

#61702 Store at -20°C

## SET1A (D3V9S) Rabbit mAb



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3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP, ChIP, ChIP-seq, C&R	H	Endogenous	300	Rabbit IgG	#O15047	9739

### Product Usage Information

For optimal ChIP and ChIP-seq results, use 5 µL of antibody and 10 µg of chromatin (approximately 4 x 10<sup>6</sup> cells) per IP. This antibody has been validated using SimpleChIP® Enzymatic Chromatin IP Kits.

The CUT&RUN dilution was determined using CUT&RUN Assay Kit #86652.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Chromatin IP	1:100
Chromatin IP-seq	1:100
CUT&RUN	1:100

### Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

### Specificity / Sensitivity

SET1A (D3V9S) Rabbit mAb recognizes endogenous levels of total SET1A protein. This antibody does not cross-react with other SET1/COMPASS proteins, including SET1B, MLL1, MLL2, MLL3, and MLL4.

### Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro383 of human SET1A protein.

### Background

The Set1 histone methyltransferase protein was first identified in yeast as part of the Set1/COMPASS histone methyltransferase complex, which methylates histone H3 at Lys4 and functions as a transcriptional co-activator (1). While yeast contain only one known Set1 protein, six Set1-related proteins exist in mammals: SET1A, SET1B, MLL1, MLL2, MLL3, and MLL4, all of which assemble into COMPASS-like complexes and methylate histone H3 at Lys4 (2,3). These Set1-related proteins are each found in distinct protein complexes, all of which share the common subunits WDR5, RBBP5, ASH2L, CXXC1 and DPY30. These subunits are required for proper complex assembly and modulation of histone methyltransferase activity (2-6). MLL1 and MLL2 complexes contain the additional protein subunit, menin (6). Like yeast Set1, all six Set1-related mammalian proteins methylate histone H3 at Lys4 (2-6). MLL translocations are found in a large number of hematological malignancies, suggesting that Set1/COMPASS histone methyltransferase complexes play a critical role in leukemogenesis (6).

### Background References

1. Miller, T. et al. (2001) *Proc Natl Acad Sci USA* 98, 12902-7.
2. Shilatifard, A. (2008) *Curr Opin Cell Biol* 20, 341-8.
3. Tenney, K. and Shilatifard, A. (2005) *J Cell Biochem* 95, 429-36.
4. Lee, J.H. and Skalnik, D.G. (2005) *J Biol Chem* 280, 41725-31.
5. Lee, J.H. et al. (2007) *J Biol Chem* 282, 13419-28.
6. Hughes, C.M. et al. (2004) *Mol Cell* 13, 587-97.

### Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

### Western Blot Buffer

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

### Applications Key

**WB:** Western Blotting **IP:** Immunoprecipitation **ChIP:** Chromatin IP **ChIP-seq:** Chromatin IP-seq  
**C&R:** CUT&RUN

### Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster  
**X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse  
**GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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