

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 ₂ O 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, Gutiérrez Y, Draffin JE, Lario A, Benoist M, Esteban JA

The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 37(41): 9945-9963. .

The MAP1B case: an old MAP that is new again.

Villarroel-Campos D, Gonzalez-Billault C

Developmental neurobiology (2014) 74(10): 953-71. .

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, Kim DH, Lee KH, Im SK, Hur EM, Chung KC, Rhim H

PloS one (2014) 9(3): e91402. .

The light chain 1 subunit of the microtubule-associated protein 1B (MAP1B) is responsible for Tiam1 binding and Rac1 activation in neuronal cells.

Henriquez DR, Bodaleo FJ, Montenegro-Venegas C, González-Billault C

PloS one (2012) 7(12): e53123. .

The light chains of microtubule-associated proteins MAP1A and MAP1B interact with α1-syntrophin in the central and peripheral nervous system.

Fuhrmann-Stroissnigg H, Noiges R, Descovich L, Fischer I, Albrecht DE, Nothias F, Froehner SC, Propst F

PloS one (2012) 7(11): e49722. .

Microtubule-associated protein 1B light chain (MAP1B-LC1) negatively regulates the activity of tumor suppressor p53 in neuroblastoma cells.

Lee SY, Kim JW, Jeong MH, An JH, Jang SM, Song KH, Choi KH

FEBS letters (2008) 582(19): 2826-32. .

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 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.