SYSY Antibodies

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β3-Tubulin (TuJ1)

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

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, 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**: yes **ICC**: 1 : 1000 up to 1 : 5000 **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: 1 : 2000 up to 1 : 4000
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 maintainance 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 tumors of non-neuronal origin (3).

Selected References for 302 302

Axon-specific microtubule regulation drives asymmetric regeneration of sensory neuron axons.
Costa AC, Murillo BR, Bessa R, Ribeiro R, Ferreira da Silva T, Porfírio-Rodrigues P, Martins GG, Brites P, Kneussel M, Misgeld T, Brill MS, et al.
eLife (2025) 13: . . **ICC, 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**

Limb-on-a-Chip: An All-Hydrogel Platform for Scalable and Reproducible Engineering of Functional Neuromuscular Tissues.
Schwendeman L, Bu A, Kohli S, Afghah F, Rossy T, Raman R
Cell biomaterials (2026) : . . **ICC; tested species: mouse**

Enteric botulinum neurotoxins facilitate infection by Salmonella and Shigella.
Fabris F, Brun P, Megighian A, Bernabè G, Castagliuolo I, Drigo I, Bano L, Lista F, Bernardini ML, Johnson EA, Montecucco C, et al.
Science advances (2026) 129: eady9407. . **WB; tested species: mouse**

Activating Muscarinic Receptor Signaling in Intrapancreatic Neurons Is Required for Parasympathetic Cholinergic Control of Pancreatic Cell Function.
Levi NJ, Tamayo Garcia A, Sokolov M, Barro-Soria R, Caicedo A
Diabetes (2026) 753: 468-482. . **IHC; tested species: mouse**

Neuronal expression of S100B triggered by oligomeric Aβ peptide contributes to protection against cytoskeletal damage and synaptic loss.
Saavedra J, Nascimento M, Figueira AJ, Oliveira da Silva MI, Gião T, Oliveira J, Liz MA, Gomes CM, Cardoso I
Frontiers in molecular neuroscience (2025) 18: 1636365. . **ICC; tested species: rat**

N6-methyladenosine (m6A) dysregulation contributes to network excitability in temporal lobe epilepsy.
Mathoux J, Wilson MM, Srinivas S, Litovskich G, Villalba Benito L, Tran C, Kesavan J, Harnett A, Auer T, Sanz-Rodriguez A, Kh A E Alkhayyat M, et al.
JCI insight (2025) 1014: . . **ICC; tested species: human**

Human iPSC-Derived Neurons with Reliable Synapses and Large Presynaptic Action Potentials.
Bullmann T, Kaas T, Ritzau-Jost A, Wöhner A, Kirmann T, Rizalar FS, Holzer M, Nerlich J, Puchkov D, Geis C, Eilers J, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 4424: . . **ICC; tested species: human**

Stretch triggers microtubule stabilization and MARCKS-dependent membrane incorporation in the shaft of embryonic axons.
Sousa SC, Aroso M, Bessa R, Veríssimo E, Ferreira da Silva T, Lopes CDF, Brites P, Vieira J, Vieira CP, Aguiar PC, Sousa MM, et al.
Current biology : CB (2024) 3419: 4577-4588.e8. . **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.
Vanhauwaert R, Oury J, Vankerckhoven B, Steyaert C, Jensen SM, Vergoossen DLE, Kneip C, Santana L, Lim JL, Plomp JJ, Augustinus R, et al.
Science translational medicine (2024) 16765: eado7189. . **IHC; tested species: mouse**

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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.