

MLL3 (C-16): sc-130173

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 19q13.12, 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.
- Deng, L.W., et al. 2004. MLL5 protein forms intranuclear foci, and over-expression inhibits cell cycle progression. *Proc. Natl. Acad. Sci. USA* 101: 757-762.
- Lee, S., et al. 2006. Coactivator as a target gene specificity determinant for Histone H3 lysine 4 methyltransferases. *Proc. Natl. Acad. Sci. USA* 103: 15392-15397.
- Nightingale, K.P., et al. 2007. Cross-talk between histone modifications in response to histone deacetylase inhibitors: MLL4 links Histone h3 acetylation and Histone H3K4 methylation. *J. Biol. Chem.* 282: 4408-4416.
- Lubitz, S., et al. 2007. Increased apoptosis and skewed differentiation in mouse embryonic stem cells lacking the histone methyltransferase MLL2. *Mol. Biol. Cell* 18: 2356-2366.

CHROMOSOMAL LOCATION

Genetic locus: MLL3 (human) mapping to 7q36.1.

SOURCE

MLL3 (C-16) is a purified rabbit polyclonal antibody raised against a peptide mapping near the C-terminus of MLL3 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MLL3 (C-16) is recommended for detection of MLL3 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

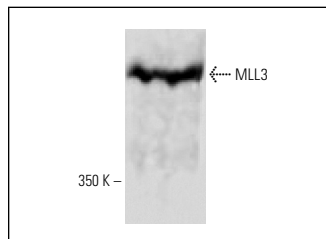
Suitable for use as control antibody for MLL3 siRNA (h): sc-62623, MLL3 shRNA Plasmid (h): sc-62623-SH and MLL3 shRNA (h) Lentiviral Particles: sc-62623-V.

Molecular Weight of MLL3: 443 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



MLL3 (C-16): sc-130173. Western blot analysis of MLL3 expression in 293 whole cell lysate.

SELECT PRODUCT CITATIONS

- Bennetzen, M.V., et al. 2013. Acetylation dynamics of human nuclear proteins during the ionizing radiation-induced DNA damage response. *Cell Cycle* 12: 1688-1695.

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.

PROTOCOLS

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