PRODUCT INFORMATION



L3MBTL1 MBT domains (human recombinant; GST-tagged) Item No. 14775

Overview and Properties

Synonyms:	H-I(3)MBT, Lethal(3)Malignant Brain Tumor-like Protein 1, L(3)MBT-like
Source:	Recombinant N-terminal GST-tagged protein expressed in E. coli
Amino Acids:	191-350
Molecular Weight:	65.5 kDa
Storage:	-80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability:	≥1 year
Purity:	≥90% estimated by SDS-PAGE
Supplied in:	50 mM Tris, pH 8.0, with 150 mM sodium chloride and 20% glycerol
Protein	
Concentration:	<i>batch specific</i> mg/ml
Information represents	the product specifications. Batch specific analytical results are provided on each cartificate of

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



SDS-PAGE Analysis of L3MBTL1 MBT domains-GST.

WARNING THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 06/18/2021

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM

PRODUCT INFORMATION



Description

The malignant brain tumor (MBT) domain is structurally related to chromatin binding domains, such as chromodomains, tudor domains, and PWWP-domains.^{1,2} MBT domain-containing proteins have a variable number of MBT repeats. The MBT domains recognize methylated lysines on histone tails with varying degree of specificity for the various methyl marks.¹ L3MBTL1, a human homolog of the Drosophila lethal(3)MBT protein, is a member of the polycomb group (PcG) of proteins that functions as a transcriptional repressor.³ L3MBTL1 contains three MBT repeat domains which collectively bind to either histone H3 or H4.^{1,4} The second and third MBT domains were found to bind preferentially to mono- and dimethylated lysines of histone H3 at lysine 4 (H3K4me1) and histone H4 at lysine 20 (H4K20me2).^{4,5} Recognition of methyl-lysine marks by MBT domains leads to chromatin compaction and a repressed transcriptional state.^{4,6} Further, L3MBTL1 has a tumor suppressor function and is thought to play a role in maintaining genomic stability and DNA replication.^{7,8} This protein product contains the MBT repeat region of L3MBTL1.

References

- 1. Trojer, P. and Reinberg, D. Beyond histone methyl-lysine binding: How malignant brain tumor (MBT) protein L3MBTL1 impacts chromatin structure. Cell Cycle 7(5), 578-585 (2008).
- 2. Maurer-Stroh, S., Dickens, N.J., Hughes-Davies, L., et al. The Tudor domain 'Royal Family': Tudor, plant Agenet, Chromo, PWWP and MBT domains. Trends Biochem. Sci. 28(2), 69-74 (2003).
- 3. Boccuni, P., MacGrogan, D., Scandura, J.M., et al. The human L(3)MBT polycomb group protein is a transcriptional repressor and interacts physically and functionally with TEL (ETV6). J. Biol. Chem. 278(17), 15412-15420 (2003).
- Trojer, P., Li, G., Sims, R.J., III, et al. L3MBTL1, a histone-methylation-dependent chromatin lock. 4. Cell 129(5), 915-928 (2007).
- Kim, J., Daniel, J., Espejo, A., et al. Tudor, MBT and chromo domains gauge the degree of lysine 5. methylation. EMBO Rep. 7(4), 397-403 (2006).
- Kalakonda, N., Fischle, W., Boccuni, P., et al. Histone H4 lysine 20 monomethylation promotes 6. transcriptional repression by L3MBTL1. Oncogene 27(31), 4293-4304 (2008).
- 7. Acs. K., Luijsterburg, M.S., Ackermann, L., et al. The AAA-ATPase VCP/p97 promotes 53BP1 recruitment by removing L3MBTL1 from DNA double-strand breaks. Nat. Struct. Mol. Biol. 18(12), 1345-1350 (2011).
- Gurvich, N., Perna, F., Farina, A., et al. L3MBTL1 polycomb protein, a candidate tumor suppressor 8. in del(20q12) myeloid disorders, is essential for genome stability. Proc. Natl. Acad. Sci. USA 107(52), 22552-22557 (2010).

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD ANN ARBOR, MI 48108 · USA PHONE: [800] 364-9897 [734] 971-3335 FAX: [734] 971-3640 CUSTSERV@CAYMANCHEM.COM WWW.CAYMANCHEM.COM