SANTA CRUZ BIOTECHNOLOGY, INC.

CAT-3 siRNA (h): sc-91259

BACKGROUND

The cationic amino acid transporter (CAT) family of proteins are part of a larger superfamily, the amino acid-polyamine-organocation (APC) superfamily. CAT-3 (cationic amino acid transporter 3), also known as SLC7A3 (solute carrier family 7 (cationic amino acid transporter, y^+ system), member 3) or ATRC3, is a 619 amino acid multi-pass membrane protein that belongs to the APC superfamily and CAT family. CAT-3 regulates the uptake of ornithine, lysine and arginine, and is highly expressed in testis, thymus and uterus. CAT-3 is also found at lower levels in brain, salivary gland, mammary gland and fetal spleen, and is subject to post-translational N-glycosylation. The gene encoding CAT-3 maps to human chromosome Xq13.1.

REFERENCES

1. Devés, R., et al. 1998. System y^+L: the broad scope and cation modulated amino acid transporter. Exp. Physiol. 83: 211-220.
2. Vekony, N., et al. 2001. Human cationic amino acid transporter hCAT-3 is preferentially expressed in peripheral tissues. Biochemistry 40: 12387-12394.
3. Gilles, W., et al. 2005. Monovalent cation conductance in *Xenopus laevis* oocytes expressing hCAT-3. Biochim. Biophys. Acta 1668: 234-239.
4. Rotmann, A., et al. 2006. Activation of classical protein kinase C reduces the expression of human cationic amino acid transporter 3 (hCAT-3) in the plasma membrane. Biochem. J. 395: 117-123.
5. Online Mendelian Inheritance in Man, OMIM™. 2007. Johns Hopkins University, Baltimore, MD. MIM Number: 300443. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
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CHROMOSOMAL LOCATION

Genetic locus: SLC7A3 (human) mapping to Xq13.1.

PRODUCT

CAT-3 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 CAT-3 shRNA Plasmid (h): sc-91259-SH and CAT-3 shRNA (h) Lentiviral Particles: sc-91259-V as alternate gene silencing products.

For independent verification of CAT-3 (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-91259A, sc-91259B and sc-91259C.

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 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

CAT-3 siRNA (h) is recommended for the inhibition of CAT-3 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 CAT-3 gene expression knockdown using RT-PCR Primer: CAT-3 (h)-PR: sc-91259-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.