SANTA CRUZ BIOTECHNOLOGY, INC.

Mlx (F-12): sc-393086

BACKGROUND

Max is a nuclear localized bHLH-Zip protein that forms homodimers or heterodimers with Myc family members, including Myc, Mad1, Mad3, Mad4, Mxi1 and Mnt (or Rox). These dimers bind to the E-box sequence CACGTG in order to regulate cell growth, proliferation and apoptosis. Mlx (Max-like protein X) is a bHLH-Zip protein that is structurally and functionally related to Max. Like Max, Mlx is broadly expressed in many tissues and has a long half-life. Mlx also forms homodimers or heterodimers with members of the Myc family, specifically Mad1, Mad4 and Rox, and members of the Mondo family, to repress or activate transcription from CACGTG E-boxes. MondoA forms weak homodimers and preferentially forms heterodimers with Mlx. The MondoA/Mlx complex is primarily localized to the cytoplasm, but will translocate to the nucleus in response to leptomycin B. Mlx can also dimerize with WBSCR14, a protein involved in Williams-Beuren syndrome (WBS), to repress E-box transcription, which provides further evidence that Mlx is a critical element in a transcription factor network.

REFERENCES

1. Blackwood, E.M., et al. 1991. Max: a helix-loop-helix zipper protein that forms a sequence-specific DNA-binding complex with Myc. Science 251: 1211-1217.
2. Amati, B., et al. 1992. Oncogenic activity of the c-Myc protein requires dimerization with Max. Cell 72: 233-245.
3. Billin, A.N., et al. 1999. Mlx, a novel Max-like BHLHZip protein that interacts with the Max network of transcription factors. J. Biol. Chem. 274: 36344-36350.

CHROMOSOMAL LOCATION

Genetic locus: MLX (human) mapping to 17q21.2; Mlx (mouse) mapping to 11 D.

SOURCE

Mlx (F-12) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 17-42 near the N-terminus of Mlx of human origin.

PRODUCT

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

Mlx (F-12) is available conjugated to agarose (sc-393086 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393086 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393086 PE), fluorescein (sc-393086 FITC), Alexa Fluor® 488 (sc-393086 AF488), Alexa Fluor® 546 (sc-393086 AF546), Alexa Fluor® 594 (sc-393086 AF594) or Alexa Fluor® 647 (sc-393086 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393086 AF680) or Alexa Fluor® 790 (sc-393086 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393086 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

Mlx (F-12) is recommended for detection of Mlx 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).

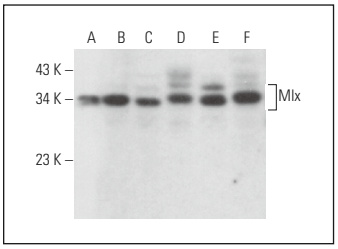
Mlx (F-12) is also recommended for detection of Mlx in additional species, including equine and bovine.

Suitable for use as control antibody for Mlx siRNA (h): sc-38081, Mlx siRNA (m): sc-38082, Mlx shRNA Plasmid (h): sc-38081-SH, Mlx shRNA Plasmid (m): sc-38082-SH, Mlx shRNA (h) Lentiviral Particles: sc-38081-V and Mlx shRNA (m) Lentiviral Particles: sc-38082-V.

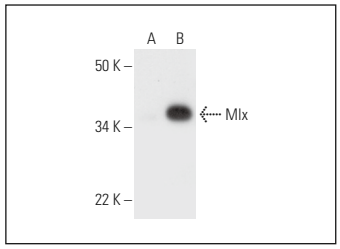
Molecular Weight of Mlx: 30 kDa.

Positive Controls: Mlx (h): 293 Lysate: sc-111152, SK-BR-3 cell lysate: sc-2218 or MCF7 whole cell lysate: sc-2206.

DATA



Mlx (F-12): sc-393086. Western blot analysis of Mlx expression in MCF7 (**A**), SK-BR-3 (**B**), BT-20 (**C**), NIH/3T3 (**D**), BC_3H1 (**E**) and A-10 (**F**) whole cell lysates.



Mlx (F-12): sc-393086. Western blot analysis of Mlx expression in non-transfected: sc-110760 (**A**) and human Mlx transfected: sc-111152 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Struntz, N.B., et al. 2019. Stabilization of the max homodimer with a small molecule attenuates Myc-driven transcription. Cell Chem. Biol. 26: 711-723.e14.
2. Yamamoto-Imoto, H., et al. 2022. Age-associated decline of MondoA drives cellular senescence through impaired autophagy and mitochondrial homeostasis. Cell Rep. 38: 110444.

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 for detailed protocols and support products.