

MAD2 (17D10): sc-47747

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 pro-metaphase 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.

CHROMOSOMAL LOCATION

Genetic locus: MAD2L1 (human) mapping to 4q27; Mad2l1 (mouse) mapping to 6 C1.

SOURCE

MAD2 (17D10) is a mouse monoclonal antibody raised against full length MAD2 of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MAD2 (17D10) is available conjugated to agarose (sc-47747 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-47747 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-47747 PE), fluorescein (sc-47747 FITC), Alexa Fluor® 488 (sc-47747 AF488), Alexa Fluor® 546 (sc-47747 AF546), Alexa Fluor® 594 (sc-47747 AF594) or Alexa Fluor® 647 (sc-47747 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-47747 AF680) or Alexa Fluor® 790 (sc-47747 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MAD2 (17D10) is recommended for detection of MAD2 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 MAD2 siRNA (h): sc-35837, MAD2 siRNA (m): sc-35838, MAD2 shRNA Plasmid (h): sc-35837-SH, MAD2 shRNA Plasmid (m): sc-35838-SH, MAD2 shRNA (h) Lentiviral Particles: sc-35837-V and MAD2 shRNA (m) Lentiviral Particles: sc-35838-V.

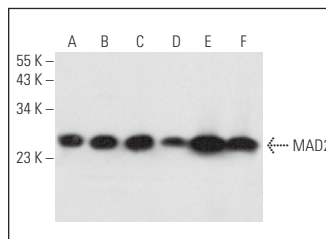
Molecular Weight of MAD2: 25 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204.

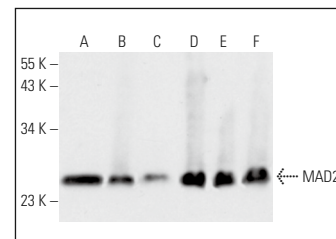
STORAGE

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

DATA



MAD2 (17D10): sc-47747. Western blot analysis of MAD2 expression in MCF7 (A), SW480 (B), K-562 (C), Hep G2 (D), MOLT-4 (E) and Raji (F) whole cell lysates.



MAD2 (17D10): sc-47747. Western blot analysis of MAD2 expression in Jurkat (A), HeLa (B) and MEG-01 (C) whole cell lysates and Jurkat (D), BJAB (E) and HeLa (F) nuclear extracts.

SELECT PRODUCT CITATIONS

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- Agarwal, N., et al. 2011. MTBP plays a crucial role in mitotic progression and chromosome segregation. *Cell Death Differ.* 18: 1208-1219.
- Giovinazzi, S., et al. 2012. Regulation of mitosis and taxane response by Daxx and Rassf1. *Oncogene* 31: 13-26.
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- Nath, S., et al. 2015. Dereglulation of Rb-E2F1 axis causes chromosomal instability by engaging the transactivation function of Cdc20-anaphase-promoting complex/cyclosome. *Mol. Cell. Biol.* 35: 356-369.
- Andonegui-Elguera, M.A., et al. 2016. BUB1 and SURVIVIN proteins are not degraded after a prolonged mitosis and accumulate in the nuclei of HCT116 cells. *Cell Death Discov.* 2: 16079.
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- Wei, B., et al. 2018. Mitotic phosphorylation of SENP3 regulates deSUMOylation of chromosome-associated proteins and chromosome stability. *Cancer Res.* 78: 2171-2178.

RESEARCH USE

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

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