SANTA CRUZ BIOTECHNOLOGY, INC.

megsin siRNA (m): sc-75769

BACKGROUND

Megsin, also designated SerpinB7 and TP55, is a 380 amino acid cytoplasmic protein that is predominantly expressed in mesangial cells, which play an important role in maintaining glomerular structure and function. As a member of the serpin family, megsin is a serine protesase inhibitor which potentially inactivate MMP-2, MMP-9 and plasmin, proteins that are notably responsible for degradation of extracellular matrix. Overexpression of megsin results in an increase in number of mesangial cells and therefore a progressive mesangial matrix expansion, which is accompanied by immune complex deposition. This finding suggests that megsin significantly influences the role of mesangial cells in renal structure and is likely implicated in a variety of nephropathies.

REFERENCES

1. Miyata, T., et al. 2002. Overexpression of the serpin megsin induces progressive mesangial cell proliferation and expansion. J. Clin. Invest. 109 585-593.
2. Xia, Y.F., et al. 2006. A family-based association study of megsin A23167G polymorphism with susceptibility and progression of IgA nephropathy in a Chinese population. Clin. Nephrol. 65: 153-159.
3. Inagi, R., et al. 2006. A severe diabetic nephropathy model with early development of nodule-like lesions induced by megsin overexpression in RAGE/iNOS transgenic mice. Diabetes 55: 356-366.
4. Xia, Y., et al. 2006. Association of megsin 2093C-2180T haplotype at the 3' untranslated region with disease severity and progression of IgA nephropathy. Nephrol. Dial. Transplant. 21: 1570-1574.
5. Miyata, T., et al. 2007. Megsin gene: its genomic analysis, pathobiological functions, and therapeutic perspectives. Curr. Genomics 8: 203-208.
6. Lim, C.S., et al. 2008. Megsin 2093T-2180C haplotype at the 3' untranslated region is associated with poor renal survival in Korean IgA nephropathy patients. Clin. Nephrol. 70: 101-109.
7. Maixnerová, D., et al. 2008. The influence of two megsin polymorphisms on the progression of IgA nephropathy. Folia Biol. 54: 40-45.
8. Ohtomo, S., et al. 2008. The role of megsin, a serine protease inhibitor, in diabetic mesangial matrix accumulation. Kidney Int. 74: 768-774.

CHROMOSOMAL LOCATION

Genetic locus: Serpinb7 (mouse) mapping to 1 E2.1.

PRODUCT

megsin siRNA (m) 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 megsin shRNA Plasmid (m): sc-75769-SH and megsin shRNA (m) Lentiviral Particles: sc-75769-V as alternate gene silencing products.

For independent verification of megsin (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75769A, sc-75769B and sc-75769C.

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

megsin siRNA (m) is recommended for the inhibition of megsin expression in mouse 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.

GENE EXPRESSION MONITORING

megsin (H-10): sc-515694 is recommended as a control antibody for monitoring of megsin 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor megsin gene expression knockdown using RT-PCR Primer: megsin (m)-PR: sc-75769-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.

PROTOCOLS

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