

Siglec-14 siRNA (h): sc-106969

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. Siglec-5 binds equally to α 2,3-linked and α 2,6-linked sialic acid. There exist four isoforms of hSiglec-5 possessing three (hSiglec-5-3L and -3C) or four (hSiglec-5-4L and -4S) extracellular domains linked to long (hSiglec-5-3L and -4L) or short (hSiglec-5-4S) cytoplasmic tails or existing as a soluble isoform (hSiglec-5-3C). Siglec-5 is expressed by monocytes and neutrophils, but is absent from leukemic cell lines representing early stages of myelomonocytic differentiation. Siglec-5 may play a role in the diagnosis and monitoring of acute myeloid leukemia (AML). Siglec-14 is predominantly expressed in hematopoietic tissues but is also found in lung and testis.

REFERENCES

1. Connolly, N.P., et al. 2002. Human Siglec-5: tissue distribution, novel isoforms and domain specificities for sialic acid-dependent ligand interactions. *Br. J. Haematol.* 119: 221-238.
2. Erickson-Miller, C.L., et al. 2003. Characterization of Siglec-5 (CD170) expression and functional activity of anti-Siglec-5 antibodies on human phagocytes. *Exp. Hematol.* 31: 382-388.
3. Virgo, P., et al. 2003. Identification of the CD33-related Siglec receptor, Siglec-5 (CD170), as a useful marker in both normal myelo-poiesis and acute myeloid leukaemias. *Br. J. Haematol.* 123: 420-430.

CHROMOSOMAL LOCATION

Genetic locus: SIGLEC14 (human) mapping to 19q13.43.

PRODUCT

Siglec-14 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-14 shRNA Plasmid (h): sc-106969-SH and Siglec-14 shRNA (h) Lentiviral Particles: sc-106969-V as alternate gene silencing products.

For independent verification of Siglec-14 (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-106969A, sc-106969B and sc-106969C.

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-14 siRNA (h) is recommended for the inhibition of Siglec-14 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-5/14 (E-1): sc-374585 is recommended as a control antibody for monitoring of Siglec-14 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-14 gene expression knockdown using RT-PCR Primer: Siglec-14 (h)-PR: sc-106969-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. Lee, J.H., et al. 2020. Negative regulation of interleukin 1 β expression in response to DnaK from *Pseudomonas aeruginosa* via the PI3K/PDK1/FoxO1 pathways. *Comp. Immunol. Microbiol. Infect. Dis.* 73: 101543.

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.