-induced inguinoscrotal testis descent in LH receptor knockout mice. Reproduction 139: 759-769.
2. Ahmad, N., et al. 2012. Relaxin induces matrix-metalloproteinases-9 and -13 via RXFP1: induction of MMP-9 involves the PI3K, ERK, Akt and PKC-ζ pathways. Mol. Cell. Endocrinol. 363: 46-61.

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.