

CCK-AR siRNA (r): sc-108027

BACKGROUND

Gastrin is responsible for the stimulation of various digestive functions. In response to Gastrin, the stomach mucosa produces and secretes hydrochloric acid, and the pancreas secretes digestive enzymes. Gastrin also stimulates smooth muscle contraction and increases blood circulation and water secretion in the stomach and intestine. Cholecystokinin (CCK) is a neurotransmitter in the brain that is involved in satiety, stress and anxiety. CCK is expressed in the gastrointestinal (GI) system as well as the central nervous system (CNS), which provides further evidence that CCK modulates food consumption. Both CCK and Gastrin mediate their effects through two G protein-coupled receptors, CCK-AR and CCK-BR. CCK preferentially binds CCK-AR with high affinity, whereas CCK-BR binds to Gastrin and CCK with nearly equal affinities. The cholecystokinin receptors and their ligands are potential therapeutic targets for GI or CNS diseases.

REFERENCES

1. Koh, T.J., et al. 1995. Molecular cloning and sequencing of the murine Gastrin gene. *Biochem. Biophys. Res. Commun.* 216: 34-41.
2. Yassin, R.R. 1999. Signaling pathways mediating Gastrin's growth-promoting effects. *Peptides* 20: 885-898.
3. de Tullio, P., et al. 2000. Therapeutic and chemical developments of cholecystokinin receptor ligands. *Expert Opin. Investig. Drugs* 9: 129-146.
4. Crespi, F., et al. 2000. Involvement of cholecystokinin within craving for cocaine: role of cholecystokinin receptor ligands. *Expert Opin. Investig. Drugs* 9: 2249-2258.
5. Beglinger, C., et al. 2001. Loxiglumide, a CCK-A receptor antagonist, stimulates calorie intake and hunger feelings in humans. *Am. J. Physiol. Regul. Integr. Comp. Physiol.* 280: 1149-1154.
6. Todisco, A., et al. 2001. Molecular mechanisms for the antiapoptotic action of Gastrin. *Am. J. Physiol. Gastrointest. Liver Physiol.* 280: 298-307.

CHROMOSOMAL LOCATION

Genetic locus: Cckar (rat) mapping to 14q11.

PRODUCT

CCK-AR siRNA (r) 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 CCK-AR shRNA Plasmid (r): sc-108027-SH and CCK-AR shRNA (r) Lentiviral Particles: sc-108027-V as alternate gene silencing products.

For independent verification of CCK-AR (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-108027A, sc-108027B and sc-108027C.

PROTOCOLS

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

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

CCK-AR siRNA (r) is recommended for the inhibition of CCK-AR expression in rat 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.

GENE EXPRESSION MONITORING

CCK-AR (F-6): sc-514303 is recommended as a control antibody for monitoring of CCK-AR 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 CCK-AR gene expression knockdown using RT-PCR Primer: CCK-AR (r)-PR: sc-108027-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Wu, X., et al. 2020. Satiety induced by bile acids is mediated via vagal afferent pathways. *JCI Insight* 5: 132400.

RESEARCH USE

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