SANTA CRUZ BIOTECHNOLOGY, INC.

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 µM 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 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

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 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 Matriptase gene expression knockdown using RT-PCR Primer: Matriptase (X. laevis)-PR: sc-72223-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.