

## MAP 2

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 <b>reconstitution</b> add 100 µl H <sub>2</sub> O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. For detailed information, see back of the data sheet.
Applications	<b>WB:</b> 1 : 1000 (AP staining) (see remarks) <b>IP:</b> not tested yet <b>ICC:</b> 1 : 100 up to 1 : 500 <b>IHC:</b> 1 : 100 up to 1 : 200 <b>IHC-P/FFPE:</b> 1 : 500
Clone	198A5
Subtype	IgG1 (κ light chain)
Immunogen	Recombinant protein corresponding to AA 2 to 314 from human MAP2-4 hu (UniProt Id: P11137-4)
Epitop	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 MAP 2; recognizes all four isoforms.
Matching control	188-0P
Remarks	<b>WB:</b> Due to its large size, MAP 2 requires special gel-electrophoresis and Western blot protocols for visualization by immunoblotting. Excellent results can be obtained with the 4-12% TRIS-glycine gradient gels from anamed or NuPAGE 3-8% TRIS-Acetate gradient gels from invitrogen.

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

Access the online factsheet including applicable protocols at <https://susy.com/product/188011> or scan the QR-code.



## Background

There are two major classes of heat stable microtubule associated proteins (MAPs): **MAP 2**, and tau. Both protein classes are involved in the regulation of microtubule polymerization in cells. Four differentially regulated isoforms of MAP 2 have been described so far.

### Selected References for 188 011

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) 55:1: 43-54. . **ICC; tested species: mouse**

FEZ1 forms complexes with CRMP1 and DCC to regulate axon and dendrite development.

Chua JY, Ng SJ, Yagensky O, Wanker EE, Chua JJE eNeuro (2021) : . . **ICC; tested species: rat**

Genetic inactivation of mTORC1 or mTORC2 in neurons reveals distinct functions in glutamatergic synaptic transmission.

McCabe MP, Cullen ER, Barrows CM, Shore AN, Tooke KI, Laprade KA, Stafford JM, Weston MC eLife (2020) 9: . . **ICC; tested species: mouse**

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**

Pyk2 overexpression in postsynaptic neurons blocks amyloid β1-42-induced synaptotoxicity in microfluidic co-cultures.

Kilinc D, Vreulx AC, Mendes T, Flaig A, Marques-Coelho D, Verschoore M, Demiautte F, Amouyel P, Eysert F, Dourlen P, et al. Brain communications (2020) 22: fcaa139. . **ICC; tested species: rat**

Caldendrin Directly Couples Postsynaptic Calcium Signals to Actin Remodeling in Dendritic Spines.

Mikhaylova M, Bär J, van Bommel B, Schätzle P, YuanXiang P, Raman R, Hradsky J, Konietzny A, Loktionov EY, Reddy PP, Lopez-Rojas J, et al. Neuron (2018) 97: 1110-1125.e14. . **ICC; tested species: mouse**

Re-evaluation of neuronal P2X7 expression using novel mouse models and a P2X7-specific nanobody.

Kaczmarek-Hajek K, Zhang J, Kopp R, Grosche A, Rissiek B, Saul A, Bruzzone S, Engel T, Jooss T, Krautloher A, Schuster S, et al. eLife (2018) 7: . . **IHC; tested species: mouse**

Biocompatibility of a Magnetic Tunnel Junction Sensor Array for the Detection of Neuronal Signals in Culture.

Moretti D, DiFrancesco ML, Sharma PP, Dante S, Albisetti E, Monticelli M, Bertacco R, Petti D, Baldelli P, Benfenati F Frontiers in neuroscience (2018) 12: 909. . **ICC; tested species: rat**

Lymphoblast-derived integration-free iPSC line AD-TREM2-1 from a 67year-old Alzheimer's disease patient expressing the TREM2 p.R47H variant.

Martins S, Yigit H, Bohndorf M, Graffmann N, Fiszl AR, Wruck W, Slegers K, Van Broeckhoven C, Adjaye J Stem cell research (2018) 29: 60-63. . **ICC; tested species: human**

Genetically Induced Retrograde Amnesia of Associative Memories After Neuroplastin Ablation.

Bhattacharya S, Herrera-Molina R, Sabanov V, Ahmed T, Iscru E, Stöber F, Richter K, Fischer KD, Angenstein F, Goldschmidt J, Beesley PW, et al. Biological psychiatry (2017) 812: 124-135. . **IHC**

PTEN Loss Increases the Connectivity of Fast Synaptic Motifs and Functional Connectivity in a Developing Hippocampal Network.

Barrows CM, McCabe MP, Chen H, Swann JW, Weston MC The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3736: 8595-8611. . **ICC; tested species: mouse**

BMP7-induced dendritic growth in sympathetic neurons requires p75(NTR) signaling.

Courter LA, Shaffo FC, Ghogha A, Parrish DJ, Lorentz CU, Habecker BA, Lein PJ Developmental neurobiology (2016) 769: 1003-13. . **ICC**

## 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 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.