

MT-MMP-6 siRNA (h): sc-41573

BACKGROUND

The matrix metalloproteinases (MMPs) are a family of peptidase enzymes responsible for the degradation of extracellular matrix components, including collagen, gelatin, Fibronectin, Laminin and proteoglycan. MMP catalysis requires both calcium and zinc. Membrane-type matrix metalloproteinases are type I membrane proteins that function to activate other MMPs. MT-MMP activation appears to be mediated by members of the proprotein convertase family, suggesting that a proprotein convertase/MT-MMP/MMP cascade may be involved in the regulation of ECM turnover. MT-MMP-6 (also known as MMP-25, MT6-MMP or Leukolysin) is the second GPI-anchored proteinase in the MMP family. Similar to MMP-3, MT-MMP-6 is able to cleave type IV collagen, Fibronectin, fibrin and gelatin. However, MT-MMP-6 cannot cleave Laminin-1 or activate progelatinase B. MT-MMP 6 is expressed in leukocytes, lung and spleen.

REFERENCES

1. Pei, D. 1999. Leukolysin/MMP25/MT6-MMP: a novel matrix metalloproteinase specifically expressed in the leukocyte lineage. *Cell Res.* 9: 291-303.
2. Velasco, G., et al. 2000. Human MT6-matrix metalloproteinase: identification, progelatinase A activation, and expression in brain tumors. *Cancer Res.* 60: 877-882.
3. Kojima, S., et al. 2000. Membrane-type 6 matrix metalloproteinase (MT6-MMP, MMP-25) is the second glycosyl-phosphatidyl inositol (GPI)-anchored MMP. *FEBS Lett.* 480: 142-146.
4. Velasco, G., et al. 2000. Human MT6-matrix metalloproteinase: identification, progelatinase A activation, and expression in brain tumors. *Cancer Res.* 60: 877-882.
5. English, W.R., et al. 2001. Catalytic activities of membrane-type 6 matrix metalloproteinase (MMP25). *FEBS Lett.* 491: 137-142.
6. Nie, J. and Pei, D. 2003. Direct activation of pro-matrix metalloproteinase-2 by leukolysin/membrane-type 6 matrix metalloproteinase/matrix metalloproteinase 25 at the Asn¹⁰⁹-Tyr bond. *Cancer Res.* 63: 6758-6762.
7. Online Mendelian Inheritance in Man, OMIM[™]. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 608482. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
8. Sun, Q., et al. 2007. MMP25 (MT6-MMP) is highly expressed in human colon cancer, promotes tumor growth, and exhibits unique biochemical properties. *J. Biol. Chem.* 282: 21998-22010.
9. Sohail, A., et al. 2008. MT4-(MMP17) and MT6-MMP (MMP25), A unique set of membrane-anchored matrix metalloproteinases: properties and expression in cancer. *Cancer Metastasis Rev.* 27: 289-302.

CHROMOSOMAL LOCATION

Genetic locus: MMP25 (human) mapping to 16p13.3.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

PRODUCT

MT-MMP-6 siRNA (h) 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 MT-MMP-6 shRNA Plasmid (h): sc-41573-SH and MT-MMP-6 shRNA (h) Lentiviral Particles: sc-41573-V as alternate gene silencing products.

For independent verification of MT-MMP-6 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-41573A, sc-41573B and sc-41573C.

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

MT-MMP-6 siRNA (h) is recommended for the inhibition of MT-MMP-6 expression in human 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

MT-MMP-6 (MM0029-2B5): sc-101453 is recommended as a control antibody for monitoring of MT-MMP-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 MT-MMP-6 gene expression knockdown using RT-PCR Primer: MT-MMP-6 (h)-PR: sc-41573-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.