



Qty: 100 µg/200 µL

Mouse anti-MAD1

Catalog No.: 438300

Mouse anti- MAD1

FORM

This affinity-purified mouse monoclonal antibody is supplied as a 200 µL aliquot at a concentration of 0.5 mg/mL in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

Clone: 117-470

Isotype: IgG1

IMMUNOGEN

Recombinant protein derived from the full length human MAD1 protein (accession # Q05195, NP_034881), which is identical to chimpanzee and 99% similar to Rhesus monkey, 96% similar to horse, 95% similar to bovine and 85% similar to mouse and rat.

SPECIFICITY

This antibody is specific for human MAD1 (MAX dimerizer, MAX dimerization protein 1, MAD protein) protein. On Western blots of human HeLa S3 cell lysates, it identifies the target band at ~83 kDa.

REACTIVITY

Reactivity has been confirmed with human HeLa S3 and HEK 293 cell lysates as well as rat KNRK using Western blotting. The reactivity has also been confirmed with human HeLa S3 cells using immunoprecipitation and immunofluorescence. Based on amino acid sequence homology, reactivity with chimpanzee, Rhesus monkey, horse, bovine and mouse is also expected.

Sample	Western Blotting	Immunofluorescence	Immunoprecipitation
Human	+++	+++	+++
Rat	ND	ND	ND
Chimpanzee	ND	ND	ND
Horse	ND	ND	ND
Bovine	ND	ND	ND
Mouse	ND	ND	ND
Monkey (Rhesus)	ND	ND	ND

(Excellent +++, Good ++, Poor +, No reactivity 0, Not applicable N/A, Not determined ND)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

Western Blotting: 2 µg/mL

Immunofluorescence 2 µg/mL

Immunoprecipitation 5 µg/IP reaction

(cont')

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STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long-term storage. Avoid repeated freezing and thawing.

BACKGROUND

Mitotic arrest-deficient protein 1 (MAD1) is a component of the mitotic spindle assembly checkpoint. The MAD family consists of four related proteins designated MAD1, MAD2 (Mxi1), MAD3 and MAD4 and more distantly related members of the bHLH-ZIP family, Mnt and Mga.¹ MAD1 is encoded by a non-essential gene that encodes a component of the spindle checkpoint. The spindle checkpoint delays the onset of anaphase in cells with defects in mitotic spindle assembly or in the attachment of chromosomes to the spindle microtubules.² The checkpoint works by inhibiting the activity of the anaphase promoting complex, thereby preventing the degradation of several cell cycle regulators.³

MAD1 protein is known to repress Myc target genes and antagonize Myc function. Authors investigated the clinical implication of MAD1 expression in human breast carcinoma and found out that in human breast carcinoma cells, expression of MAD1 seems to be down-regulated, whereas expression of Myc is amplified.⁴ Altered expression of MAD1 may play a role in the malignant transformation of human mammary epithelial cells and represent an aggressive phenotype in human breast carcinoma.⁴ A knockout mouse model was created to examine the physiologic consequence of reduced MAD1 function. Results indicated an essential MAD1 function in mouse development and correlation of MAD1 haploinsufficiency with increased constitutive tumors.⁵ A telomerase activation study in tumor development showed that MAD1, which is involved in human cancer, regulates expression of telomerase.⁶

REFERENCES

1. Baudino TA et al. *Mol Cell Biol* 21 (3): 691-702, 2001.
2. Martin-Lluesma S et al. *Science* 297 (5590): 2267-70, 2002.
3. Grandori C et al. *Annu Rev Cell Dev* 16:653-99, 2000.
4. Hans S et al. *Cancer* 88 (7): 1623-32, 2000.
5. Iwanaga Y et al. *Cancer Res* 67(1): 160-6. 2007.1
6. Lin S et al. *Cell* 113, 881-889, 2003.

RELATED PRODUCTS

Product	Conjugate	Cat. No.
Protein A	Sepharose 4B	10-1041
rec-Protein G	Sepharose 4B	10-1241
ZyMAX™ Goat anti-rabbit IgG	Unconjugated	81-6100
ZyMAX™ Goat anti-mouse IgG	Unconjugated	81-6500

Secondary antibody conjugates.

Conjugate	Goat anti-rabbit IgG (H+L)	Goat anti-mouse IgG (H+L)	Ex/Em*	Fluorescence similar to--
Alexa Fluor® 488	A11008	A11001	495/519	FITC
Alexa Fluor® 555	A21428	A21422	555/565	Cy3
Alexa Fluor® 594	A11012	A11005	590/617	Texas Red
Alexa Fluor® 647	A21244	A21235	650/668	Cy5
HRP	81-6120	81-6520	NA**	NA
AP	81-6122	81-6522	NA	NA
Biotin	B2770	B2763	NA	NA

*Excitation/emission (nm); **Not applicable

For additional secondary antibody conjugates, visit www.invitrogen.com/antibodies

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