ARG62684
anti-beta Tubulin antibody [TU-06]

Package: 100 µg
Store at: -20°C

Summary

Product Description	Mouse Monoclonal antibody [TU-06] recognizes beta Tubulin
Tested Reactivity	Hu, Ms, Rat, Arabi, Chk, Fsh, Nicotiana, Paramecium, Pig, Tetrahymena
Tested Application	ICC/IF, IHC-P, WB
Specificity	The clone TU-06 recognizes an epitope (aa 81-95) on phylogenetically conserved N-terminal structural domain of beta-Tubulin (recognizes all beta-Tubulin isoforms) in various species.
Host	Mouse
Clonality	Monoclonal
Clone	TU-06
Isotype	IgM
Target Name	beta Tubulin
Species	Pig
Immunogen	Beta-subunits of porcine brain Tubulin.
Conjugation	Un-conjugated
Alternate Names	Tubulin beta-2A chain; Tubulin beta class IIa; TUBB2; TUBB; CDCBM5

Application Instructions

Application table

Application	Dilution
ICC/IF	2 µg/ml
IHC-P	5 µg/ml
WB	1 µg/ml

Application Note

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.
ICC/IF: Staining technique: Fixed and permeabilized cells.
* The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.

Positive Control

WB: HPB-ALL human peripheral blood leukemia cell line
IHC-P: Heart
ICC/IF: 3T3

Properties

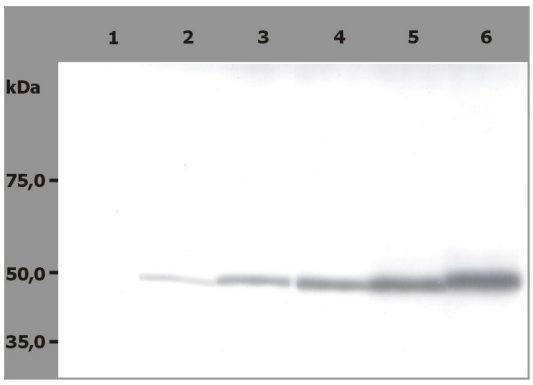
Form	Liquid
Purification	Purified from ascites by precipitation methods.

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

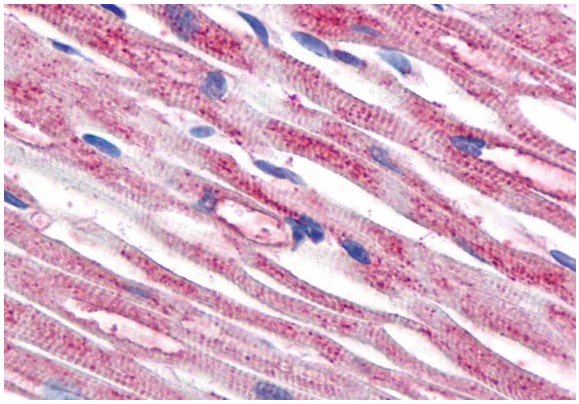
Gene Symbol	TUBB2A
Gene Full Name	tubulin, beta 2A class IIa
Background	The microtubules are intracellular dynamic polymers made up of evolutionarily conserved polymorphic alpha/beta-Tubulin heterodimers and a large number of microtubule-associated proteins (MAPs). The microtubules consist of 13 protofilaments 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.
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 (By similarity). [UniProt]
Research Area	Controls and Markers antibody; Signaling Transduction 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). Phosphorylated on Ser-172 by CDK1 during the cell cycle, from metaphase to telophase, but not in interphase. This phosphorylation inhibits tubulin incorporation into microtubules.

Images



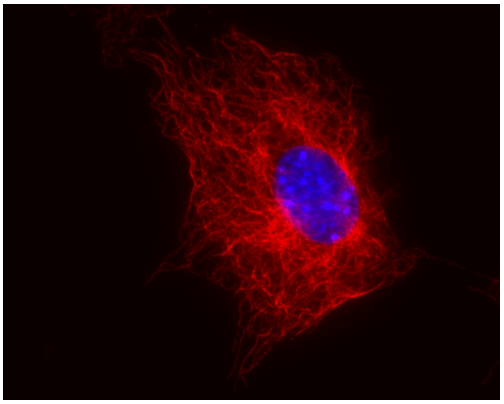
ARG62684 anti-beta Tubulin antibody [TU-06] WB image

Western blot: HPB-ALL human peripheral blood leukemia cell lysate stained with (1) Negative control, (2,3,4,5,6) ARG62684 anti-beta Tubulin antibody [TU-06] (dilutions: 0.5, 1, 2, 4, 5 µg/ml).



ARG62684 anti-beta Tubulin antibody [TU-06] IHC-P image

Immunohistochemistry: Paraffin-embedded Human heart tissue stained with ARG62684 anti-beta Tubulin antibody [TU-06].



ARG62684 anti-beta Tubulin antibody [TU-06] ICC/IF image

Immunofluorescence: 3T3 mouse embryonal fibroblast cells stained with ARG62684 anti-beta Tubulin antibody [TU-06] (red).
Cell nuclei was stained with DAPI (blue).