SANTA CRUZ BIOTECHNOLOGY, INC.

SV2C siRNA (h): sc-42279

BACKGROUND

In all vertebrates, SV2 proteins are abundant, hydrophobic, membrane glycoproteins that are expressed as two major isoforms, SV2A and SV2B, and one minor isoform, SV2C. SV2 proteins are differentially expressed in the brain and are present on all synaptic vesicles, independent of transmitter type. While SV2A and SV2B are expressed ubiquitously througout the brain, SV2C displays a more restricted pattern of expression. SV2C is only present on a small subset of synapses in phylogenetically old brain areas, indicating that SV2C could be evolutionary more ancient than SV2A or SV2B. Specifically, SV2C is expressed in the central neuraxis, which includes the striatum, midbrain, hindbrain and the olfactory bulb. SV2C, whose molecular mass ranges due to N-glycosylation, contains cytoplasmic N-terminal and C-terminal domains. The restricted pattern of SV2C expression suggests that it may be used as a specific synaptic marker in the study of degenerative diseases, such as Parkinson's disease.

REFERENCES

1. Buckley, K., et al. 1985. Identification of transmembrane glycoprotein specific for secretory vesicles fo neural and endocrine cells. J. Cell Biol. 100: 1284-1294.
2. Lowe, A.W., et al. 1988. Endocrine secretory granules and neuronal synaptic vesicles have three integral membrane proteins in common. J. Cell Biol. 106: 51-59.
3. Bajjaleih, S.M., et al. 1993. Brain contains two forms of synaptic vesicle protein 2. Proc. Natl. Acad. Sci. USA 90: 2150-2154.
4. Janz, R., et al. 1999. SV2C is a synaptic vesicle protein with an unusually restricted localization: anatomy of a synaptic vesicle protein family. Neuroscience 94: 1279-1290.
5. Janz, R., et al. 1999. SV2A and SV2B function as redundant Ca^{2+} regulators in neurotransmitter release. Neuron 24: 1003-1016.

CHROMOSOMAL LOCATION

Genetic locus: SV2C (human) mapping to 5q13.3.

PRODUCT

SV2C 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 SV2C shRNA Plasmid(h): sc-42279-SH and SV2C shRNA (h) Lentiviral Particles: sc-42279-V as alternate gene silencing products.

For independent verification of SV2C (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-42279A, sc-42279B and sc-42279C.

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

SV2C siRNA (h) is recommended for the inhibition of SV2C 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 SV2C gene expression knockdown using RT-PCR Primer: SV2C (h)-PR: sc-42279-PR (20 µl, 545 bp). 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.