EXBIO Antibodies

PRODUCT DATA SHEET

A4-427-C100

Monoclonal Antibody to beta-tubulin Alexa Fluor® 488 conjugated (0.1 mg)

Clone: TU-12

Isotype: Mouse IgM

Specificity: The antibody TU-12 recognizes an epitope located within aa 345-430 of C-terminal domain of beta-tubulin in various species.

Immunogen: Porcine brain microtubule protein MTP-1.

Species Reactivity: Broad species reactivity

Preparation: The purified antibody is conjugated with Alexa Fluor 488 under optimum conditions. The conjugate is purified by size-exclusion chromatography and adjusted for direct use. No reconstitution is necessary.

Storage Buffer: The reagent is provided in phosphate buffered saline (PBS) containing 15 mM sodium azide and 0.2% (w/v) high-grade protease free Bovine Serum Albumin (BSA) as a stabilizing agent.

Storage / Stability: Store in the dark at 2-8^{o}C. Do not freeze. Avoid prolonged exposure to light.
Do not use after expiration date stamped on vial label.
Short-term exposure to room temperature should not affect the quality of the reagent. However, if reagent is stored under any conditions other than those specified, the conditions must be verified by the user.

Expiration: See vial label

Lot Number: See vial label

Background: The **microtubules** are intracellular dynamic polymers made up of evolutionarily conserved polymorphic alpha/beta-tubulin heterodimers and a large number of microtubule-associated proteins (MAPs). The microtubules consist of 13 protofilaments and have an outer diameter 25 nm. Microtubules have their intrinsic polarity; highly dynamic plus ends and less dynamic minus ends. Microtubules are required for vital processes in eukaryotic cells including mitosis, meiosis, maintenance of cell shape and intracellular transport. Microtubules are also necessary for movement of cells by means of flagella and cilia. In mammalian tissue culture cells microtubules have their minus ends anchored in microtubule organizing centers (MTOCs).The GTP (guanosintriphosphate) molecule is an essential for tubulin heterodimer to associate with other heterodimers to form microtubule. In vivo, microtubule dynamics vary considerably. Microtubule polymerization is reversible and a populations of microtubules in cells are on their minus ends either growing or shortening this phenomenon is called dynamic instability of microtubules. On a practical level, microtubules can easily be stabilized by the addition of non-hydrolysable analogues of GTP (eg. GMPPCP) or more commonly by anti-cancer drugs such as Taxol. Taxol stabilizes microtubules at room temperature for many hours. Using limited proteolysis by enzymes both tubulin subunits can be divided into N-terminal and C-terminal structural domains.
The **beta-tubulin** (relative molecular weight around 50 kDa) is counterpart of alpha-tubulin in tubulin heterodimer, it is coded by multiple tubulin genes and it is also posttranslationally modified. Heterogeneity of subunit is concentrated in C-terminal structural domain.

EXBIO Praha | Nad Safinou II 366 | 252 42 Vestec u Prahy | Czech Republic
Tel: +420 261 090 664 | Fax: +420 261 090 660 | orders@exbio.cz | www.exbio.cz

References:

*Linhartova I, Draber P, Draberova E, Viklicky V.: Immunological discrimination of beta-tubulin isoforms in developing mouse brain. Post-translational modification of non-class-III beta-tubulins. Biochem J. 1992 Dec 15;288 (Pt 3):919-24.
*Draber P, Draberova E, Viklicky V.: Immunostaining of human spermatozoa with tubulin domain-specific monoclonal antibodies. Recognition of a unique beta-tubulin epitope in the sperm head. Histochemistry. 1991;95(5):519-24.
*Smertenko A, Blume Y, Viklický V, Dráber P: Exposure of tubulin structural domains in Nicotiana tabacum microtubules probed by monoclonal antibodies. Eur J Cell Biol. 1997 Feb;72(2):104-12.
*Blume Y, Yemets A, Sheremet Y, Nyporko A, Sulimenko V, Sulimenko T, Draber P: Exposure of beta-tubulin regions defined by antibodies on an Arabidopsis thaliana microtubule protofilament model and in the cells. BMC Plant Biol. 2010 Feb 18;10(1):29. [Epub ahead of print]

EXBIO Praha | Nad Safinou II 366 | 252 42 Vestec u Prahy | Czech Republic
Tel: +420 261 090 664 | Fax: +420 261 090 660 | orders@exbio.cz | www.exbio.cz