SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-9 siRNA (h): sc-29400

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The matrix metalloproteinases (MMP) are a family of peptidase enzymes responsible for the degradation of extracellular matrix components, including collagen, gelatin, Fibronectin, laminin and proteoglycan. Transcription of MMP genes is differentially activated by phorbol ester, lipopolysaccharide (LPS) or staphylococcal enterotoxin B (SEB). MMP catalysis requires both calcium and zinc. MMP-9 (also designated 92 kDa type IV collagenase or gelatinase B) has been shown to degrade bone collagens in concert with MMP-1 (also designated interstitial collagenase, fibroblast collagenase or collagenase-1) and cysteine proteases, and may play a role in bone osteoclastic resorption. MMP-1 is downregulated by p53, and abnormality of p53 expression may contribute to joint degradation in rheumatoid arthritis by regulating MMP-1 expression.

CHROMOSOMAL LOCATION

Genetic locus: MMP9 (human) mapping to 20q13.12.

PRODUCT

MMP-9 siRNA (h) is a target-specific 19-25 nt siRNA 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 MMP-9 shRNA Plasmid (h): sc-29400-SH and MMP-9 shRNA (h) Lentiviral Particles: sc-29400-V as alternate gene silencing 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

MMP-9 siRNA (h) is recommended for the inhibition of MMP-9 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 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.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

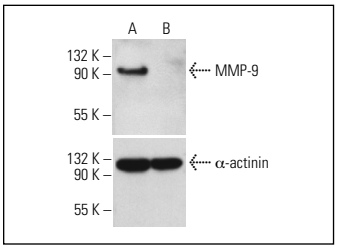
GENE EXPRESSION MONITORING

MMP-9 (E-11): sc-393859 is recommended as a control antibody for monitoring of MMP-9 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 MMP-9 gene expression knockdown using RT-PCR Primer: MMP-9 (h)-PR: sc-29400-PR (20 µl, 444 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

DATA



MMP-9 siRNA (h): sc-29400. Western blot analysis of MMP-9 expression in non-transfected control (**A**) and MMP-9 siRNA transfected (**B**) A-431 cells. Blot probed with MMP-9 (C-20): sc-6840. α-actinin (H-2): sc-17829 used as specificity and loading control.

SELECT PRODUCT CITATIONS

1. Wang, Z., et al. 2006. Downregulation of Notch 1 inhibits invasion by inactivation of NFκB, vascular endothelial growth factor, and matrix metalloproteinase-9 in pancreatic cancer cells. Cancer Res. 66: 2778-2784.
2. Nascimento, C.F., et al. 2010. Role of MMP9 on invadopodia formation in cells from adenoid cystic carcinoma. Study by laser scanning confocal microscopy. Microsc. Res. Tech. 73: 99-108.
3. Ruggiero, E., et al. 2011. The activity of matrix metalloproteinase-9 is part of the mechanism of cell-to-cell HIV-1 endocytosis in dendritic cells. Curr. Drug Discov. Technol. 8: 112-118.
4. Fiaschi, T., et al. 2013. Carbonic anhydrase IX from cancer-associated fibroblasts drives epithelial-mesenchymal transition in prostate carcinoma cells. Cell Cycle 12: 1791-1801.
5. Puolakkainen, P., et al. 2014. Anti-inflammatory macrophages activate invasion in pancreatic adenocarcinoma by increasing the MMP-9 and ADAM8 expression. Med. Oncol. 31: 884.
6. Yang, J.R., et al. 2016. Kindlin-2 promotes invasiveness of prostate cancer cells via NFκB-dependent upregulation of matrix metalloproteinases. Gene 576: 571-576.

PROTOCOLS

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