

# PRODUCT INFORMATION



## MLL1 (human recombinant)

Item No. 10658

### Overview and Properties

**Synonyms:** ALL1, CXXC-type zinc finger protein 7, HRX, KMT2a, Lysine Methyltransferase 2A, Mixed Lineage Leukemia 1

**Source:** Recombinant protein expressed in *E. coli*. An N-terminal hexahistidine tag and SUMOpro tag were removed by cleavage with SUMO protease 1 (Ulp1). *SUMOpro and SUMO Protease 1 were used under non-exclusive license from LifeSensors, Inc. www.lifesensors.com.*

**Amino Acids:** 3,762-3,969 (N-terminal truncations)

**Uniprot No.:** Q03164

**Molecular Weight:** 24.1 kDa

**Storage:** -80°C (as supplied)

**Stability:** ≥6 months

**Purity:** **batch specific** (≥80% estimated by SDS-PAGE)

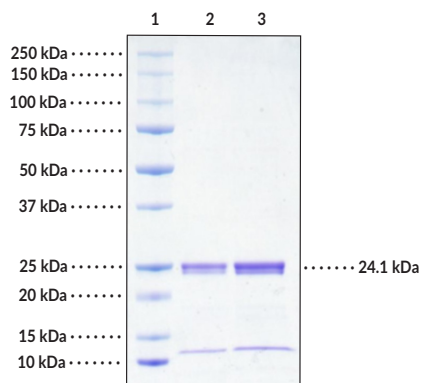
**Supplied in:** 50 mM Tris, pH 8.0, with 400 mM sodium chloride, 10% glycerol, and 5 mM 2-mercaptoethanol

### Protein

**Concentration:** **batch specific** mg/ml

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

### Image



Lane 1: MW Markers  
Lane 2: MLL1 (2 µg)  
Lane 3: MLL1 (4 µg)

Representative gel image shown; actual purity may vary between each batch.

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.

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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

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## Description

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Mixed Lineage Leukemia (MLL1) plays a major role in epigenetic regulation through methylation of histone 3 at lysine 4 (H3K4) to activate gene transcription. Methylation of H3K4 leads to upregulation of developmental genes, including HOX family members.<sup>1</sup> In addition to its methylation activity, MLL1 has been shown to co-localize with Pol II at several genomic elements.<sup>2</sup> Consequently, MLL1 has very low basal methyltransferase activity unless complexed with the activating protein complex of WDR5, Ash2L, and RbBP5 (MLL/WAR complex).<sup>3</sup> This C-terminal fragment of MLL1, residues 3,762 - 3,969, contains the SET1 domain for methyltransferase activity, and the WIN motif for binding the WAR complex. The protein DPY-30 has also been reported to associate with the MLL1-WAR complex. MLL1 is also available as a component of the MLL1/WAR complex (Item No. 10756) and MLL1/WARD complex.

## References

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1. Patel, A., Dharmarajan, V., Vought, V.E., *et al.* On the mechanism of multiple lysine methylation by the human mixed lineage leukemia protein-1 (MLL1) core complex. *J. Biol. Chem.* **284**(36), 24242-24256 (2009).
2. Mohan, M., Lin, C., Guest, E., *et al.* Licensed to elongate: A molecular mechanism for MLL-based leukaemogenesis. *Nature Reviews Cancer* **10**(10), 721-728 (2010).
3. Smith, E., Lin, C., and Shilatifard, A. The super elongation complex (SEC) and MLL in development and disease. *Genes & Development* **25**(7), 661-672 (2011).

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