

Product Information

**MONOCLONAL ANTI-BIN1 (SH3P9,
AMPHIPHYSIN II, AMPHL)
CLONE 99D
Mouse Ascites Fluid**

Product Number **B9428**

Product Description

Monoclonal Anti-Bin1 (SH3P9, Amphiphysin II, amphl) (mouse IgG2b isotype) is derived from the 99D hybridoma produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a recombinant polypeptide, containing amino acids 189-398 of human Bin1.^{1,2} The isotype is determined using Sigma ImmunoType™ Kit (Product Code ISO-1) and by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents (Product Code ISO-2).

Monoclonal Anti-Bin1 (SH3P9, Amphiphysin II, amphl), reacts specifically with a 33-residue segment of the myc-binding domain (MBD, amino acids 323-356) of the human Bin1 molecule.¹ It does not react with the Bin1-related 45 kDa polypeptide.¹ The product may be used for ELISA¹, immunoprecipitation^{1,2}, immunoblotting (65-70 kDa in cultured cells^{1,2}, and approx. 75 kDa in rat brain preparation), immunocytochemistry (nucleoplasm and subnuclear punctate compartment in several cell lines¹, and also in cytoplasm²), immunohistochemistry¹ and flow cytometry². Reactivity has been observed with human,¹ mouse,^{1,2} rat,¹ rabbit and avian Bin1.

The identification and analysis of tumor suppressors is of major importance for improved diagnosis and treatment of tumors. Bin1 [Box-dependent myc-interacting protein-1, also known as SH3P9, amphiphysin II and amphl (amphiphysin-like)] is a novel protein that has features of a tumor suppressor. Bin1 interacts with and inhibits the oncogenic activity of the myc oncoprotein that has a major role in many human cancers. The loss of Bin1 may contribute to growth deregulation in cancer cells in carcinoma of the breast, colon, lung, cervix, prostate and liver.¹⁻³ In human and rodent cells it appears as a short-lived (half-life of approx. 2 hrs) monomeric phosphoprotein (approx. 70 kDa).^{1,2}

The human *BIN1* gene has been mapped to chromosome 2q14,⁴ within a mid-2q region that is deleted in approx. 42% of metastatic prostate cancers, and at the syntenic murine locus, in >90% of radiation-induced myeloid leukemias.¹ It has been suggested that the Bin1 molecule appears in different isoforms or conformations, and the localization varies between normal and tumor cells. In normal cells, Bin1 is predominantly nucleoplasmic, but is also present in a subnuclear compartment. In a panel of tumor cells that express Bin1, the predominant localization of the molecule is in the subnuclear compartment.¹ In addition to the role of Bin1 in controlling neoplastic cell growth and cell cycle by the inhibition of transformation by both myc and the adenovirus E1A protein, it is related to amphiphysin, a neuronal protein that is the auto-immune target of paraneoplastic disorders associated with breast and lung cancer, and to RVS167, a negative regulator of the cell cycle in yeasts. Although widely expressed in normal cells, Bin1 is poorly expressed or undetectable in approx. half of carcinoma cell lines and primary breast carcinomas examined.³ Deficits in expression are functionally significant, because ectopic Bin1 can inhibit the growth of tumor cells that lack endogenous expression.³ Bin1 has also been found to be highly expressed in murine skeletal muscle; over-expression of Bin1 promotes myotube formation and upregulation of myosin heavy chain, while interference with Bin1 expression significantly impairs these processes.² Antibodies reacting specifically with Bin1 are useful tools in the study of the genetic control of apoptosis and understanding its dysfunction in cancer.

Reagents

The product is supplied as ascites fluid with 15 mM sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content a material safety 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 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

A minimum working dilution of 1:50,000 is determined by immunoblotting using a rat brain cytosol preparation.

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

References

1. Wechsler-Reya, R., et al., *Cancer Res.*, **57**, 3258 (1997).
2. Wechsler-Reya, R.J., et al., *Mol. Cell. Biol.*, **18**, 566 (1998).
3. Sakamuro, D., et al., *Nat. Genet.*, **14**, 69 (1996).
4. Negrov, D., et al., *Genomics*, **33**, 329 (1996).

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