3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

Anti-Tubulin, Tyrosine antibody, Mouse monoclonal
Clone TUB-1A2, purified from hybridoma cell culture

Product Number **SAB4200776**

Product Description

Anti-Tubulin, Tyrosine antibody, Mouse monoclonal (mouse IgG3 isotype) is derived from the TUB-1A2 hybridoma, produced by the fusion of mouse myeloma cells and splenocytes from mouse immunized with a synthetic peptide containing the carboxy terminal amino acids of porcine α-tubulin, conjugated to KLH.[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-Tubulin, Tyrosine antibody, Mouse monoclonal specifically recognizes the C-terminal Tyrosine of Tubulin protein. The antibody is non-reactive with cells that have been treated with pancreatic carboxypeptidase A under conditions which remove only the C-terminal tyrosine.[1] Monoclonal Anti-Tubulin, Tyrosine recognizes Tubulin from human,[2] mouse,[1,3] chicken, bovine,[4] rat,[1,5] hamster,[1] canine,[1] monkey,[1] porcine,[6] arabidopsis,[6] tobacco,[6] yeast,[1] *Xenopus*,[1] insect,[7] comb jelly,[8] sponge,[9] and worm[10] origin. The product may be used in several immunochemical techniques including immunoblotting (~55 kDa)[2,4,7], immunofluorescence,[1,3,8] and immunohistochemistry[2,5,9-10].

Tubulin is the major building block of microtubules. This intracellular cylindrical filamentous structure is presented in almost all eukaryotic cells. Microtubules function as structural and mobility 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 mass of 55 kDa and share considerable homology.

The most widely studied tubulins have been isolated from vertebrate brains. The microtubules can be viewed in immunofluorescent microscopy allowing the observation of the intracellular organization of proteins that are in the form of a supramolecular structure.[11-13]

There are three major isotypes of tubulin in eukaryotic cells: α-tubulin and β-tubulin that form heteromeric complexes which associate into protofilaments, and γ-tubulin which appears in the cytosol and microtubule-organizing centers as ring-shaped structures.[14] Tubulins are affected by a several types of post-translational modifications, including acetylation, tyrosination/detyrosination, phosphorylation, polyglutamination, polyglycylation, and generation of non-tyrosinatable tubulin,[14] all, but acetylation, occur at the C-terminus of the tubulin molecule.[15] The dynamic properties of microtubules of the tyrosinated tubulin (Tyr-Tubulin) type studied in living cells have suggested that they turnover and grow very rapidly *in vivo* with most microtubules exchanging within a halftime of ~10 minutes.[1] Detyrosination involves the removal of the C-terminal tyrosine of α-tubulin in the microtubule polymers by cellular carboxypeptidases.[16] The reverse tyrosination reaction, or addition of a tyrosine residue to the now C-terminal glutamate residue of α-tubulin, occurs on soluble tubulin heterodimers and is catalyzed by tubulin tyrosine ligase (TTL).[16] Proper functioning of the detyrosination/tyrosination cycle has been shown to influence tumorigenesis and neuronal organization. Low levels of tyrosinated tubulin correlate with increased tumorigenisis, tumor invasiveness, and poor prognosis, suggesting that detyrosinated tubulin provides a growth advantage.[17]

Monoclonal Anti-Tubulin, Tyrosine antibody can be useful for the specific detection and subcellular localization of tyrosinated α-tubulin.

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
Immunofluorescence: a working concentration of 2–4 μg/mL is recommended using human HeLa or Chicken fibroblast cells.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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