

## **MLL Polyclonal Antibody**

**Catalog # AP74102** 

# **Specification**

## **MLL Polyclonal Antibody - Product Information**

Application IHC-P Primary Accession 003164

Reactivity Human, Mouse, Rat

Host Rabbit Clonality Polyclonal

# **MLL Polyclonal Antibody - 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**

IHC-P~~N/A

#### **Format**

Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.

#### **Storage Conditions**

-20°C

# **MLL Polyclonal Antibody - 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:<a href="http://www.uniprot.org/citations/12453419" target="\_blank">12453419</a>, PubMed:<a href="http://www.uniprot.org/citations/15960975" target="\_blank">15960975</a>, PubMed:<a href="http://www.uniprot.org/citations/19187761" target="\_blank">19187761</a>, PubMed:<a href="http://www.uniprot.org/citations/19556245" target="\_blank">19556245</a>, PubMed:<a href="http://www.uniprot.org/citations/20677832" target="\_blank">20677832</a>, PubMed:<a href="http://www.uniprot.org/citations/20677832" target="\_blank">21220120</a>, PubMed:<a href="http://www.uniprot.org/citations/21220120" target="\_blank">21220120</a>, PubMed:<a href="http://www.uniprot.org/citations/26886794" target="\_blank">26886794</a>). 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:<a href="http://www.uniprot.org/citations/12453419"



target=" blank">12453419</a>, PubMed:<a href="http://www.uniprot.org/citations/15960975" target="blank">15960975</a>, PubMed:<a href="http://www.uniprot.org/citations/19187761" target="blank">19187761</a>, PubMed:<a href="http://www.uniprot.org/citations/19556245" target="\_blank">19556245</a>, PubMed:<a href="http://www.uniprot.org/citations/20677832" target=" blank">20677832</a>, PubMed:<a href="http://www.uniprot.org/citations/21220120" target=" blank">21220120</a>, PubMed:<a href="http://www.uniprot.org/citations/24235145" target=" blank">24235145</a>, PubMed:<a href="http://www.uniprot.org/citations/26886794" target="\_blank">26886794</a>). 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: <a href="http://www.uniprot.org/citations/12453419" target=" blank">12453419</a>, PubMed:<a href="http://www.uniprot.org/citations/15960975" target="blank">15960975</a>, PubMed:<a href="http://www.uniprot.org/citations/19187761" target=" blank">19187761</a>, PubMed:<a href="http://www.uniprot.org/citations/19556245" target="\_blank">19556245</a>, PubMed:<a href="http://www.uniprot.org/citations/20677832" target="blank">20677832</a>, PubMed:<a href="http://www.uniprot.org/citations/21220120" target="blank">21220120</a>, PubMed:<a href="http://www.uniprot.org/citations/25561738" target="\_blank">25561738</a>, PubMed:<a href="http://www.uniprot.org/citations/26886794" target="\_blank">26886794</a>). Has weak methyltransferase activity by itself, and requires other component of the MLL1/MLL complex to obtain full methyltransferase activity (PubMed:<a href="http://www.uniprot.org/citations/19187761" target=" blank">19187761</a>, PubMed:<a href="http://www.uniprot.org/citations/26886794" target="blank">26886794</a>). 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:<a href="http://www.uniprot.org/citations/19187761" target=" blank">19187761</a>). Binds to unmethylated CpG elements in the promoter of target genes and helps maintain them in the nonmethylated state (PubMed:<a href="http://www.uniprot.org/citations/20010842" target=" blank">20010842</a>). Required for transcriptional activation of HOXA9 (PubMed:<a href="http://www.uniprot.org/citations/12453419" target=" blank">12453419</a>, PubMed:<a href="http://www.uniprot.org/citations/20010842" target="blank">20010842</a>, PubMed:<a href="http://www.uniprot.org/citations/20677832" target="\_blank">20677832</a>). Promotes PPP1R15A-induced apoptosis (PubMed:<a href="http://www.uniprot.org/citations/10490642" target=" blank">10490642</a>). 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:<a href="http://www.uniprot.org/citations/24235145" target="\_blank">24235145</a>).

# **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.

# **MLL Polyclonal Antibody - Protocols**

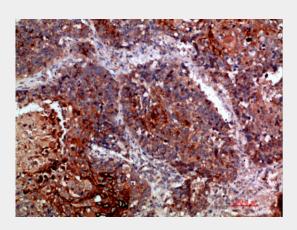
Provided below are standard protocols that you may find useful for product applications.

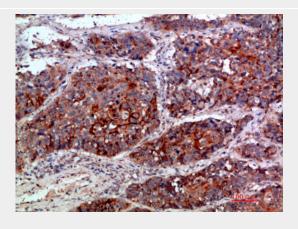
- Western Blot
- Blocking Peptides
- Dot Blot

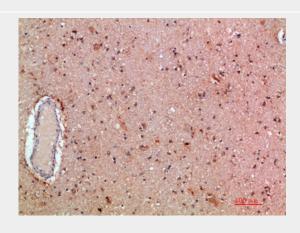


- <u>Immunohistochemistry</u>
- <u>Immunofluorescence</u>
- Immunoprecipitation
  Flow Cytomety
  Cell Culture

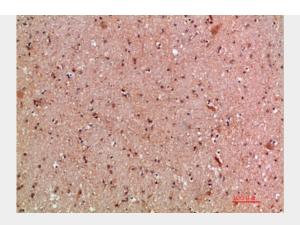
# **MLL Polyclonal Antibody - Images**

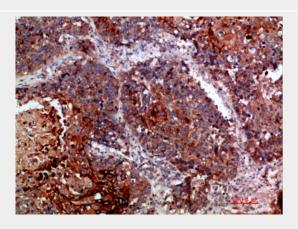


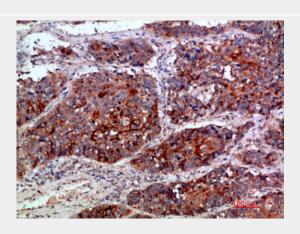






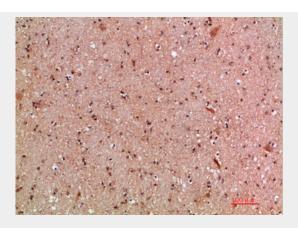












# **MLL Polyclonal Antibody - Background**

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).