SANTA CRUZ BIOTECHNOLOGY, INC.

Relaxin Receptor 1 siRNA (h): sc-40177

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 1, also known as Relaxin/insulin-like family peptide receptor 1, RXFP1, LGR7 or RXFPR1, is a leucine-rich repeat G protein-coupled receptor that binds Relaxins and INSL3 (insulin-like peptide 3). Expressed in brain, placenta, uterus, kidney, prostate, testis, adrenal, heart, ovary and skin, Relaxin Receptor 1 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 1, 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, including ACTH, Glucagon and epinephrine, and plays an important role in modulating cellular activity. Due to alternative splicing events, two Relaxin Receptor 1 isoforms are expressed.

REFERENCES

1. Zhao, L., et al. 1999. Mice without a functional relaxin gene are unable to deliver milk to their pups. Endocrinology 140: 445-453.
2. Lee, P.C., et al. 2000. Effectiveness of an organ-sharing program in providing zero HLA-A,B,DR mismatched kidneys for transplantation in Taiwan. J. Formos. Med. Assoc. 99: 447-452.
3. Hsu, S.Y., et al. 2002. Activation of orphan receptors by the hormone relaxin. Science 295: 671-674.

CHROMOSOMAL LOCATION

Genetic locus: LGR7 (human) mapping to 4q32.1.

PRODUCT

Relaxin Receptor 1 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 Relaxin Receptor 1 shRNA Plasmid (h): sc-40177-SH and Relaxin Receptor 1 shRNA (h) Lentiviral Particles: sc-40177-V as alternate gene silencing products.

For independent verification of Relaxin Receptor 1 (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-40177A, sc-40177B and sc-40177C.

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 1 siRNA (h) is recommended for the inhibition of Relaxin Receptor 1 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

Relaxin Receptor 1 (3E3): sc-293228 is recommended as a control antibody for monitoring of Relaxin Receptor 1 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 1 gene expression knockdown using RT-PCR Primer: Relaxin Receptor 1 (h)-PR: sc-40177-PR (20 µl, 599 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Liu, J., et al. 2020. H3 relaxin protects against calcium oxalate crystal-induced renal inflammatory pyroptosis. Cell Prolif. E-published.

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.