

# Neurokinin B siRNA (m): sc-42291

## BACKGROUND

The tachykinin family consists of amidated neuropeptides that share a carboxy-terminal sequence (Phe-X-Gly-Leu-Met-NH<sub>2</sub>). Tachykinin peptides have many pleiotropic 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 12q13.3, which comprises approximately 4.5% of the human genome. Chromosome 12 is associated with a variety of diseases and afflictions, including hypochondrogenesis, Kniest dysplasia, Noonan syndrome and trisomy 12p.

## REFERENCES

1. Lai, J.P., et al. 1998. Identification of a  $\delta$  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.
7. Benussi, D.G., et al. 2009. Trisomy 12p and monosomy 4p: phenotype-genotype correlation. *Genet. Test. Mol. Biomarkers* 13: 199-204.
8. Lo, F.S., et al. 2009. High resolution melting analysis for mutation detection for PTPN11 gene: applications of this method for diagnosis of Noonan syndrome. *Clin. Chim. Acta* 409: 75-77.
9. Topaloglu, A.K., et al. 2009. TAC3 and TACR3 mutations in familial hypogonadotropic hypogonadism reveal a key role for Neurokinin B in the central control of reproduction. *Nat. Genet.* 41: 354-358.

## CHROMOSOMAL LOCATION

Genetic locus: Tac2 (mouse) mapping to 10 D3.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

Neurokinin B 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Neurokinin B shRNA Plasmid (m): sc-42291-SH and Neurokinin B shRNA (m) Lentiviral Particles: sc-42291-V as alternate gene silencing products.

For independent verification of Neurokinin B (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-42291A, sc-42291B and sc-42291C.

## 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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Neurokinin B siRNA (m) is recommended for the inhibition of Neurokinin B 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Neurokinin B gene expression knockdown using RT-PCR Primer: Neurokinin B (m)-PR: sc-42291-PR (20  $\mu$ l). 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.