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SANTA CRUZ BIOTECHNOLOGY, INC.

NPY2-R siRNA (h): sc-42101

BACKGROUND

A gene on chromosome 4q31 encodes a 381 amino acid protein, NPY2-R (also designated Neuropeptide Y receptor Y2). NPY2-R is a member of the G protein-coupled receptor super-family, and like other members has seven putative transmembrane domains. However, NPY2-R gene consists of two exons, unlike the contiguous structure of other G protein-coupled receptor genes. NPY2-R shares a 31% sequence identity with NPY1-R. NPY2-R is expressed in the presynaptic membranes of the central nervous system, and to a lesser extent the peripheral nervous system. NPY2-R associates (from highest to lowest affinity) with carboxyl terminals of unphosphorylate Peptide YY (PYY) (phosphorylation of PYY greatly reduces its binding affinity), NPY, and Pancreatic Peptide. Depending on the cell type, NPY2-R couples with different G proteins, which act as different second messengers. NPY2-R reduces the effects of depolarization, calcium ion currents in arterial smooth muscle by through association with NPY. NPY2-R inhibits cholecysto-kinin octapeptide-induced, esophageal muscle contraction, through interactions with PYY and NPY.

REFERENCES

1. Rose, P.M., et al. 1995. Cloning and functional expression of a cDNA encoding a human type 2 neuropeptide Y receptor. J. Biol. Chem. 270: 22661-22664.
2. Ammar, D.A., et al. 1996. Characterization of the human type 2 neuropeptide Y receptor gene (NPY2-R) and localization to the chromosome 4q region containing the type 1 neuropeptide Y receptor gene. Genomics 38: 392-398.
3. Gehlert, D.R., et al. 1996. Expression cloning of a human brain neuropeptide Y Y2 receptor. Mol. Pharmacol. 49: 224-228.
4. Lewis, C.J., et al. 1999. Inhibition of vasoconstriction and Ca^{2+} currents mediated by Neuropeptide Y Y2 receptors. J. Smooth Muscle Res. 35: 147-156.
5. Huang, S.C. 2000. Fuctional CCK-A and Y2 receptors in guinea pig esophagus. Regul. Pept. 88: 55-60.
6. Chen, Z., et al. 2001. Ser^{13}-phophorylated PYY from porcine intestine with a potent biological activity. FEBS Lett. 492: 119-122.

CHROMOSOMAL LOCATION

Genetic locus: NPY2R (human) mapping to 4q32.1.

PRODUCT

NPY2-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NPY2-R shRNA Plasmid (h): sc-42101-SH and NPY2-R shRNA (h) Lentiviral Particles: sc-42101-V as alternate gene silencing products.

For independent verification of NPY2-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-42101A, sc-42101B and sc-42101C.

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

NPY2-R siRNA (h) is recommended for the inhibition of NPY2-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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NPY2-R gene expression knockdown using RT-PCR Primer: NPY2-R (h)-PR: sc-42101-PR (20 µl). 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.