SANTA CRUZ BIOTECHNOLOGY, INC.

L3MBTL siRNA (h): sc-60915

BACKGROUND

L3MBTL is member of the Polycomb group of proteins that function as transcriptional repressors in large protein complexes. L3MBTL contains three repeats of 100 residues called MBT repeats, and a C-terminal α-helical structure within a cavity lined by aromatic amino acids. The protein undergoes monoallelic methylation in hematopoietic tissues and is expressed in most human adult normal tissues. During interphase, L3MBTL localizes to the nucleus and completely associates with condensed chromosomes in mitotic cells. Together with Trithorax group proteins, L3MBTL is responsible for the coordinated regulation of patterns of gene activity. The human L3MBTL gene lies in a region of chromosome 20 that is frequently deleted in patients with myeloid malignancies and has been proposed as a candidate 20q tumor suppressor gene, implicating L3MBTL expression in some cases of myeloid leukemia.

REFERENCES

1. 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.
2. Boccuni, P., et al. 2003. The human L(3)MBT interacts physically and functionally with TEL (ETV6). J. Biol. Chem. 278: 15412-15420.
3. Sathyamurthy, A., et al. 2003. Crystal structure of the malignant brain tumor (MBT) repeats in Sex Comb on Midleg-like 2 (SCML2). J. Biol. Chem. 278: 46968-46973.
4. Wang, W.K., et al. 2003. Malignant brain tumor repeats: a three-leaved propeller architecture with ligand/peptide binding pockets. Structure 11: 775-789.
5. 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.
6. 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.
7. Yohn, C.B., et al. 2004. l(3)malignant brain tumor and three novel genes are required for *Drosophila* germ-cell formation. Genetics 165: 1889-1900.

CHROMOSOMAL LOCATION

Genetic locus: L3MBTL1 (human) mapping to 20q13.12.

PRODUCT

L3MBTL 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 L3MBTL shRNA Plasmid (h): sc-60915-SH and L3MBTL shRNA (h) Lentiviral Particles: sc-60915-V as alternate gene silencing products.

For independent verification of L3MBTL (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-60915A, sc-60915B and sc-60915C.

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

L3MBTL siRNA (h) is recommended for the inhibition of L3MBTL 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

L3MBTL (D-9): sc-166905 is recommended as a control antibody for monitoring of L3MBTL 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 L3MBTL gene expression knockdown using RT-PCR Primer: L3MBTL (h)-PR: sc-60915-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.