3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-B23 antibody, Mouse monoclonal
clone FC82291, purified from hybridoma cell culture

Product Number **B0556**

Product Description

Anti-B23 antibody, Mouse monoclonal (Nucleophosmin/NPM) (mouse IgG1 isotype) is derived from the FC82291 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from a CD-1 mouse immunized with a purified rat B23.[1] The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells, grown in a bioreactor.

Anti-B23 antibody, Mouse monoclonal recognizes specifically B23 (also called nucleophosmin, NPM, numatrin or NO38).[1-6] It detects both the phosphorylated and the unphosphorylated B23 molecule.[6] The epitope recognized by the antibody lies within the 68 amino acids at the C-terminus of B23.[3] The antibody may be used for ELISA,[1-4] competitive ELISA,[2,3] immunoblotting (37 kDa),[1-3,6] immunoprecipitation,[6] immunocytochemistry (2% formaldehyde-acetone[1,2,5] or 10% formalin/methanol-1% NP-40[6]) and microinjection (blocks the initiation of centrosome duplication).[6] Reactivity has been observed with human,[2-5] monkey, bovine, dog, hamster (weak), rat,[1,3] kangaroo rat,[1] and mouse[6] B23.

B23 (also known as NPM, nucleophosmin, numatrin or NO38) is a phosphoprotein, widely expressed in all cell types, and localized in granular regions of the nucleolus associated with pre-ribosomal particles. This protein was found to be involved in several nuclear functions such as assembly and/or intranuclear transport of pre-ribosomal particles, cytoplasmic/nuclear trafficking, regulation of DNA polymerase α activity and centrosome duplication.[6] Phosphorylation of B23 is mediated by a cyclin complex, CDK2/cyclin E.[6]

This phosphorylation causes the dissociation of B23 from the centrosome and enables the duplication of the centrosome during cell mitosis.[6] B23 was also found to be involved in pro-myelocytic leukemia in which the gene for B23 fuses with retinoic acid receptor α (RARα). As a consequence, a fusion protein (60-70 kDa) is produced containing parts of the two genes.[7] Monoclonal antibody reacting specifically with B23 is a useful tool for the study of the involvement of B23 in nuclear functions, cytoplasmic/nuclear trafficking, and centrosome duplication.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 1% bovine serum albumin and 15 mM sodium azide as a preservative.

Antibody Concentration: Approx. 0.5 mg/ml.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

For continuous use, store at 2 to 8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is 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

Immunoblotting: a working concentration of 0.2-0.4 μg/ml is determined using a whole extract of 3T3 (mouse fibroblasts) cells.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

1. Ochs, R., et al., *Exp. Cell Res*., **146**, 139-149 (1983).
2. Yung, B.Y.-M., et al., *Biochim. Biophys. Acta*, **826**, 167-173 (1985).
3. Chan, P.-K., et al., *J. Biol. Chem*., **261**, 14335-14341 (1986).
4. Feuerstein, N., et al., *J. Biol. Chem*., **263**, 10608-10612 (1988).
5. Chan, P.K., and Chan, F.Y., *Biochem. Pharmacol*., **57**, 1265-1273 (1999).
6. Okuda, M., et al., *Cell*, **103**, 127-140 (2000).
7. Redner, R. L., et al., *Blood*, **95**, 2683-2690 (2000).

DS,PHC 10/17-1

`