



GIP siRNA (m): sc-72039

BACKGROUND

Glucose-dependent insulinotropic polypeptide (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 β -cell. GIP has been shown to increase adenylyl cyclase activity, elevate intracellular calcium levels, and stimulate a mitogen-activated protein kinase pathway in the pancreatic β -cell. Additionally, nutrient protein provides a potent stimulus for GIP expression, an effect that occurs at the posttranslational level and may be mediated in part through the acid-stimulatory properties of protein. 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

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2. Meneilly, G.S., et al. 2000. Effect of ageing and diabetes on glucose-dependent insulinotropic polypeptide and dipeptidyl peptidase IV responses to oral glucose. *Diabet. Med.* 17: 346-350.
3. Wolfe, M.M., et al. 2000. Regulation of glucose-dependent insulinotropic polypeptide release by protein in the rat. *Am. J. Physiol. Gastrointest. Liver Physiol.* 279: G561-G566.
4. Lynn, F.C., et al. 2001. Defective glucose-dependent insulinotropic polypeptide receptor expression in diabetic fatty Zucker rats. *Diabetes* 50: 1004-1011.
5. Ehses, J.A., et al. 2001. A new pathway for glucose-dependent insulinotropic polypeptide (gip) receptor signaling. evidence for the involvement of phospholipase $\alpha 2$ in gip-stimulated Insulin secretion. *J. Biol. Chem.* 276: 23667-23673.
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: Gip (mouse) mapping to 11 D.

PRODUCT

GIP 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see GIP shRNA Plasmid (m): sc-72039-SH and GIP shRNA (m) Lentiviral Particles: sc-72039-V as alternate gene silencing products.

For independent verification of GIP (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-72039A, sc-72039B and sc-72039C.

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

GIP siRNA (m) is recommended for the inhibition of GIP 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 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 GIP gene expression knockdown using RT-PCR Primer: GIP (m)-PR: sc-72039-PR (20 μ 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 for detailed protocols and support products.