

α -Tubulin

Cat.No. 302 217; Monoclonal rat antibody, 100 μ g purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μ g purified IgG, lyophilized. Azide was added before lyophilization. For reconstitution add 100 μ l H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C until use.
Applications	WB: 1 : 1000 up to 1 : 5000 (AP staining) IP: not tested yet ICC: 1 : 200 up to 1 : 500 IHC: 1 : 400 IHC-P/FFPE: not tested yet
Clone	37B5
Subtype	IgG1
Immunogen	Synthetic peptide corresponding to AA 443 to 449 from rat α -Tubulin 1A (UniProt Id: P68370-1)
Epitop	Epitop: AA 443 to 449 from rat α -Tubulin 1A (UniProt Id: P68370-1)
Reactivity	Reacts with: mammals, chicken. Other species not tested yet.
Specificity	Specific for α -tubulin.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Microtubules are involved in a wide variety of cellular activities ranging from mitosis and transport events to cell movement and the maintenance of cell shape. Tubulin itself is a globular protein which consists of two polypeptides, α -tubulin and β -tubulin. α - and β -tubulin dimers are assembled to 13 protofilaments that form a microtubule of 22 nm diameter. Tyrosine ligase adds a C-terminal tyrosine to monomeric α -tubulin. Assembled microtubules can again be detyrosinated by a cytoskeleton associated carboxypeptidase. Detyrosinated α -tubulin is referred to as **Glu- α -tubulin**. Another post-translational modification of detyrosinated α -tubulin is C-terminal polyglutamylolation which is characteristic for microtubules in neuronal cells and the mitotic spindle. A third variant of detyrosinated α -tubulin is **Δ 2-tubulin** which lacks the C-terminal glutamic acid. It cannot be tyrosinated by tyrosine ligase and is one of the dominant α -tubulin isoforms in neurons.

Selected References SYSY Antibodies

Developmental switch in the kinase dependency of long-term potentiation depends on expression of GluA4 subunit-containing AMPA receptors.
Luchkina NV, Huupponen J, Clarke VR, Coleman SK, Keinänen K, Taira T, Lauri SE
Proceedings of the National Academy of Sciences of the United States of America (2014) 111(11): 4321-6. **WB; tested species: mouse, rat**

Ongoing intrinsic synchronous activity is required for the functional maturation of CA3-CA1 glutamatergic synapses.
Huupponen J, Molchanova SM, Lauri SE, Taira T
Cerebral cortex (New York, N.Y.: 1991) (2013) 23(11): 2754-64. **WB; tested species: rat**

Selected General References

A vital role of tubulin-tyrosine-ligase for neuronal organization.
Erck C, Peris L, Andrieux A, Meissirel C, Gruber AD, Vernet M, Schweitzer A, Saoudi Y, Pointu H, Bosc C, Salin PA, et al.
Proceedings of the National Academy of Sciences of the United States of America (2005) 102(22): 7853-8.

Association of tubulin carboxypeptidase with microtubules in living cells.
Contin MA, Sironi JJ, Barra HS, Arce CA
The Biochemical journal (1999) 339 (Pt 2): 463-71.

Accumulation of delta 2-tubulin, a major tubulin variant that cannot be tyrosinated, in neuronal tissues and in stable microtubule assemblies.
Paturle-Lafanechère L, Manier M, Trigault N, Pirollet F, Mazarguil H, Job D
Journal of cell science (1994) 107 (Pt 6): 1529-43.

Characterization of the tubulin-tyrosine ligase.
Ersfeld K, Wehland J, Plessmann U, Dodemont H, Gerke V, Weber K
The Journal of cell biology (1993) 120(3): 725-32.

Class II tubulin, the major brain beta tubulin isotype is polyglutamylated on glutamic acid residue 435.
Rüdiger M, Plessman U, Klöppel KD, Wehland J, Weber K
FEBS letters (1992) 308(1): 101-5.

Autoregulation of tubulin synthesis in hepatocytes and fibroblasts.
Caron JM, Jones AL, Kirschner MW
The Journal of cell biology (1985) 101(5 Pt 1): 1763-72.

Autoregulation of tubulin synthesis in enucleated cells.
Caron JM, Jones AL, Rall LB, Kirschner MW
Nature () 317(6038): 648-51.