SANTA CRUZ BIOTECHNOLOGY, INC.

MLL (HRX107): sc-53371

BACKGROUND

Eukaryotic RNA polymerase II mediates the synthesis of mature and functional messenger RNA. This is a multistep process, called the transcription cycle, that includes five stages: preinitiation, promoter, clearance, elongation and termination. Elongation is thought to be a critical stage for the regulation of gene expression. ELL (11-19 lysine-rich leukemia protein), also designated MEN, functions as an RNA polymerase II elongation factor that increases the rate of transcription by suppressing transient pausing by RNA polymerase II. It is also thought to regulate cellular proliferation. ELL is abundantly expressed in peripheral blood leukocytes, skeletal muscle, placenta and testis, with lower expression in spleen, thymus, heart, brain, lung, kidney, liver and ovary. The gene encoding human ELL, which maps to chromosome 19p13.1, is one of several genes that undergo translocation with the MLL gene on chromosome 11q23.3 in acute myeloid leukemia. MLL (myeloid/lymphoid leukemia, also designated ALL-1 and HRX) regulates embryonal and hematopoietic development.

REFERENCES

1. Thirman, M.J., et al. 1994. Cloning of ELL, a gene that fuses to MLL in a t(11;19)(q23;p13.1) in acute myeloid leukemia. Proc. Natl. Acad. Sci. USA 91: 12110-12114.
2. Shilatifard, A., et al. 1997. Structure and function of RNA polymerase II elongation factor ELL. Identification of two overlapping ELL functional domains that govern its interaction with polymerase and the ternary elongation complex. J. Biol. Chem. 272: 22355-22363.
3. Ennas, M.G., et al. 1997. The human ALL-1/MLL/HRX antigen is predominantly localized in the nucleus of resting and proliferating peripheral blood mononuclear cells. Cancer Res. 57: 2035-2041.
4. Shilatifard, A. 1998. Factors regulating the transcriptional elongation activity of RNA polymerase II. FASEB J. 12: 1437-1446.
5. Kanda, Y., et al. 1998. Overexpression of the MEN/ELL protein, an RNA polymerase II elongation factor, results in transformation of Rat1 cells with dependence on the lysine-rich region. J. Biol. Chem. 273: 5248-5252.
6. Shinobu, N., et al. 1999. Physical interaction and functional antagonism between the RNA polymerase II elongation factor ELL and p53. J. Biol. Chem. 274: 17003-17010.
7. Megonigal, M.D., et al. 2000. Panhandle PCR for cDNA: a rapid method for isolation of MLL fusion transcripts involving unknown partner genes. Proc. Natl. Acad. Sci. USA 97: 9597-9602.
8. Luo, R.T., et al. 2001. The elongation domain of ELL is dispensable but its ELL-associated factor 1 interaction domain is essential for MLL-ELL-induced leukemogenesis. Mol. Cell. Biol. 21: 5678-5687.

CHROMOSOMAL LOCATION

Genetic locus: KMT2A (human) mapping to 11q23.3; Kmt2a (mouse) mapping to 9 A5.2.

RESEARCH USE

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

SOURCE

MLL (HRX107) is a mouse monoclonal antibody raised against amino acids 839-854 of MLL of human origin.

PRODUCT

Each vial contains 200 µg IgM in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

MLL (HRX107) is recommended for detection of MLL of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for MLL siRNA (h): sc-38039, MLL siRNA (m): sc-38040, MLL shRNA Plasmid (h): sc-38039-SH, MLL shRNA Plasmid (m): sc-38040-SH, MLL shRNA (h) Lentiviral Particles: sc-38039-V and MLL shRNA (m) Lentiviral Particles: sc-38040-V.

Molecular Weight of MLL: 430 kDa.

Molecular Weight of MLL N-Terminal cleavage: 320 kDa.

Molecular Weight of MLL C-Terminal cleavage: 180 kDa.

SELECT PRODUCT CITATIONS

1. Mueller, D., et al. 2009. Misguided transcriptional elongation causes mixed lineage leukemia. PLoS Biol. 7: e1000249.

STORAGE

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

PROTOCOLS

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