Anti-KMT2D Antibody

HA500417

Product Type:	Rabbit polyclonal IgG, primary antibodies
Species reactivity:	Human
Applications:	WB, IF-Cell
Molecular Wt:	Predicted band size: 593 kDa

Description: Histone-lysine N-methyltransferase 2D (KMT2D), also known as MLL4 and sometimes MLL2 in humans and Mll4 in mice, is a major mammalian histone H3 lysine 4 (H3K4) mono-methyltransferase. It is part of a family of six Set1-like H3K4 methyltransferases that also contains KMT2A (or MLL1), KMT2B (or MLL2), KMT2C (or MLL3), KMT2F (or SET1A), and KMT2G (or SET1B). KMT2D is a large protein over 5,500 amino acids in size and is widely expressed in adult tissues. The protein co-localizes with lineage determining transcription factors on transcriptional enhancers and is essential for cell differentiation and embryonic development. It also plays critical roles in regulating cell fate transition, metabolism, and tumor suppression. Mutations in KMT2D cause human genetic conditions including Kabuki syndrome, another distinct congenital malformations disorder and various forms of cancer. Germline heterozygous loss of function mutations in KMT2D, also known as MLL2 in humans, cause Kabuki syndrome type 1 with mutational occurrence rates between 56% and 75%. Germline heterozygous missense variants in exon 38 or 39 of the KMT2D gene cause another rare distinct multiple malformation disorder characterized by choanal atresia, athelia or hypoplastic nipples, branchial sinus abnormalities, neck pits, lacrimal duct anomalies, hearing loss, external ear malformations, and thyroid abnormalities.

Immunogen:	Recombinant protein within C terminal human KMT2D.
Positive control:	A549.
Subcellular location:	Nucleus
Database links:	SwissProt: O14686 Human
Recommended Dilutions:	
WB	1:500-2,000
IF-Cell	1:100
Storage Buffer:	PBS (pH7.4), 0.1% BSA, 40% Glycerol. Preservative: 0.05% Sodium Azide.
Storage Instruction:	Shipped at 4℃. Store at +4℃ short term (1-2 weeks). It is recommended to aliquot into single-use upon delivery. Store at -20℃ long term.
Purity:	Immunogen affinity purified.

Images

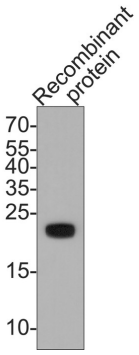

Fig1: Western blot analysis of KMT2D on recombinant protein with Rabbit anti-KMT2D antibody (HA500417) at 1/10,000 dilution.

Lysates/proteins at 50 ng/Lane.

Observed band size: 22 kDa

Exposure time: 2 minutes;

15% SDS-PAGE gel.

Proteins were transferred to a PVDF membrane and blocked with 5% NFDM/TBST for 1 hour at room temperature. The primary antibody (HA500417) at 1/10,000 dilution was used in 5% NFDM/TBST at room temperature for 2 hours. Goat Anti-Rabbit IgG - HRP Secondary Antibody (HA1001) at 1:300,000 dilution was used for 1 hour at room temperature.

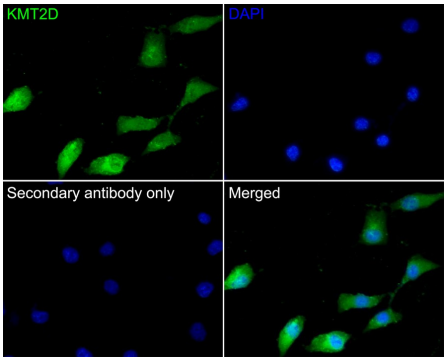

Fig2: Immunocytochemistry analysis of A549 cells labeling KMT2D with Rabbit anti-KMT2D antibody (HA500417) at 1/100 dilution.

Cells were fixed in 4% paraformaldehyde for 10 minutes at 37 ℃, permeabilized with 0.05% Triton X-100 in PBS for 20 minutes, and then blocked with 2% negative goat serum for 30 minutes at room temperature. Cells were then incubated with Rabbit anti-KMT2D antibody (HA500417) at 1/100 dilution in 2% negative goat serum overnight at 4 ℃. Goat Anti-Rabbit IgG H&L (iFluor™ 488, HA1121) was used as the secondary antibody at 1/1,000 dilution. PBS instead of the primary antibody was used as the secondary antibody only control. Nuclear DNA was labelled in blue with DAPI.

Background References

1. Lee JE, Wang C, Xu S, Cho YW, Wang L, Feng X, et al. (December 2013). "H3K4 mono- and di-methyltransferase MLL4 is required for enhancer activation during cell differentiation". eLife. 2: e01503.
2. Prasad R, Zhadanov AB, Sedkov Y, Bullrich F, Druck T, Rallapalli R, et al. (July 1997). "Structure and expression pattern of human ALR, a novel gene with strong homology to ALL-1 involved in acute leukemia and to Drosophila trithorax". Oncogene. 15 (5): 549–60.