SANTA CRUZ BIOTECHNOLOGY, INC.

MBL-C siRNA (m): sc-35870

BACKGROUND

Mannose-binding lectin protein C (MBL-C), also known as mannose-binding protein C; mannose-binding lectin 2, soluble (opsonic defect); mannan-binding lectin; mannan-binding protein; and soluble mannose-binding lectin, initiates the lectin branch of the innate immune response by binding to the surface of potentially pathogenic microorganisms and initiating complement fixation through an N-terminal collagen-like domain. MBL-C is a key component in immune response due to its ability to directly trigger neutralization of invading microorganisms by an Ab-independent mechanism. It binds to sugars on the surface of bacterial, fungal and parasitic cells through C-terminal, Ca^{2+}-dependent carbohydrate-recognition domains. Mutations of human MBL are associated with immunodeficiency resulting from a reduction in the ability of the mutant MBL to initiate complement fixation. In human, two types of MBL-associated serine proteases (MASP-1 and MASP-2) and a truncated form of MASP-2, designated small MBL-associated protein (sMAP) or MAp19, complex with MBL to activate the lectin pathway of the complement system. Activated MASPs subsequently cleave and activate downstream components of the complement pathway.

REFERENCES

1. Heise, C., et al. 2000. Impaired secretion of rat mannose-binding protein resulting from mutations in the collagen-like domain. J. Immunol. 165: 1403-1409.
2. Matsushita, M., et al. 2000. Proteolytic activities of two types of mannose-binding lectin-associated serine protease. J. Immunol. 165: 2637-2642.
3. Chen, C.B. and Wallis, R. 2001. Stoichiometry of complexes between mannose-binding protein and its associated serine proteases: defining functional units for complement activation. J. Biol. Chem. 276: 25894-25902.
4. Endo, M., et al. 2001. Regulation of *in situ* complement activation via the lectin pathway in patients with IgA nephropathy. Clin. Nephrol. 55: 185-191.
5. Thielens, N.M., et al. 2001. Interaction properties of human mannan-binding lectin (MBL)-associated serine proteases-1 and -2, MBL-associated protein 19, and MBL. J. Immunol. 166: 5068-5077.

CHROMOSOMAL LOCATION

Genetic locus: Mbl2 (mouse) mapping to 19 C1.

PRODUCT

MBL-C 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 MBL-C shRNA Plasmid (h): sc-35869-SH and MBL-C shRNA (h) Lentiviral Particles: sc-35869-V as alternate gene silencing products.

For independent verification of MBL-C (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-35869A, sc-35869B and sc-35869C.

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

MBL-C siRNA (m) is recommended for the inhibition of MBL-C 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MBL-C gene expression knockdown using RT-PCR Primer: MBL-C (m)-PR: sc-35870-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.