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MLL Polyclonal Antibody

Catalog # AP74102

Product Information

Application	WB, IHC-P, IF, ICC, E
Primary Accession	Q03164
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Calculated MW	431764

Additional Information

Gene ID	4297
Other Names	Histone-lysine N-methyltransferase MLL (EC 2.1.1.43) (ALL-1) (CXXC-type zinc finger protein 7) (Lysine N-methyltransferase 2A) (KMT2A) (Trithorax-like protein) (Zinc finger protein HRX) [Cleaved into: MLL cleavage product N320 (N-terminal cleavage product of 320 kDa) (p320); MLL cleavage product C180 (C-terminal cleavage product of 180 kDa) (p180)]
Dilution	WB~~1:1000 IHC-P~~IHC-p 1:50-200, ELISA 1:10000-20000 IF~~1:50~200 ICC~~N/A E~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20℃

Protein Information

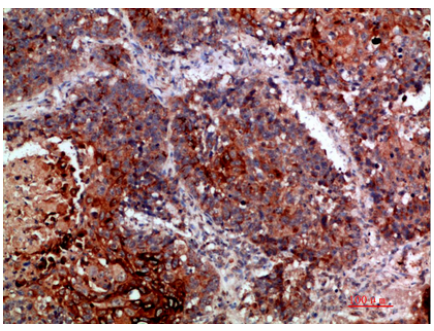
Name	KMT2A
Synonyms	ALL1, CXXC7, HRX, HTRX, MLL, MLL1, TRX1
Function	Histone methyltransferase that plays an essential role in early development and hematopoiesis (PubMed:12453419, PubMed:15960975, PubMed:19187761, PubMed:19556245, PubMed:20677832, PubMed:21220120, PubMed:26886794). Catalytic subunit of the MLL1/MLL complex, a multiprotein complex that mediates both methylation of 'Lys-4' of histone H3 (H3K4me) complex and acetylation of 'Lys-16' of histone H4 (H4K16ac) (PubMed:12453419, PubMed:15960975, PubMed:19187761, PubMed:19556245, PubMed:20677832, PubMed:21220120, PubMed:24235145, PubMed:26886794). Catalyzes methyl group transfer from S-adenosyl-L- methionine to the epsilon-amino group of 'Lys-4' of histone H3 (H3K4) via a non-processive mechanism. Part of chromatin remodeling machinery predominantly forms H3K4me1 and H3K4me2 methylation marks

	at active chromatin sites where transcription and DNA repair take place (PubMed:12453419, PubMed:15960975, PubMed:19187761, PubMed:19556245, PubMed:20677832, PubMed:21220120, PubMed:25561738, PubMed:26886794). Has weak methyltransferase activity by itself, and requires other component of the MLL1/MLL complex to obtain full methyltransferase activity (PubMed:19187761, PubMed:26886794). Has no activity toward histone H3 phosphorylated on 'Thr-3', less activity toward H3 dimethylated on 'Arg-8' or 'Lys-9', while it has higher activity toward H3 acetylated on 'Lys-9' (PubMed:19187761). Binds to unmethylated CpG elements in the promoter of target genes and helps maintain them in the nonmethylated state (PubMed:20010842). Required for transcriptional activation of HOXA9 (PubMed:12453419, PubMed:20010842, PubMed:20677832). Promotes PPP1R15A-induced apoptosis (PubMed:10490642). Plays a critical role in the control of circadian gene expression and is essential for the transcriptional activation mediated by the CLOCK-BMAL1 heterodimer (By similarity). Establishes a permissive chromatin state for circadian transcription by mediating a rhythmic methylation of 'Lys-4' of histone H3 (H3K4me) and this histone modification directs the circadian acetylation at H3K9 and H3K14 allowing the recruitment of CLOCK-BMAL1 to chromatin (By similarity). Also has auto-methylation activity on Cys-3882 in absence of histone H3 substrate (PubMed:24235145).
Cellular Location	Nucleus [MLL cleavage product C180]: Nucleus. Note=Localizes to a diffuse nuclear pattern when not associated with MLL cleavage product N320
Tissue Location	Heart, lung, brain and T- and B-lymphocytes.

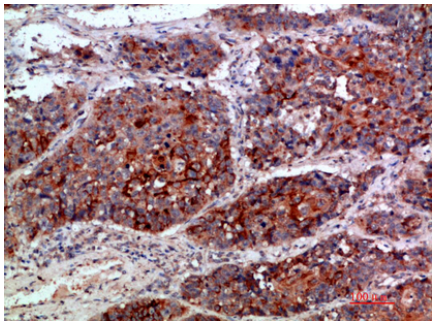
Background

Histone methyltransferase that plays an essential role in early development and hematopoiesis. Catalytic subunit of the MLL1/MLL complex, a multiprotein complex that mediates both methylation of 'Lys-4' of histone H3 (H3K4me) complex and acetylation of 'Lys-16' of histone H4 (H4K16ac). In the MLL1/MLL complex, it specifically mediates H3K4me, a specific tag for epigenetic transcriptional activation (PubMed:12453419, PubMed:20677832, PubMed:26886794). Has weak methyltransferase activity by itself, and requires other component of the MLL1/MLL complex to obtain full methyltransferase activity (PubMed:19187761, PubMed:26886794). Has no activity toward histone H3 phosphorylated on 'Thr-3', less activity toward H3 dimethylated on 'Arg-8' or 'Lys-9', while it has higher activity toward H3 acetylated on 'Lys-9'. Binds to unmethylated CpG elements in the promoter of target genes and helps maintain them in the nonmethylated state (PubMed:20010842). Required for transcriptional activation of HOXA9 (PubMed:12453419, PubMed:20677832, PubMed:20010842). Promotes PPP1R15A-induced apoptosis. Plays a critical role in the control of circadian gene expression and is essential for the transcriptional activation mediated by the CLOCK-ARNTL/BMAL1 heterodimer. Establishes a permissive chromatin state for circadian transcription by mediating a rhythmic methylation of 'Lys-4' of histone H3 (H3K4me) and this histone modification directs the circadian acetylation at H3K9 and H3K14 allowing the recruitment of CLOCK-ARNTL/BMAL1 to chromatin (By similarity).

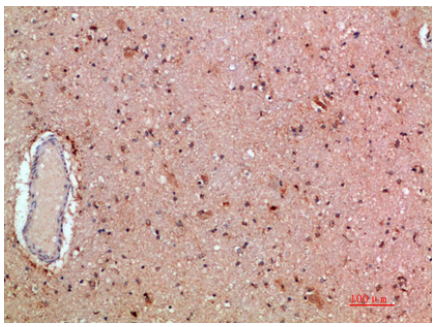
Images



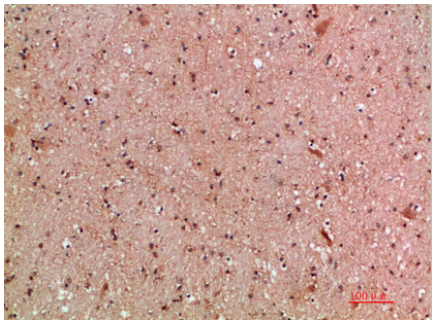
Immunohistochemical analysis of paraffin-embedded human-lung-cancer, antibody was diluted at 1:200



Immunohistochemical analysis of paraffin-embedded human-lung-cancer, antibody was diluted at 1:200



Immunohistochemical analysis of paraffin-embedded human-brain, antibody was diluted at 1:200



Immunohistochemical analysis of paraffin-embedded human-brain, antibody was diluted at 1:200

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