SYSY Antibodies

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BCAS1

Cat.No. 445 003; 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**: 1 : 1000 up to 1 : 2000 (AP staining) **IP**: not tested yet **ICC**: 1 : 1000 **IHC**: 1 : 1000 (see remarks) **IHC-P**: 1 : 200 up to 1 : 1000
Immunogen	Recombinant protein corresponding to AA 1 to 633 from mouse BCAS1 (UniProt Id: Q80YN3)
Reactivity	Reacts with: mouse (Q80YN3), rat (Q3ZB98-1), human (O75363). Other species not tested yet.
Specificity	Specific for BCAS1 and its known isoforms
Remarks	**IHC**: AGR can improve signal strength and reveals additional immunoreactive structures.

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

Background

Breast **c**arcinoma-**a**mplified **s**equence **1** (BCAS1) was originally identified as a potential oncogene amplified in human cancer cell lines (1). It is also highly expressed in brain (2) where it mainly defines an oligodendroglial subpopulation occuring at regions of active myelin formation (3).
In fetal brain BCAS1 positive oligodendrocytes are restricted to the white matter. In adult brains they persist in the grey matter until old age (3).

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 445 003

LPCAT1, the Enzyme Responsible for Converting LPC to PC, Promotes OPC Differentiation In Vitro.
Shang Q, Zhang X, Pu Y, Lin J, Ma P, Pan Y, Zhao M, Sun D, Cao L
Journal of cellular and molecular medicine (2025) 293: e70387. . **ICC; tested species: mouse**

Cerebral Creatine Deficiency Affects the Timing of Oligodendrocyte Myelination.
Rosko LM, Gentile T, Smith VN, Manavi Z, Melchor GS, Hu J, Shults NV, Albanese C, Lee Y, Rodriguez O, Huang JK, et al.
The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 437: 1143-1153. . **IHC; tested species: mouse**

Oligodendrocyte mechanotransduction channel TMEM63A regulates myelin sheath geometry.
Dereddi RR, Djannatian M, Fiore F, Kalita D, Verkest C, Torres FB, Möbius W, Khodaie B, Ruhwedel T, Alhalaseh K, Schifferer M, et al.
Neuron (2026) : . . **IHC; tested species: mouse**

Sleep loss induces cholesterol-associated myelin dysfunction.
Simayi R, Ficiarà E, Faniyan O, Cerdán Cerdá A, Aboufares El Alaoui A, Fiorini R, Cutignano A, Piscitelli F, Maroto AS, Santos A, Del Gallo F, et al.
Proceedings of the National Academy of Sciences of the United States of America (2026) 1234: e2523438123. . **IHC; tested species: rat**

Developmental maturation and regional heterogeneity but no sexual dimorphism of the murine CNS myelin proteome.
Siems SB, Gargareta VI, Schadt LC, Daguano Gastaldi V, Jung RB, Piepkorn L, Casaccia P, Sun T, Jahn O, Werner HB
Glia (2025) 731: 38-56. . **IHC; tested species: mouse**

Transcriptional dynamics of the oligodendrocyte lineage and its regulation by the brain erythropoietin system.
Ye L, Daguano Gastaldi V, Curto Y, Wildenburg AF, Yu X, Hindermann M, Eggert S, Ronnenberg A, Wang Q, Butt UJ, Kawaguchi R, et al.
Nature communications (2025) 161: 8291. . **IHC; tested species: mouse**

Genetic targeting of premyelinating oligodendrocytes reveals activity-dependent myelination mechanisms.
Bhambri A, Thai P, Wei S, Bae HG, Reynolds P, Barbosa D, Sharma T, Yu Z, Xing C, Kim JH, Yu G, et al.
Nature neuroscience (2025) : . . **IHC; tested species: mouse**

Micro-scale control of oligodendrocyte morphology and myelination by the intellectual disability-linked protein acyltransferase ZDHHC9.
Jeong HK, Gonzalez-Fernandez E, Crawley I, Coakley JM, Hwang J, Martin DDO, Bamji SX, Kim JI, Kang SH, Thomas GM
eLife (2025) 13: . . **IHC; tested species: mouse**

Myelin-axon interface vulnerability in Alzheimer's disease revealed by subcellular proteomics and imaging of human and mouse brain.
Cai Y, Pinheiro-de-Sousa I, Slobodyanyuk M, Chen F, Huynh T, Kanyo J, Tang P, Fuentes LA, Braker A, Welch R, Huttner A, et al.
Nature neuroscience (2025) 287: 1418-1435. . **IHC; tested species: mouse**

Neurons sequester the cholesterol-inhibiting TFEB in oligodendrocyte cytoplasm to safeguard myelination and neural function.
Zhang Y, Cheng Z, Huang S, Sharma T, Barbosa D, Yu G, Sun LO
Cell reports (2025) 449: 116252. . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols at https://sysy.com/product/445003 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.