



# GIPR siRNA (h): sc-75134

## BACKGROUND

GIPR (gastric inhibitory polypeptide receptor) is a 466 amino acid protein belonging to the G protein-coupled receptor 2 family. The activity of GIPR is mediated by G proteins, which activate adenyl cyclase. Expressed as two isoforms produced by alternative splicing, GIPR is a multi-pass cell membrane protein that acts as a receptor for the glucose-dependent insulinotropic polypeptide (GIP). GIP is a major physiologic factor in the augmentation of the Insulin response to oral glucose. GIP is a peptide hormone that is released postprandially from the small intestine and acts in concert with glucagon-like peptide (GLP)-1 to potentiate glucose-induced Insulin secretion from the pancreatic  $\beta$ -cell. GIP has been shown to increase adenyl cyclase activity, elevate intracellular calcium levels, and stimulate a mitogen-activated protein kinase pathway in the pancreatic  $\beta$ -cell. GIP release is demonstrated predominantly after ingestion of carbohydrate and fat and the effects of acid on GIP are consistent with a role for GIP as an enterogastrone.

## REFERENCES

1. Yamada, Y., et al. 2004. Physiology of GIP—a lesson from GIP receptor knockout mice. *Horm. Metab. Res.* 36: 771-774.
2. Boylan, M.O., et al. 2006. Sp1/Sp3 binding is associated with cell-specific expression of the glucose-dependent insulinotropic polypeptide receptor gene. *Am. J. Physiol. Endocrinol. Metab.* 290: E1287-E1295.
3. Marenah, L., et al. 2006. A stable analogue of glucose-dependent insulinotropic polypeptide, GIP(LysPAL16), enhances functional differentiation of mouse embryonic stem cells into cells expressing islet-specific genes and hormones. *Biol. Chem.* 387: 941-947.
4. Lampron, A., et al. 2006. Whole genome expression profiling of glucose-dependent insulinotropic peptide (GIP)- and adrenocorticotropin-dependent adrenal hyperplasias reveals novel targets for the study of GIP-dependent Cushing's syndrome. *J. Clin. Endocrinol. Metab.* 91: 3611-3618.
5. Tsukiyama, K., et al. 2006. Gastric inhibitory polypeptide as an endogenous factor promoting new bone formation after food ingestion. *Mol. Endocrinol.* 20: 1644-1651.
6. Irwin, N., et al. 2006. Biological activity and antidiabetic potential of synthetic fragment peptides of glucose-dependent insulinotropic polypeptide, GIP(1-16) and (Pro3)GIP(1-16). *Regul. Pept.* 135: 45-53.

## CHROMOSOMAL LOCATION

Genetic locus: GIPR (human) mapping to 19q13.32.

## PRODUCT

GIPR 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GIPR shRNA Plasmid (h): sc-75134-SH and GIPR shRNA (h) Lentiviral Particles: sc-75134-V as alternate gene silencing products.

For independent verification of GIPR (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-75134A, sc-75134B and sc-75134C.

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

## APPLICATIONS

GIPR siRNA (h) is recommended for the inhibition of GIPR 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  $\mu$ M in 66  $\mu$ 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 GIPR gene expression knockdown using RT-PCR Primer: GIPR (h)-PR: sc-75134-PR (20  $\mu$ l). 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.