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).

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**

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**

Oligodendrocytes produce amyloid-β and contribute to plaque formation alongside neurons in Alzheimer's disease model mice.
Sasmita AO, Depp C, Nazarenko T, Sun T, Siems SB, Ong EC, Nkeh YB, Böhler C, Yu X, Bues B, Evangelista L, et al.
Nature neuroscience (2024) : . . **IHC; tested species: mouse**

Oligodendrocyte Maturation Alters the Cell Death Mechanisms That Cause Demyelination.
Chapman TW, Kamen Y, Piedra ET, Hill RA
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 4413: . . **IHC; tested species: mouse**

Microglia regulate cortical remyelination via TNFR1-dependent phenotypic polarization.
Boutou A, Roufagalas I, Politopoulou K, Tastsoglou S, Abouzeid M, Skoufos G, Verdu de Juan L, Ko JH, Kyrargyri V, Hatzigeorgiou AG, Barnum CJ, et al.
Cell reports (2024) 4311: 114894. . **IHC; tested species: mouse**

Oligodendrocyte death initiates synchronous remyelination to restore cortical myelin patterns in mice.
Chapman TW, Olveda GE, Bame X, Pereira E, Hill RA
Nature neuroscience (2023) 264: 555-569. . **IHC; tested species: mouse**

PBAF Subunit Pbrm1 Selectively Influences the Transition from Progenitors to Pre-Myelinating Cells during Oligodendrocyte Development.
Waldhauser V, Baroti T, Fröb F, Wegner M
Cells (2023) 1212: . . **IHC; tested species: mouse**

Selected General References

Positional cloning of ZNF217 and NABC1: genes amplified at 20q13.2 and overexpressed in breast carcinoma.
Collins C et al. Proc. Natl. Acad. Sci. U.S.A. (1998) PubMed:9671742

Mice lacking BCAS1, a novel myelin-associated protein, display hypomyelination, schizophrenia-like abnormal behaviors, and upregulation of inflammatory genes in the brain.
Ishimoto T et al. Glia (2017) PubMed:28230289

BCAS1 expression defines a population of early myelinating oligodendrocytes in multiple sclerosis lesions.
Fard MK et al. Sci Transl Med (2017) PubMed:29212715

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 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.