SANTA CRUZ BIOTECHNOLOGY, INC.

MAD2 (C-10): sc-374131

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, T47D, was shown to complete mitosis in the presence of nocodazole, an inhibitor of mitotic spindle assembly. MAD2 is localized to unattached kinetochores during prometa-phase 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 IGFIR, 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., et al. 1996. Identification of a human mitotic checkpoint gene: hsMAD2. Science 274: 246-248.

CHROMOSOMAL LOCATION

Genetic locus: MAD2L1 (human) mapping to 4q27.

SOURCE

MAD2 (C-10) is a mouse monoclonal antibody raised against amino acids 1-205 representing full length MAD2 of human origin.

PRODUCT

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

MAD2 (C-10) is available conjugated to agarose (sc-374131 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374131 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374131 PE), fluorescein (sc-374131 FITC), Alexa Fluor® 488 (sc-374131 AF488), Alexa Fluor® 546 (sc-374131 AF546), Alexa Fluor® 594 (sc-374131 AF594) or Alexa Fluor® 647 (sc-374131 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374131 AF680) or Alexa Fluor® 790 (sc-374131 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

MAD2 (C-10) is recommended for detection of MAD2 of 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), immunohistochemistry (including paraffin-embedded sections) (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 MAD2 siRNA (h): sc-35837, MAD2 shRNA Plasmid (h): sc-35837-SH and MAD2 shRNA (h) Lentiviral Particles: sc-35837-V.

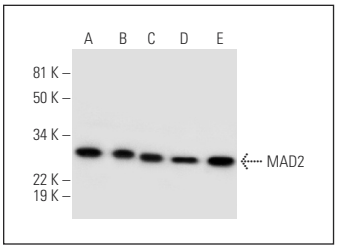
Molecular Weight of MAD2: 25 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, Jurkat nuclear extract: sc-2132 or MEG-01 nuclear extract: sc-2150.

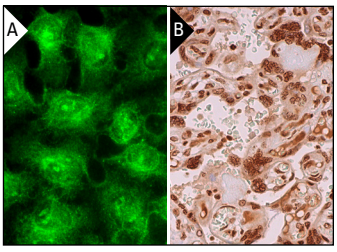
RECOMMENDED SUPPORT REAGENTS

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. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MAD2 (C-10): sc-374131. Western blot analysis of MAD2 expression in Jurkat (**A**), K-562 (**B**), HeLa (**C**), BJAB (**D**) and MEG-01 (**E**) nuclear extracts.



MAD2 (C-10): sc-374131. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear and cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing nuclear staining of trophoblastic cells (**B**).

SELECT PRODUCT CITATIONS

1. Busacca, S., et al. 2020. BRCA1/MAD2L1 deficiency disrupts the spindle assembly checkpoint to confer vinorelbine resistance in mesothelioma. Mol. Cancer Ther. E-published.

RESEARCH USE

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