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Product Information

Anti-β-Tubulin II antibody, Mouse monoclonal
clone 7B9, purified from hybridoma cell culture

Product Number **T8453**

Product Description

Monoclonal Anti-β-Tubulin II (mouse IgG1 isotype) is derived from the hybridoma 7B9 produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice immunized with a synthetic peptide corresponding to a fragment at the C-terminus of human β–tubulin II.[1] This sequence is common also to the monkey, bovine, dog, rat, and mouse C-termini of β–tubulin II. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2.

Monoclonal Anti-β-Tubulin II reacts with human, rat, and mouse β–tubulin II. The antibody may be used in various immunochemical techniques including immunoblotting (~50 kDa), immunoprecipitation, and immunocytochemistry.[1]

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 the cytoskeleton. Tubulin is a heterodimer that consists of α-tubulin and β–tubulin. Both subunits have a molecular mass of ~50 kDa and share considerable homology. In addition to α- and β-tubulin, several other tubulins have been identified, bringing the number of distinct tubulin classes to seven. Most of these tubulins have distinct subcellular localization and an emerging diverse set of functions.[2] Out of the seven different tubulins four new members of the tubulin family were identified, which consist of δ, ξ, η, and ε-tubulin. η and ε-tubulins were discovered by database searches.[3]

Microtubular systems contain at least three α-tubulin isoforms. Two isoforms are encoded by two α-tubulin genes. The third isoform is generated by post-translational modification.[4] At least three modifications of tubulin have been described: phosphorylation of β-tubulin from brain, the removal of the carboxy-terminal tyrosine from α-tubulin in vertebrate tissues, and the acetylation of the amino group of lysine(s) in α-tubulin.

Monoclonal antibodies recognizing α-tubulin, together with monoclonal antibodies to other tubulin types (β-tubulin isotypes I, II, and III, tyrosine tubulin, and acetylated-α-tubulin) provide specific and useful tools in studying the intracellular distribution of tubulin and the static and dynamic aspects of the cytoskeleton. In addition, the various tubulin isoforms have been implicated in cancerous processes and are thus suggested as potential targets for cancer therapy.[5] Specifically, the ratio between β tubulin classes II and V mRNA was found as a useful biomarker for nonsmall cell lung cancer (NSCLC) tumor differentiation and/or aggressiveness.[6]

Reagent

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

Antibody concentration: ~1.0 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 at –20 °C 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 1-2 μg/mL is recommended using Neuro-2a cell extract.

Note: In order to obtain best results in various techniques and preparations, it is recommended to determine optimal working dilutions by titration.

References

1. Moody, S.A. et al., *J. Comp. Neurol.,* **364**, 219-230 (1996).
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3. McKean, P.G. et al., *J. Cell Sci*., **114**, 2723-2733 (2001).
4. LeDizet, M., and Piperno, G., *J. Cell Biol*., **104**, 13-22 (1986).
5. Carlson, R.O., *Expert Opin. Investig. Drug,* **17**, 707-712 (2008).
6. Cucchiarelli, V. et al., *Cell Motil. Cytoskeleton,* **65**, 675-685 (2008).

VS,DS,GG,TD,KAA,PHC,MAM 08/19-1