

## β3-Tubulin

Cat.No. 302 302; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

### Data Sheet

|                         |   |
|-------------------------|---|
| Reconstitution/ Storage | 200 µl antiserum, lyophilized. For <b>reconstitution</b> add 200 µl H <sub>2</sub> O, then aliquot and store at -20°C until use.<br>Antibodies should be stored at +4°C when still lyophilized. Do not freeze!<br>For detailed information, see back of the data sheet. |
| Applications            | <b>WB:</b> 1 : 1000 up to 1 : 10000 (AP staining)<br><b>IP:</b> yes<br><b>ICC:</b> 1 : 1000 up to 1 : 5000<br><b>IHC:</b> 1 : 200 up to 1 : 500<br><b>IHC-P:</b> 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).<br>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 302 302

- BMP/SMAD Pathway Promotes Neurogenesis of Midbrain Dopaminergic Neurons In Vivo and in Human Induced Pluripotent and Neural Stem Cells.  
Jovanovic VM, Salti A, Tilleman H, Zega K, Jukic MM, Zou H, Friedel RH, Prakash N, Blaess S, Edenhofer F, Brodski C, et al. *The Journal of neuroscience : the official journal of the Society for Neuroscience* (2018) 387: 1662-1676. . **IHC; tested species: mouse**
- The Actin Nucleator Cobl Is Critical for Centriolar Positioning, Postnatal Planar Cell Polarity Refinement, and Function of the Cochlea.  
Haag N, Schüler S, Nietzsche S, Hübner CA, Strenzke N, Qualmann B, Kessels MM *Cell reports* (2018) 249: 2418-2431.e6. . **WB; tested species: mouse**
- Neuron-astrocyte interaction enhance GABAergic synaptic transmission in a manner dependent on key metabolic enzymes.  
Kaczor P, Rakus D, Mozrzyms JW *Frontiers in cellular neuroscience* (2015) 9: 120. . **ICC**
- Motor innervation directs the correct development of the mouse sympathetic nervous system.  
Erickson AG, Motta A, Kastriti ME, Edwards S, Couplier F, Théouille E, Murtazina A, Poverennaya I, Wies D, Ganofsky J, Canu G, et al. *Nature communications* (2024) 151: 7065. . **IHC; tested species: mouse**
- Neph1 is required for neurite branching and is negatively regulated by the PRRXL1 homeodomain factor in the developing spinal cord dorsal horn.  
Baltar J, Miranda RM, Cabral M, Rebelo S, Grahammer F, Huber TB, Reguenga C, Monteiro FA *Neural development* (2024) 191: 13. . **ICC; tested species: mouse**
- ARGX-119 is an agonist antibody for human MuSK that reverses disease relapse in a mouse model of congenital myasthenic syndrome.  
Vanhouwaert R, Oury J, Vankerckhoven B, Steyaert C, Jensen SM, Vergoossen DLE, Kneip C, Santana L, Lim JL, Plompp JJ, Augustinus R, et al. *Science translational medicine* (2024) 16765: eado7189. . **IHC; tested species: mouse**
- Essential transcription factors for induced neuron differentiation.  
Lu C, Garipler G, Dai C, Roush T, Salome-Correa J, Martin A, Liscovitch-Brauer N, Mazzoni EO, Sanjana NE *Nature communications* (2023) 141: 8362. . **ICC; tested species: human**
- A RhoA-mediated biomechanical response in Schwann cells modulates peripheral nerve myelination.  
Seixas AI, Morais MRG, Brakebusch C, Relvas JB *Progress in neurobiology* (2023) 227: 102481. . **WB; tested species: mouse**
- Generation of three induced pluripotent stem cell lines carrying different variants of the BDNF (Val66Met) polymorphism.  
Horschitz S, Frank J, Koch P *Stem cell research* (2023) 66: 102989. . **ICC; tested species: human**
- Endosomal phosphatidylinositol 3-phosphate controls synaptic vesicle cycling and neurotransmission.  
Liu GT, Kochlamazashvili G, Puchkov D, Müller R, Schultz C, Mackintosh AI, Vollweider D, Haucke V, Soykan T *The EMBO journal* (2022) : e109352. . **WB; tested species: rat**

Access the online factsheet including applicable protocols at <https://sysy.com/product/302302> 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.