

β3-Tubulin

Cat.No. 302 306; Polyclonal chicken antibody, 200 µl antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antibody, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	WB: 1 : 1000 up to 1 : 10000 (AP staining) IP: not tested yet ICC: 1 : 500 IHC: 1 : 500 IHC-P: 1 : 500
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of mouse β3-tubulin (UniProt Id: Q9ERD7)
Reactivity	Reacts with: human (Q13509), rat (Q4QRB4), mouse (Q9ERD7). Other species not tested yet.
Specificity	Specific for β3-tubulin.
Matching control	302-3P

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

Background

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 (1). 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 25 nm diameter (1). **Class III β-tubulin** is abundant in the central and peripheral nervous systems (CNS and PNS) where it is prominently expressed during fetal and postnatal development (2). It is widely used as a neuronal marker in normal and neoplastic tissues but has also been reported to be expressed in certain tumours of non-neuronal origin (3).

Selected References for 302 306

BDNF-dependent modulation of axonal transport is selectively impaired in ALS.
Tosolini AP, Sleight JN, Surana S, Rhymes ER, Cahalan SD, Schiavo G
Acta neuropathologica communications (2022) 101: 121. . **IHC; tested species: mouse**

nNOS-CAPON blockers produce anxiolytic effects by promoting synaptogenesis in chronic stress-induced animal models of anxiety.
Zhu LJ, Shi HJ, Chang L, Zhang CC, Si M, Li N, Zhu DY
British journal of pharmacology (2020) 17716: 3674-3690. . **ICC; tested species: mouse**

DOPAL initiates αSynuclein-dependent impaired proteostasis and degeneration of neuronal projections in Parkinson's disease.
Masato A, Plotegher N, Terrin F, Sandre M, Faustini G, Thor A, Adams S, Berti G, Cogo S, De Lazzari F, Fontana CM, et al.
NPJ Parkinson's disease (2023) 91: 42. . **ICC; tested species: mouse, rat**

Rab10 regulates the sorting of internalised TrkB for retrograde axonal transport.
Lazo OM, Schiavo G
eLife (2023) 12: . . **ICC; tested species: mouse**

REST/NRSF drives homeostatic plasticity of inhibitory synapses in a target-dependent fashion.
Prestigio C, Ferrante D, Marte A, Romei A, Lignani G, Onofri F, Valente P, Benfenati F, Baldelli P
eLife (2021) 10: . . **ICC; tested species: mouse**

Essential role for InSyn1 in dystroglycan complex integrity and cognitive behaviors in mice.
Uezu A, Hisey E, Kobayashi Y, Gao Y, Bradshaw TW, Devlin P, Rodriguez R, Tata PR, Soderling S
eLife (2019) 8: . . **ICC; tested species: mouse**

Selected General References

Class III beta-tubulin isotype: a key cytoskeletal protein at the crossroads of developmental neurobiology and tumor neuropathology.
Katsetos CD et al. *J. Child Neurol.* (2003) PubMed:14736079

Expression of class III beta-tubulin correlates with unfavorable survival outcome in patients with resected non-small cell lung cancer.
Koh Y et al. *J Thorac Oncol* (2010) PubMed:20087230

Class III beta-tubulin is a component of the mitotic spindle in multiple cell types.
Jouhilahti EM et al. *J. Histochem. Cytochem.* (2008) PubMed:18796406

Early born lineage of retinal neurons express class III beta-tubulin isotype.
Sharma RK et al. *Brain Res.* (2007) PubMed:17900541

Breakdown of axonal synaptic vesicle precursor transport by microglial nitric oxide.
Stagi M et al. *J. Neurosci.* (2005) PubMed:15647478

Access the online factsheet including applicable protocols at <https://sysy.com/product/302306> or scan the QR-code.



FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera:** With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies:** Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein. For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.