Product Information

Anti-Acetylated Tubulin Antibody, Mouse Monoclonal

Clone 6-11B-1, purified from hybridoma cell culture

T7451

Product Description

Monoclonal Anti-Acetylated Tubulin (mouse IgG2b isotype) is derived from the hybridoma 6-11B-1 produced by the fusion of mouse myeloma cells and splenocytes from a mouse immunized with acetylated tubulin from the outer arm of *Strongylocentrotus purpuratus* (sea urchin). The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Cat. No. ISO2.

Monoclonal Anti-Acetylated Tubulin recognizes an epitope located on the α3 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 (Example. 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 PtK_2.[4] The antibody may be used in immunoblotting, quantitative dot blot, ELISA, solid phase RIA, immunohistology, and electron microscopy.[5]

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 Lys^{40}, 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, 6, 7]

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.

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Antibody concentration: ~1 mg/mL

Precautions and Disclaimer

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 2-8 °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 antibody concentration of 0.03-0.06 µg/mL is recommended using total rat brain extract.

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

References

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4. Piperno, G., et al., J. Cell Biol., 104, 289-302 (1987).
5. Morales, M., and Fifkova, E., Cell Tissue Res., 265, 415-423 (1991).
6. Polevoda, B., and Sherman, F., Genome Biol., 3, (2002).
7. Kouzarides, T., EMBO J., 19, 1176-1179 (2000).

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