SANTA CRUZ BIOTECHNOLOGY, INC.

Multimerin-1 siRNA (h): sc-89230

BACKGROUND

Multimerin-1, also known as MMRN1, EMILIN-4 or ECM (endothelial cell multimerin), is a 1,228 amino acid secreted protein that contains one C1q domain, one EMI domain and one EGF-like domain. Synthesized in megakaryocytes and endothelial cells and present in liver, lung and placenta, Multimerin-1 exists as a multimeric structure composed of varying disulfide-linked multimers and functions as a carrier protein for platelet factors (specifically platelet factor V), playing a role in the stabilization and storage of factor V in platelets. In addition, Multimerin-1 acts as a ligand for select Integrins and may participate in extracellular matrix adhesion. Defects in the gene encoding Multimerin-1 that lead to Multimerin-1 deficiency are associated with autosomal dominant bleeding disorders due to platelet factor malfunction. Multiple isoforms of Multimerin-1 exist due to alternative splicing events.

REFERENCES

1. Hayward, C.P., et al. 1995. The cDNA sequence of human endothelial cell multimerin. A unique protein with RGDS, coiled-coil, and epidermal growth factor-like domains and a carboxyl terminus similar to the globular domain of complement C1q and collagens type VIII and X. J. Biol. Chem. 270: 18246-18251.
2. Hayward, C.P., et al. 1998. Studies of multimerin in human endothelial cells. Blood 91: 1304-1317.
3. Torres, M.D., et al. 2000. The human multimerin gene MMRN maps to chromosome 4q22. Cytogenet. Cell Genet. 88: 275-277.
4. Jeimy, S.B., et al. 2004. Identification of the MMRN1 binding region within the C2 domain of human factor V. J. Biol. Chem. 279: 51466-51471.
5. Hayward, C.P., et al. 2004. Human platelets contain forms of factor V in disulfide-linkage with multimerin. Thromb. Haemost. 92: 1349-1357.
6. Adam, F., et al. 2005. Analyses of cellular Multimerin-1 receptors: *in vitro* evidence of binding mediated by αIIbβ3 and $\alpha_v\beta_3$. Thromb. Haemost. 94: 1004-1011.
7. Jeimy, S.B., et al. 2008. Multimerin-1 binds factor V and activated factor V with high affinity and inhibits thrombin generation. Thromb. Haemost. 100: 1058-1067.
8. Jeimy, S.B., et al. 2008. Location of the Multimerin-1 binding site in coagulation factor V: an update. Thromb. Res. 123: 352-354.
9. Online Mendelian Inheritance in Man, OMIM™. 2008. Johns Hopkins University, Baltimore, MD. MIM Number: 601456. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: MMRN1 (human) mapping to 4q22.1.

PROTOCOLS

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

PRODUCT

Multimerin-1 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 Multimerin-1 shRNA Plasmid (h): sc-89230-SH and Multimerin-1 shRNA (h) Lentiviral Particles: sc-89230-V as alternate gene silencing products.

For independent verification of Multimerin-1 (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-89230A, sc-89230B and sc-89230C.

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

Multimerin-1 siRNA (h) is recommended for the inhibition of Multimerin-1 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Multimerin-1 gene expression knockdown using RT-PCR Primer: Multimerin-1 (h)-PR: sc-89230-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.