SANTA CRUZ BIOTECHNOLOGY, INC.

Tachykinin 4 siRNA (h): sc-61635

BACKGROUND

The Tachykinin family consists of amidated neuropeptides that share a carboxy-terminal sequence (Phe-X-Gly-Leu-Met-NH_2). They are widely distributed within the peripheral and central nervous system and play a role as excitatory neurotransmitters, which are mediated through three types of receptors designated NK-1R, NK-2R and NK-3R. Tachykinin 4, also designated preprotachykinin C or PPT-C, encodes hemokinin-1 (HK-1), endokinin A (EKA), endokinin B (EKB), and endokinin D (EKD). These peptides have a widespread peripheral distribution and exhibit significant potency for NK-1R. Hemokinin-1 is similar in potency to substance P (SP). Both peptides stimulate IFN-γ production and are expressed at sites of chronic inflammation, where HK-1 is thought to be an important regulator of B cell development.

REFERENCES

1. Lai, J.P., et al. 1998. Identification of a δ isoform of preprotachykinin mRNA in human mononuclear phagocytes and lymphocytes. J. Neuroimmunol. 9: 121-128.
2. Kurtz, M.M., et al. 2002. Identification, localization and receptor characterization of novel mammalian substance P-like peptides. Gene 296: 205-212.
3. Camarda, V., et al. 2002. Pharmacological profile of hemokinin 1: a novel member of the Tachykinin family. Life Sci. 71: 363-370.
4. Page, N.M, et al. 2003. Characterization of the endokinins: human Tachykinins with cardiovascular activity. Proc. Natl. Acad. Sci. USA 100: 6245-6250.
5. Page, N.M. 2004. Hemokinins and endokinins. Cellular and molecular life sciences: Cell. Mol. Life Sci. 61: 1652-1663.
6. Pennefather, J.N., et al. 2004. Tachykinins and Tachykinin receptors: a growing family. Life Sci. 74: 1445-1463.
7. Patacchini, R., et al. 2004. Newly discovered tachykinins raise new questions about their peripheral roles and the tachykinin nomenclature. Trends Pharmacol. Sci. 25: 1-3.
8. Metwali, A., et al. 2004. Cutting edge: hemokinin has Substance P-like function and expression in inflammation. J. Immunol. 172: 6528-6532.

CHROMOSOMAL LOCATION

Genetic locus: TAC4 (human) mapping to 17q21.33.

PRODUCT

Tachykinin 4 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 Tachykinin 4 shRNA Plasmid (h): sc-61635-SH and Tachykinin 4 shRNA (h) Lentiviral Particles: sc-61635-V as alternate gene silencing products.

For independent verification of Tachykinin 4 (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-61635A, sc-61635B and sc-61635C.

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

Tachykinin 4 siRNA (h) is recommended for the inhibition of Tachykinin 4 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 Tachykinin 4 gene expression knockdown using RT-PCR Primer: Tachykinin 4 (h)-PR: sc-61635-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.