SYSY Antibodies

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MAP1B

Cat.No. 557 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°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 : 2000 **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 1000 up to 1 : 10000
Immunogen	Recombinant protein corresponding to the N-terminal part of mouse MAP1B (UniProt Id: P14873)
Reactivity	Reacts with: mouse (P14873), rat (P15205), human (P46821). Other species not tested yet.

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

Background

Microtubule-associated protein 1B (MAP1B) is a neuronal microtubule-associated protein of the MAP1 family. It is synthesized as a precursor that is cleaved near the carboxy terminus into a heavy and a light chain which can interact with each other. MAP1B can bind microtubules and actin, linking the two cytoskeletal systems (1-3). The MAP1 protein family is conserved in vertebrates (2, 4). MAP1B is expressed predominantly in the nervous system, especially during early development, where it is enriched in growing axons and growth cones, but it remains present in adult brain regions with high plasticity such as hippocampus, cortex, cerebellum, and olfactory bulb (2, 4, 5, 6). Functionally, MAP1B regulates microtubule stability and actin dynamics, axon outgrowth and guidance, neuronal migration, dendritic spine development, synaptic maturation, and presynaptic organization (3, 5, 6, 7). MAP1B deficiency alters synaptic vesicle fusion, leads to abnormal presynaptic terminal structure and dendritic spines, and it impairs mitochondrial retrograde transport (5, 7, 8). MAP1B also plays a role in the proliferation and migration of cancer cells, and human MAP1B mutations are correlated with the development of a variety of neurological diseases including Parkinson's disease, schizophrenia, and periventricular nodular heterotopia (3).

Selected General References

Microtubule-associated protein 1B: identification of a major component of the neuronal cytoskeleton.
Bloom GS et al. Proc Natl Acad Sci U S A (1985) PubMed:3895231

Microtubule-associated protein, MAP1B, encodes functionally distinct polypeptides.
Tan TC et al. J Biol Chem (2024) PubMed:39305956

Microtubule-associated protein 1B (MAP1B)-deficient neurons show structural presynaptic deficiencies in vitro and altered presynaptic physiology.
Bodaleo FJ et al. Sci Rep (2016) PubMed:27425640

The MAP1B case: an old MAP that is new again.
Villarroel-Campos D et al. Dev Neurobiol (2014) PubMed:24700609

The role of microtubule-associated protein 1B in axonal growth and neuronal migration in the central nervous system.
Yang M et al. Neural Regen Res (2012) PubMed:25737712

Microtubule-associated protein 1B (MAP1B) is required for dendritic spine development and synaptic maturation.
Tortosa E et al. J Biol Chem (2011) PubMed:21984824

The MAP1 family of microtubule-associated proteins.
Halpain S et al. Genome Biol (2006) PubMed:16938900

Role of MAP1B in axonal retrograde transport of mitochondria.
Jiménez-Mateos EM et al. Biochem J (2006) PubMed:16536727

Access the online factsheet including applicable protocols at https://sysy.com/product/557003 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.