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GPR38 siRNA (h): sc-43812

BACKGROUND

Motilin is a widely conserved 22 amino acid peptide hormone secreted from enterochromaffin cells of the gastrointestinal tract. Within the intestines, motilin potentiates intestinal motility by inducing contractions of the duodenum and through binding to surface receptors, designated GPR38 (G protein-coupled receptor 38). These motilin receptors are predominantly expressed in stomach, thyroid and bone marrow, and they are related to other G protein-coupled receptors located in the pituitary and hypothalamus, which mediate the signaling for growth hormone secretagogues. The gene encoding GPR38 is alternately spliced at the carboxy terminus to generate two related proteins that are designated GPR38-A and GPR38-B. Sequence comparisons of the two isoforms indicate that GPR38-A contains seven transmembrane domains while GPR38-B is predicted to contain only five transmembrane regions. Consistent with other G protein-coupled receptors, GPR38 activates phospholipase C signal transduction pathways and induces intracellular calcium mobilization after binding of motilin.

REFERENCES

1. Brown, J.C., et al. 1973. Motilin, a gastric motor activity stimulating polypeptide: the complete amino acid sequence. *Can. J. Biochem.* 51:533-537.
2. Depoortere, I. and Peeters, T.L. 1995. Transduction mechanism of motilin and motilides in rabbit duodenal smooth muscle. *Regul. Pept.* 55: 227-235.
3. McKee, K.K., et al. 1997. Cloning and characterization of two human G protein-coupled receptor genes (GPR38 and GPR39) related to the growth hormone secretagogue and neurotensin receptors. *Genomics* 46: 426-34.
4. Smith, R.G., et al 1997. Peptidomimetic regulation of growth hormone secretion. *Endocr. Rev.* 18: 621-645.
5. Tan, C.P., et al. 1998. Cloning and characterization of a human and murine T cell orphan G protein-coupled receptor similar to the growth hormone secretagogue and neurotensin receptors. *Genomics* 52: 223-229.
6. Feighner, S.D., et al. 1999. Receptor for motilin identified in the human gastrointestinal system. *Science* 284: 2184-2188.

CHROMOSOMAL LOCATION

Genetic locus: MLNR (human) mapping to 13q14.2.

PRODUCT

GPR38 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GPR38 shRNA Plasmid (h): sc-43812-SH and GPR38 shRNA (h) Lentiviral Particles: sc-43812-V as alternate gene silencing products.

For independent verification of GPR38 (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-43812A, sc-43812B and sc-43812C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

GPR38 siRNA (h) is recommended for the inhibition of GPR38 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 μ M in 66 μ l. 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 DSC1 gene expression knockdown using RT-PCR Primer: DSC1 (m)-PR: sc-43108-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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