SANTA CRUZ BIOTECHNOLOGY, INC.

MLF1 (D-1): sc-514294

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Myeloid leukemia factor 1 (MLF1) is a 268 amino acid protein expressed by a gene that is involved in translocations associated with acute myeloid leukemia. MLF1 is a widely expressed negative regulator of cell cycle progression functioning upstream of the tumor suppressor p53. MLF1 induces p53-dependent cell cycle arrest in murine embryonic fibroblasts. MLF1 expression also inversely affects the endogenous level of COP1, a ubiquitin ligase for p53, inhibits Epo-induced cell cycle exit, and inhibits a rise in the cell cycle inhibitor p27. Polo-like kinase 1 (Plk1) phosphorylates MLF1 at its Thr78 site, which induces ubiquitination and degradation of MLF1 before the transition from metaphase to anaphase. Mutations of these phosphorylation sites stabilize MLF1 and inhibit mitotic progression. MLF1 normally functions in multi-potent progenitor cells, and its dysregulation may be somewhat responsible for leukemogenesis.

REFERENCES

1. Yoneda-Kato, N., et al. 1999. Apoptosis induced by the myelodysplastic syndrome-associated NPM-MLF1 chimeric protein. Oncogene 18: 3716-3724.
2. Matsumoto, N., et al. 2000. Elevated MLF1 expression correlates with malignant progression from myelodysplastic syndrome. Leukemia 14: 1757-1765.
3. Kazemi-Esfarjani, P. and Benzer, S. 2002. Suppression of polyglutamine toxicity by a *Drosophila* homolog of myeloid leukemia factor 1. Hum. Mol. Genet. 11: 2657-2672.

CHROMOSOMAL LOCATION

Genetic locus: MLF1 (human) mapping to 3q25.32; Mlf1 (mouse) mapping to 3 E1.

SOURCE

MLF1 (D-1) is a mouse monoclonal antibody raised against amino acids 1-135 mapping at the N-terminus of MLF1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MLF1 (D-1) is available conjugated to agarose (sc-514294 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514294 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514294 PE), fluorescein (sc-514294 FITC), Alexa Fluor® 488 (sc-514294 AF488), Alexa Fluor® 546 (sc-514294 AF546), Alexa Fluor® 594 (sc-514294 AF594) or Alexa Fluor® 647 (sc-514294 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514294 AF680) or Alexa Fluor® 790 (sc-514294 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

MLF1 (D-1) is recommended for detection of MLF1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for MLF1 siRNA (h): sc-61055, MLF1 siRNA (m): sc-61056, MLF1 shRNA Plasmid (h): sc-61055-SH, MLF1 shRNA Plasmid (m): sc-61056-SH, MLF1 shRNA (h) Lentiviral Particles: sc-61055-V and MLF1 shRNA (m) Lentiviral Particles: sc-61056-V.

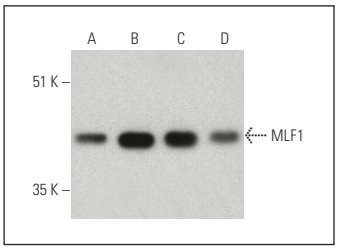
Molecular Weight of MLF1: 31 kDa.

Positive Controls: NTERA-2 cl.D1 whole cell lysate: sc-364181, ES-2 cell lysate: sc-24674 or HeLa whole cell lysate: sc-2200.

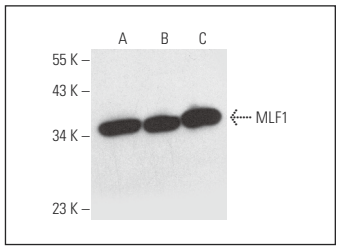
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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



MLF1 (D-1) HRP: sc-514294 HRP. Direct western blot analysis of MLF1 expression in NTERA-2 cl.D1 (**A**), ES-2 (**B**), HeLa (**C**) and A-673 (**D**) whole cell lysates.



MLF1 (D-1): sc-514294. Western blot analysis of MLF1 expression in NTERA-2 cl.D1 (**A**), ES-2 (**B**) and HeLa (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Li, H., et al. 2018. Centromere protein U facilitates metastasis of ovarian cancer cells by targeting high mobility group box 2 expression. Am. J. Cancer Res. 8: 835-851.
2. Tang, Z., et al. 2023. Epigenetic deregulation of MLF1 drives intrahepatic cholangiocarcinoma progression through EGFR/AKT and Wnt/β-catenin signaling. Hepatol. Commun. 7: e0204.

RESEARCH USE

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