SANTA CRUZ BIOTECHNOLOGY, INC.

MLL2 siRNA (m): sc-75795

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The Power to Question

BACKGROUND

The mixed lineage leukemia (MLL) gene family comprise a group of Histone H3 lysine 4 (H3K4) methyltransferases within the larger Set1 family. The founding member MLL commonly undergoes translocations in infantile leukemia and displays increased expression in some adult myeloid leukemias. MLL2, also designated ALR, exists within a complex of proteins. MLL2 is important for mouse embryonic development and may be involved in adhesion-related cytoskeletal events affecting cell growth and survival. The MLL2 gene maps to the human locus 12q13.12, which is a frequent target of rearrangement or amplification in solid tumors. MLL3 or its paralogue MLL4 associate with activating signal cointegrator-2 (ASC-2), which regulates ligand-dependent H3K4 trimethylation and expression of LXR-target genes. MLL3 maps to a location on human chromosome 7q36.1 that is often deleted in myeloid disorders. MLL3 also exhibits higher expression in peripheral blood, placenta, pancreas, testis, and fetal thymus. MLL5 localizes to the nucleus and forms intranuclear protein complexes, which may regulate chromatin remodeling and cellular growth suppression. The gene encoding human MLL5 lies within chromosome band 7q22.3, a region deleted in cytogenetic aberrations of acute myeloid malignancies.

REFERENCES

1. Ruault, M., et al. 2002. MLL3, a new human member of the TRX/MLL gene family, maps to 7q36, a chromosome region frequently deleted in myeloid leukaemia. Gene 284: 73-81.
2. Deng, L.W., et al. 2004. MLL 5 protein forms intranuclear foci, and overexpression inhibits cell cycle progression. Proc. Natl. Acad. Sci. USA 101: 757-762.
3. Lee, S., et al. 2006. Coactivator as a target gene specificity determinant for Histone H3 lysine 4 methyltransferases. Proc. Natl. Acad. Sci. USA 103: 15392-15397.
4. Nightingale, K.P., et al. 2007. Cross-talk between histone modifications in response to histone deacetylase inhibitors: MLL4 links Histone H3 acetylation and histone H3K4 methylation. J. Biol. Chem. 282: 4408-4416.
5. Lubitz, S., et al. 2007. Increased apoptosis and skewed differentiation in mouse embryonic stem cells lacking the histone methyltransferase MLL2. Mol. Biol. Cell 18: 2356-2366.
6. Issaeva, I., et al. 2007. Knockdown of ALR (MLL2) reveals ALR target genes and leads to alterations in cell adhesion and growth. Mol. Cell. Biol. 27: 1889-1903.
7. Lee, S., et al. 2008. Activating signal cointegrator-2 is an essential adaptor to recruit Histone H3 lysine 4 methyltransferases MLL3 and MLL4 to the liver X receptors. Mol. Endocrinol. 22: 1312-1319.

CHROMOSOMAL LOCATION

Genetic locus: Mll2 (mouse) mapping to 15 F1.

PROTOCOLS

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

PRODUCT

MLL2 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 MLL2 shRNA Plasmid (m): sc-75795-SH and MLL2 shRNA (m) Lentiviral Particles: sc-75795-V as alternate gene silencing products.

For independent verification of MLL2 (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-75795A, sc-75795B and sc-75795C.

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

MLL2 siRNA (m) is recommended for the inhibition of MLL2 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MLL2 gene expression knockdown using RT-PCR Primer: MLL2 (m)-PR: sc-75795-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Xia, M., et al. 2013. Histone methyltransferase ASH1L suppresses interleukin-6 production and inflammatory autoimmune diseases by inducing the ubiquitin-editing enzyme A20. Immunity 39: 470-481.

RESEARCH USE

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