SANTA CRUZ BIOTECHNOLOGY, INC.

Neurokinin B siRNA (h): sc-106300

BACKGROUND

The tachykinin family consists of amidated neuropeptides that share a carboxy-terminal sequence (Phe-X-Gly-Leu-Met-NH_2). Tachykinin peptides have many plieotropic functions including: neurotransmission, immune/hematopoietic modulation, angiogenesis and mitogenesis. Neurokinin B (NKB), also known as TAC3 (tachykinin 3), NKNB or ZNEUROK1, is a 121 amino acid secreted protein that belongs to the tachykinin family and exists as three alternatively spliced isoforms. Expressed primarily in the central and peripheral nervous system, Neurokinin B is also found in the placental outer syncytiotrophoblast and is thought to have a role in pregnancy-induced pre-eclampsia and hypertension. The gene encoding Neurokinin B maps to human chromosome 12, which comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, achondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p.

REFERENCES

1. Lai, J.P., et al. 1998. Identification of a δ isoform of preprotachykinin mRNA in human mononuclear phagocytes and lymphocytes. J. Neuroimmunol. 91: 121-128.
2. Page, N.M., et al. 2000. Excessive placental secretion of neurokinin B during the third trimester causes pre-eclampsia. Nature 405: 797-800.
3. Singh, D., et al. 2000. Increased expression of preprotachykinin-I and neurokinin receptors in human breast cancer cells: implications for bone marrow metastasis. Proc. Natl. Acad. Sci. USA 97: 388-393.
4. Delgado Carrasco, J., et al. 2001. Achondrogenesis type II-hypochondrogenesis: radiological features. Case report. An. Esp. Pediatr. 55: 553-557.
5. Yokoyama, T., et al. 2003. A case of Kniest dysplasia with retinal detachment and the mutation analysis. Am. J. Ophthalmol. 136: 1186-1188.
6. Forzano, F., et al. 2007. A familial case of achondrogenesis type II caused by a dominant COL2A1 mutation and "patchy" expression in the mosaic father. Am. J. Med. Genet. A 143A: 2815-2820.

CHROMOSOMAL LOCATION

Genetic locus: TAC3 (human) mapping to 12q13.3.

PRODUCT

Neurokinin B 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 Neurokinin B shRNA Plasmid (h): sc-106300-SH and Neurokinin B shRNA (h) Lentiviral Particles: sc-106300-V as alternate gene silencing products.

For independent verification of Neurokinin B (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-106300A, sc-106300B and sc-106300C.

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

Neurokinin B siRNA (h) is recommended for the inhibition of Neurokinin B 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.

GENE EXPRESSION MONITORING

Neurokinin B (1B2): sc-517127 is recommended as a control antibody for monitoring of Neurokinin B 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 Neurokinin B gene expression knockdown using RT-PCR Primer: Neurokinin B (h)-PR: sc-106300-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.