SANTA CRUZ BIOTECHNOLOGY, INC.

NAGAT siRNA (m): sc-61139

BACKGROUND

Histo-blood group ABO system transferase (NAGAT) is a member of the glycosyltransferase 6 family of proteins and the basis of the ABO blood group system. The histo-blood group ABO involves three carbohydrate antigens: A, B and H; the NAGAT protein functions as the basis of this group. A, B and AB individuals express a glycosyltransferase activity converting the H antigen to the A antigen (by addition of UDP-GalNAc) or to the B antigen (by addition of UDP-Gal), while O individuals do not express this glycosyltransferase activity. The B phenotype of NAGAT differs from the A form by a few residue substitutions, whereas the O form is a result of a single base frame-shift deletion in the N-terminal extremity of the gene. The NAGAT protein localizes to the Golgi apparatus and its conserved DXD motif functions in cofactor binding.

REFERENCES

1. Nydegger, U., et al. 2004. ABO histo-blood group system-incompatible allografting. Int. Immunopharmacol. 5: 147-153.
2. Hutson, A.M., et al. 2005. Norwalk virus infection associates with secretor status genotyped from sera. J. Med. Virol. 77: 116-120.
3. Nydegger, U.E., et al. 2005. Histo-blood group antigens as allo- and autoantigens. Ann. N.Y. Acad. Sci. 1050: 40-51.
4. Chen, Y.L., et al. 2005. ABO/secretor genetic complex is associated with the susceptibility of childhood asthma in Taiwan. Clin. Exp. Allergy 35: 926-932.
5. Fretz, R., et al. 2005. Risk factors for infections with Norovirus gastrointestinal illness in Switzerland. Eur. J. Clin. Microbiol. Infect. Dis. 24: 256-261.
6. Kominato, Y., et al. 2005. Regulation of ABO gene expression. Leg. Med. 7: 263-265.
7. Tanaka, Y., et al. 2005. Intragraft expression of recipient-type ABO blood group antigens: long-term follow-up and histological features after liver transplantation. Liver Transpl. 11: 547-554.
8. Huang, P., et al. 2005. Norovirus and histo-blood group antigens: demonstration of a wide spectrum of strain specificities and classification of two major binding groups among multiple binding patterns. J. Virol. 79: 6714-6722.

CHROMOSOMAL LOCATION

Genetic locus: Abo (mouse) mapping to 2 A3.

PRODUCT

NAGAT 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 NAGAT shRNA Plasmid (m): sc-61139-SH and NAGAT shRNA (m) Lentiviral Particles: sc-61139-V as alternate gene silencing products.

For independent verification of NAGAT (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-61139A, sc-61139B and sc-61139C.

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

NAGAT siRNA (m) is recommended for the inhibition of NAGAT 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

Blood Group A antigen (Z2A): sc-69951 is recommended as a control antibody for monitoring of NAGAT 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor NAGAT gene expression knockdown using RT-PCR Primer: NAGAT (m)-PR: sc-61139-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.