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# Product Information

**Anti-β-Tubulin IV antibody, Mouse monoclonal**
Clone ONS.1A6, purified from hybridoma cell culture

Product Number **SAB4200792**

## Product Description

Anti-β-Tubulin IV antibody, Mouse monoclonal (mouse IgG1 isotype) is derived from the ONS.1A6 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from a BALB/c mouse immunized with a synthetic peptide corresponding to the C-terminal sequence of β-tubulin isotype IV coupled to BSA.[1] The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents (Product Number ISO2). The antibody is purified from culture supernatant of hybridoma cells.

Anti-β-Tubulin IV antibody, Mouse monoclonal specifically recognizes an epitope located in the C-terminal sequence of β-tubulin isotype IV of human,[1,2] bovine,[1,3] hamster, rat,[4] and mouse.[7] No reactivity with Tubulin I, II, and III isotypes is observed.[1] The antibody is recommended for use in various immunological techniques, including immunoblot (~55 kDa),[1,5] immunofluorescence,[6] immunohisto-chemistry,[2] ELISA,[1] and Immunoaffinity purification.[8]

Tubulin is the major building block of microtubules. It possesses an intracellular cylindrical filamentous structure that is present in almost all eukaryotic cells. Except in the simplest eukaryotes, tubulin exists in all cells as a heterodimer of two similar but not identical polypeptides (~55 kDa each), designated α and β, that assembles into microtubules.[9] Both α and β tubulins undergo post-translational modifications, including acetylation, phosphorylation, detyrosination, polyglutamylation, and polyglycylation.[10]

For β-tubulin, six evolutionarily conserved isotypes were identified, designated βI-βVI. Their utilization in the same cell type of different species is nearly absolutely conserved with the exception of the sequenced diversed hematopoietic β-tubulin. Since the different isotypes of tubulin differ from each other in their ability to polymerize into microtubules, it is hypothesized that the β-tubulin isotypes contribute to unique functional properties.[11]

The most complex pattern of isotype distribution in tissues is seen in the vertebrate β-tubulins.[12] In mammals βI is constitutive and found in most tissues. βII is found in many tissues, but largely in the brain; its synthesis increases in regeneration and development of neurons. βIII is found in the brain and in dorsal root ganglia; it appears to be localized to neurons, where its expression seems to increase during axonal outgrowth. βIV in mammals exists at two subtypes, differing from each other at 10 positions. βIVa is brain specific and βIVb is ubiquitous, but both appear to be constitutive. βV is ubiquitously expressed in a variety of cultured mammalian cells. βVI is apparently restricted to hematopoietic tissues, being expressed in mammalian platelets, spleen, bone marrow, and other blood-forming tissues.

The detection, localization, and characterization of proteins involved in microtubule function is fundamental to the understanding of mitosis, meiosis, organellar, and flagellar movement, intracellular transport and cytoskeletal functions. Antibodies reacting specifically with α- and β-tubulin isotypes serve as an essential tool in the detection of the presence and functional significance of these molecules in various cellular settings.

## 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

This product is 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 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 10–20 µg/mL is recommended using human breast cancer MCF7 cell line.

Immunofluorescence: a working concentration of 5–10 µg/mL is recommended using human foreskin Hs68 cells.

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

**References**

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