SANTA CRUZ BIOTECHNOLOGY, INC.

MMP-27 siRNA (h): sc-96557

BACKGROUND

Metalloproteinases (MMPs) are a family of proteins that are involved in the breakdown of the extracellular matrix during normal cellular events, including reproduction, tissue remodeling and embryonic development. MMPs are crucial in tumor invasion and building of metastatic formations because of their ability to degrade extracellular matrix proteins such as fibronectin, laminin, gelatins and/or collagen. MMP-27 (matrix metallopeptidase 27) is a 513 amino acid secreted protein that is expressed in B-cells. Belonging to the peptidase M10A family, MMP-27 contains four hemopexin-like domains, which is suggested to be involved in substrate recognition. MMP-27, along with other MMP family members, is associated with breast cancer development and tumor progression.

REFERENCES

1. Hofmann, U.B., Westphal, J.R., Waas, E.T., Zendman, A.J., Cornelissen, I.M., Ruiter, D.J. and van Muijen, G.N. 1999. Matrix metalloproteinases in human melanoma cell lines and xenografts: increased expression of activated matrix metalloproteinase-2 (MMP-2) correlates with melanoma progression. Br. J. Cancer 81: 774-782.
2. Johansson, N., Ahonen, M. and Kähäri, V.M. 2000. Matrix metalloproteinases in tumor invasion. Cell. Mol. Life Sci. 57: 5-15.
3. Hofmann, U.B., Westphal, J.R., Van Muijen, G.N. and Ruiter, D.J. 2000. Matrix metalloproteinases in human melanoma. J. Invest. Dermatol. 115: 337-344.
4. Bar-Or, A., Nuttall, R.K., Duddy, M., Alter, A., Kim, H.J., Ifergan, I., Pennington, C.J., Bourgoin, P., Edwards, D.R. and Yong, V.W. 2003. Analyses of all matrix metalloproteinase members in leukocytes emphasize monocytes as major inflammatory mediators in multiple sclerosis. Brain 126: 2738-2749.
5. Kerkelä, E. and Saarialho-Kere, U. 2003. Matrix metalloproteinases in tumor progression: focus on basal and squamous cell skin cancer. Exp. Dermatol. 12: 109-125.

CHROMOSOMAL LOCATION

Genetic locus: MMP27 (human) mapping to 11q22.2.

PRODUCT

MMP-27 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MMP-27 shRNA Plasmid (h): sc-96557-SH and MMP-27 shRNA (h) Lentiviral Particles: sc-96557-V as alternate gene silencing products.

For independent verification of MMP-27 (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-96557A, sc-96557B and sc-96557C.

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

MMP-27 siRNA (h) is recommended for the inhibition of MMP-27 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 contains 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 MMP-27 gene expression knockdown using RT-PCR Primer: MMP-27 (h)-PR: sc-96557-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.