Recombinant KMT2D (MLL2) complex

Catalog No: 31498, 31902
Lot No: 21815001
Expressed In: *E. coli*

Quantity: 20, 1000 µg
Concentration: 0.9 µg/µl
Source: Human

Buffer Contents: Recombinant KMT2D (MLL2) complex was expressed in *E.coli* cells and is supplied in 25 mM Tris pH 8.0, 300 mM NaCl, 5% Glycerol, 0.04% Triton X-100.

Background: KMT2D (MLL2) complex (Myeloid/lymphoid or mixed-lineage leukemia 2) is a Trithorax-group protein that function collectively to promote gene expression. KMT2D (MLL2) is a histone methyltransferase that methylates the Lysine 4 position of histone H3. In particular, the SET domain is a conserved C-terminal domain that characterizes proteins of the MLL (mixed-lineage leukemia) family. The SET domain is responsible for its histone methyltransferase activity which mediates chromatin modifications associated with epigenetic transcriptional activation. H3K4 methylation represents a specific epigenetic tag for transcriptional activation. MLL2 is part of a large protein complex called ASCOM, which has been shown to be a transcriptional regulator of the β-globin and estrogen receptor genes. Mutations in this gene have been shown to be a cause of Kabuki syndrome.

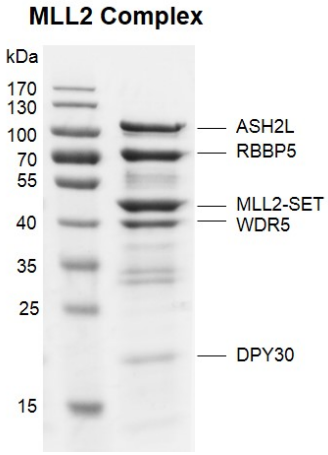
Protein Details: Recombinant KMT2D (MLL2) complex contains amino acids 5355 - 5537 of the human MLL2 protein (accession number NP_003473.3) with N-terminal GST-Tag and MW = 47.6 kDa; full length human WDR5 (GenBank Accession No.NM_017588), with N-terminal 6×His-Tag and MW = 35 kDa; full length human ASH2L (GenBank Accession No. NM_001105214), N-terminal 6×His-Tag and MW = 61 kDa; full length human RbBP5 (GenBank Accession No. NM_005057), N-terminal 6×His-Tag and MW = 60 kDa, and full length human DPY30 (GenBank Accession No. NM_032574), N-terminal 6×His-Tag and MW =12 kDa, all individually expressed in *E. coli* cells. The recombinant protein is >80% pure by SDS-PAGE.

Application Notes: Recombinant KMT2D (MLL2) complex is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling.

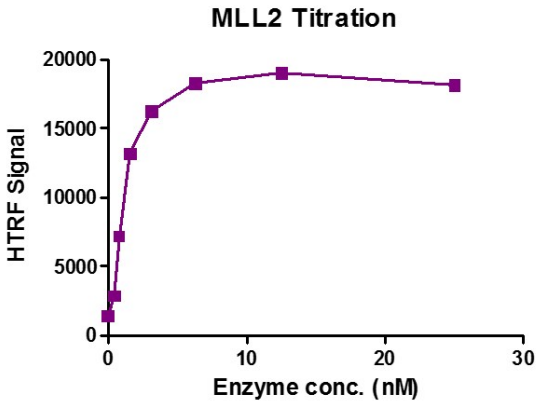
HMT Assay Conditions: 3.3 µM H3K4me0 (1-21aa) peptide was incubated with different concentrations of recombinant KMT2D (MLL2) complex in reaction buffer containing 50 mM TrisCl pH 8.6, 0.02% Triton X-100, 2 mM MgCl2, 1 mM TCEP, 100 µM SAM for 3 hours at room temperature. Activity was detected by HTRF and MALDI-TOF.

Storage and Guarantee: Recombinant proteins in solution are temperature sensitive and must be stored at -80°C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. This product is guaranteed for 6 months from date of receipt.

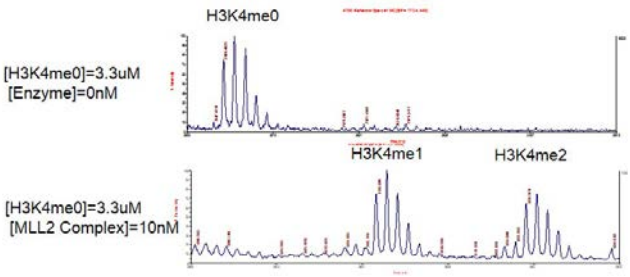
This product is for research use only and is not for use in diagnostic procedures.



Recombinant KMT2D (MLL2) complex gel
Recombinant KMT2D (MLL2) complex was run on an 10% SDS-PAGE gel and stained with Coomassie blue.



Recombinant KMT2D (MLL2) complex HTRF activity assay
3.3 µM H3K4me0 (1-21aa) peptide was incubated with KMT2D (MLL2) complex in reaction buffer for 3 hour at room temperature. KMT2D (MLL2) complex was used in a HTRF assay to determine enzyme linearity. Methylated peptide (H3K4me2) was measured using H3K4me2-specific antibody.



Recombinant KMT2D (MLL2) complex MALDI-TOF activity assay
3.3 µM H3K4me0 peptide was incubated with 10 nM KMT2D (MLL2) complex in reaction buffer for 3 hours at room temperature. The reaction product was detected by MALDI-TOF. Single 3.3 uM H3K4me0 peptide was used as negative control.

Catalytic Ability: ~450 turnovers/ enzyme molecule