Revision 1

Store at -20C

#25501

SET1/COMPASS Antibody Sampler Kit

1 Kit (8 x 20 microliters)

Cell Signaling TECHNOLOGY®

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3 Trask Lane | Danvers | Massachusetts | 01923 | USA

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Product Includes	Product #	Quantity	Mol. Wt	Isotype/Source
SET1A (D3V9S) Rabbit mAb	61702	20 µl	300 kDa	Rabbit IgG
SET1B (D1U5D) Rabbit mAb	44922	20 µl	320 kDa	Rabbit IgG
MLL1 (D2M7U) Rabbit mAb (Amino-terminal Antigen)	14689	20 µl	300 kDa	Rabbit IgG
MLL1 (D6G8N) Rabbit mAb (Carboxy-terminal Antigen)	14197	20 µl	180 kDa	Rabbit IgG
MLL2/KMT2B (D6X2E) Rabbit mAb (Carboxy-terminal Antigen)	63735	20 µl	80 kDa	Rabbit IgG
WDR5 (D9E1I) Rabbit mAb	13105	20 µl	37 kDa	Rabbit IgG
WDR82 (D2I3B) Rabbit mAb	99715	20 µl	30 kDa	Rabbit IgG
Menin (D45B1) XP® Rabbit mAb	6891	20 µl	76 kDa	Rabbit IgG
Anti-rabbit IgG, HRP-linked Antibody	7074	100 µl		Goat

Please visit cellsignal.com for individual component applications, species cross-reactivity, dilutions, protocols, and additional product information.

Description

The SET1/COMPASS Antibody Sampler Kit provides an economical means of detecting SET1/COMPASS proteins using control antibodies against SET1A, SET1B, MLL1, MLL2, WDR5, WDR82, and Menin. This kit contains enough primary antibodies to perform at least two western blot experiments.

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.

Background

The Set1 histone methyltransferase protein was first identified in yeast as part of the Set1/COMPASS histone methyltransferase complex, which methylates histone H3 on lysine 4 and functions as a transcriptional co-activator (1). While yeast contain only one known Set1 protein, mammals contain six Set1-related proteins: SET1A, SET1B, MLL1, MLL2, MLL3 and MLL4, all of which methylate histone H3 on lysine 4 (2,3). These Set1-related proteins are each found in distinct protein complexes, all of which share the common core structural subunits WDR5, RBBP5 and ASH2L (2-6). WDR82 is a core subunit specific to SET1A and SET1B complexes, while Menin is a core subunit specific to the MLL complexes (4,5,7).

Like yeast Set1, all six Set1-related mammalian proteins methylate histone H3 on lysine 4 (2-6). SET1A, SET1B, MLL1 and MLL2 mediate di- and tri-methylation of histone H3 Lys4 at gene promoters to facilitate transcription activation. MLL3 and MLL4 function primarily to mono-methylate histone H3 Lys4 at gene enhancers. MLL1 and MLL2 function as master regulators of both embryogenesis and hematopoiesis, and are required for proper expression of Hox genes (8-10). MLL1 is a large approximately 4000 amino acid protein that is cleaved by the Taspase 1 threonine endopeptidase to form N-terminal (MLL1-N) and C-terminal MLL1 (MLL1-C) fragments, both of which are subunits of the functional MLL1/COMPASS complex (11,12). MLL1 translocations are found in a large number of hematological malignancies, suggesting that Set1 histone methyltransferase complexes play a critical role in leukemogenesis (6). Like MLL1, MLL2 is also a large, approximately 2700 amino acid protein that is cleaved by the Taspase 1 threonine endopeptidase to form N-terminal (MLL2-N) and C-terminal (MLL2-C) fragments, both of which are subunits of the functional MLL2/COMPASS complex. MLL2 has also been implicated as a modulator of hematological malignancies (13). MLL3 and MLL4 proteins are not cleaved by Taspase 1.

Background References

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Limited Uses