SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin 3 siRNA (m): sc-77418

BACKGROUND

The cathepsin family of proteolytic enzymes contains several diverse classes of proteases. Cathepsin 3 is a cysteine peptidase exclusively expressed in the spongiotrophoblast layer of murine placenta. It contains a signal sequence and two N-glycosylation sites suggesting that it may be targeted to the endosomal/lysosomal compartment by mannose 6-phosphate receptors. Cathepsin 3 shares all of its characteristic features with the C1A papain family cysteine peptidases and is most closely related to Cathepsin M. Its expression is regulated during mouse embryonic development. The mouse placentally expressed cathepsin genes, Cathepsin M, J/P, Q, R, 1, 2, 3 and 6, are located in a tight cluster on chromosome 13. They are found in mice and rats, but homologs of these genes are not found in humans.

REFERENCES

1. Deussing, J., et al. 2002. Identification and characterization of a dense cluster of placenta-specific cysteine peptidase genes and related genes on mouse chromosome 13. Genomics 79: 225-240.
2. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. Nat. Rev. Genet. 4: 544-558.
3. Uinuk-Ool, T.S., et al. 2003. Phylogeny of antigen-processing enzymes: cathepsins of a cephalochordate, an agnathan and a bony fish. Scand. J. Immunol. 58: 436-448.
4. Puente, X.S., et al. 2004. A genomic analysis of rat proteases and protease inhibitors. Genome Res. 14: 609-622.
5. Juriloff, D.M., et al. 2004. A digenic cause of cleft lip in A-strain mice and definition of candidate genes for the two loci. Birth Defects Res. Part A Clin. Mol. Teratol. 70: 509-518.
6. Ishida, M., et al. 2004. Cathepsin gene expression in mouse placenta during the latter half of pregnancy. J. Reprod. Dev. 50: 515-523.

CHROMOSOMAL LOCATION

Genetic locus: Cts3 (mouse) mapping to 13 B3.

PRODUCT

cathepsin 3 siRNA (m) is a pool of 2 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 cathepsin 3 shRNA Plasmid (m): sc-77418-SH and cathepsin 3 shRNA (m) Lentiviral Particles: sc-77418-V as alternate gene silencing products.

For independent verification of cathepsin 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-77418A and sc-77418B.

PROTOCOLS

See our web site at www.scbt.com or our catalog 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

cathepsin 3 siRNA (m) is recommended for the inhibition of cathepsin 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 60 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 cathepsin 3 gene expression knockdown using RT-PCR Primer: cathepsin 3 (m)-PR: sc-77418-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.