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30-1309: Anti-alpha-tubulin Monoclonal Antibody (Clone:TU-02)

Clonality :	Monoclonal
Clone Name :	TU-02
Application :	WB
Reactivity :	Human
Gene :	TUBA4A
Gene ID :	7277
Uniprot ID :	P68366
Format :	Purified
Alternative Name :	Alpha-tubulin 1, Testis-specific alpha-tubulin, Tubulin H2-alpha, Tubulin alpha-1 chain
Isotype :	Mouse IgM
Immunogen Information :	microtubule proteins from porcine brain

Description

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 alpha-tubulin (relative molecular weight around 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. 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.

Product Info

Amount :	0.1 mg
Purification :	Purified by precipitation and chromatography
Storage condition :	Store at 2-8°C. Do not freeze.

Application Note

Western blotting: Recommended dilution: 1-2 µg/ml.

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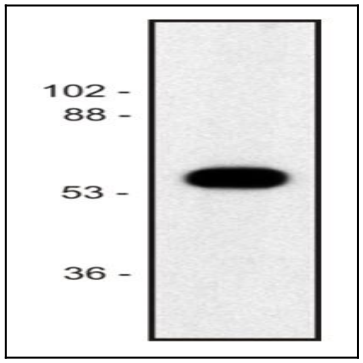

Figure 1: Western blot of human Jurkat T cell line lysate (1% laurylmaltoside); non-reduced sample, immunostained by Anti-alpha-tubulin Monoclonal Antibody (Clone:TU-02).

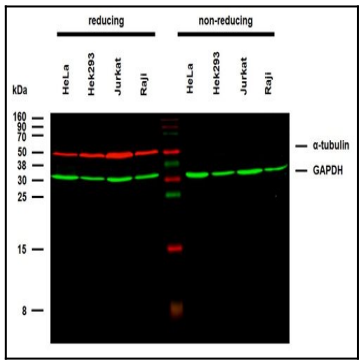

Figure 2: Western blotting analysis was performed on whole cell extracts (RIPA lysis buffer) of HeLa, HEK 293, Jurkat, and Raji cell lines mixed and heated (100°C, 5 min) with reducing (2-mercaptoethanol) or non-reducing SDS-loading buffer. Samples were resolved using 15% SDS-PAGE gel. Nitrocellulose membrane blot was probed simultaneously with mouse IgM monoclonal antibody TU-02 (1 µg/ml) and anti-GAPDH mouse IgG1 monoclonal antibody FF26A (1 µg/ml) used as the loading control. Subclass-specific secondary antibodies IRDye 680RD Goat-anti-Mouse IgM (red) and IRDye 800CW Goat-anti-Mouse IgG (green) were used for multiplex fluorescent Western blot detection. Alpha-tubulin was detected at ~50 kDa in all tested cell lines. Anti-alpha-Tubulin Purified (TU-02) is not suitable for use in non-reducing conditions on RIPA cell extracts.