SYSY Antibodies

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MAP1B-LC1

Cat.No. 410 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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 (AP staining)
Immunogen	Synthetic peptide corresponding to AA 2383 to 2396 from mouse MAP1B (UniProt Id: P14873)
Reactivity	Reacts with: mouse (P14873). Weaker signal: rat (P15205). Other species not tested yet.

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

Background

MAP1B, also referred to as Microtubule-associated protein 1B, MAP5, MAP1.2, or MAP1X, belongs to the microtubule-associated protein family.
The MAP1B gene encodes for a single precursor protein that is subsequently cleaved into a heavy chain of 280 kDa (MAP1B-HC) and a light chain of 32 kDa (**MAP1B-LC1**). Both chains have a microtubule-binding domain and an actin-binding domain, and they associate to form a multimeric complex.
MAP1B is mainly expressed in neurons. It is present at its highest levels in the brain during early postnatal development. In the adult, MAP1B expression remains elevated in brain regions that retain a high level of axonal growth and synaptic plasticity.
MAP1B is involved in microtubule and actin filament association. It is required for proper axon growth and dendritic spine morphogenesis in developing neurons.
In the last few years, it has become apparent that MAP1B has other cellular and molecular functions that are not related to its microtubule-stabilizing properties.
In line with this, MAP1B-LC1 has additional functions outside of the complex with the heavy chain. It associates with various proteins like serotonin receptor 5-HT6R, α1-syntrophin, GRIP1, Tiam1, and p53. Accordingly, MAP1B-LC1 may be considered a signaling protein that regulates molecular pathways.

Selected General References

MAP1B Light Chain Modulates Synaptic Transmission via AMPA Receptor Intracellular Trapping.
Palenzuela R et al. J. Neurosci. (2017) PubMed:28904092

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

Direct interaction and functional coupling between human 5-HT6 receptor and the light chain 1 subunit of the microtubule-associated protein 1B (MAP1B-LC1).
Kim SH et al. PLoS ONE (2014) PubMed:24614691

The light chain 1 subunit of the microtubule-associated protein 1B (MAP1B) is responsible for Tiam1 binding and Rac1 activation in neuronal cells.
Henríquez DR et al. PLoS ONE (2012) PubMed:23300879

The light chains of microtubule-associated proteins MAP1A and MAP1B interact with α1-syntrophin in the central and peripheral nervous system.
Fuhrmann-Stroissnigg H et al. PLoS ONE (2012) PubMed:23152929

Microtubule-associated protein 1B light chain (MAP1B-LC1) negatively regulates the activity of tumor suppressor p53 in neuroblastoma cells.
Lee SY et al. FEBS Lett. (2008) PubMed:18656471

Access the online factsheet including applicable protocols at https://sysy.com/product/410005 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.