

DOT1L1 (E-2): sc-376036

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

- 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.
- Min, J., et al. 2003. Structure of the catalytic domain of human DOT1L, a non-SET domain nucleosomal histone methyltransferase. *Cell* 112: 711-723.
- Okada, Y., et al. 2005. hDOT1L links histone methylation to leukemogenesis. *Cell* 121: 167-178.
- Okada, Y., et al. 2006. Leukaemic transformation by CALM-AF10 involves upregulation of Hoxa5 by hDOT1L. *Nat. Cell Biol.* 8: 1017-1024.
- 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.
- 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.
- 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.

CHROMOSOMAL LOCATION

Genetic locus: DOT1L (human) mapping to 19p13.3; Dot1l (mouse) mapping to 10 C1.

SOURCE

DOT1L1 (E-2) is a mouse monoclonal antibody raised against amino acids 1-300 mapping at the N-terminus of DOT1L1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-376036 X, 200 μ g/0.1 ml.

STORAGE

Store at 4°C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

DOT1L1 (E-2) is recommended for detection of DOT1L1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for DOT1L1 siRNA (h): sc-77174, DOT1L1 siRNA (m): sc-77175, DOT1L1 shRNA Plasmid (h): sc-77174-SH, DOT1L1 shRNA Plasmid (m): sc-77175-SH, DOT1L1 shRNA (h) Lentiviral Particles: sc-77174-V and DOT1L1 shRNA (m) Lentiviral Particles: sc-77175-V.

DOT1L1 (E-2) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

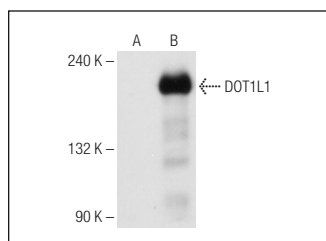
Molecular Weight of DOT1L1: 185 kDa.

Positive Controls: DOT1L1 (m): 293T Lysate: sc-178530 or AMJ2-C8 whole cell lysate: sc-364366.

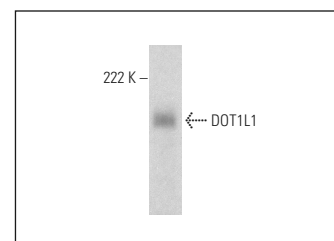
RECOMMENDED SUPPORT REAGENTS

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

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 (E-2): sc-376036. Western blot analysis of DOT1L1 expression in AMJ2-C8 whole cell lysate.

SELECT PRODUCT CITATIONS

- Chen, X., et al. 2020. Methyltransferase DOT1L preferentially promotes innate IL-6 and IFN- β production by mediating H3K79me_{2/3} methylation in macrophages. *Cell. Mol. Immunol.* 17: 76-84.

RESEARCH USE

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