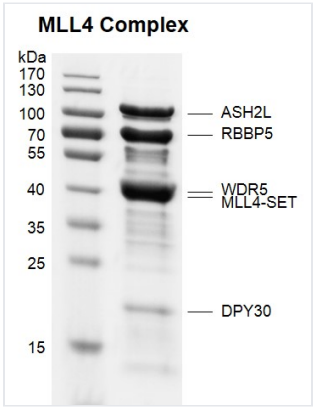
KMT2B Recombinant Protein

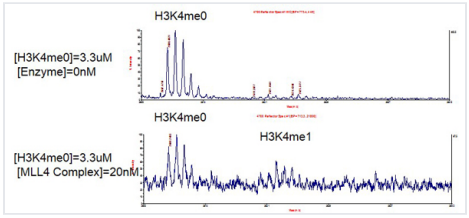
PRODUCT OVERVIEW

Product Name	KMT2B, Recombinant Protein
Full Product Name	Recombinant KMT2B (MLL4) complex
Product Gene Name	KMT2B recombinant protein
Product Synonym Names	Lysine Methyltransferase 2B;/WD Repeat Domain 5
Host	E Coli
Form/Format	Recombinant KMT2B (MLL4) complex was expressed in E Coli cells and is supplied in 25mM Tris pH8.0, 300mM NaCl, 5% Glycerol, 0.04% Triton X-100.
Purity/Purification	The recombinant protein is >85% pure by SDS-PAGE.
Preparation and Storage	Recombinant proteins in solution are temperature sensitive and must be stored at -80 degree C to prevent degradation. Avoid repeated freeze/thaw cycles and keep on ice when not in storage. Shipping Temp: Dry Ice
OMIM	606834
3D Structure	ModBase 3D Structure for Q9UMN6
Protein Species	Human
Tag	GST-Tag, His-Tag
Notes	Recombinant KMT2B (MLL4) complex is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling. HMT Assay Conditions: 3.3uM H3K4me0 (1-21aa) peptide was incubated with different concentrations of recombinant KMT2B (MLL4) complex in reaction buffer containing 50mM TrisCl pH 8.6, 0.02% Triton X-100, 2mM MgCl2, 1mM TCEP, 100uM SAM for 3 hours at room temperature. Activity was detected by HTRF and MALDI-TOF.
Dry Ice Shipment	Extra charge fee may add to your shipping cost as dry ice is required to ship this product.
Product Categories/Family for KMT2B recombinant protein	Recombinant Proteins; Histone Methyltransferase (HMT)
Related Product Information for KMT2B recombinant protein	Short Description: Recombinant KMT2B (MLL4) complex contains amino acids 2551-2715 of the human MLL4 protein (accession number NP_055542.1) with an N-terminal GST-Tag and MW = 47.6 kDa; full-length human WDR5 (accession number NM_017588), with N-terminal 6xHis-tag and MW = 35 kDa; full-length human ASH2L (accession number NM_001105214), N-terminal 6xHis-tag and MW = 61 kDa; full-length human RbBP5 (accession number NM_005057), N-terminal 6xHis-tag and MW = 60 kDa, and full-length human DPY30 (accession number NM_032574), N-terminal 6xHis-tag and MW =12 kDa, all individually expressed in E Coli. The recombinant protein is >85% pure by SDS-PAGE. Recombinant KMT2B (MLL4) complex is suitable for use in the study of enzyme kinetics, inhibitor screening, and selectivity profiling. Background: KMT2B (MLL4)(Myeloid/lymphoid or mixed-lineage leukemia 4) is a Trithorax-group protein that function collectively to promote gene expression. KMT2B (MLL4) 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. MLL4 plays a central role in b-globin locus transcription regulation by being recruited by Nfe2. KMT2B (MLL4) is also required during the transcriptionally active period of oocyte growth for the establishment and/or maintenance of bulk H3K4 trimethylation (H3K4me3), global transcriptional silencing that precedes resumption of meiosis, oocyte survival and normal zygotic genome activation. MLL4 may also be involved in human cancer as its expression has been shown to be upregulated in solid tumor cell lines.

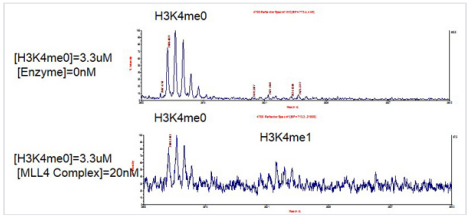
Other Notes	Small volumes of KMT2B recombinant protein vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.
Searchable Terms for KMT2B purchase	MBS388209 is a recombinant protein targeting KMT2B. Also known as Recombinant KMT2B (MLL4) complex. Host: E Coli.



SDS-Page of KMT2B recombinant protein
Recombinant KMT2B (MLL4) complex gel KMT2B (MLL4) complex was run on an 10% SDS-PAGE gel and stained with Coomassie blue.



Testing Data of KMT2B recombinant protein
Recombinant KMT2B (MLL4) complex MALDI-TOF activity assay 3.3 uM H3K4me0 peptide was incubated with 20 nM Recombinant KMT2B (MLL4) 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: 50 turnovers/ enzyme molecule



Testing Data of KMT2B recombinant protein
Recombinant KMT2B (MLL4) complex HTRF activity assay 3.3 uM H3K4me0 (1-21aa) peptide was incubated with Recombinant KMT2B (MLL4) complex in reaction buffer for 3 hour at room temperature. Recombinant KMT2B (MLL4) complex was used in a HTRF assay to determine enzyme linearity. Methylated peptide (H3K4me2) was measured using H3K4me2-specific antibody.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for KMT2B. It may not necessarily be applicable to this product.

NCBI GI #	7662046
NCBI GeneID	9757
NCBI Accession #	NP_055542.1
UniProt Primary Accession #	Q9UMN6
UniProt Secondary Accession #	O15022; O95836; Q96GP2; Q96IP3; Q9UK25; Q9Y668; Q9Y669
UniProt Related Accession #	Q9UMN6
GenBank Nucleotide #	NM_017588
NCBI Official Full Name	histone-lysine N-methyltransferase 2B
NCBI Official Synonym Full Names	lysine (K)-specific methyltransferase 2B
NCBI Official Symbol	KMT2B
NCBI Official Synonym Symbols	HRX2; MLL2; MLL4; TRX2; WBP7; MLL1B; WBP-7
UniProt Protein Name	Histone-lysine N-methyltransferase 2B

UniProt Synonym Protein Names	Myeloid/lymphoid or mixed-lineage leukemia protein 4; Trithorax homolog 2; WW domain-binding protein 7; WBP-7
Protein Family	Histone-lysine N-methyltransferase
UniProt Gene Name	KMT2B
UniProt Synonym Gene Names	HRX2; KIAA0304; MLL2; MLL4; TRX2; WBP7; Lysine N-methyltransferase 2B; WBP-7
UniProt Entry Name	KMT2B_HUMAN
NCBI Protein Information	histone-lysine N-methyltransferase 2B; trithorax homologue 2; WW domain binding protein 7; mixed lineage leukemia gene homolog 2; histone-lysine N-methyltransferase MLL4; myeloid/lymphoid or mixed-lineage leukemia protein 4; myeloid/lymphoid or mixed-line
NCBI Summary for KMT2B	This gene encodes a protein which contains multiple domains including a CXXC zinc finger, three PHD zinc fingers, two FY-rich domains, and a SET (suppressor of variegation, enhancer of zeste, and trithorax) domain. The SET domain is a conserved C-terminal domain that characterizes proteins of the MLL (mixed-lineage leukemia) family. This gene is ubiquitously expressed in adult tissues. It is also amplified in solid tumor cell lines, and may be involved in human cancer. Two alternatively spliced transcript variants encoding distinct isoforms have been reported for this gene, however, the full length nature of the shorter transcript is not known. [provided by RefSeq, Jul 2008]
UniProt Comments for KMT2B	MLL2: may be a transcriptional regulator. Contains 3 A.T hook DNA-binding domains. Two alternatively spliced isoforms have been described. Protein type: Methyltransferase; EC 2.1.1.43; Transcription factor; Methyltransferase, protein lysine; DNA-binding Chromosomal Location of Human Ortholog: 19q13.1 Cellular Component: nucleoplasm; histone methyltransferase complex; nucleus Molecular Function: protein binding; DNA binding; zinc ion binding; histone lysine N-methyltransferase activity (H3-K4 specific); transcription factor activity Biological Process: ovulation; establishment and/or maintenance of chromatin architecture; ovarian follicle development; transcription, DNA-dependent; chromatin-mediated maintenance of transcription; histone H3-K4 methylation; oocyte differentiation; regulation of histone H3-K4 methylation; gene silencing
Research Articles on KMT2B	**1.** KMT2B transgene mediates hippocampal histone 3 lysine 4 di- and trimethylation and is a critical player for memory formation.
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