

ARG62671 anti-alpha Tubulin antibody [TU-16]

Package: 100 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [TU-16] recognizes alpha Tubulin
Tested Reactivity	Hu, Ms, Rat, Dog, Nicotiana, Pig
Tested Application	ELISA, ICC/IF, IHC-P, IP, WB
Specificity	The clone TU-16 reacts with alpha-Tubulin of all tested species, under denaturing and non-denaturing conditions.
Host	Mouse
Clonality	Monoclonal
Clone	TU-16
Isotype	IgM
Target Name	alpha Tubulin
Species	Pig
Immunogen	Porcine brain microtubule protein MTP-1.
Conjugation	Un-conjugated
Alternate Names	TUBA1; ALS22; Tubulin alpha-4A chain; Testis-specific alpha-tubulin; Alpha-tubulin 1; Tubulin alpha-1 chain; Tubulin H2-alpha; H2-ALPHA

Application Instructions

Application table	Application	Dilution
	ELISA	Assay-dependent
	ICC/IF	Assay-dependent
	IHC-P	10 µg/ml
	IP	Assay-dependent
	WB	1 - 2 µg/ml
Application Note	<p>IP: Under reducing condition.</p> <p>WB: Incubated for 60 min. Sample preparation: Resuspend approx. 50 mil. cells in 1 ml cold Lysis buffer (1% laurylmaltoside in 20 mM Tris/Cl, 100 mM NaCl pH 8.2, 50 mM NaF including Protease inhibitor Cocktail). Incubate 60 min on ice. Centrifuge to remove cell debris. Mix lysate with reducing Laemmli SDS-PAGE sample buffer. Application note: reducing condition.</p> <p>* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.</p>	
Positive Control	WB: HPB-ALL Human peripheral blood leukemia cell line	

Properties

Form	Liquid
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Purification	Purified from ascites by precipitation methods.
Purity	> 95% (by SDS-PAGE)
Buffer	TBS (pH 8.0) and 15 mM Sodium azide
Preservative	15 mM Sodium azide
Concentration	1 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed before use.
Note	For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

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 (guanosinotriphosphate) 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.

Research Area Calculated Mw PTM

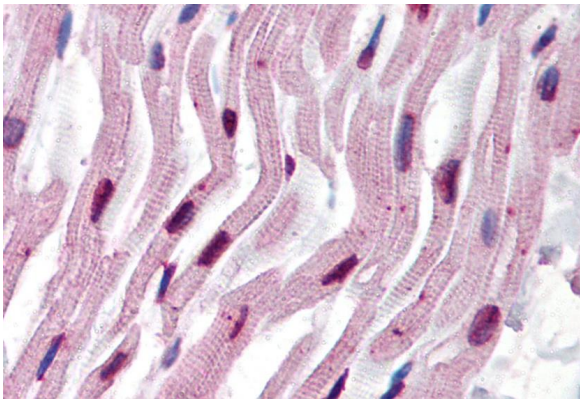
Controls and Markers antibody; Neuroscience antibody; Signaling Transduction antibody
50 kDa

Some glutamate residues at the C-terminus are polyglutamylated, resulting in polyglutamate chains on the gamma-carboxyl group (PubMed:26875866). Polyglutamylation plays a key role in microtubule severing by spastin (SPAST). SPAST preferentially recognizes and acts on microtubules decorated with short polyglutamate tails: severing activity by SPAST increases as the number of glutamates per tubulin rises from one to eight, but decreases beyond this glutamylation threshold (PubMed:26875866).

Some glutamate residues at the C-terminus are monoglycylated but not polyglycylated due to the absence of functional TTL10 in human. Monoglycylation is mainly limited to tubulin incorporated into axonemes (cilia and flagella). Both polyglutamylation and monoglycylation can coexist on the same protein on adjacent residues, and lowering glycylation levels increases polyglutamylation, and reciprocally. The precise function of monoglycylation is still unclear (Probable).

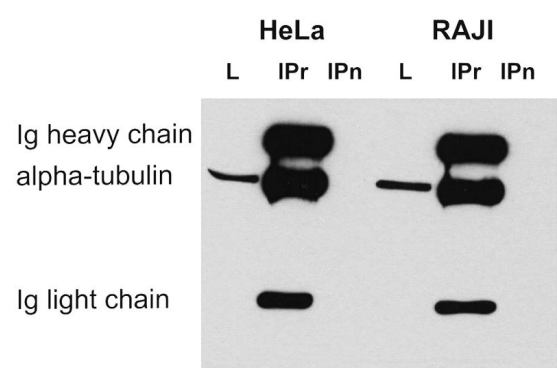
Acetylation of alpha chains at Lys-40 is located inside the microtubule lumen. This modification has been correlated with increased microtubule stability, intracellular transport and ciliary assembly.

Methylation of alpha chains at Lys-40 is found in mitotic microtubules and is required for normal mitosis and cytokinesis contributing to genomic stability.



ARG62671 anti-alpha Tubulin antibody [TU-16] IHC-P image

Immunohistochemistry: Paraffin-embedded Human heart tissue stained with ARG62671 anti-alpha Tubulin antibody [TU-16].



ARG62671 anti-alpha Tubulin antibody [TU-16] IP image

Immunoprecipitation: HeLa and Raji cell lysates immunoprecipitated by ARG62671 anti-alpha Tubulin antibody [TU-16] and stained with [ARG62670](#) anti-alpha Tubulin antibody [TU-01]. IgM heavy chain (76-92 kDa) and IgM light chain (25-30 kDa) indicated. MW of alpha tubulin is around 50 kDa. L = lysate IPr = immunoprecipitate (reducing conditions) IPn = immunoprecipitate (non-reducing conditions).