3050 Spruce Street
Saint Louis, Missouri 63103 USA
Telephone (800) 325-5832 (314) 771-5765
Fax (314) 286-7828
email: techserv@sial.com
sigma-aldrich.com

ProductInformation

Monoclonal Anti-Mad1
Clone 9B10
Purified Mouse Immunoglobulin

Product Number **M 8069**

Product Description

Monoclonal Anti-Mad1 (mouse IgG2b isotype) is derived from the hybridoma 9B10 produced by the fusion of mouse myeloma cells (SP2/0 cells) and splenocytes from BALB/c mice immunized with human recombinant Mad1 protein. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Sigma ISO-2).

Monoclonal Anti-Mad1 recognizes human Mad1 (~85 kDa). The antibody may be used in immunoprecipitation, and immunocytochemistry.

Mitotic checkpoint prevents the transition of eukaryotic cells to anaphase until all the chromosomes have made productive, bipolar attachments through their kinetochores to the microtubules of the mitotic spindle. In *Saccharomyces cervisiae* six genes are important for the kinetochore-dependent mitotic checkpoint: *MAD1, MAD2, MAD3, BUB1, BUB3*, and Spindles gene *MPS1*. All six genes have homologues in higher eukaryotes.[1-3] In mammals the mitotic checkpoint is an important mechanism that controls the advance to anaphase during every mitosis. Gene inactivation of MAD2 or Bub3 causes lethality in mice and acquisition of aneuploidy in cell culture. Unattached kinetochores are responsible for generating the checkpoint signal that prevents progression to the anaphase stage. Part of the signal is to inhibit the Cdc20-activated form of a ubiquitin ligase, inhibition of the anaphase promoting complex/cyclosome (APC/C) and inhibition of the ubiquitination of substrates whose destruction is important for the cell to advance to the anaphase stage. Human Mad1 can complex with Mad2 and is preferentially localized to unattached kinetochores during mitosis. Both Mad1 and Mad2 localize to the nuclear pore complex throughout interphase.[1-3]

Reagent

The antibody is supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody Concentration: ~2 mg/mL

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. Storage in “frost-free” freezers is also not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

By immunofluorescence, a working antibody concentration of 10-20 µg/mL is recommended using HeLa cells.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining optimal working dilutions by titration.

References

1. Campbell, M.S., et al., J. Cell Sci., **114**, 953-963 (2000).
2. Weaver, B.A.A., et al., J. Cell Biol., **162**, 551-563 (2003).
3. Liu, S.T., et al., Mol. Biol. Cell, **14**, 1638-1651 (2003).

KAA/EK 10/05