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MAL siRNA (h): sc-44785

BACKGROUND

MAL (for myelin and lymphocyte protein), also known as T lymphocyte maturation-associated protein, is a nonglycosylated hydrophobic integral membrane protein belonging to the MAL family of proteolipids. MAL is highly enriched in nervous system myelin and in rafts and apical membranes of epithelial cells. It is involved in forming, stabilizing and maintaining glycosphingolipid-enriched membrane microdomains. MAL maintains the myelin sheath and, by controlling the sorting and trafficking of oligodendrocytes, it is involved in central nervous system paranode maintenance. MAL is a component of lipid rafts in myelinating cells. Association with glycosphingolipids may result in protein-lipid microdomain formation in myelin. MAL has been localized to the endoplasmic reticulum of T cells and in compact myelin of cells in the nervous system. MAL is primarily expressed by oligodendrocytes and Schwann cells in the intermediate and late stages of T cell differentiation.

REFERENCES

1. Schaeren-Wiemers, N., et al. 1995. Identification of new oligodendrocyte- and Myelin-specific genes by a differential screening approach. *J. Neurochem.* 65: 10-22.
2. Schaeren-Wiemers, N., et al. 2004. The raft-associated protein MAL is required for maintenance of proper axon-glia interactions in the central nervous system. *J. Cell Biol.* 166: 731-742.
3. Saravanan, K., et al. 2004. Specific downregulation and mistargeting of the lipid raft-associated protein MAL in a glycolipid storage disorder. *Neurobiol. Dis.* 16: 396-406.
4. Marazuela, M., et al. 2004. Expression of MAL and MAL2, two elements of the protein machinery for raft-mediated transport, in normal and neoplastic human tissue. *Histol. Histopathol.* 19: 925-933.
5. Philippar, U., et al. 2004. The SRF target gene FHL-2 antagonizes RhoA/MAL-dependent activation of SRF. *Mol. Cell* 16: 867-880.
6. SWISS-PROT/TrEMBL (P21145). World Wide Web URL: <http://www.expasy.ch/sprot/sprot-top.html>.

CHROMOSOMAL LOCATION

Genetic locus: MAL (human) mapping to 2q11.1.

PRODUCT

MAL 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 MAL shRNA Plasmid (h): sc-44785-SH and MAL shRNA (h) Lentiviral Particles: sc-44785-V as alternate gene silencing products.

For independent verification of MAL (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-44785A, sc-44785B and sc-44785C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

MAL siRNA (h) is recommended for the inhibition of MAL 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

MAL (E-1): sc-390687 is recommended as a control antibody for monitoring of MAL 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 MAL gene expression knockdown using RT-PCR Primer: MAL (h)-PR: sc-44785-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.