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MAD1 (h): 293T Lysate: sc-177504

BACKGROUND

Cell cycle progression is subject to arrest at the mitotic spindle assembly checkpoint in response to incorrect spindle fiber assembly. MAD1 and MAD2 (for mitotic arrest-deficient 1 and 2) are components of the mitotic spindle checkpoint. Incorrect spindle assembly in normal cells leads to mitotic arrest. MAD1 prevents the onset of anaphase until all chromosomes are aligned correctly at the metaphase plate and is crucial for anchoring MAD2L1 to the nuclear periphery. It also plays an important role in septum positioning. MAD1 can form a homodimer, but may also form a heterodimer with MAD2 to form the tetrameric MAD1L1-MAD2L1 core complex. MAD1 localizes primarily to the nucleus, but during mitosis, it moves from a nuclear distribution to the centrosome, to the spindle midzone and then on to the midbody. MAD1 activity is induced by BUB1 and the protein is hyperphosphorylated after mitotic spindle damage and/or in late S through M phase. Defects in the gene encoding for MAD1, MAD1L1, play a major role in the development and progression of various cancer types.

REFERENCES

1. Jones, N. 1990. Transcriptional regulation by dimerization: two sides to an incestuous relationship. *Cell* 61: 9-11.
2. Dang, C.V., Barrett, J., Villa-Garcia, M., Resar, L.M.S., Kato, G.J. and Fearon, E.R. 1991. Intracellular leucine zipper interactions suggest c-Myc hetero-oligomerization. *Mol. Cell. Biol.* 11: 954-962.
3. Blackwood, E.M. and Eisenman, R.N. 1991. Max: a helix-loop-helix zipper protein that forms a sequence-specific DNA-binding complex with Myc. *Science* 251: 1211-1217.
4. Prendergast, G.C., Lawe, D. and Ziff, E.B. 1991. Association of Myn, the murine homolog of Max, with c-Myc stimulates methylation-sensitive DNA binding and Ras cotransformation. *Cell* 65: 395-407.
5. Amati, B., Brooks, M.W., Levy, N., Littlewood, T.D., Evan, G.I. and Land, H. 1992. Oncogenic activity of the c-Myc protein requires dimerization with Max. *Cell* 72: 233-245.
6. Mukherjee, B., Morgenbesser, S.D. and DePinho, R.A. 1992. Myc family oncoproteins function through a common pathway to transform normal cells in culture: cross-interference by Max and transacting dominant mutants. *Genes Dev.* 6: 1480-1492.

CHROMOSOMAL LOCATION

Genetic locus: MAD1L1 (human) mapping to 7p22.3.

PRODUCT

MAD1 (h): 293T Lysate represents a lysate of human MAD1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

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.

APPLICATIONS

MAD1 (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive MAD1 antibodies. Recommended use: 10-20 µl per lane.

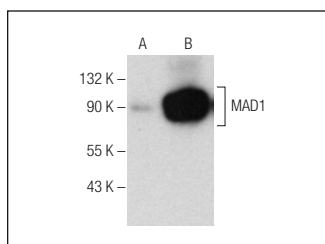
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

MAD1 (F-7): sc-376613 is recommended as a positive control antibody for Western Blot analysis of enhanced human MAD1 expression in MAD1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

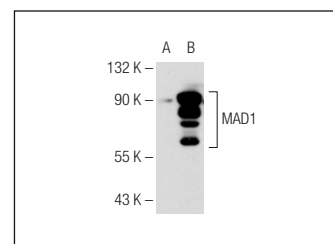
RECOMMENDED SUPPORT REAGENTS

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



MAD1 (F-7): sc-376613. Western blot analysis of MAD1 expression in non-transfected: sc-117752 (A) and human MAD1 transfected: sc-177504 (B) 293T whole cell lysates.



MAD1 (D-5): sc-166313. Western blot analysis of MAD1 expression in non-transfected: sc-117752 (A) and human MAD1 transfected: sc-177504 (B) 293T whole cell lysates.

PROTOCOLS

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