SANTA CRUZ BIOTECHNOLOGY, INC.

Siglec-7 siRNA (h): sc-106757



BACKGROUND

Two families of mammalian lectin-like adhesion molecules bind glycoconjugate ligands in a sialic acid-dependent manner: the selectins and the sialoadhesins. The sialic acid-binding immunoglobulin superfamily lectins, designated siglecs or sialoadhesins, are immunoglobulin superfamily members recognizing sialylated ligands. The common sialic acids of mammalian cells are N-acetylneuraminic acid (Neu5Ac) and N-glycolylneuraminic acid (Neu5Gc). Siglec-1 mediates local cell-cell interactions in lymphoid tissues and can be detected at contact points of macrophages with other macrophages, sinus-lining cells and reticulum cells. Siglec-7, highly expressed in monocytes and resident blood cells but not in parenchymatous cells, mediates inhibition of natural killer cell cytotoxicity. Siglec-9 is closely homologous to Siglec-7. It is highly expressed in peripheral blood leukocytes (not eosino-phils), liver, bone marrow, placenta and spleen. Siglec-8, a type I membrane protein, is selectively expressed on human eosinophils, basophils and mast cells, where it regulates their function and survival.

REFERENCES

- Brinkman-Van der Linden, E.C. and Varki, A. 2000. New aspects of siglec binding specificities, including the significance of fucosylation and of the sialyl-Tn epitope. Sialic acid-binding immunoglobulin superfamily lectins. J. Biol. Chem. 275: 8625-8632.
- Brinkman-Van der Linden, E.C., et al. 2000. Loss of N-glycolylneuraminic acid in human evolution. Implications for sialic acid recognition by siglecs. J. Biol. Chem. 275: 8633-8640.
- Schadee-Eestermans, I.L., et al. 2000. Ultrastructural localisation of sialoadhesin (Siglec-1) on macrophages in rodent lymphoid tissues. Immunobiology 202: 309-325.
- Avril, T., et al. 2004. The membrane-proximal immunoreceptor tyrosinebased inhibitory motif is critical for the inhibitory signaling mediated by Siglecs-7 and -9, CD33-related siglecs expressed on human monocytes and NK cells. J. Immunol. 173: 6841-6849.
- Lock, K., et al. 2004. Expression of CD33-related siglecs on human mononuclear phagocytes, monocyte-derived dendritic cells and plasmacytoid dendritic cells. Immunobiology 209: 199-207.

CHROMOSOMAL LOCATION

Genetic locus: SIGLEC7 (human) mapping to 19q13.41.

PRODUCT

Siglec-7 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Siglec-7 shRNA Plasmid (h): sc-106757-SH and Siglec-7 shRNA (h) Lentiviral Particles: sc-106757-V as alternate gene silencing products.

For independent verification of Siglec-7 (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-106757A, sc-106757B and sc-106757C.

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-7 siRNA (h) is recommended for the inhibition of Siglec-7 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 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-7 (A-7): sc-398919 is recommended as a control antibody for monitoring of Siglec-7 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-lgG κ BP-HRP: sc-516102 or m-lgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz MarkerTM Molecular Weight Standards: sc-2035, UltraCruz[®] Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-lgG κ BP-FITC: sc-516140 or m-lgG 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-7 gene expression knockdown using RT-PCR Primer: Siglec-7 (h)-PR: sc-106757-PR (20 μ I). 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.