

MAP2

Cat.No. 188 003; 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 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) IP: not tested yet ICC: 1 : 500 up to 1 : 1000 IHC: 1 : 250 up to 1 : 500 IHC-P: 1 : 250 up to 1 : 500
Immunogen	Recombinant protein corresponding to residues near the amino terminus of human Map2 (UniProt Id: P11137-4)
Reactivity	Reacts with: human (P11137), rat (P15146), mouse (P20357). Other species not tested yet.
Specificity	Specific for MAP2; recognizes all four isoforms.
Matching control	188-OP
Remarks	WB: Due to the large size of this protein, we recommend NuPAGE 3-8% Tris-Acetate gels for SDS-PAGE.

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 188 003

An increase in basal BDNF provokes hyperactivation of the Akt-mammalian target of rapamycin pathway and deregulation of local dendritic translation in a mouse model of Down's syndrome.

Troca-Marín JA, Alves-Sampaio A, Montesinos ML

The Journal of neuroscience : the official journal of the Society for Neuroscience (2011) 3126: 9445-55. . **ICC, IHC**

Optimization of Transcription Factor-Driven Neuronal Differentiation from Human Induced Pluripotent Stem Cells for Disease Modelling and Drug Screening.

Servetti M, Caramia M, Parodi G, Loiacono F, Nano E, Biddau G, Ferrando L, Morinelli L, Valente P, Martinoia S, Escelsior A, et al. Stem cell reviews and reports (2025) : . . **ICC; tested species: human**

Disease-associated polyalanine expansion mutations impair UBA6-dependent ubiquitination.

Amer-Sarsour F, Falik D, Berdichevsky Y, Kordonsky A, Eid S, Rabinski T, Ishtayeh H, Cohen-Adiv S, Braverman I, Blumen SC, Laviv T, et al.

The EMBO journal (2024) : . . **ICC; tested species: mouse**

Microglia rescue neurons from aggregate-induced neuronal dysfunction and death through tunneling nanotubes.

Scheiblich H, Eikens F, Wischhof L, Opitz S, Jüngling K, Cserép C, Schmidt SV, Lambert J, Bellande T, Pósai B, Geck C, et al. Neuron (2024) : . . **IHC; tested species: mouse**

Age-related deficits in neuronal physiology and cognitive function are recapitulated in young mice overexpressing the L-type calcium channel, CaV 1.3.

Moore SJ, Cazares VA, Temme SJ, Murphy GG

Aging cell (2023) 223: e13781. . **ICC; tested species: mouse**

Vesicular Glutamate Release from Feeder-Free hiPSC-Derived Neurons.

Baldassari S, Cervetto C, Amato S, Fruscione F, Balagura G, Pelassa S, Musante I, Iacomino M, Traverso M, Corradi A, Scudieri P, et al.

International journal of molecular sciences (2022) 2318: . . **ICC; tested species: human**

ASCL1- and DLX2-induced GABAergic neurons from hiPSC-derived NPCs.

Barretto N, Zhang H, Powell SK, Fernando MB, Zhang S, Flaherty EK, Ho SM, Slesinger PA, Duan J, Brennand KJ

Journal of neuroscience methods (2020) 334: 108548. . **ICC; tested species: human**

Access the online factsheet including applicable protocols at <https://sysy.com/product/188003> 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 at 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.