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.

Uniprot No.: Q03164

Batch specific information can be found on the Certificate of Analysis or by contacting Technical Support

Molecular Weight: 24.1 kDa
Storage: -80°C (as supplied); avoid freeze/thaw cycles by aliquoting protein
Stability: As supplied, 6 months from the QC date provided on the Certificate of Analysis, when stored properly
Purity: batch specific (≥95% estimated by SDS-PAGE)
Supplied in: batch specific
Protein Concentration: batch specific mg/ml
Activity: Activity was demonstrated in the MLL1 complex (Ash2L, WDR5, RbBP5, and MLL1) (Item No. 10756) and MLL1 complex (Ash2L, WDR5, RbBP5, MLL1, and DPY30) (Item No. 10945) using a radiometric assay with [3H]-S-adenosylmethionine ([3H]-SAM) incubated with Core Histones (Item No. 11010) at 30°C for 30 minutes in buffer containing 50 mM Tris, pH 8.0, 150 mM sodium chloride, 3 mM MgCl$_2$, and 5% glycerol. Methylated products were separated by SDS-PAGE and visualized by exposure on autoradiographic film. Methylation of Histone H3 was determined by a band ~15.5 kDa.

Image

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

Representative gel image shown; actual purity may vary between each batch but protein will be ≥95% pure.
Description

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. In addition to its methylation activity, MLL1 has been shown to co-localize with Pol II at several genomic elements. Consequently, MLL1 has very low basal methyltransferase activity unless complexed with the activating protein complex of WDR5, Ash2L, and RbBP5 (MLL/WAR complex). This C-terminal fragment of MLL1, residues 3762 - 3969, 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 (Item No. 10945).

References