

Siglec-E siRNA (m): sc-153462

BACKGROUND

Two families of mammalian lectin-like adhesion molecules, the selectins and the sialoadhesins, bind glycoconjugate ligands in a sialic acid-dependent manner. The sialic acid-binding immunoglobulin superfamily lectins, designated Siglecs or sialoadhesins, recognize sialylated ligands and play a key role in mediating sialic-acid dependent binding to cells. Siglec-E (sialic acid binding Ig-like lectin E), also known as CD170, Siglec5, Siglec9, Siglec11 or mSiglec-E, is a 467 amino acid murine protein that localizes to the membrane and contains one Ig-like V-type domain and two Ig-like C2-type domains. Expressed at high levels in heart, liver and spleen and found at lower levels in lung and kidney, Siglec-E exists as a disulfide-linked homodimer that acts as a cell adhesion molecule which mediates sialic acid-dependent cell binding and is thought to play a role in immune system function. Siglec-E is subject to post-translational phosphorylation which may influence its protein binding capabilities.

REFERENCES

1. Yu, Z., et al. 2001. mSiglec-E, a novel mouse CD33-related siglec (sialic acid-binding immunoglobulin-like lectin) that recruits Src homology 2 (SH2)-domain-containing protein tyrosine phosphatases SHP-1 and SHP-2. *Biochem. J.* 353: 483-492.
2. Ulyanova, T., et al. 2001. Molecular cloning of MIS, a myeloid inhibitory siglec, that binds protein-tyrosine phosphatases SHP-1 and SHP-2. *J. Biol. Chem.* 276: 14451-14458.

CHROMOSOMAL LOCATION

Genetic locus: Siglece (mouse) mapping to 7 B4.

PRODUCT

Siglec-E 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Siglec-E shRNA Plasmid (m): sc-153462-SH and Siglec-E shRNA (m) Lentiviral Particles: sc-153462-V as alternate gene silencing products.

For independent verification of Siglec-E (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-153462A, sc-153462B and sc-153462C.

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

Siglec-E siRNA (m) is recommended for the inhibition of Siglec-E 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 μ M in 66 μ l. 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

Siglec-E (F-7): sc-377477 is recommended as a control antibody for monitoring of Siglec-E 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-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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 Siglec-E gene expression knockdown using RT-PCR Primer: Siglec-E (m)-PR: sc-153462-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mukherjee, K., et al. 2020. Sialic acid-Siglec-E interactions during *Pseudomonas aeruginosa* infection of macrophages interferes with phagosome maturation by altering intracellular calcium concentrations. *Front. Immunol.* 11: 332.
2. Karmakar, J. and Mandal, C. 2021. Interplay between sialic acids, Siglec-E, and Neu1 regulates MyD88- and TRIF-dependent pathways for TLR4-activation during *Leishmania donovani* infection. *Front. Immunol.* 12: 626110.

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.