SANTA CRUZ BIOTECHNOLOGY, INC.

# SCLT1 siRNA (h): sc-89139

## BACKGROUND

SCLT1 (sodium channel and clathrin linker 1), also known as CAP1A or hCAP-1A, is a 688 amino acid cytoplasmic protein that acts as a linker between the voltage-gated sodium channel, $Na^+$ CP type X$\alpha$, and clathrin. SCLT1 is abundantly expressed in DRG (dorsal root ganglia) neurons and colocalizes with $Na^+$ CP type X$\alpha$. SCLT1 regulates $Na^+$ CP type X$\alpha$ channel activity by promoting channel internalization. SCLT1 exists as four alternatively spliced isoforms and is encoded by a gene located on human chromosome 4q28.2, which encodes nearly 6% of the human genome and has the largest gene deserts (regions of the genome with no protein encoding genes) of all human chromosomes. Defects in some of the genes located on chromosome 4 are associated with Huntington's disease, Ellis-van Creveld syndrome, methylmalonic acidemia and polycystic kidney disease.

## REFERENCES


1. Lemmon, S.K. 2001. Clathrin uncoating: auxilin comes to life. Curr. Biol. 11: R49-R52.
2. Rougier, J.S., et al. 2005. Molecular determinants of voltage-gated sodium channel regulation by the Nedd4/Nedd4-like proteins. Am. J. Physiol., Cell Physiol. 288: C692-C701.
3. Liu, C., et al. 2005. CAP-1A is a novel linker that binds clathrin and the voltage-gated sodium channel $Na_v1.8$. Mol. Cell. Neurosci. 28: 636-649.
4. Hillier, L.W., et al. 2005. Generation and annotation of the DNA sequences of human chromosomes 2 and 4. Nature 434: 724-731.
5. Cowan, C.M. and Raymond, L.A. 2006. Selective neuronal degeneration in Huntington's disease. Curr. Top. Dev. Biol. 75:25-71.
6. Cummins, T.R., et al. 2007. The roles of sodium channels in nociception: implications for mechanisms of pain. Pain 131: 243-257.
7. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 611399. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/


## CHROMOSOMAL LOCATION

Genetic locus: SCLT1 (human) mapping to 4q28.2.

## PRODUCT

SCLT1 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 SCLT1 shRNA Plasmid (h): sc-89139-SH and SCLT1 shRNA (h) Lentiviral Particles: sc-89139-V as alternate gene silencing products.

For independent verification of SCLT1 (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-89139A, sc-89139B and sc-89139C.

## 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

SCLT1 siRNA (h) is recommended for the inhibition of SCLT1 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 SCLT1 gene expression knockdown using RT-PCR Primer: SCLT1 (h)-PR: sc-89139-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.