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GFAP

Cat.No. 173 011BT; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized, labeled with Biotin.For **reconstitution** add 100 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 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 200 **IHC_P**: 1 : 200
Label	biotin
Clone	134B1
Subtype	IgG2a (κ light chain)
Immunogen	full-length recombinant human GFAP (UniProt Id: P14136)
Epitop	Epitop: AA 391 to 405 from human GFAP (UniProt Id: P14136)
Reactivity	Reacts with: human (P14136), rat (P47819), mouse (P03995), cow. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for GFAP isoform 1 (alpha). K.O.
Matching control	173-0P
Remarks	**WB**: The monoclonal antibodies are less sensitive compared to the rabbit polyclonal polyclonal (cat. no. 173 002).

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

Background

Glial **f**ibrillary **a**cidic **p**rotein **GFAP** is a glial-specific member of the intermediate filament protein family. This group comprises celltype-specific filamentous proteins with similar structure and function as scaffold for cytoskeleton assembly and maintenance.
Frequently, neural stem cells also express GFAP. In addition many types of brain tumors, probably derived from astrocytic cells, heavily express GFAP. This protein is also found in the lens epithelium, Kupffer cells of the liver, in some cells in salivary tumors and others.
Point-mutations in the GFAP gene have been correlated to Alexander disease a fatal leukoencephalopathy that leads to the dysmyelination or demyelination of the central nervous system.

Selected References for 173 011BT

Chronic lithium administration in a mouse model for Krabbe disease.
Del Grosso A, Parlanti G, Angella L, Giordano N, Tonazzini I, Ottalagana E, Carpi S, Pellegrino RM, Alabed HBR, Emiliani C, Caleo M, et al.
JIMD reports (2022) 631: 50-65. . **WB; tested species: mouse**

Selected General References

Loss of glial fibrillary acidic protein (GFAP) impairs Schwann cell proliferation and delays nerve regeneration after damage.
Triolo D, Dina G, Lorenzetti I, Malaguti M, Morana P, Del Carro U, Comi G, Messing A, Quattrini A, Previtali SC
Journal of cell science (2006) 119Pt 19: 3981-93. .

Asymptomatic hereditary Alexander's disease caused by a novel mutation in GFAP.
Shiihara T, Sawaishi Y, Adachi M, Kato M, Hayasaka K
Journal of the neurological sciences (2004) 2251-2: 125-7. .

Glial fibrillary acidic protein: GFAP-thirty-one years (1969-2000).
Eng LF, Ghirnikar RS, Lee YL
Neurochemical research (2000) 259-10: 1439-51. .

GFAP-positive and myelin marker-positive glia in normal and pathologic environments.
Dyer CA, Kendler A, Jean-Guillaume D, Awatramani R, Lee A, Mason LM, Kamholz J
Journal of neuroscience research (2000) 603: 412-26. .

Expression of GFAP immunoreactivity during development of long fiber tracts in the rat CNS.
Valentino KL, Jones EG, Kane SA
Brain research (1983) 2853: 317-36. .

Glial fibrillary acidic protein (GFAP): purification from human fibrillary astrocytoma, development and validation of a radioimmunoassay for GFAP-like immunoactivity.
Palfreyman JW, Thomas DG, Ratcliffe JG, Graham DI
Journal of the neurological sciences (1979) 411: 101-13. .

Determination of glial fibrillary acidic protein (GFAP) in human brain tumors.
Jacque CM, Vinner C, Kujas M, Raoul M, Racadot J, Baumann NA
Journal of the neurological sciences (1978) 351: 147-55. .

Access the online factsheet including applicable protocols at https://sysy.com/product/173011BT 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.