

MRV11 siRNA (m): sc-42929

BACKGROUND

The integration of the murine leukemia virus (MuLV) into the mammalian genome is frequently associated with insertional mutagenesis of cellular proto-oncogenes and tumor suppressor genes leading to cellular transformation and leukemias. Several proto-oncogenes were initially identified as sites of viral integration, including the tumor-suppressors Myc, Myb, and Hox. A related murine virus, MRV, also induces leukemia through viral integration and the disruption of the MRV11 encoding gene. MRV11 is specifically expressed in megakaryocytes and various myeloid leukemias, and its expression is downregulated during monocytic differentiation. The human and murine homologs of MRV11 share substantial sequence similarity and similar expression patterns and are most closely related to the lymphoid specific protein Jaw1. The transcripts generated from MRV11 are alternatively spliced and initiated from two distinct promoters to produce a longer isoform, MRV11a, which contains an N-terminal 84 amino acid extension that is not present in the otherwise identical, shorter isoform, MRV11b. These two isoforms have distinct subcellular localization patterns as MRV11a contains an additional transmembrane domain and localizes to the endoplasmic reticulum, while MRV11b is diffusely distributed throughout the cell.

REFERENCES

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2. Buchberg, A.M., et al. 1990. Evi-2, a common integration site involved in murine myeloid leukemogenesis. *Mol. Cell. Biol.* 10: 4658-4666.
3. Behrens, T.W., et al. 1994. Jaw1, a lymphoid-restricted membrane protein localized to the endoplasmic reticulum. *J. Immunol.* 153: 682-690.
4. Cho, B.C., et al. 1995. Frequent disruption of the Nf1 gene by a novel murine AIDS virus-related provirus in BXH-2 murine myeloid lymphomas. *J. Virol.* 69: 7138-7146.
5. Moskow, J.J., et al. 1995. Meis1, a PBX1-related homeobox gene involved in myeloid leukemia in BXH-2 mice. *Mol. Cell. Biol.* 15: 5434-5443.
6. Behrens, T.W., et al. 1996. Carboxyl-terminal targeting and novel post-translational processing of Jaw1, a lymphoid protein of the endoplasmic reticulum. *J. Biol. Chem.* 271: 23528-23534.
7. Shaughnessy, J.D., Jr., et al. 1999. MRV11, a common MRV integration site in BXH2 myeloid leukemias, encodes a protein with homology to a lymphoid-restricted membrane protein Jaw1. *Oncogene* 18: 2069-2084.

CHROMOSOMAL LOCATION

Genetic locus: Mrv11 (mouse) mapping to 7 F1.

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.

PRODUCT

MRV11 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see MRV11 shRNA Plasmid (m): sc-42929-SH and MRV11 shRNA (m) Lentiviral Particles: sc-42929-V as alternate gene silencing products.

For independent verification of MRV11 (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-42929A, sc-42929B and sc-42929C.

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

MRV11 siRNA (m) is recommended for the inhibition of MRV11 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 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MRV11 gene expression knockdown using RT-PCR Primer: MRV11 (m)-PR: sc-42929-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.