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ProductInformation

Monoclonal Anti-NBS1 (Nibrin)
Clone NBS1-501
produced in mouse, purified immunoglobulin

Catalog Number **N9287**

Product Description

Monoclonal Anti-NBS1 (Nibrin) (mouse IgG1isotype) is derived from the hybridoma NBS1-501 produced by the fusion of mouse myeloma cells (NS1 cells) and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to amino acids 206-220 of human NBS1. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-NBS1 recognizes human NBS1. The antibody may be used in immunocytochemistry, immunoblotting, ~95 kDa, immunoprecipitation, and ELISA.

The Nijmegen breakage syndrome is caused by a defective response to DNA double-strand breaks (DSB).[1, 2] NBS1 was first isolated as a protein involved in DNA repair through analysis of mutations in patients with this syndrome.[1, 2] It is a 754 amino acid protein containing two domains found in cell cycle checkpoint proteins: forkhead-associated domain (FHA) and an adjacent breast cancer carboxy-terminal domain (BRCT).[1, 3] NBS1 is a component of the double-strand break repair complex NBS1/MRE11/p50. This complex contains five proteins: p95 (NBS1), p200, p400, MRE11, and RAD50. The complex is important for double-strand break repair, meiotic recombination, and for telomere maintenance.[2, 4, 5] p95/NBS1 (Nibrin) deficiency abrogates the formation of the MRE11/RAD50 ionizing radiation-induced foci, revealing a molecular link between DSB (double strand break) repair and cell cycle checkpoint functions.[2] The phenotypic similarities between ataxia-telangiectasia (AT) and Nijmegen breakage syndrome had suggested that ATM and NBS1 function in a common signaling pathway. This was confirmed by the finding that, in response to ionizing radiation, NBS1 is phosphorylated on Ser^{343} in an ATM-dependent manner.[6]

Reagent

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, 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 2-4 µg/mL is recommended using nuclear extract of HEK 293T expressing recombinant human NBS1.

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

References

1. Varon, R., et al., *Cell*, **93**, 467-476 (1998).
2. Carney, J.P., et al., *Cell*, **93**, 477-486 (1998).
3. Cerosaletii, K.M., and Concannon, P., *J. Biol. Chem.*, **278**, 21944-21951 (2003).
4. Goldberg, M., et al., *Nature*, **421**, 952-956 (2003).
5. di Fagagna, F., et al., *Nature*, **426**, 194-198 (2003).
6. Lim, D.-S., et al., *Nature*, **404**, 613-617 (2000).

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