SANTA CRUZ BIOTECHNOLOGY, INC.

MLLT11 siRNA (h): sc-88150

BACKGROUND

The gene encoding the mixed-lineage leukemia (MLL) proteins is located on chromosome 11q23. Chromosomal translocations involving band 11q23 result in rogue activator proteins that are associated with approximately 10% of patients with acute lymphoblastic leukemia (ALL) and 5% of patients with acute myeloid leukemia (AML). Most patients affected are less than one year of age. MLLT11, also known as mixed-lineage leukemia translocated to 11 or AF1q, is a 90 amino acid MLL fusion partner. Based on the expression patterns of MLLT11, it is thought that MLLT11 plays a role in leukemogenesis and, specifically, the progression of acute monocytic leukemia (AML). Also, expressed in embryonic brain cortex, MLLT11 is upregulated during neuronal differentiation and is thought to play a role in the development of the central nervous system. Finally, MLLT11 has been shown to be differentially expressed in highly metastatic cells, in comparison with non-metastatic parent cells. Such findings suggest a role of MLLT11 in tumorigenesis.

REFERENCES

1. Tse, W., et al. 1995. A novel gene, AF1q, fused to MLL in t(1;11) (q21;q23), is specifically expressed in leukemic and immature hematopoietic cells. Blood 85: 650-656.
2. Online Mendelian Inheritance in Man, OMIM™. 1998. Johns Hopkins University, Baltimore, MD. MIM Number: 600328. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. So, C.W., et al. 2000. Analysis of MLL-derived transcripts in infant acute monocytic leukemia with a complex translocation (1;11;4)(q21;q23;p16). Cancer Genet. Cytogenet. 117: 24-27.
4. Tse, W., et al. 2004. Elevated expression of the AF1q gene, an MLL fusion partner, is an independent adverse prognostic factor in pediatric acute myeloid leukemia. Blood 104: 3058-3063.
5. Lin, H.J., et al. 2004. AF1q, a differentially expressed gene during neuronal differentiation, transforms HEK cells into neuron-like cells. Brain Res. Mol. Brain Res. 131: 126-130.
6. Tse, W., et al. 2005. Increased AF1q gene expression in high-risk myelodysplastic syndrome. Br. J. Haematol. 128: 218-220.

CHROMOSOMAL LOCATION

Genetic locus: MLLT11 (human) mapping to 1q21.3.

PRODUCT

MLLT11 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 MLLT11 shRNA Plasmid (h): sc-88150-SH and MLLT11 shRNA (h) Lentiviral Particles: sc-88150-V as alternate gene silencing products.

For independent verification of MLLT11 (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-88150A, sc-88150B and sc-88150C.

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

MLLT11 siRNA (h) is recommended for the inhibition of MLLT11 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.

GENE EXPRESSION MONITORING

MLLT11 (2A9-1B7): sc-517101 is recommended as a control antibody for monitoring of MLLT11 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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 MLLT11 gene expression knockdown using RT-PCR Primer: MLLT11 (h)-PR: sc-88150-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.