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KMT4 / Dot1L Antibody (N-Term)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1198a

Product Information

Application	IHC-P, E
Primary Accession	Q8TEK3
Other Accession	NP_115871
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB2772
Calculated MW	164856
Antigen Region	87-117

Additional Information

Gene ID	84444
Other Names	Histone-lysine N-methyltransferase, H3 lysine-79 specific, DOT1-like protein, Histone H3-K79 methyltransferase, H3-K79-HMTase, Lysine N-methyltransferase 4, DOT1L, KIAA1814, KMT4
Target/Specificity	This KMT4 / Dot1L antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 87~117 amino acids from the N-terminal region of human DOT1L.
Dilution	IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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	KMT4 / Dot1L Antibody (N-Term) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	DOT1L (HGNC:24948)
Synonyms	KIAA1814, KMT4

Function	Histone methyltransferase that methylates 'Lys-79' of histone H3 (PubMed:12123582, PubMed:38503750, PubMed:38129415). Histones in nucleosomes are preferred as substrate compared to free histones (PubMed:12123582, PubMed:38503750). Binds to DNA (PubMed:12628190, PubMed:38503750). Together with MLLT3/AF9, is involved in SCNN1A transcriptional repression following H3K79 hypermethylation at the promoter (By similarity).
Cellular Location	Nucleus. Cytoplasm {ECO:0000250|UniProtKB:Q6XZL8}. Note=Cytoplasmic localization is dependent on and mediated by MLLT6/AF17 {ECO:0000250|UniProtKB:Q6XZL8}

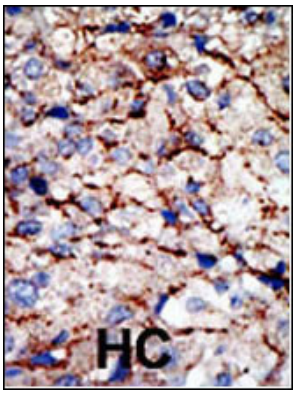
Background

Similar to acetylation and phosphorylation, histone methylation at the N-terminal tail has emerged as an important role in regulating chromatin dynamics and gene activity. Histone methylation occurs on arginine and lysine residues and is catalyzed by two families of proteins, the protein arginine methyltransferase family and the SET-domain-containing methyltransferase family. Five members have been identified in the arginine methyltransferase family. About 27 are grouped into the SET-domain family, and another 17 make up the PR domain family that is related to the SET domain family. The retinoblastoma protein-interacting zinc finger geneRIZ1 is a tumor suppressor gene and a FOUNDING member of the PR domain family. RIZ1 inactivation is commonly found in many types of human cancers and occurs through loss of mRNA expression, frame shift mutation, chromosomal deletion, and missense mutation. RIZ1 is also a tumor susceptibility gene in mice. The loss of RIZ1 mRNA in human cancers was shown to associate with DNA methylation of its promoter CpG island. Methylation of the RIZ1 promoter strongly correlated with lost or decreased RIZ1 mRNA expression in breast, liver, colon, and lung cancer cell lines as well as in liver cancer tissues.

References

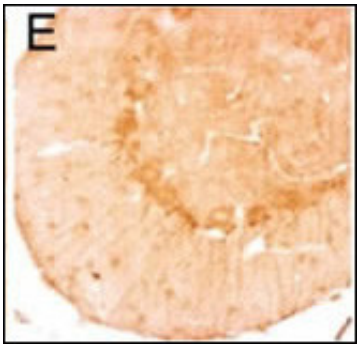
Feng, Q., et al., Curr. Biol. 12(12):1052-1058 (2002).

Images



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.

IHC analysis of Af4 complex proteins in the cerebellum at 5 weeks of age. DOT1 staining is found in the Purkinje cell layer (PCL), although additional staining of Bergmann glia occurs in the molecular layer.



Citations

- DOT1L regulates dystrophin expression and is critical for cardiac function.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.