SANTA CRUZ BIOTECHNOLOGY, INC.

# CAT-3 siRNA (m): sc-142026

## 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. Vékony, 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/


## CHROMOSOMAL LOCATION

Genetic locus: Slc7a3 (mouse) mapping to X C3.

## PRODUCT

CAT-3 siRNA (m) 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 (m): sc-142026-SH and CAT-3 shRNA (m) Lentiviral Particles: sc-142026-V as alternate gene silencing products.

For independent verification of CAT-3 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-142026A, sc-142026B and sc-142026C.

## 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 (m) is recommended for the inhibition of CAT-3 expression in mouse 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 (m)-PR: sc-142026-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.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.