

Monoclonal Antibody to alpha Tubulin / TUBA1B (Loading Control) - FITC

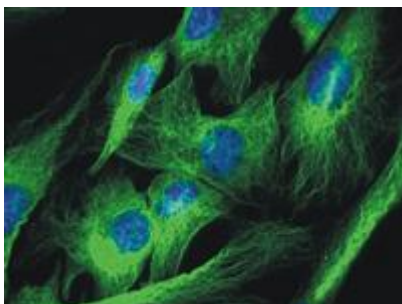
Alternate names:	Alpha-tubulin ubiquitous, Tubulin K-alpha-1, Tubulin alpha-1B chain, Tubulin alpha-ubiquitous chain
Catalog No.:	BM753F
Quantity:	0.1 mg
Concentration:	1.0 mg/ml
Background:	<p>The microtubules are intracellular dynamic polymers made up of evolutionarily conserved polymorphic alpha/beta-tubulin 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 (guanosin triphosphate) 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 alpha-tubulin (relative molecular weight about 50 kDa) is globular protein that exists in cells as part of soluble alpha/beta-tubulin dimer or it is polymerized into microtubules. In different species it is coded by multiple tubulin genes that form tubulin classes (in human 6 genes). Expressed tubulin genes are named tubulin isotypes. Some of the tubulin isotypes are expressed ubiquitously, while some have more restricted tissue expression.</p> <p>Alpha-tubulin is also subject of numerous post-translational modifications. Tubulin isotypes and their posttranslational modifications are responsible for multiple tubulin charge variants - tubulin isoforms. Heterogeneity of alpha-tubulin is concentrated in C-terminal structural domain.</p>
Uniprot ID:	P68363
NCBI:	NP_006073
GeneID:	10376
Host / Isotype:	Mouse / IgG1

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- Clone:** TU-01
- Immunogen:** Fraction of Tubulin purified from porcine brain by two cycles of polymerization-depolymerization.
- Format:** **State:** Liquid purified Ig fraction
Buffer System: Phosphate buffered saline (PBS) with 15 mM Sodium Azide as preservative, approx. pH 7.4
Label: FITC – Fluorescein Isothiocyanate under optimum conditions. The reagent is free of unconjugated
- Applications:** **Immunofluorescence:** 1/50 on fixed and permeabilized cells.
Other applications not tested. Optimal dilutions are dependent on conditions and should be determined by the user.
- Specificity:** The antibody recognizes the defined epitope (aa 65-97) on N-terminal structural domain of alpha-tubulin in all species (recognized epitope conserved within all species).
Species: Broad.
Other species not tested.
- Storage:** Store the antibody undiluted at 2-8°C.
DO NOT FREEZE!
This product is photosensitive and should be protected from light.
Shelf life: one year from despatch.
- General References:** 1. Viklicky V. et al., Cell Biol. Int. Rep. 6, 725 (1982).
2. Draber P. et al., Eur. J. Cell Biol. 41, 82 (1986).
3. Grimm M. et al., Biochim. Biophys. Acta 914, 83 (1987).
4. Draber P. et al., J. Cell Sci. 92, 519 (1989).
5. Draber et al., Histochemistry 95, 519 (1991).
6. Linhartova I. et al., Biochem. J. 288, 919 (1992).
7. Novakova M et al. Cell Motil Cytoskeleton. 1996;33(1):38-51.
8. Smertenko A, et al. cells. Planta. 1997;201(3):349-58.
9. Kukharskyy V et al. Exp Cell Res. 2004 Aug 1;298(1):218-28.
10. Lukas J et al. Nucleic Acids Res. 2009 Mar 20. [Epub ahead of print].
11. 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.

Pictures:

Immunofluorescence staining of 3T3 Mouse embryonal fibroblast cell line using anti-alpha-tubulin antibody (TU-01; green). Nucleus is stained with DAPI (blue).

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