SANTA CRUZ BIOTECHNOLOGY, INC.

Mad 4 (H-209): sc-771

BACKGROUND

It is now well established that Myc regulation of cell proliferation and differentiation involves a family of related transcription factors. One such factor, Max, is an obligate heterodimeric partner for Myc and can also form heterodimers with at least four related proteins designated Mad 1, Mxi1 (i.e., Mad 2), Mad 3 and Mad 4. Like Mad 1 and Mxi1, association of Mad 3 and Mad 4 with Max results in transcriptional repression. Both Myc and the Mad proteins have short half-lives and their synthesis is tightly regulated, while Max expression is constitutive and relatively stable. Two related mammalian cDNAs have been identified and shown to encode Mad-binding proteins. Both possess sequence homology with the yeast transcription repressor Sin3 including four conserved paired amphipathic helix (PAH) domains. mSin3A and mSin3B specifically interact with the Mad proteins via their second paired amphipathic helix domain (PAH2). It has been suggested that Mad-Max heterodimers repress transcription by tethering mSin3 to DNA as corepressors.

REFERENCES

1. Mukherjee, B., et al. 1992. Myc family oncoproteins function through a common pathway to transform normal cells in culture: cross-interference by Max and transacting dominant mutants. Genes Dev. 6: 1480-1492.
2. Kretzner, L., et al. 1992. The Myc and Max proteins possess distinct transcriptional activities. Nature 359: 426-429.
3. Ayer, D.E., et al. 1993. Mad: a heterodimeric partner for Max that antagonizes Myc transcriptional activity. Cell 72: 211-222.
4. Amati, B., et al. 1993. The c-Myc protein induces cell cycle progression and apoptosis through dimerization with Max. EMBO J. 12: 5083-5087.

CHROMOSOMAL LOCATION

Genetic locus: MXD4 (human) mapping to 4p16.3; Mxd4 (mouse) mapping to 5 B2.

SOURCE

Mad 4 (H-209) is a rabbit polyclonal antibody raised against amino acids 1-209 of Mad 4 of mouse origin.

PRODUCT

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

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-771 X, 200 µg/0.1 ml.

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.

APPLICATIONS

Mad 4 (H-209) is recommended for detection of Mad 4 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).

Mad 4 (H-209) is also recommended for detection of Mad 4 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for Mad 4 siRNA (h): sc-38077, Mad 4 siRNA (m): sc-38078, Mad 4 shRNA Plasmid (h): sc-38077-SH, Mad 4 shRNA Plasmid (m): sc-38078-SH, Mad 4 shRNA (h) Lentiviral Particles: sc-38077-V and Mad 4 shRNA (m) Lentiviral Particles: sc-38078-V.

Mad 4 (H-209) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of Mad 4: 23/30 kDa.

Positive Controls: F9 cell lysate: sc-2245.

SELECT PRODUCT CITATIONS

1. Yin, X., et al. 2001. Mmip-2/Rnf-17 enhances c-Myc function and regulated some target genes in common with glucocorticoid hormones. Oncogene 20: 2908-2917.
2. Calomme, C., et al. 2002. Upstream stimulatory factors binding to an E box motif in the R region of the bovine leukemia virus long terminal repeat stimulates viral gene expression. J. Biol. Chem. 277: 8775-8789.
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4. Siegel, P.M., et al. 2003. Mad upregulation and Id2 repression accompany transforming growth factor (TGF)-β-mediated epithelial cell growth suppression. J. Biol. Chem. 278: 35444-35450.
5. Font, M.P., et al. 2004. Repression of transcription at the human T-cell receptor Vβ2.2 segment is mediated by a MAX/MAD/mSin3 complex acting as a scaffold for HDAC activity. Biochem. Biophys. Res. Commun. 325: 1021-1029.
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8. Terragni, J., et al. 2011. The E-box binding factors Max/Mnt, MITF, and USF1 act coordinately with FoxO to regulate expression of proapoptotic and cell cycle control genes by phosphatidylinositol 3-kinase/Akt/glycogen synthase kinase 3 signaling. J. Biol. Chem. 286: 36215-36227.
9. Yang, W., et al. 2012. Dissecting the complex regulation of Mad4 in glioblastoma multiforme cells. Cancer Biol. Ther. 13: 1339-1348.