SANTA CRUZ BIOTECHNOLOGY, INC.

L3MBTL4 siRNA (h): sc-75404

BACKGROUND

Polycomb group (PcG) proteins are important for maintaining the transcriptionally repressed state of target genes and are thought to function via chromatin modification. PcG proteins assemble into multimeric protein complexes, which are involved in maintaining the transcriptional repressive state of genes over successive cell generations. L3MBTL4 (lethal(3)malignant brain tumor-like 4 protein), also known as HsT1031, is a 623 amino acid protein belonging to the PcG family. Localized to the nucleus, L3MBTL4 contains three MBT repeats and a SAM (sterile α motif) domain, a widespread domain in signaling and nuclear proteins. The gene encoding L3MBTL4 maps to human chromosome 18, which houses over 300 protein-coding genes and contains nearly 76 million bases. L3MBTL4 exists as two isoforms produced by alternative splicing events.

REFERENCES

1. Sewalt, R.G., et al. 1998. Characterization of interactions between the mammalian polycomb-group proteins Enx1/EZH2 and EED suggests the existence of different mammalian polycomb-group protein complexes. Mol. Cell. Biol. 18: 3586-3595.
2. Koga, H., et al. 1999. A human homolog of *Drosophila* lethal(3)malignant brain tumor (l(3)mbt) protein associates with condensed mitotic chromosomes. Oncogene 18: 3799-3809.
3. Fukuyama, T., et al. 2000. Proliferative involvement of ENX-1, a putative human Polycomb group gene, in haematopoietic cells. Br. J. Haematol. 108: 842-847.
4. Wismar, J. 2001. Molecular characterization of h-l(3)mbt-like: a new member of the human MBT family. FEBS Lett. 507: 119-121.
5. Wang, J., et al. 2001. Imprinted X inactivation maintained by a mouse Polycomb group gene. Nat. Genet. 28: 371-375.
6. Yohn, C.B., et al. 2003. l(3)malignant brain tumor and three novel genes are required for *Drosophila* germ-cell formation. Genetics 165: 1889-1900.
7. Boccuni, P., et al. 2003. The human L(3)MBT polycomb group protein is a transcriptional repressor and interacts physically and functionally with TEL (ETV6). J. Biol. Chem. 278: 15412-15420.
8. Bench, A.J., et al. 2004. Characterization of the imprinted polycomb gene L3MBTL, a candidate 20q tumour suppressor gene, in patients with myeloid malignancies. Br. J. Haematol. 127: 509-518.
9. Li, J., et al. 2004. Imprinting of the human L3MBTL gene, a polycomb family member located in a region of chromosome 20 deleted in human myeloid malignancies. Proc. Natl. Acad. Sci. USA 101: 7341-7346.

CHROMOSOMAL LOCATION

Genetic locus: L3MBTL4 (human) mapping to 18p11.31.

PROTOCOLS

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

PRODUCT

L3MBTL4 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 L3MBTL4 shRNA Plasmid (h): sc-75404-SH and L3MBTL4 shRNA (h) Lentiviral Particles: sc-75404-V as alternate gene silencing products.

For independent verification of L3MBTL4 (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-75404A, sc-75404B and sc-75404C.

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

L3MBTL4 siRNA (h) is recommended for the inhibition of L3MBTL4 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 L3MBTL4 gene expression knockdown using RT-PCR Primer: L3MBTL4 (h)-PR: sc-75404-PR (20 µl, 598 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Vazquez, M.J., et al. 2018. SIRT1 mediates obesity- and nutrient-dependent perturbation of pubertal timing by epigenetically controlling Kiss1 expression. Nat. Commun. 9: 4194.

RESEARCH USE

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