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- Mindermengenzuschlag
- Trockeneiszuschlag
- Gefahrgutzuschlag
- Expressversand

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SANTA CRUZ BIOTECHNOLOGY, INC.

Na^+ CP type IVα siRNA (m): sc-42649

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 non-covalently associated β1 subunit and a disulfide-linked β2 subunit. The two β subunits regulate the level of channel expression, modulate gating and function as cell adhesion molecules for cellular aggregation and cytoskeleton interaction. The α subunits of sodium channels type I and III are predominantly expressed in neuronal cell bodies and proximal processes, while type IIα subunits are more abundant along axons. The β1 subunit of sodium channel type I is expressed in brain, skeletal and cardiac muscle. In the brain, β1 and β2 are highly expressed in Purkinje cells, and β1 is also expressed in the pyramidal cells of the deep cerebellar nuclei. Impaired voltage-gated sodium channels lead to a number of diseases including myotonia.

REFERENCES

1. Rosenfeld, J., et al. 1997. A novel muscle sodium channel mutation causes painful congenital myotonia. Ann. Neurol. 42: 811-814.
2. Catterall, W.A. 1999. Molecular properties of brain sodium channels: an important target for anticonvulsant drugs. Adv. Neurol. 79: 441-456.
3. Whitaker, W.R., et al. 2000. Distribution of voltage-gated sodium channel α subunit and β subunit mRNAs in human hippocampal formation, cortex, and cerebellum. J. Comp. Neurol. 422: 123-139.
4. Isom, L.L. 2001. Sodium channel β subunits: anything but auxiliary. Neuroscientist 7: 42-54.
5. Whitaker, W.R., et al. 2001. Comparative distribution of voltage-gated sodium channel proteins in human brain. Mol. Brain Res. 88: 37-53.

CHROMOSOMAL LOCATION

Genetic locus: Scn4a (mouse) mapping to 11 E1.

PRODUCT

Na^+ CP type IVα 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 Na^+ CP type IVα shRNA Plasmid (m): sc-42649-SH and Na^+ CP type IVα shRNA (m) Lentiviral Particles: sc-42649-V as alternate gene silencing products.

For independent verification of Na^+ CP type IVα (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-42649A, sc-42649B and sc-42649C.

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

Na^+ CP type IVα siRNA (m) is recommended for the inhibition of Na^+ CP type IVα 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 IVα gene expression knockdown using RT-PCR Primer: Na^+ CP type IVα (m)-PR: sc-42649-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.