

MLL5 (C-10): sc-377182



The Power to Question

BACKGROUND

The mixed lineage leukemia (MLL) gene family comprise a group of Histone H3 lysine 4 (H3K4) methyltransferases within the larger SET1 family. The founding member MLL commonly undergoes translocations in infantile leukemia and displays increased expression in some adult myeloid leukemias. MLL2, also designated ALR, exists within a complex of proteins. MLL2 is important for mouse embryonic development and may be involved in adhesion-related cytoskeletal events affecting cell growth and survival. The MLL2 gene maps to the human locus 19q13.1, which is a frequent target of rearrangement or amplification in solid tumors. MLL3 or its paralogue MLL4 associate with activating signal cointegrator-2 (ASC-2), which regulates ligand-dependent H3K4 trimethylation and expression of LXR-target genes. MLL3 maps to a location on human chromosome 7 that is often deleted in myeloid disorders. MLL3 also exhibits higher expression in peripheral blood, placenta, pancreas, testis, and fetal thymus. MLL5 localizes to the nucleus and forms intranuclear protein complexes, which may regulate chromatin remodeling and cellular growth suppression. The gene encoding human MLL5 lies within chromosome band 7q22.3, a region deleted in cytogenetic aberrations of acute myeloid malignancies.

REFERENCES

- Huntsman, D.G., et al. 1999. MLL2, the second human homolog of the *Drosophila* trithorax gene, maps to 19q13.1 and is amplified in solid tumor cell lines. *Oncogene* 18: 7975-7984.
- Ruault, M., et al. 2002. MLL3, a new human member of the TRX/MLL gene family, maps to 7q36, a chromosome region frequently deleted in myeloid leukaemia. *Gene* 284: 73-81.

CHROMOSOMAL LOCATION

Genetic locus: KMT2E (human) mapping to 7q22.3; Kmt2e (mouse) mapping to 5 A3.

SOURCE

MLL5 (C-10) is a mouse monoclonal antibody raised against amino acids 81-190 mapping near the N-terminus of MLL5 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ 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-377182 X, 200 µg/0.1 ml.

MLL5 (C-10) is available conjugated to agarose (sc-377182 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-377182 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377182 PE), fluorescein (sc-377182 FITC), Alexa Fluor® 488 (sc-377182 AF488), Alexa Fluor® 546 (sc-377182 AF546), Alexa Fluor® 594 (sc-377182 AF594) or Alexa Fluor® 647 (sc-377182 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377182 AF680) or Alexa Fluor® 790 (sc-377182 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MLL5 (C-10) is recommended for detection of MLL5 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MLL5 (C-10) is also recommended for detection of MLL5 in additional species, including equine, canine and porcine.

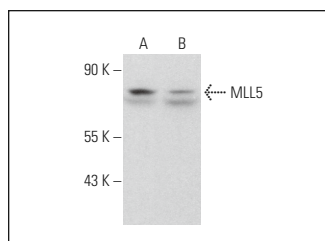
Suitable for use as control antibody for MLL5 siRNA (h): sc-75798, MLL5 shRNA Plasmid (h): sc-75798-SH and MLL5 shRNA (h) Lentiviral Particles: sc-75798-V.

MLL5 (C-10) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

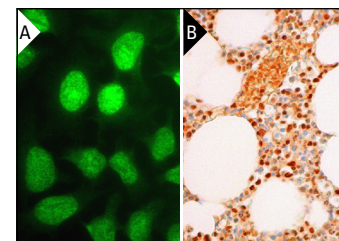
Molecular Weight of MLL5 isoforms 1-7: 205/196/69/99/186/181/201 kDa.

Positive Controls: HL-60 whole cell lysate: sc-2209 or HEL 92.1.7 cell lysate: sc-2270.

DATA



MLL5 (C-10): sc-377182. Western blot analysis of MLL5 expression in HL-60 (A) and HEL 92.1.7 (B) whole cell lysates. Detection reagent used: m-IgGκc BP-HRP: sc-516102.



MLL5 (C-10): sc-377182. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human bone marrow tissue showing nuclear staining of hematopoietic cells (B).

SELECT PRODUCT CITATIONS

- Inoue, D., et al. 2018. A novel ASXL1-OGT axis plays roles in H3K4 methylation and tumor suppression in myeloid malignancies. *Leukemia* 32: 1327-1337.
- Pereira-Martins, D.A., et al. 2021. MLL5 improves ATRA driven differentiation and promotes xenotransplant engraftment in acute promyelocytic leukemia model. *Cell Death Dis.* 12: 371.

STORAGE

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

RESEARCH USE

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