



3050 Spruce Street  
Saint Louis, Missouri 63103 USA  
Telephone 800-325-5832 • (314) 771-5765  
Fax (314) 286-7828  
email: techserv@sial.com  
sigma-aldrich.com

## Product Information

### MONOCLONAL ANTI- $\beta$ -TUBULIN ISOTYPE III CLONE SDL.3D10 Mouse Ascites Fluid

Product No. T 8660

#### Product Description

Monoclonal Anti- $\beta$  Tubulin Isotype III (mouse IgG2b isotype) is derived from the SDL.3D10 hybridoma<sup>1,2</sup> produced by the fusion of mouse myeloma cells and splenocytes from BALB/c mice. The mice were immunized with a chemically synthesized peptide corresponding to the carboxyl-terminal sequence of human  $\beta$ -tubulin isotype III conjugated to BSA. 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- $\beta$ -Tubulin Isotype III specifically recognizes an epitope located on human  $\beta$ -tubulin (isotype III). It cross-reacts with bovine and rat in an immunoblotting technique where it localizes the tubulin band in either a rat brain extract or a bovine brain MAPs extract. It does not bind to tubulin in a chicken brain preparation, or in a chicken fibroblasts cell line by immunoblotting or immunofluorescence techniques.

Monoclonal Anti- $\beta$ -Tubulin Isotype III may be used for the localization of isotype III of  $\beta$ -tubulin using various immunochemical assays such as ELISA, immunoblot, dot blot, and immunocytochemistry.

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  $\alpha$  and  $\beta$  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.<sup>3</sup> The most extreme diversity is localized to the 15 residues of the carboxy-terminal. For  $\beta$ -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  $\beta$ - tubulin which is the most highly divergent in sequence and is not conserved between species. Research has been centered around the hypothesis that these  $\beta$  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.<sup>1</sup> The monoclonal antibody from hybridoma SDL.3D10 can stimulate microtubule assembly when reconstituted with tubulin, tau or MAP2.

#### 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 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 working dilution of at least 1:400 was determined by indirect immunoblotting using a rat brain extract.

In order to obtain best results in different techniques and preparations, it is recommended that each individual user determine their optimal working dilutions by titration assay.

#### Storage

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.

## References

1. Banerjee, A., et al., J. Biol. Chem., **265**, 1794 (1990).
2. Banerjee, A., et al., J. Biol. Chem., **263**, 3029 (1988).
3. Josh, H.C. and Cleveland, D.W., Cell Motil. Cytoskel., **16**, 159 (1990).

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