SANTA CRUZ BIOTECHNOLOGY, INC.

MAD2 (N-19): sc-6330

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 (N-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of 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.

Blocking peptide available for competition studies, sc-6330 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MAD2 (N-19) 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).

MAD2 (N-19) is also recommended for detection of MAD2 in additional species, including equine, canine, bovine, porcine and avian.

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.

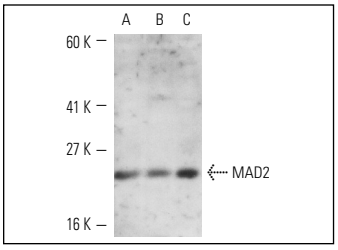
Molecular Weight of MAD2: 25 kDa.

Positive Controls: K-562 nuclear extract: sc-2130, Jurkat nuclear extract: sc-2132 or BJAB nuclear extract: sc-2145.

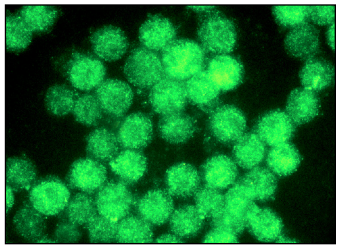
STORAGE

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

DATA



MAD2 (N-19): sc-6330. Western blot analysis of MAD2 expression in BJAB (**A**), K-562 (**B**) and Jurkat (**C**) nuclear extracts.



MAD2 (N-19): sc-6330. Immunofluorescence staining of methanol-fixed BJAB cells showing nuclear localization.

SELECT PRODUCT CITATION

1. Homer, H.A., et al. 2005. MAD2 is required for inhibiting securin and cyclin B degradation following spindle depolymerisation in meiosis I mouse oocytes. Reproduction 130: 829-843.
2. Homer, H.A., et al. 2005. RNA interference in meiosis I human oocytes: towards an understanding of human aneuploidy. Mol. Hum. Reprod. 11: 397-404.
3. Mondal, G., et al. 2006. A new MAD2-interacting domain of Cdc20 is critical for the function of MAD2-Cdc20 complex in the spindle assembly checkpoint. Biochem. J. 396: 243-253.
4. Yin, F., et al. 2006. Mad2β, an alternative variant of Mad2 reducing mitotic arrest and apoptosis induced by adriamycin in gastric cancer cells. Life Sci. 78: 1277-1286.
5. Yen, A.H. and Yang, J.L. 2010. Cdc20 proteolysis requires p38 MAPK signaling and Cdh1-independent APC/C ubiquitination during spindle assembly checkpoint activation by cadmium. J. Cell. Physiol. 223: 327-334.

RESEARCH USE

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