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NPY5-R siRNA (h): sc-42105

BACKGROUND

Pancreatic polypeptide (PP), neuropeptide Y (NPY) and peptide YY (PYY) are related 36-amino acid hormones. A number of structurally related receptors for these peptides have been isolated: NPY1-R, NPY2-R, NPY3-R, NPY4-R, NPY5-R and NPY6-R. NPY4-R is expressed in several human tissues, including brain, coronary artery and ileum. NPY4-R maps to human chromosome 10q11.22. NPY5-R, isolated from rat hypothalamus, encodes a 456-amino acid protein with less than 35% overall identity to known Y-type receptors. The human NPY5-R sequence is nearly identical to, but in the opposite orientation from, that of the human NPY1-R sequence. NPY5-R localizes to the paraventricular hypothalamic nucleus, the lateral hypothalamus and other locations consistent with a role in the control of feeding behavior. The gene which encodes NPY5-R maps to human chromosome 4q32.2. NPY6-R is abundantly expressed in human heart and skeletal muscle. The gene which encodes NPY6-R maps to human chromosome 5q31.

REFERENCES

1. Bard, J.A., et al. 1995. Cloning and functional expression of a human Y4 subtype receptor for pancreatic polypeptide, neuropeptide Y, and peptide YY. *J. Biol. Chem.* 270: 26762-26765.
2. Gerald, C., et al. 1996. A receptor subtype involved in neuropeptide-Y-induced food intake. *Nature* 382: 168-171.
3. Hu, Y., et al. 1996. Identification of a novel hypothalamic neuropeptide Y receptor associated with feeding behavior. *J. Biol. Chem.* 271: 26315-26319.
4. Matsumoto, M., et al. 1996. Inactivation of a novel neuropeptide Y/peptide YY receptor gene in primate species. *J. Biol. Chem.* 271: 27217-27220.
5. Darby, K., et al. 1997. Assignment of the Y-4 receptor gene (PPYR1) to human chromosome 10q11.2 and mouse chromosome 14. *Genomics* 46: 513-515.
6. Lutz, C.M., et al. 1997. Neuropeptide Y receptor genes mapped in human and mouse: receptors with high affinity for pancreatic polypeptide are not clustered with receptors specific for neuropeptide Y and peptide YY. *Genomics* 46: 287-290.

CHROMOSOMAL LOCATION

Genetic locus: NPY5R (human) mapping to 4q32.2.

PRODUCT

NPY5-R 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NPY5-R shRNA Plasmid (h): sc-42105-SH and NPY5-R shRNA (h) Lentiviral Particles: sc-42105-V as alternate gene silencing products.

For independent verification of NPY5-R (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-42105A, sc-42105B and sc-42105C.

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

NPY5-R siRNA (h) is recommended for the inhibition of NPY5-R 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 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

NPY5-R (H-4): sc-137167 is recommended as a control antibody for monitoring of NPY5-R 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 NPY5-R gene expression knockdown using RT-PCR Primer: NPY5-R (h)-PR: sc-42105-PR (20 μ l, 556 bp). 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.