Synaptic Systems

Rudolf-Wissell-Str. 28
37079 Göttingen, Germany
Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

Tyr-α-tubulin

Cat.No. 302 117; Monoclonal rat antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Azide was added before lyophilization. For reconstitution add 100 µl H_2O 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**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P/FFPE**: 1 : 200
Clone	YL1-2
Subtype	IgG2a
Immunogen	Recombinant protein corresponding to AA 1 to 447 from Clostridium botulinum Tyr-α-tubulin
Epitop	GGY
Reactivity	Reacts with: human, rat, mouse, vertebrates, invertebrates, yeast. Other species not tested yet.
Specificity	Specific for tyrosinated α-tubulin (tyr-tubulin). No cross reaction to glu-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 maintainance 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 ads a C-terminal tyrosin 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 polyglutamylation which is characteristic for microtubules in neuronal cells and the mitotic spindle. A third variant of detyrosinated α-tubulin is **Δ2-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 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.