SANTA CRUZ BIOTECHNOLOGY, INC.

Mad 1 (F-1): sc-8012

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

It is now well established that the nature and relative abundance of individual subunits of different classes of transcription factors can positively or negatively regulate levels of gene expression. Myc proteins homodimerize and bind DNA poorly, if at all, at physiological levels. Max is a nuclear localized bHLH-Zip protein initially identified by screening a B cell expression library with the bHLH-Zip region of c-Myc. Max homodimers and the Myc-Max heterodimers bind the sequence CACGTG; however the binding of the heterodimeric complex is stronger than the Max homodimer. The Max gene products have been identified as Max and Max 9, proteins that differ by a 9 amino acid insertion N-terminal to the basic region. In contrast to Myc, which is highly regulated during progression through the cell cycle, Max is highly stable and is much more abundant than Myc. Two members of the bHLH-Zip protein family, designated Mad and Mxi 1, homodimerize poorly but form heterodimeric complexes with Max that have opposing functions to Myc-Max heterodimers with respect to regulation of gene expression.

REFERENCES

1. Jones, N. 1990. Transcriptional regulation by dimerization: two sides to an incestuous relationship. Cell 61: 9-11.
2. 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.

CHROMSOMAL LOCATION

Genetic locus: MXD1 (human) mapping to 2p13.3; Mxd1 (mouse) mapping to 6 D1.

SOURCE

Mad 1 (F-1) is a mouse monoclonal antibody raised against amino acids 1-221 representing full length Mad 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 lambda 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-8012 X, 200 µg/0.1 ml.

Mad 1 (F-1) is available conjugated to agarose (sc-8012 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-8012 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-8012 PE), fluorescein (sc-8012 FITC), Alexa Fluor® 488 (sc-8012 AF488), Alexa Fluor® 546 (sc-8012 AF546), Alexa Fluor® 594 (sc-8012 AF594) or Alexa Fluor® 647 (sc-8012 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-8012 AF680) or Alexa Fluor® 790 (sc-8012 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

Mad 1 (F-1) is recommended for detection of Mad 1 of mouse, rat and 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)], 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 Mad 1 siRNA (h): sc-38073, Mad 1 siRNA (m): sc-38074, Mad 1 shRNA Plasmid (h): sc-38073-SH, Mad 1 shRNA Plasmid (m): sc-38074-SH, Mad 1 shRNA (h) Lentiviral Particles: sc-38073-V and Mad 1 shRNA (m) Lentiviral Particles: sc-38074-V.

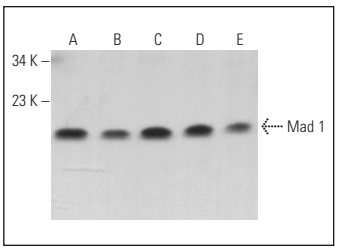
Mad 1 (F-1) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight (predicted) of Mad 1: 25 kDa.

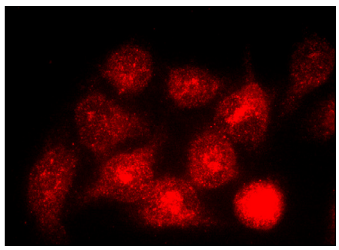
Molecular Weight (observed) of Mad 1: 32-35 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Jurkat whole cell lysate: sc-2204 or RAW 264.7 whole cell lysate: sc-2211.

DATA



Mad 1 (F-1): sc-8012. Western blot analysis of Mad 1 expression in HeLa (**A**), Jurkat (**B**), RAW 264.7 (**C**), NIH/3T3 (**D**) and 3T3-L1 (**E**) whole cell lysates.



Mad 1 (F-1): sc-8012. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Fultz, K.E., et al. 2002. APC-dependent regulation of ornithine decarboxylase in human colon tumor cells. Mol. Carcinog. 34: 10-18.
2. Villavicencio, E.H., et al. 2002. Cooperative E-box regulation of human GLI1 by TWIST and USF. Genesis 32: 247-258.
3. Xue, G., et al. 2015. c-Myc-mediated repression of miR-15-16 in hypoxia is induced by increased HIF-2α and promotes tumor angiogenesis and metastasis by upregulating FGF2. Oncogene 34: 1393-1406.
4. Struntz, N.B., et al. 2019. Stabilization of the max homodimer with a small molecule attenuates Myc-driven transcription. Cell Chem. Biol. pii: S2451-9456(19)30044-3.
5. Li, M., et al. 2019. Zinc-finger protein YY1 suppresses tumor growth of human nasopharyngeal carcinoma by inactivating c-Myc-mediated microRNA-141 transcription. J. Biol. Chem. 4 pii: jbc.RA118.006281.

RESEARCH USE

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