SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+ CP type VIIα siRNA (m): sc-149785

BACKGROUND

Voltage-gated sodium channels are selective ion channels that regulate the permeability of sodium ions in excitable cells. During the propagation of an action potential, sodium channels allow an influx of sodium ions, which rapidly depolarize the cell. The three glycoproteins that comprise the voltage-gated sodium channel proteins include a pore-forming α subunit, a noncovalently associated β1 subunit and a disulfide-linked β2 subunit. Na^+ CP type VIIα (sodium channel protein type 7 subunit α), also known as SCN6A, sodium channel protein cardiac and skeletal muscle subunit α and putative voltage-gated sodium channel subunit α Na_x, is a 1,682 amino acid multi-pass membrane protein that belongs to the sodium channel family. Primarily expressed in uterus and heart, Na^+ CP type VIIα may function in the regulation of salt intake behavior and central sensing of body-fluid sodium levels.

REFERENCES

1. Han, J.A., et al. 1991. Direct amplification of a single dissected chromosomal segment by polymerase chain reaction: a human brain sodium channel gene is on chromosome 2q22-q23. Proc. Natl. Acad. Sci. USA 88: 335-339.
2. George, A.L., et al. 1992. Molecular cloning of an atypical voltage-gated sodium channel expressed in human heart and uterus: evidence for a distinct gene family. Proc. Natl. Acad. Sci. USA 89: 4893-4897.
3. George, A.L., et al. 1994. Assignment of a human voltage-dependent sodium channel α-subunit gene (SCN6A) to 2q21-q23. Genomics 19: 395-397.
4. Watanabe, E., et al. 2000. Nav2/NaG channel is involved in control of salt-intake behavior in the CNS. J. Neurosci. 20: 7743-7751.
5. Hiyama, T.Y., et al. 2002. Na_x channel involved in CNS sodium-level sensing. Nat. Neurosci. 5: 511-512.
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CHROMOSOMAL LOCATION

Genetic locus: Scn7a (mouse) mapping to 2 C1.3.

PRODUCT

Na^+ CP type VIIα siRNA (m) is a pool of 2 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 Na^+ CP type VIIα shRNA Plasmid (m): sc-149785-SH and Na^+ CP type VIIα shRNA (m) Lentiviral Particles: sc-149785-V as alternate gene silencing products.

For independent verification of Na^+ CP type VIIα (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-149785A and sc-149785B.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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

Na^+ CP type VIIα siRNA (m) is recommended for the inhibition of Na^+ CP type VIIα 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Na^+ CP type VIIα gene expression knockdown using RT-PCR Primer: Na^+ CP type VIIα (m)-PR: sc-149785-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.