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MLL3 Antibody (C-term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP6184a

Product Information

Application	WB, E
Primary Accession	Q8NEZ4
Other Accession	Q8BRH4
Reactivity	Human
Predicted	Mouse
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	541370
Antigen Region	4345-4374

Additional Information

Gene ID	58508
Other Names	Histone-lysine N-methyltransferase 2C, Lysine N-methyltransferase 2C, Homologous to ALR protein, Myeloid/lymphoid or mixed-lineage leukemia protein 3, KMT2C, HALR, KIAA1506, MLL3
Target/Specificity	This MLL3 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 4345-4374 amino acids from the C-terminal region of human MLL3.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.05% (V/V) Proclin 300. This antibody is purified through a protein A column, followed by peptide affinity purification.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	MLL3 Antibody (C-term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	KMT2C
Synonyms	HALR, KIAA1506, MLL3

Function	Histone methyltransferase that catalyzes methyl group transfer from S-adenosyl-L-methionine to the epsilon-amino group of 'Lys-4' of histone H3 (H3K4) (PubMed:25561738). Part of chromatin remodeling machinery predominantly forms H3K4me1 methylation marks at active chromatin sites where transcription and DNA repair take place (PubMed:22266653, PubMed:24081332, PubMed:25561738). Likely plays a redundant role with KMT2D in enriching H3K4me1 mark on primed and active enhancer elements (PubMed:24081332).
Cellular Location	Nucleus.
Tissue Location	Highly expressed in testis and ovary, followed by brain and liver. Also expressed in placenta, peripherical blood, fetal thymus, heart, lung and kidney. Within brain, expression was highest in hippocampus, caudate nucleus, and substantia nigra. Not detected in skeletal muscle and fetal liver

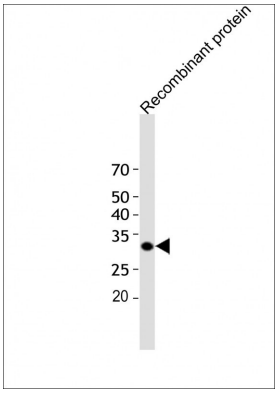
Background

The SET domain is a conserved C-terminal domain that characterizes proteins of the MLL family, including MLL3. The MLL SET domain is a histone H3 Lys4 (K4)-specific methyltransferase whose activity is stimulated with acetylated H3 peptides. MLL3 maps to 7q36, a chromosome region frequently deleted in myeloid leukaemia. The deduced MLL3 4,911-amino acid protein is more closely related to MLL2 than to MLL1 or MLL4. MLL3 has 6 plant homeodomain (PHD) fingers preceded by a cys-rich ZNF1 domain in its N terminus; a high mobility group (HMG) box, an ATPase alpha-beta signature, and a leucine zipper motif in its central region; and 2 C-terminal FY (phe-tyr) motifs and the SET domain preceded by a ZNF2 domain in its C terminus. The predicted protein also contains several putative nuclear localization motifs. Isoform II lacks ZNF1 and the PHD.

References

Ota, T., et al., Nat. Genet. 36(1):40-45 (2004). Hillier, L.W., et al., Nature 424(6945):157-164 (2003). Goo, Y.-H., et al., Mol. Cell. Biol. 23(1):140-149 (2003). Tan, Y.C., et al., Cancer Detect. Prev. 25(5):454-469 (2001). Nagase, T., et al., DNA Res. 7(2):143-150 (2000).

Images



All lanes: Anti-MLL3 Antibody (C-term) at 1:1000 dilution + Recombinant protein lysate Lysates/proteins at 20 µg per lane. Secondary: Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated (ASP1615) at 1/15000 dilution. Observed band size: 28 KDa Blocking/Dilution buffer: 5% NFDM/TBST.

Citations

- Endocrine disrupting chemical, bisphenol-A, induces breast cancer associated gene HOXB9 expression in vitro and in vivo.
- Bisphenol-A induces expression of HOXC6, an estrogen-regulated homeobox-containing gene associated with breast cancer.

- Bisphenol-A and diethylstilbestrol exposure induces the expression of breast cancer associated long noncoding RNA HOTAIR in vitro and in vivo.
- Antisense transcript long noncoding RNA (lncRNA) HOTAIR is transcriptionally induced by estradiol.
- HOXC10 is overexpressed in breast cancer and transcriptionally regulated by estrogen via involvement of histone methylases MLL3 and MLL4.
- HOXC6 Is transcriptionally regulated via coordination of MLL histone methylase and estrogen receptor in an estrogen environment.