Revision 6

Store at -20C

#77087

DOT1L (D1W4Z) Rabbit mAb

Cell Signaling TECHNOLOGY®

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, ChIP, C&R, C&T	H Mk	Endogenous	185	Rabbit IgG	#Q8TEK3	84444

Product Usage Information

For optimal ChIP and ChIP-seq results, use 10 µl of antibody and 10 µg of chromatin (approximately 4 x 10^6 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.

The CUT&Tag dilution was determined using CUT&Tag Assay Kit #77552.

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:200
Chromatin IP	1:50
CUT&RUN	1:50
CUT&Tag	1:50

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

DOT1L (D1W4Z) Rabbit mAb recognizes endogenous levels of total DOT1L protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro459 of human DOT1L protein.

Background

DOT1-like protein (DOT1L), also known as Lysine N-methyltransferase 4 (KMT4), is a histone methyltransferase that functions to mono-, di-, and tri-methylate histone H3 on lysine 79, a histone modification that is associated with active transcription and plays a role in DNA damage response, cell cycle regulation, and embryonic stem cell development (1). DOT1L is required for the initiation and maintenance of mixed lineage leukemia (MLL)-rearranged leukemias, and selective DOT1L inhibitors such as EP2-5676 show remarkable anti-tumor effects in MLL-rearranged leukemias (2,3). Multiple studies have also implicated DOT1L in solid tumor cancers such as breast cancer, where DOT1L induces neoplastic transformation of immortalized breast cancer cells and promotes tumor initiation and growth. Overexpression of DOT1L is associated with poor prognosis in breast cancer, and selective DOT1L inhibitors are able to suppress proliferation and migration of breast cancer cells (4-6).

Background References

1. Kim, W. et al. (2012) *J Biol Chem* 287, 5588-99.
2. Okuda, H. et al. (2017) *J Clin Invest* 127, 1918-1931.
3. McLean, C.M. et al. (2014) *Leukemia* 28, 2131-8.
4. Lee, J.Y. and Kong, G. (2015) *Oncotarget* 6, 30451-2.
5. Zhang, L. et al. (2014) *Oncotarget* 5, 10665-77.
6. Cho, M.H. et al. (2015) *Nat Commun* 6, 7821.

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 nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **ChIP:** Chromatin IP **C&R:** CUT&RUN **C&T:** CUT&Tag

Cross-Reactivity Key

H: Human **Mk:** Monkey

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