SANTA CRUZ BIOTECHNOLOGY, INC.

cathepsin 6 siRNA (m): sc-77419

BACKGROUND

The cathepsin family of proteolytic enzymes contains several diverse classes of proteases. Cathepsin 6 is a member of the C1A papain family. It is a cysteine peptidase exclusively expressed in labyrinthine trophoblastic cells of the murine placenta where it colocalizes with its closest relative, Cathepsin J/P. Cathepsin 6 may be involved in mediating the gas and nutrient exchange between maternal and fetal blood. In addition, it may play a role in immunological modulation or processing of secretory protein factors. Cathepsin 6 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. Nakajima, A., et al. 2001. Cathepsin-6, a novel cysteine proteinase showing homology with and co-localized expression with cathepsin J/P in the labyrinthine layer of mouse placenta. Biochem. J. 349: 689-692.
2. 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.
3. Puente, X.S., et al. 2003. Human and mouse proteases: a comparative genomic approach. Nat. Rev. Genet. 4: 544-558.
4. 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.
5. Ishida, M., et al. 2004. Cathepsin gene expression in mouse placenta during the latter half of pregnancy. J. Reprod. Dev. 50: 515-523.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: Cts6 (mouse) mapping to 13 B2.

PRODUCT

cathepsin 6 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 cathepsin 6 shRNA Plasmid (m): sc-77419-SH and cathepsin 6 shRNA (m) Lentiviral Particles: sc-77419-V as alternate gene silencing products.

For independent verification of cathepsin 6 (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-77419A, sc-77419B and sc-77419C.

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

cathepsin 6 siRNA (m) is recommended for the inhibition of cathepsin 6 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.

GENE EXPRESSION MONITORING

cathepsin 6 (J14h): sc-80514 is recommended as a control antibody for monitoring of cathepsin 6 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor cathepsin 6 gene expression knockdown using RT-PCR Primer: cathepsin 6 (m)-PR: sc-77419-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.