

SLC6A2 siRNA (h): sc-61215

BACKGROUND

The norepinephrine transporter encoded by SLC6A2 is a multi-pass membrane protein that terminates noradrenergic signaling by rapid re-uptake of neuronally released norepinephrine (NE) into presynaptic terminals. It belongs to the sodium neurotransmitter symporter (SNF) family and interacts with PRKCABP. The norepinephrine transporter regulates NE-mediated behavioral and physiological effects, including mood, depression, feeding behavior, cognition, regulation of blood pressure and heart rate. Consequently, the norepinephrine transporter is the target of several drugs used in the treatment or diagnosis of disorders, including depression, attention-deficit hyperactivity disorder and feeding disturbances. Defects in SLC6A2, the gene encoding the norepinephrine transporter, can cause orthostatic intolerance, a syndrome that is associated with postural tachycardia and is characterized by lightheadedness, fatigue, altered mentation and syncope.

REFERENCES

1. Fukumitsu, N., et al. 2006. Reduced 125I-meta-iodobenzylguanidine uptake and norepinephrine transporter density in the hearts of mice with MPTP-induced Parkinsonism. *Nucl. Med. Biol.* 33: 37-42.
2. Miner, L.H., et al. 2006. Chronic stress increases the plasmalemmal distribution of the norepinephrine transporter and the coexpression of tyrosine hydroxylase in norepinephrine axons in the prefrontal cortex. *J. Neurosci.* 26: 1571-1578.
3. Matsunaga, W., et al. 2006. Involvement of neurotrophic factors in aging of noradrenergic innervations in hippocampus and frontal cortex. *Neurosci. Res.* 54: 313-318.
4. Smith, H.R., et al. 2006. Distribution of norepinephrine transporters in the non-human primate brain. *Neuroscience* 138: 703-714.

CHROMOSOMAL LOCATION

Genetic locus: SLC6A2 (human) mapping to 16q12.2.

PRODUCT

SLC6A2 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 SLC6A2 shRNA Plasmid (h): sc-61215-SH and SLC6A2 shRNA (h) Lentiviral Particles: sc-61215-V as alternate gene silencing products.

For independent verification of SLC6A2 (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-61215A, sc-61215B and sc-61215C.

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

SLC6A2 siRNA (h) is recommended for the inhibition of norepinephrine transporter 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 norepinephrine transporter gene expression knockdown using RT-PCR Primer: SLC6A2 (h)-PR: sc-61215-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.