SYSY Antibodies

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MAP2

Cat.No. 188 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For **reconstitution** add 200 µl H_2O, then aliquot and store at -20°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 : 1000 **IHC**: yes **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), chicken. Other species not tested yet.
Specificity	Specific for MAP 2; recognizes all four isoforms.
Matching control	188-0P
Remarks	**WB**: 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

Background

There are two major classes of heat stable **m**icrotubule **a**ssociated **p**roteins (MAPs): **MAP2**, and tau. Both protein classes are involved in the regulation of microtubule polymerization in cells. Four differentially regulated isoforms of MAP2 have been described so far.

Selected References for 188 002

CD8+ T-Lymphocyte-Driven Limbic Encephalitis Results in Temporal Lobe Epilepsy.
Pitsch J, van Loo KMJ, Gallus M, Dik A, Kamalizade D, Baumgart AK, Gnatkovsky V, Müller JA, Opitz T, Hicking G, Naik VN, et al.
Annals of neurology (2021) 894: 666-685. . **IHC-P; tested species: mouse**

The active zone protein family ELKS supports Ca2+ influx at nerve terminals of inhibitory hippocampal neurons.
Liu C, Bickford LS, Held RG, Nyitrai H, Südhof TC, Kaeser PS
The Journal of neuroscience : the official journal of the Society for Neuroscience (2014) 3437: 12289-303. . **ICC**

Region-specific expression of vesicular glutamate and GABA transporters under various ischaemic conditions in mouse forebrain and retina.
Michalski D, Härtig W, Krügel K, Edwards RH, Böddener M, Böhme L, Pannicke T, Reichenbach A, Grosche A
Neuroscience (2013) 231: 328-44. . **IHC**

Inhibition of 7α,26-dihydroxycholesterol biosynthesis promotes midbrain dopaminergic neuron development.
Hennegan J, Bryant AH, Griffiths L, Trigano M, Bartley OJM, Bartlett JJ, Minahan C, Abreu de Oliveira WA, Yutuc E, Ntikas S, Bartsocas CS, et al.
iScience (2024) 271: 108670. . **ICC; tested species: human**

Evolving prion-like tau conformers differentially alter postsynaptic proteins in neurons inoculated with distinct isolates of Alzheimer's disease tau.
Hromadkova L, Kim C, Haldiman T, Peng L, Zhu X, Cohen M, de Silva R, Safar JG
Cell & bioscience (2023) 131: 174. . **ICC; tested species: mouse**

Contextual fear response is modulated by M-type K+ channels and is associated with subtle structural changes of the axon initial segment in hippocampal GABAergic neurons.
Ruiz SA, Tikochinsky E, Rubovitch V, Pick CG, Attali B
AIMS neuroscience (2023) 101: 33-51. . **IHC; tested species: mouse**

Rebuilding essential active zone functions within a synapse.
Tan C, Wang SSH, de Nola G, Kaeser PS
Neuron (2022) 1109: 1498-1515.e8. . **ICC; tested species: mouse**

Zika virus infection of mature neurons from immunocompetent mice generates a disease-associated microglia and a tauopathy-like phenotype in link with a delayed interferon beta response.
Manet C, Mansuroglu Z, Conquet L, Bortolin V, Comptdaer T, Segrt H, Bourdon M, Menidjel R, Stadler N, Tian G, Herit F, et al.
Journal of neuroinflammation (2022) 191: 307. . **ICC; tested species: mouse**

AAV-Mediated CRISPRi and RNAi Based Gene Silencing in Mouse Hippocampal Neurons.
Deutsch M, Günther A, Lerchundi R, Rose CR, Balfanz S, Baumann A
Cells (2021) 102: . . **IHC; tested species: mouse**

PKC-phosphorylation of Liprin-α3 triggers phase separation and controls presynaptic active zone structure.
Emperador-Melero J, Wong MY, Wang SSH, de Nola G, Nyitrai H, Kirchhausen T, Kaeser PS
Nature communications (2021) 121: 3057. . **ICC; tested species: mouse**

Role of endocannabinoid signaling in a septohabenular pathway in the regulation of anxiety- and depressive-like behavior.
Vickstrom CR, Liu X, Liu S, Hu MM, Mu L, Hu Y, Yu H, Love SL, Hillard CJ, Liu QS
Molecular psychiatry (2020) : . . **IHC; tested species: mouse**

Gabapentin inhibits multiple steps in the amyloid beta toxicity cascade.
González-Sanmiguel J, Burgos CF, Bascuñán D, Fernández-Pérez EJ, Riffo-Lepe N, Boopathi S, Fernández-Pérez A, Bobadilla-Azócar C, González W, Figueroa M, Vicente B, et al.
ACS chemical neuroscience (2020) : . . **ICC; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/188002 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.