SANTA CRUZ BIOTECHNOLOGY, INC.

MAD2B (h): 293 Lysate: sc-113252

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 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 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., Waters, J.C., Salmon, E.D. and Murray, A.W. 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., Zhu, Y. and Gustafson, T.A. 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.
6. SWISS-PROT/TrEMBL (Q9UI95). World Wide Web URL: http://www.expasy.ch/sprot/sprot-top.html

CHROMOSOMAL LOCATION

Genetic locus: MAD2L2 (human) mapping to 1p36.22.

PRODUCT

MAD2B (h): 293 Lysate represents a lysate of human MAD2B transfected 293 cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

MAD2B (h): 293 Lysate is suitable as a Western Blotting positive control for human reactive MAD2B antibodies. Recommended use: 10-20 µl per lane.

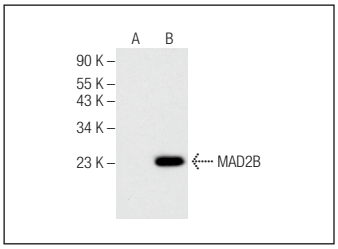
Control 293 Lysate: sc-110760 is available as a Western Blotting negative control lysate derived from non-tranfected 293 cells.

MAD2B (F-12): sc-377367 is recommended as a positive control antibody for Western Blot analysis of enhanced human MAD2B expression in MAD2B transfected 293 cells (starting dilution 1:100, dilution range 1:100-1:1,000).

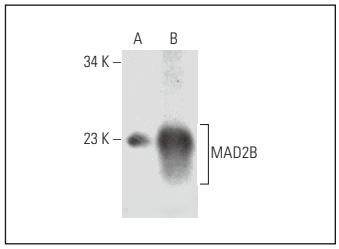
RECOMMENDED SUPPORT REAGENTS

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.

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.



MAD2B (14): sc-135977. 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 -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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