SANTA CRUZ BIOTECHNOLOGY, INC.

MAD2B (F-12): sc-377367

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. MAD2 (for mitotic arrest-deficient) is a component of the mitotic spindle checkpoint. Cells with mutated MAD2 do not undergo mitotic arrest in response to incorrect spindle fiber assembly, which results in missegregation and eventual cell death. A breast carcinoma cell line with reduced MAD2 expression, T-47D, was shown to complete mitosis in the presence of Nocodazole, an inhibitor of mitotic spindle assembly. MAD2 is localized to unattached kinetochores during prometaphase and disassociates upon spindle fiber attachment, indicating that MAD2 regulates kinetochore binding to the spindle fibers. Human MAD2 has also been shown to associate with Insulin receptor (IR), but not IGF-IR, implicating MAD2 as a mediator for IR-specific signaling. MAD2B, a MAD2 homolog, is required for the execution of the mitotic checkpoint monitoring the kinetochore-spindle attachment process and, if the process is not complete, MAD2B delays the onset of anaphase.

REFERENCES

1. Murray, A.W. 1992. Creative blocks: cell-cycle checkpoints and feedback controls. Nature 359: 599-604.
2. Glotzer, M. 1996. Mitosis: don't get mad, get even. Curr. Biol. 6: 1592-1594.
3. Chen, R.H., et al. 1996. Association of spindle assembly checkpoint component XMAD2 with unattached kinetochores. Science 274: 242-246.
4. Li, Y. and Benezra, R. 1996. Identification of a human mitotic checkpoint gene: hsMAD2. Science 274: 246-248.
5. O'Neill, T.J., et al. 1997. Interaction of MAD2 with the carboxyl-terminus of the Insulin receptor but not with the IGF-IR. Evidence for release from the Insulin receptor after activation. J. Biol. Chem. 272: 10035-10040.

CHROMOSOMAL LOCATION

Genetic locus: MAD2L2 (human) mapping to 1p36.22; Mad2l2 (mouse) mapping to 4 E2.

SOURCE

MAD2B (F-12) is a mouse monoclonal antibody raised against amino acids 1-82 mapping at the N-terminus of MAD2B 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.

MAD2B (F-12) is available conjugated to agarose (sc-377367 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377367 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377367 PE), fluorescein (sc-377367 FITC), Alexa Fluor® 488 (sc-377367 AF488), Alexa Fluor® 546 (sc-377367 AF546), Alexa Fluor® 594 (sc-377367 AF594) or Alexa Fluor® 647 (sc-377367 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377367 AF680) or Alexa Fluor® 790 (sc-377367 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

MAD2B (F-12) is recommended for detection of MAD2B 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).

MAD2B (F-12) is also recommended for detection of MAD2B in additional species, including equine and bovine.

Suitable for use as control antibody for MAD2B siRNA (h): sc-106795, MAD2B siRNA (m): sc-149211, MAD2B shRNA Plasmid (h): sc-106795-SH, MAD2B shRNA Plasmid (m): sc-149211-SH, MAD2B shRNA (h) Lentiviral Particles: sc-106795-V and MAD2B shRNA (m) Lentiviral Particles: sc-149211-V.

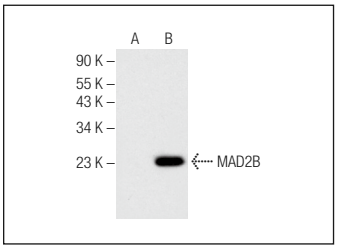
Molecular Weight of MAD2B: 24 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203 or MAD2B (h): 293 Lysate: sc-113252.

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



MAD2B (F-12): sc-377367. Western blot analysis of MAD2B expression in non-transfected: sc-110760 (**A**) and human MAD2B transfected: sc-113252 (**B**) 293 whole cell lysates.

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.