SYSY Antibodies

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S100B

Cat.No. 287 003; 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_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**: not tested yet **IP**: not tested yet **ICC**: 1 : 500 up to 1 : 1000 **IHC**: 1 : 1000 up to 1 : 2000 **IHC-P**: 1 : 200
Immunogen	Recombinant protein corresponding to AA 1 to 92 from rat S100B (UniProt Id: P04631)
Reactivity	Reacts with: rat (P04631), mouse (P50114), human (P04271). Other species not tested yet.

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

Background

The family of S100 proteins comprises more than 20 members. These proteins are EF-hand Ca^{2+}-binding proteins, and are widely distributed in mammalian tissue. Since these proteins are soluble in 100 % saturated ammonium-sulfate solution they have been named S100.
S100B is a frequently used marker protein for mature astrocytes whereas GFAP is also expressed in germinal zone cells that maintained their immature developmental stage.

Selected References for 287 003

Optimized Protocol for Proportionate CNS Cell Retrieval as a Versatile Platform for Cellular and Molecular Phenomapping in Aging and Neurodegeneration.
Ain Q, Schmeer CW, Wengerodt D, Hofmann Y, Witte OW, Kretz A
International journal of molecular sciences (2022) 236: . . **FACS; 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**

Probing nano-organization of astroglia with multi-color super-resolution microscopy.
Heller JP, Michaluk P, Sugao K, Rusakov DA
Journal of neuroscience research (2017) 9511: 2159-2171. . **ICC; tested species: rat**

Mapping multi-regional functional connectivity of astrocyte-neuronal networks during behaviors.
Wang H, Huang M, Yang S, Xu J, Li J, Qin H, Liang S, Teng T, Yang C, Gong M, He Y, et al.
Neurophotonics (2024) 114: 045010. . **IHC; tested species: mouse**

Evolutionary changes leading to efficient glymphatic circulation in the mammalian brain.
Kameya N, Sakai I, Saito K, Hamabe-Horiike T, Shinmyo Y, Nakada M, Okuda S, Kawasaki H
Nature communications (2024) 151: 10048. . **IHC**

Ca2+-modulated photoactivatable imaging reveals neuron-astrocyte glutamatergic circuitries within the nucleus accumbens.
Serra I, Esparza J, Delgado L, Martín-Monteagudo C, Puigròs M, Podlesniy P, Trullás R, Navarrete M
Nature communications (2022) 131: 5272. . **IHC; tested species: mouse**

Drebrin controls scar formation and astrocyte reactivity upon traumatic brain injury by regulating membrane trafficking.
Schiweck J, Murk K, Ledderose J, Münster-Wandowski A, Ornaghi M, Vida I, Eickholt BJ
Nature communications (2021) 121: 1490. . **IHC; tested species: mouse**

MeCP2 controls neural stem cell fate specification through miR-199a-mediated inhibition of BMP-Smad signaling.
Nakashima H, Tsujimura K, Irie K, Imamura T, Trujillo CA, Ishizu M, Uesaka M, Pan M, Noguchi H, Okada K, Aoyagi K, et al.
Cell reports (2021) 357: 109124. . **IHC; tested species: human,mouse**

Glial A2B Adenosine Receptors Modulate Abnormal Tachykininergic Responses and Prevent Enteric Inflammation Associated with High Fat Diet-Induced Obesity.
D'Antongiovanni V, Benvenuti L, Fornai M, Pellegrini C, van den Wijngaard R, Cerantola S, Giron MC, Caputi V, Colucci R, Haskó G, Németh ZH, et al.
Cells (2020) 95: . . **IHC; tested species: mouse**

A Method to Visualize the Nanoscopic Morphology of Astrocytes In Vitro and In Situ.
Heller JP, Rusakov DA
Methods in molecular biology (Clifton, N.J.) (2019) 1938: 69-84. . **ICC; tested species: rat**

FGF signaling directs the cell fate switch from neurons to astrocytes in the developing mouse cerebral cortex.
Anh Dinh Duong T, Hoshiba Y, Saito K, Kawasaki K, Ichikawa Y, Matsumoto N, Shinmyo Y, Kawasaki H
The Journal of neuroscience : the official journal of the Society for Neuroscience (2019) : . . **IHC; tested species: mouse**

Selected General References

S100B-immunopositive astrocytes and oligodendrocytes in the hippocampus are differentially afflicted in unipolar and bipolar depression: a postmortem study.
Gos T et al. J Psychiatr Res (2013) PubMed:23896207

Access the online factsheet including applicable protocols at https://sysy.com/product/287003 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.