

VGLUT3 siRNA (h): sc-42334

BACKGROUND

The ATP-dependent, chloride-sensitive vesicular glutamate transporters (VGLUT) include BNPI (VGLUT1), VGLUT2 (DNPI) and VGLUT3. The brain expresses BNPI (brain specific Na⁺-dependent inorganic phosphate (P_i) cotransporter) and VGLUT2 in a complementary fashion. The telencephalic regions express BNPI, whereas the lower brainstem and diencephalic regions express VGLUT2. Rat pinealocytes express both BNPI and VGLUT2. The striatum, hippocampus, cerebral cortex and raphe nuclei express VGLUT3 in a small number of neurons. Pancreatic α and β cells express BNPI and VGLUT2 in response to glucose concentrations. Human VGLUT3 shares a 72% sequence homology with VGLUT2 and BNPI.

REFERENCES

1. Aihara, Y., et al. 2000. Molecular cloning of a novel brain-type Na⁺-dependent inorganic phosphate cotransporter. *J. Neurochem.* 74: 2622-2625.
2. Kaneko, T. and Fujiyama, F. 2002. Complementary distribution of vesicular glutamate transporters in the central nervous system. *Neurosci. Res.* 42: 243-250.
3. Gras, C., et al. 2002. A third vesicular glutamate transporter expressed by cholinergic and serotonergic neurons. *J. Neurosci.* 22: 5442-5451.
4. Takamori, S., et al. 2002. Molecular cloning and functional characterization of human vesicular glutamate transporter 3. *EMBO Rep.* 3: 798-803.
5. Morimoto, R., et al. 2003. Co-expression of vesicular glutamate transporters (VGLUT1 and VGLUT2) and their association with synaptic-like micro vesicles in rat pinealocytes. *J. Neurochem.* 84: 382-391.
6. Bai, L., et al. 2003. Characterization of vesicular glutamate transporter in pancreatic α and β cells and its regulation by glucose. *Am. J. Physiol. Gastrointest. Liver Physiol.* 284: G808-G814.

CHROMOSOMAL LOCATION

Genetic locus: SLC17A8 (human) mapping to 12q23.1.

PRODUCT

VGLUT3 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VGLUT3 shRNA Plasmid (h): sc-42334-SH and VGLUT3 shRNA (h) Lentiviral Particles: sc-42334-V as alternate gene silencing products.

For independent verification of VGLUT3 (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-42334A, sc-42334B and sc-42334C.

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.

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

APPLICATIONS

VGLUT3 siRNA (h) is recommended for the inhibition of VGLUT3 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 μ M in 66 μ 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 VGLUT3 gene expression knockdown using RT-PCR Primer: VGLUT3 (h)-PR: sc-42334-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.