ARG22795
anti-alpha Tubulin antibody [YL1/2]

Package: 100 µg
Store at: -20°C

Summary

Product Description	Rat Monoclonal antibody [YL1/2] recognizes alpha Tubulin This antibody recognizes alpha subunit of tubulin, specifically binding tyrosylated Tubulin (Tyr-Tubulin) (Wehland et al. 1983). The epitope recognized by this antibody has been extensively studied and would appear to be a linear sequence requiring an aromatic residue at the C terminus, with the two adjacent amino acids being negatively charged (represented by Glu-Glu-Tyr in Tyr-Tubulin). The antibody has been used in epitope tagging procedures to detect proteins tagged with a C-terminal Gly-Gly-Phe epitope. These sequence requirements have been reported to result in some cross-reactivity with other proteins in certain circumstances, including E. coli rec A and oxidized actin (Burns 1987). This product is routinely tested in ELISA on Tubulin.
Tested Reactivity	Hu, Ms, Rat, Bird, Bov, Dm, Dog, Pig, Xenopus, Yeast
Predict Reactivity	Amph, Plnt
Tested Application	ELISA, ICC/IF, IHC-Fr, IHC-P, IP, RIA, WB
Host	Rat
Clonality	Monoclonal
Clone	YL1/2
Isotype	IgG2a
Target Name	alpha Tubulin
Species	Yeast
Immunogen	Yeast tubulin
Conjugation	Un-conjugated
Alternate Names	Tubulin K-alpha-1; Alpha-tubulin ubiquitous; Tubulin alpha-ubiquitous chain; Tubulin alpha-1B chain; K-ALPHA-1

Application Instructions

Application table

Application	Dilution
ELISA	1:100 - 1:1000
ICC/IF	1:500 - 1:1000
IHC-Fr	Assay-dependent
IHC-P	Assay-dependent
IP	Assay-dependent
RIA	Assay-dependent
WB	1:3000 - 1:10000

Application Note

WB: This antibody is suitable for use as a loading control.
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

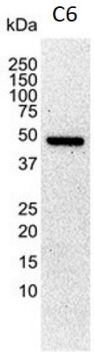
Properties

Form	Liquid
Purification	Purification with Protein G.
Buffer	PBS and 0.09% Sodium azide.
Preservative	0.09% 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

Gene Symbol	TUBA1B
Gene Full Name	tubulin, alpha 1b
Function	Tubulin is the major constituent of microtubules. It binds two moles of GTP, one at an exchangeable site on the beta chain and one at a non-exchangeable site on the alpha chain. [UniProt]
Research Area	Signaling Transduction antibody; Loading Control antibody
Calculated Mw	50 kDa
PTM	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 TTLL10 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. Nitration of Tyr-451 is irreversible and interferes with normal dynein intracellular distribution. Undergoes a tyrosination/detyrosination cycle, the cyclic removal and re-addition of a C-terminal tyrosine residue by the enzymes tubulin tyrosine carboxypeptidase (TTCP) and tubulin tyrosine ligase (TTL), respectively. Tubulin alpha-1B chain: Tyrosination promotes microtubule interaction with CAP-Gly domain-containing proteins such as CLIP1, CLIP2 and DCTN1 (By similarity). Tyrosination regulates the initiation of dynein-dynactin motility via interaction with DCTN1, which brings the dynein-dynactin complex into contact with microtubules (PubMed:26972003). In neurons, tyrosinated tubulins mediate the initiation of retrograde vesicle transport (By similarity). Detyrosinated tubulin alpha-1B chain: Detyrosination is involved in metaphase plate congression by guiding chromosomes during mitosis: detyrosination promotes interaction with CENPE, promoting pole-proximal transport of chromosomes toward the equator (PubMed:25908662). Detyrosination increases microtubules-dependent mechanotransduction in dystrophic cardiac and skeletal muscle. In cardiomyocytes, detyrosinated microtubules are required to resist to contractile compression during contraction: detyrosination promotes association with desmin (DES) at force-generating sarcomeres, leading to buckled microtubules and mechanical resistance to contraction (By similarity).

Images



ARG22795 anti-alpha Tubulin antibody [YL1/2] WB image

Western blot: C6 Rat glioma whole cell lysate stained with ARG22795 anti-alpha Tubulin antibody [YL1/2].