SANTA CRUZ BIOTECHNOLOGY, INC.

NK-1R siRNA (m): sc-36070

BACKGROUND

The substance P receptor, also designated NK-1R for neurokinin 1 receptor, is a member of a class of tachykinin receptors which also includes the NK-2 receptor and the NK-3 receptor. Substance P receptors bind to tachykinin peptides, including substance P, substance K and neuromedin K. NK-1R is likely to be involved in nociceptive transmission, basal ganglia function or anxiety and depression. NK-1R is expressed in a high proportion of spinothalmic and spinobranchial neurons located in lamina 1. NK-1R neurons in the dorsal horn of the spinal cord may play a role in chronic neuropathic and inflammatory pain. Ligand-induced internalization of NK-1R into early endosomes deplete the cell surface of these receptors. This internalization may be involved in a down-regulation response of a cell to substance P.

REFERENCES

1. Takeda, Y., et al. 1991. Molecular cloning, structural characterization and functional expression of the human substance P receptor. Biochem. Biophys. Res. Commun. 179: 1232-1240.
2. Garland, A.M., et al. 1994. Agonist-induced internalization of the substance P (NK1) receptor expressed in epithelial cells. Biochem. J. 303: 177-186.
3. Mantyh, P.W., et al. 1995. Receptor endocytosis and dendrite reshaping in spinal neurons after somatosensory stimulation. Science 268: 1629-1632.
4. Saria, A. 1999. The tachykinin NK1 receptor in the brain: pharmacology and putative functions. Eur. J. Pharmacol. 375: 51-60.
5. Ding, Y.Q., et al. 1999. The distribution of substance P receptor (NK1)-like immunoreactive neurons in the newborn and adult human spinal cord. Neurosci. Lett. 266: 133-136.
6. Nichols, M.L., et al. 1999. Transmission of chronic nociception by spinal neurons expressing the substance P receptor. Science 286: 1558-1561.

CHROMOSOMAL LOCATION

Genetic locus: Tacr1 (mouse) mapping to 6 C3.

PRODUCT

NK-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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see NK-1R shRNA Plasmid (m): sc-36070-SH and NK-1R shRNA (m) Lentiviral Particles: sc-36070-V as alternate gene silencing products.

For independent verification of NK-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-36070A, sc-36070B and sc-36070C.

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 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

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

NK-1R (D-11): sc-365091 is recommended as a control antibody for monitoring of NK-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-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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NK-1R gene expression knockdown using RT-PCR Primer: NK-1R (m)-PR: sc-36070-PR (20 µl, 406 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.