SANTA CRUZ BIOTECHNOLOGY, INC.

MAD1 (F-7): sc-376613

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cell cycle progression is subject to arrest at the mitotic spindle assembly checkpoint in response to incorrect spindle fiber assembly. MAD1 and MAD2 (for mitotic arrest-deficient 1 and 2) are components of the mitotic spindle checkpoint. Incorrect spindle assembly in normal cells leads to mitotic arrest. MAD1 prevents the onset of anaphase until all chromosomes are aligned correctly at the metaphase plate and is crucial for anchoring MAD2L1 to the nuclear periphery. It also plays an important role in septum positioning. MAD1 can form a homo-dimer, but may also form a heterodimer with MAD2 to form the tetrameric MAD1L1-MAD2L1 core complex. MAD1 localizes primarily to the nucleus, but during mitosis, it moves from a nuclear distribution to the centrosome, to the spindle midzone and then on to the midbody. MAD1 activity is induced by BUB1 and the protein is hyperphosphorylated after mitotic spindle damage and/or in late S through M phase. Defects in the gene encoding for MAD1, MAD1L1, play a major role in the development and progression of various cancer types.

REFERENCES

1. Jones, N. 1990. Transcriptional regulation by dimerization: two sides to an incestuous relationship. Cell 61: 9-11.
2. Dang, C.V., et al. 1991. Intracellular leucine zipper interactions suggest c-Myc hetero-oligomerization. Mol. Cell. Biol. 11: 954-962.

CHROMOSOMAL LOCATION

Genetic locus: MAD1L1 (human) mapping to 7p22.3; Mad1l1 (mouse) mapping to 5 G2.

SOURCE

MAD1 (F-7) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 77-115 near the N-terminus of MAD1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAD1 (F-7) is available conjugated to agarose (sc-376613 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376613 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376613 PE), fluorescein (sc-376613 FITC), Alexa Fluor® 488 (sc-376613 AF488), Alexa Fluor® 546 (sc-376613 AF546), Alexa Fluor® 594 (sc-376613 AF594) or Alexa Fluor® 647 (sc-376613 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376613 AF680) or Alexa Fluor® 790 (sc-376613 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-376613 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

MAD1 (F-7) is recommended for detection of MAD1 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).

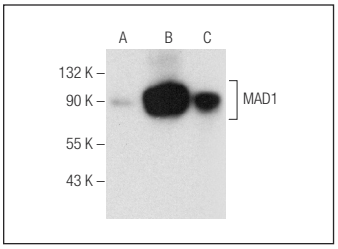
MAD1 (F-7) is also recommended for detection of MAD1 in additional species, including bovine.

Suitable for use as control antibody for MAD1 siRNA (h): sc-62577, MAD1 siRNA (m): sc-62578, MAD1 shRNA Plasmid (h): sc-62577-SH, MAD1 shRNA Plasmid (m): sc-62578-SH, MAD1 shRNA (h) Lentiviral Particles: sc-62577-V and MAD1 shRNA (m) Lentiviral Particles: sc-62578-V.

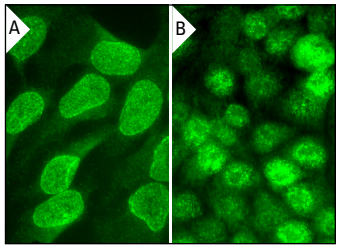
Molecular Weight of MAD1: 90 kDa.

Positive Controls: SK-N-SH cell lysate: sc-2410, HeLa whole cell lysate: sc-2200 or MAD1 (h): 293T Lysate: sc-177504.

DATA



MAD1 (F-7): sc-376613. Western blot analysis of MAD1 expression in non-transfected 293T: sc-117752 (**A**), human MAD1 transfected 293T: sc-177504 (**B**) and SK-N-SH (**C**) whole cell lysates.



MAD1 (F-7): sc-376613. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (**A**,**B**).

SELECT PRODUCT CITATIONS

1. Chen, F., et al. 2018. Nucleoporin35 is a novel microtubule associated protein functioning in oocyte meiotic spindle architecture. Exp. Cell Res. 371: 435-443.
2. Roscioli, E., et al. 2020. Ensemble-level organization of human kinetochores and evidence for distinct tension and attachment sensors. Cell Rep. 31: 107535.
3. Chen, F., et al. 2021. Ribonucleic acid export 1 is a kinetochore-associated protein that participates in chromosome alignment in mouse oocytes. Int. J. Mol. Sci. 22: 4841.
4. Bunch, H., et al. 2021. BRCA1-BARD1 regulates transcription through modulating topoisomerase IIβ. Open Biol. 11: 210221.
5. Li, T., et al. 2022. Potential dual protective effects of melatonin on spermatogonia against hexavalent chromium. Reprod. Toxicol. 111: 92-105.

RESEARCH USE

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