

GLP-1R siRNA (m): sc-45764

BACKGROUND

Glucagon, a pancreatic hormone, functions as an antagonist to Insulin, stimulating the conversion of glycogen to glucose and increasing blood sugar levels. GLP-1 functions as a transmitter in the central nervous system, inhibiting feeding and drinking behavior. Both Glucagon and GLP-1 function through their specific binding to the Glucagon receptor or GLP-1R, respectively. The Glucagon receptor shows expression in liver, kidney and adipose tissue. GLP-1R expression primarily localizes to areas of the hypothalamus involved in feeding behavior. Both receptors and their ligands serve as potential targets for the therapeutic treatment of diabetes.

REFERENCES

1. Iwanij, V., et al. 1990. Characterization of the Glucagon receptor and its functional domains using monoclonal antibodies. *J. Biol. Chem.* 265: 21302-21308.
2. Rouille, Y., et al. 1995. Differential processing of proGlucagon by the subtilisin-like prohormone convertases PC2 and PC3 to generate either Glucagon or Glucagon-like peptide. *J. Biol. Chem.* 270: 26488-26496.
3. Scrocchi, L.A., et al. 1996. Glucose intolerance but normal satiety in mice with a null mutation in the Glucagon-like peptide 1 receptor gene. *Nat. Med.* 2: 1254-1258.
4. Bollen, M., et al. 1998. Specific features of glycogen metabolism in the liver. *Biochem. J.* 336: 19-31.
5. Jiang, G., et al. 2003. Glucagon and regulation of glucose metabolism. *Am. J. Physiol. Endocrinol. Metab.* 284: E671-E678.

CHROMOSOMAL LOCATION

Genetic locus: Glp1r (mouse) mapping to 17 A3.3.

PRODUCT

GLP-1R 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 GLP-1R shRNA Plasmid (m): sc-45764-SH and GLP-1R shRNA (m) Lentiviral Particles: sc-45764-V as alternate gene silencing products.

For independent verification of GLP-1R (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-45764A, sc-45764B and sc-45764C.

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

GLP-1R siRNA (m) is recommended for the inhibition of GLP-1R 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.

GENE EXPRESSION MONITORING

GLP-1R (D-6): sc-390774 is recommended as a control antibody for monitoring of GLP-1R 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 GLP-1R gene expression knockdown using RT-PCR Primer: GLP-1R (m)-PR: sc-45764-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. Guo, C., et al. 2022. MicroRNA-214-5p aggravates sepsis-related acute kidney injury in mice. *Drug Dev. Res.* 83: 339-350.

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.