

Product Information

MONOCLONAL ANTI-ACETYLATED TUBULIN CLONE 6-11B-1 Mouse Ascites Fluid

Product No. **T 6793**

Product Description

Monoclonal Anti-Acetylated Tubulin (mouse IgG2b isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. Acetylated tubulin from the outer arm of *Strongylocentrotus purpuratus* (sea urchin) was used as the immunogen. The isotype is determined using the 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-Acetylated Tubulin recognizes an epitope located on the $\alpha 3$ isoform of *Chlamydomonas* axonemal α -tubulin,¹ within four residues of Lys-40 when this amino acid is acetylated.² A sequence very similar to the one detected by the antibody in *Chlamydomonas* is found in the majority of α -tubulins, but the corresponding region is markedly divergent in some

α -tubulin isoforms from chicken, *Drosophila* and yeast.²

The antibody has been used to detect acetylated α -tubulins from many organisms that are frequently studied in the laboratory: protista, plants, invertebrates and vertebrates (e.g., human, mouse, pig, bovine, rat, hamster, monkey, chicken, frog).³ Details on the strains of organisms and microtubule structures containing acetylated α -tubulin detected by the antibody have been described.³ Occasionally, the epitope recognized by the antibody may be absent or masked, as it is in the rat kangaroo epithelial-like cell line PtK₂.⁴ The product may be used in immunoblotting, quantitative dot blot, ELISA, solid phase RIA, immunohistology and electron microscopy.⁵

Monoclonal Anti-Acetylated Tubulin may be used for the localization of acetylated tubulin using various immunochemical assays such as ELISA, immunoblot, dot blot, solid phase RIA, electron microscopy and immunohistochemistry.

Tubulin is the major building block of microtubules. This intracellular, cylindrical filamentous structure is present in almost all eukaryotic cells. Microtubules function as structural and mobile elements in mitosis, intracellular transport, flagellar movement and in the cytoskeleton.

Tubulin is a heterodimer which consists of α -tubulin and β -tubulin; both subunits have a

molecular weight of 50,000 and share considerable homology. At least three modifications of tubulin subunits have been described: the phosphorylation of β -tubulin from brain, the removal of the carboxyterminal tyrosine from α -tubulin in vertebrate tissues and the acetylation of the amino group of lysine(s) in α -tubulin.

Acetylation of α -tubulin is a post-translational modification that consists of the reversible addition of an acetyl group to Lys40, achieved by a specific acetylase.

Acetylation of α -tubulin is an important feature of axoneme assembly in a variety of organisms. Tubulin acetylation may play a prevalent role in the differentiation of microtubule structure and function.¹

Monoclonal antibody recognizing the acetylated form of tubulin, together with monoclonal antibodies to other types of tubulins (α , β , β -tubulin isotype I + II, β -tubulin isotype III and tyrosine tubulin) provide specific and useful tools in studying the intracellular distribution of tubulin and the static and dynamic aspects of cytoskeleton.

Reagents

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

Precautions

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 hazards and safe handling practices.

Product Profile

A minimum working dilution of 1:2,000 is determined by indirect immunoblotting using a bovine or rat brain preparation.

In order to obtain best results, it is recommended that each individual user determine their optimum working dilution by titration assay.

Storage

For continuous use, store at 2-8 °C for a maximum of one month. For extended storage, the solution may be frozen 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.

References

1. Piperno, G., and Fuller, M., J. Cell Biol., **101**, 2085 (1985).
2. LeDizet, M., and Piperno, G., Proc. Natl. Acad. Sci. USA, **84**, 5720 (1987).
3. LeDizet, M., and Piperno, G., Meth. Enzymol., **196**, 264 (1991).
4. Piperno, G., et al., J. Cell Biol., **104**, 289 (1987).
5. Morales, M., and Fifkovà, E., Cell Tissue Res., **265**, 415 (1991).

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