

α -Tubulin

Cat.No. 302 008; Recombinant rabbit antibody, 100 μ g purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 μ g purified IgG, lyophilized. 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 : 500 IHC: 1 : 500 IHC-P/FFPE: not tested yet
Clone	RbF2C
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 1 from bovine α -Tubulin
Reactivity	Reacts with: human, rat, mouse, cow. Other species not tested yet.
Specificity	Specific for α -tubulin.
Remarks	This antibody is a chimeric antibody based on the monoclonal mouse antibody F2C. The constant regions of the heavy and light chains have been replaced with rabbit specific sequences. The antibody can therefore be used with standard anti-rabbit secondary reagents. The antibody has been expressed in mammalian cells and carries a Strep-tag® at the C-terminus of the heavy chain.

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 polyglutamylation 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 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.