SYSY Antibodies

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MAP2

Cat.No. 188 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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) (see remarks) **IP**: not tested yet **ICC**: 1 : 200 up to 1 : 1000 (see remarks) **IHC**: 1 : 200 up to 1 : 500 **IHC-P**: 1 : 500 up to 1 : 2000 **IHC-Fr**: 1 : 500 (see remarks) **DNA-PAINT**: external data (see remarks)
Clone	198A5
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to residues near the amino terminus of human Map2 (UniProt Id: P11137-4)
Epitop	AA 82 to 96 from human MAP2-4 hu (UniProt Id: P11137-4)
Reactivity	Reacts with: human (P11137), rat (P15146), mouse (P20357). No signal: zebrafish. Other species not tested yet.
Specificity	Specific for MAP2; recognizes all four isoforms.
Matching control	188-0P
Remarks	**WB**: Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE. **ICC**: The following fixatives are possible: 4% formaldehyde/PFA, methanol. **IHC-Fr**: Acetone fixation is recommended. **DNA-PAINT**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

There are two major classes of heat-stable microtubule-associated proteins (MAPs): MAP2 and tau (MAPT). Both bind microtubules and regulate their polymerization and stability—a critical process for maintaining cellular architecture and dynamics (1).

MAP2 exists in four main isoforms—MAP2A, MAP2B, MAP2C, and MAP2D—via alternative splicing. The high molecular weight isoforms MAP2A/B (~250 kDa) and lower molecular weight isoforms MAP2C/D (~70 kDa) all share a conserved microtubule-binding core domain, important for dendritic stabilization and neuritogenesis (2).

Since microtubule dynamics are central to cell division, migration, and morphology, aberrations in MAP2 and tau expression have been implicated in several types of cancer.

Consequently, MAP2 expression has diagnostic and prognostic relevance in neuro-oncology. MAP2 immunoreactivity helps distinguish glial neoplasms in neuropathology, and its expression tends to vary according to tumor grade (3). While classic low-grade gliomas often show robust MAP2 staining, higher-grade tumors may exhibit less-specific and more heterogeneous patterns. Moreover, in melanoma, reduced MAP2 expression correlates with increased tumor aggressiveness, underscoring its potential role as a tumor suppressive marker (4).

Selected References for 188 011

Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**

Influenza A Virus (H1N1) Infection Induces Microglial Activation and Temporal Dysbalance in Glutamatergic Synaptic Transmission.
Düsedau HP, Steffen J, Figueiredo CA, Boehme JD, Schultz K, Erck C, Korte M, Faber-Zuschratter H, Smalla KH, Dieterich D, Kröger A, et al.
mBio (2021) 125: e0177621. . **IHC-P; tested species: mouse**

Neuronal-targeted TFEB rescues dysfunction of the autophagy-lysosomal pathway and alleviates ischemic injury in permanent cerebral ischemia.
Liu Y, Xue X, Zhang H, Che X, Luo J, Wang P, Xu J, Xing Z, Yuan L, Liu Y, Fu X, et al.
Autophagy (2018) : . . **WB; tested species: rat**

Up-regulation of neurofilament light chains is associated with diminished immunoreactivities for MAP2 and tau after ischemic stroke in rodents and in a human case.
Härtig W, Krueger M, Hofmann S, Preißler H, Märkel M, Frydrychowicz C, Mueller WC, Bechmann I, Michalski D
Journal of chemical neuroanatomy (2016) 78: 140-148. . **IHC**

Combinatorial hedgehog and mitogen signaling promotes the in vitro expansion but not retinal differentiation potential of retinal progenitor cells.
Ringuette R, Wang Y, Atkins M, Mears AJ, Yan K, Wallace VA
Investigative ophthalmology & visual science (2014) 551: 43-54. . **ICC; tested species: mouse**

Activity-dependent localization and dynamics of STIM1 and STIM2 at ER-PM contacts in hippocampal neurons.
Chhikara A, Maciąg F, Sorusch N, Heine M
Cell reports (2025) 4410: 116290. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/188011 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.