SANTA CRUZ BIOTECHNOLOGY, INC.

MAL2 siRNA (h): sc-77560

BACKGROUND

The MARVEL domain is a 130 amino acid motif that contains four transmembrane helices, both of which have cytoplasmic N- and C-terminal regions. MARVEL domain-containing proteins are thought to participate in tight junction regulation, the biogenesis of vesicular transport carriers and in cholesterol-rich membrane apposition events. MAL2 (MAL, T cell differentiation protein 2) is a 176 amino acid multi-pass membrane protein that is associated with lipid rafts and contains one MARVEL domain. Expressed predominately in liver, kidney and lung, MAL2 functions as a member of the polarized machinery transport system and is required for transcytosis, a transporter pathway used to deliver membrane-bound cargo from perinuclear endosomes to the apical surface in a raft-dependent manner. Differential expression of MAL2 is associated with several cancers, including renal cell carcinoma and childhood leukemia, suggesting a role for MAL2 in tumorigensis.

REFERENCES

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2. de Marco, M.C., et al. 2002. MAL2, a novel raft protein of the MAL family, is an essential component of the machinery for transcytosis in hepatoma Hep G2 cells. J. Cell Biol. 159: 37-44.
3. Marazuela, M., et al. 2004. Expression and distribution of MAL2, an essential element of the machinery for basolateral-to-apical transcytosis, in human thyroid epithelial cells. Endocrinology 145: 1011-1016.
4. Marazuela, M. and Alonso, M.A. 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. Llorente, A., et al. 2004. Caveolin-1 and MAL are located on prostasomes secreted by the prostate cancer PC-3 cell line. J. Cell Sci. 117: 5343-5351.
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7. Rohan, S., et al. 2006. Gene expression profiling separates chromophobe renal cell carcinoma from oncocytoma and identifies vesicular transport and cell junction proteins as differentially expressed genes. Clin. Cancer Res. 12: 6937-6945.
8. Barbaric, D., et al. 2006. Expression of tumor protein D52-like genes in childhood leukemia at diagnosis: clinical and sample considerations. Leuk. Res. 30: 1355-1363.
9. de Marco, M.C., et al. 2006. Dynamics of MAL2 during glycosylphosphatidylinositol-anchored protein transcytotic transport to the apical surface of hepatoma HepG2 cells. Traffic 7: 61-73.

CHROMOSOMAL LOCATION

Genetic locus: MAL2 (human) mapping to 8q24.12.

RESEARCH USE

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

PRODUCT

MAL2 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MAL2 shRNA Plasmid (h): sc-77560-SH and MAL2 shRNA (h) Lentiviral Particles: sc-77560-V as alternate gene silencing products.

For independent verification of MAL2 (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-77560A, sc-77560B and sc-77560C.

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

MAL2 siRNA (h) is recommended for the inhibition of MAL2 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MAL2 gene expression knockdown using RT-PCR Primer: MAL2 (h)-PR: sc-77560-PR (20 µl). 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.