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# Matriptase siRNA (*X. laevis*): sc-72223

## BACKGROUND

Matriptase (also known as MT-SP1, ST14, prostamin and epithin) is a tumor-associated type II transmembrane serine protease that is highly expressed in many human cancer-derived cell lines and is implicated in extracellular matrix re-modeling, tumor growth, and metastasis. Matriptase performs pleiotropic functions in the development of the epidermis, hair follicles, and cellular immune system. Sphingosine 1-phosphate (S1P, SPP), present in serum-derived lipoproteins, activates matriptase while matriptase activates both urokinase-type plasminogen activator and hepatocyte growth factor (HGF). Hepatocyte growth factor activator inhibitor type 1 (HAI-1) is a Kunitz-type serine protease inhibitor identified as a strong inhibitor of matriptase and HGF. Advanced-stage ovarian tumors that express matriptase are more likely to do so in the absence of its inhibitor, HAI-1, indicating that an imbalance in the matriptase:HAI-1 ratio could be important in the development of advanced disease.

## REFERENCES

1. Cho, E.G., et al. 2001. N-terminal processing is essential for release of epithin, a mouse type II membrane serine protease. *J. Biol. Chem.* 276: 44581-44589.
2. Friedrich, R., et al. 2002. Catalytic domain structures of MT-SP1/matriptase, a matrix-degrading transmembrane serine proteinase. *J. Biol. Chem.* 277: 2160-2168.
3. Oberst, M.D., et al. 2002. Expression of the serine protease Matriptase and its inhibitor HAI-1 in epithelial ovarian cancer: correlation with clinical outcome and tumor clinicopathological parameters. *Clin. Cancer Res.* 8: 1101-1107.
4. List, K., et al. 2002. Matriptase/MT-SP1 is required for postnatal survival, epidermal barrier function, hair follicle development, and thymic homeostasis. *Oncogene* 21: 3765-3779.
5. Benaud, C., et al. 2002. Sphingosine 1-phosphate, present in serum-derived lipoproteins, activates matriptase. *J. Biol. Chem.* 277: 10539-10546.
6. Denda, K., et al. 2002. Functional characterization of Kunitz domains in hepatocyte growth factor activator inhibitor type 1. *J. Biol. Chem.* 277: 14053-14059.

## PRODUCT

Matriptase siRNA (*X. laevis*) 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Matriptase shRNA Plasmid (*X. laevis*): sc-72223-SH and Matriptase shRNA (*X. laevis*) Lentiviral Particles: sc-72223-V as alternate gene silencing products.

For independent verification of Matriptase (*X. laevis*) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-72223A, sc-72223B and sc-72223C.

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Matriptase siRNA (*X. laevis*) is recommended for the inhibition of Matriptase expression in *X. laevis* 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  $\mu$ M in 66  $\mu$ 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Matriptase gene expression knockdown using RT-PCR Primer: Matriptase (*X. laevis*)-PR: sc-72223-PR (20  $\mu$ 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.