SANTA CRUZ BIOTECHNOLOGY, INC.

MAD2 (FL-205): sc-28261

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 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 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 (FL-205) is a rabbit polyclonal antibody raised against amino acids 1-205 representing full length MAD2 of human origin.

PRODUCT

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

APPLICATIONS

MAD2 (FL-205) 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), immunohistochemistry (including paraffin-embedded sections) (start-ing dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

MAD2 (FL-205) is also recommended for detection of MAD2 in additional species, including equine, canine, bovine and porcine.

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: BJAB nuclear extract: sc-2145, Jurkat nuclear extract: sc-2132 or HeLa nuclear extract: sc-2120.

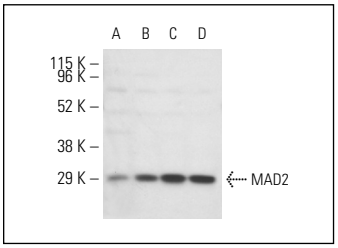
STORAGE

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

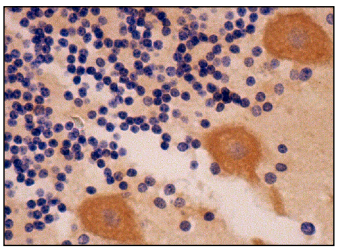
RESEARCH USE

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

DATA



MAD2 (FL-205): sc-28261. Western blot analysis of MAD2 expression in HeLa (**A**), BJAB (**B**), MEG-01 (**C**) and Jurkat (**D**) nuclear extracts.



MAD2 (FL-205): sc-28261. Immunoperoxidase staining of formalin fixed, paraffin-embedded human cerebellum tissue showing cytoplasmic staining of Purkinje cells.

SELECT PRODUCT CITATIONS

1. Pastorelli, R., et al. 2007. Proteome characterization of a human urothelial cell line resistant to the bladder carcinogen 4-aminobiphenyl. Proteome Sci. 5: 6.
2. Lee, S.H., et al. 2008. Tpr directly binds to Mad 1 and MAD2 and is important for the Mad 1-MAD2-mediated mitotic spindle checkpoint. Genes Dev. 22: 2926-2931.
3. Tomasini, R., et al. 2009. TAp73 regulates the spindle assembly checkpoint by modulating BubR1 activity. Proc. Natl. Acad. Sci. USA 106: 797-802.
4. Gatti, G., et al. 2009. Myc prevents apoptosis and enhances endoreduplication induced by paclitaxel. PLoS ONE 4: e5442.
5. Carrassa, L., et al. 2009. U2OS cells lacking Chk1 undergo aberrant mitosis and fail to activate the spindle checkpoint. J. Cell. Mol. Med. 13: 1565-1576.
6. Huang, J.M., et al. 2010. Combination of vorinostat and flavopiridol is selectively cytotoxic to multidrug-resistant neuroblastoma cell lines with mutant TP53. Mol. Cancer Ther. 9: 3289-3301.
7. Lee, S.H., et al. 2010. Mad2 inhibits the mitotic kinesin MKlp2. J. Cell Biol. 191: 1069-1077.
8. Chilà, R., et al. 2013. Chk1-Mad2 interaction: a crosslink between the DNA damage checkpoint and the mitotic spindle checkpoint. Cell Cycle 12: 1083-1090.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.