SANTA CRUZ BIOTECHNOLOGY, INC.

Gastrin siRNA (h): sc-37103

BACKGROUND

Gastrin, which is normally formed by mucosal cells in the gastric antrum and by the D cells of the pancreatic islets, is a hormone whose main function is to stimulate secretion of HCl by the gastric mucosa. HCl, in turn, inhibits Gastrin formation. Gastrin also stimulates smooth muscle contraction and increases blood circulation and water secretion in the stomach and intestine. Gastrin is regulated by epidermal growth factor in both mice and humans. Gastrin is excreted in excess by pancreatic tumors in the Zollinger-Ellison syndrome. Gastrin maps to human chromosome 17q21.2. Gastrin-Releasing Peptide (GRP) stimulates the release of Gastrin as well as other gastrointestinal hormones, in addition to acting as an autocrine growth factor for certain cell types. High levels of GRP are found in the human lung just after birth and levels decrease thereafter in parallel with the observed disease in a number of pulmonary neuroendocrine cells. GRP is known to promote lung tumorigenesis in model systems and, interestingly, is induced by retinoic acid. GRP is involved in several functions with the hypothalamus, and is thought to play a role in regulating pituitary hormone secretion. GRP maps to human chromosome 18q21.32.

REFERENCES

1. Gregory, R.A., et al. 1969. Amino acid constitution of two gastrins isolated from Zollinger-Ellison tumor tissue. Gut 10: 603-608.
2. Lebacq-Verheyden, A.M., et al. 1987. Human gastrin-releasing peptide gene maps to chromosome band 18q21. Somat. Cell Mol. Genet. 13: 81-86.
3. Flejter, W.L., et al. 1993. Multicolor FISH mapping with Alu-PCR-amplified YAC clone DNA determines the order of markers in the BRCA1 region on chromosome 17q12-q21. Genomics 17: 624-631.
4. Koh, T.J., et al. 1995. Molecular cloning and sequencing of the murine gastrin gene. Biochem. Biophys. Res. Commun. 216: 34-41.
5. Sachs, G., et al. 1997. Physiology of isolated gastric endocrine cells. Annu. Rev. Physiol. 59: 243-256.
6. Terashi, H., et al. 1998. Growth stimulation of normal melanocytes and nevocellular nevus cells by gastrin releasing peptide (GRP). J. Dermatol. Sci. 17: 93-100.
7. Ravi, R.K., et al. 1998. Induction of gastrin releasing peptide by all-*trans* retinoic acid in small cell lung cancer cells. Oncol. Rep. 5: 497-501.

CHROMOSOMAL LOCATION

Genetic locus: GAST (human) mapping to 17q21.2.

PRODUCT

Gastrin 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 Gastrin shRNA Plasmid (h): sc-37103-SH and Gastrin shRNA (h) Lentiviral Particles: sc-37103-V as alternate gene silencing products.

For independent verification of Gastrin (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-37103A, sc-37103B and sc-37103C.

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

Gastrin siRNA (h) is recommended for the inhibition of Gastrin 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

Gastrin (B-10): sc-28302 is recommended as a control antibody for monitoring of Gastrin 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.

SELECT PRODUCT CITATIONS

1. Wang, J., et al. 2016. Gastrin regulates ABCG2 to promote the migration, invasion and side populations in pancreatic cancer cells via activation of NFκB signaling. Exp. Cell Res. 346: 74-84.

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.