

Mast Cell Protease 7 siRNA (m): sc-77420

BACKGROUND

Mast cells are connective tissue cells derived from blood-forming tissues that line arterial walls and secrete substances which mediate inflammatory and immune responses. Mast cell tryptases are major elements of mast cell granules with a variety of forms and functions. Mast cell proteases are a family of rodent protein homologs to human tryptases that are specifically expressed in mast cell secretory granules and may serve as highly specific markers in the analysis of mast cell heterogeneity, differentiation and function. Mast Cell Protease 7, also known as Tryptase α/β 1 or MMCP-7, is predominantly expressed in differentiated mast cells. It functions to degrade Fibrinogen at the endothelium/blood barrier and may be involved in regulating the formation of fibrin-platelet clots. The transcription of the gene encoding Mast Cell Protease 7 is regulated by activin A, TGF β and Smad3.

REFERENCES

- McNeil, H.P., et al. 1993. Isolation, characterization, and transcription of the gene encoding mouse mast cell protease 7. Proc. Natl. Acad. Sci. USA 89: 11174-11178.
- Ghildyal, N., et al. 1994. Lack of expression of the tryptase mouse mast cell protease 7 in mast cells of the C57BL/6J mouse. J. Immunol. 153: 2624-2630.
- Matsumoto, R., et al. 1995. Packaging of proteases and proteoglycans in the granules of mast cells and other hematopoietic cells. A cluster of histidines on mouse mast cell protease 7 regulates its binding to heparin serglycin proteoglycans. J. Biol. Chem. 270: 19524-19531.
- Huang, C., et al. 1998. The tryptase, mouse mast cell protease 7, exhibits anticoagulant activity *in vivo* and *in vitro* due to its ability to degrade fibrinogen in the presence of the diverse array of protease inhibitors in plasma. J. Biol. Chem. 272: 31885-31893.
- Ogihara, H., et al. 2001. Inhibitory effect of the transcription factor encoded by the mutant mi microphthalmia allele on transactivation of mouse mast cell protease 7 gene. Blood 97: 645-651.

CHROMOSOMAL LOCATION

Genetic locus: Tpsab1 (mouse) mapping to 17 A1.

PRODUCT

Mast Cell Protease 7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Mast Cell Protease 7 shRNA Plasmid (m): sc-77420-SH and Mast Cell Protease 7 shRNA (m) Lentiviral Particles: sc-77420-V as alternate gene silencing products.

For independent verification of Mast Cell Protease 7 (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-77420A, sc-77420B and sc-77420C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Mast Cell Protease 7 siRNA (m) is recommended for the inhibition of Mast Cell Protease 7 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 μ M in 66 μ l. 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

Mast Cell Protease 7 (CC40): sc-80533 is recommended as a control antibody for monitoring of Mast Cell Protease 7 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 Mast Cell Protease 7 gene expression knockdown using RT-PCR Primer: Mast Cell Protease 7 (m)-PR: sc-77420-PR (20 μ l). 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.