

Technical Bulletin

Anti- β -Tubulin Isotype III Antibody, Mouse Monoclonal

Clone SDL.3D10, purified from hybridoma cell culture

T5076

Product Description

Monoclonal Anti- β -Tubulin Isotype III (mouse IgG2b isotype) is derived from the SDL.3D10 hybridoma^{1,2} produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice, immunized with a peptide corresponding to the carboxyl-terminal sequence of human β -tubulin isotype III conjugated to BSA. The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Cat. No. ISO2.

Monoclonal Anti- β -Tubulin Isotype III specifically recognizes an epitope located on human,^{1, 3} bovine,^{1, 4} boar,⁵ rat,⁶ and mouse⁷ β -tubulin (isotype III). It does not bind to tubulin in a chicken brain preparation or in a chicken fibroblasts cell line by immunoblotting¹ or immunofluorescence techniques. The antibody may be used for the localization of isotype III of β -tubulin using various immunochemical assays such as ELISA, immunoblot,^{1, 5} dot blot, immunocytochemistry,^{5, 6} and immunohistochemistry.⁷

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. Except in the simplest eukaryotes, tubulin exists in all cells as a mixture of similar, but not identical sets of α and β tubulin polypeptides. Within either set of polypeptides, individual subunits diverge from each other (both within and across species) at less than 10% of the amino acid positions.⁸⁻¹¹ The most extreme diversity is localized to the 15 residues of the carboxy-terminal. For β -tubulin, five evolutionarily conserved isotype clones have been identified. These are almost totally conserved in the subunits utilized in the same cell types of different species with the exception of the hematopoietic β -tubulin, which is the most highly divergent in sequence and is not conserved between species. Research has been centered on the hypothesis that these β tubulin isotypes contribute to unique functional properties. It has been reported that the different isotypes of tubulin differ from each other in their ability to polymerize into microtubules.⁸⁻¹¹ The monoclonal antibody from hybridoma SDL.3D10 can stimulate microtubule assembly when reconstituted with tubulin, tau, or MAP2.¹

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

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

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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 0.1-0.2 µg/mL is determined using 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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