SANTA CRUZ BIOTECHNOLOGY, INC.

CNT3 siRNA (h): sc-60425

BACKGROUND

The concentrative nucleoside transporter (CNT) protein family comprises three members: CNT1, CNT2 and CNT3. This family regulates multiple cellular processes, including neurotransmission, vascular tone and adenosine concentration in the vicinity of cell surface receptors. CNT3 plays an important role in mediating the cellular entry and metabolism of purine and pyrimidine nucleosides and a variety of synthetic antiviral and anticancer nucleoside analog drugs. Electrostatic interaction is the force that drives CNT3 transport. Specifically, CNT3 couples active nucleoside transport with passive sodium and proton transport.

REFERENCES

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2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 608269. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Kato, R., et al. 2005. Nucleoside transport at the blood-testis barrier studied with primary-cultured sertoli cells. J. Pharmacol. Exp. Ther. 312: 601-608.
4. Rodriguez-Mulero, S., et al. 2005. Expression of concentrative nucleoside transporters SLC28 (CNT1, CNT2, and CNT3) along the rat nephron: effect of diabetes. Kidney Int. 68: 665-672.
5. Badagnani, I., et al. 2005. Functional analysis of genetic variants in the human concentrative nucleoside transporter 3 (CNT3; SLC28A3). Pharmacogenomics J. 5: 157-165.
6. Aymerich, I., et al. 2005. The concentrative nucleoside transporter family (SLC28): new roles beyond salvage? Biochem. Soc. Trans. 33: 216-219.
7. Damaraju, S., et al. 2005. Identification and functional characterization of variants in human concentrative nucleoside transporter 3, hCNT3 (SLC28A3), arising from single nucleotide polymorphisms in coding regions of the hCNT3 gene. Pharmacogenet. Genomics 15: 173-182.
8. Hu, H., et al. 2006. Electrophysiological characterization and modeling of the structure activity relationship of the human concentrative nucleoside transporter 3 (hCNT3). Mol. Pharmacol. 69: 1542-1553.

CHROMOSOMAL LOCATION

Genetic locus: SLC28A3 (human) mapping to 9q21.32.

PRODUCT

CNT3 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 CNT3 shRNA Plasmid (h): sc-60425-SH and CNT3 shRNA (h) Lentiviral Particles: sc-60425-V as alternate gene silencing products.

For independent verification of CNT3 (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-60425A, sc-60425B and sc-60425C.

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

CNT3 siRNA (h) is recommended for the inhibition of CNT3 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 CNT3 gene expression knockdown using RT-PCR Primer: CNT3 (h)-PR: sc-60425-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Skrypek, N., et al. 2013. The MUC4 mucin mediates gemcitabine resistance of human pancreatic cancer cells via the Concentrative Nucleoside Transporter family. Oncogene 32: 1714-1723.

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.