

DOT1L1 (m): 293T Lysate: sc-178530

BACKGROUND

DOT1L1, also known as DOT1L (DOT1-like, Histone H3 methyltransferase), DOT1 or KMT4, is a 1,739 amino acid homolog of the yeast DOT1 (disruptor of telomeric silencing-1) protein. Localized to the nucleus and highly expressed in testis, lung and kidney, DOT1L1 is a histone methyltransferase that transfers methyl groups from S-adenosyl-L-methionine to lysine residues on various substrates, such as nucleosomes or histones. While most histone methyltransferases contain a SET domain through which they confer their enzymatic activity, DOT1L1 does not contain this characteristic domain and is, therefore, thought to function through a different mechanism. DOT1L1 can bind with several MLL-fusion partners found in acute leukemia and, through this binding, can promote oncogenesis. Two isoforms of DOT1L1 are expressed due to alternative splicing events.

REFERENCES

1. Feng, Q., et al. 2002. Methylation of H3-lysine 79 is mediated by a new family of HMTases without a SET domain. *Curr. Biol.* 12: 1052-1058.
2. Min, J., et al. 2003. Structure of the catalytic domain of human DOT1L, a non-SET domain nucleosomal histone methyltransferase. *Cell* 112: 711-723.
3. Okada, Y., et al. 2005. hDOT1L links histone methylation to leukemogenesis. *Cell* 121: 167-178.
4. Okada, Y., et al. 2006. Leukaemic transformation by CALM-AF10 involves upregulation of HoxA5 by hDOT1L. *Nat. Cell Biol.* 8: 1017-1024.
5. Zhang, W., et al. 2006. Dot1a-AF9 complex mediates Histone H3 Lys-79 hypermethylation and repression of ENaC α in an aldosterone-sensitive manner. *J. Biol. Chem.* 281: 18059-18068.
6. Zhang, W., et al. 2006. Aldosterone-sensitive repression of ENaC α transcription by a Histone H3 lysine-79 methyltransferase. *Am. J. Physiol., Cell Physiol.* 290: C936-C946.
7. Steger, D.J., et al. 2008. DOT1L/KMT4 recruitment and H3K79 methylation are ubiquitously coupled with gene transcription in mammalian cells. *Mol. Cell. Biol.* 28: 2825-2839.
8. Van Vlierberghe, P., et al. 2008. The recurrent SET-NUP214 fusion as a new HOXA activation mechanism in pediatric T-cell acute lymphoblastic leukemia. *Blood* 111: 4668-4680.

CHROMOSOMAL LOCATION

Genetic locus: Dot1l (mouse) mapping to 10 C1.

PRODUCT

DOT1L1 (m): 293T Lysate represents a lysate of mouse DOT1L1 transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

APPLICATIONS

DOT1L1 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive DOT1L1 antibodies. Recommended use: 10-20 μ l per lane.

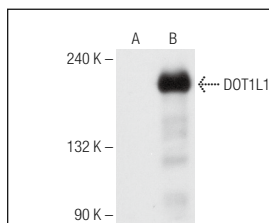
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

DOT1L1 (E-2): sc-376036 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse DOT1L1 expression in DOT1L1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

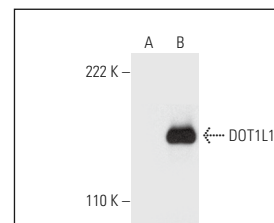
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



DOT1L1 (E-2): sc-376036. Western blot analysis of DOT1L1 expression in non-transfected: sc-117752 (A) and mouse DOT1L1 transfected: sc-178530 (B) 293T whole cell lysates.



DOT1L1 (C-3): sc-390879. Western blot analysis of DOT1L1 expression in non-transfected: sc-117752 (A) and mouse DOT1L1 transfected: sc-178530 (B) 293T whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.