abcam

ab56770

Anti-KMT2B / MLL4 antibody [4C10]

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	pH: 7.4
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human KMT2B aa 800-950. The exact immunogen used to generate this antibody is proprietary information. Database link Q9UMN6
Clone number	4C10
Purity	Tissue culture supernatant
Light chain type	kappa

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human
Dilution info	-
Notes	This antibody has only been tested in WB against the recombinant fragment used as immunogen. We have no data on the detection of endogenous protein.

Expected

Species	Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information KMT2B

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) 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:17707229, PubMed:25561738). Likely plays a redundant role with KMT2C in enriching H3K4me1 marks on primed and active enhancer elements (PubMed:24081332). Plays a central role in beta-globin locus transcription regulation by being recruited by NFE2 (PubMed:17707229). Plays an important role in controlling bulk H3K4me during oocyte growth and preimplantation development (By similarity). Required during the transcriptionally active period of oocyte growth for the establishment and/or maintenance of bulk H3K4 trimethylation (H3K4me3), global transcriptional silencing that preceeds resumption of meiosis, oocyte survival and normal zygotic genome activation (By similarity).

Storage

Shipped at conditions Blue Ice

Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

This product was changed from ascites to tissue culture supernatant on 11th June 2019. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	KMT2B also known as MLL4 is a protein complex that functions as a histone methyltransferase. It specifically catalyzes the methylation of histone H3 on lysine 4 (H3K4) a modification associated with transcriptional activation. KMT2B has a molecular mass of approximately 296 kDa and is widely expressed in human tissues with notable expression in the brain heart and skeletal muscle. This protein is part of the COMPASS-like complexes which play significant roles in chromatin remodeling.
Biological function summary	KMT2B contributes to regulating gene expression. As part of the larger COMPASS-like complex it cooperates with other regulatory proteins to modify chromatin structure facilitating easier access of transcriptional machinery to DNA. This action influences the activation of genes important for cell differentiation and development. KMT2B interacts with several cofactors including WRAD components (WDR5 RBBP5 ASH2L and DPY30) enhancing its enzymatic activity.
Pathways	KMT2B functions prominently in signaling mechanisms like the Wnt and MAPK pathways. These pathways are integral to cell growth and differentiation. The protein intricately connects with other pathways' proteins including beta-catenin in the Wnt pathway and ERK1/2 in the MAPK pathway. These interactions highlight KMT2B's role in regulating cellular functions and development.
Associated diseases and disorders	KMT2B has associations with neurodevelopmental disorders and specific forms of cancer. Mutations in KMT2B can lead to dystonia a movement disorder characterized by involuntary muscle contractions. In cancer alterations affect pathways involving oncogenic factors such as MYC highlighting the critical connections between KMT2B and cellular growth regulation. Understanding these links provides insights into potential therapeutic targets for related conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

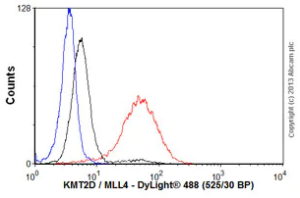
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1 product image



Flow Cytometry - Anti-KMT2B / MLL4 antibody [4C10] (ab56770)

KMT2B / MLL4 Flow Cytometry staining using mouse Anti-KMT2B / MLL4 antibody

Overlay histogram showing HL60 cells stained with ab56770 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab56770, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2µg/1x10^6 cells) used under the same conditions. Unlabelled sample (blue line). Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.
This image was generated using the ascites version of the product.

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