Product Data Sheet: GFAP

Cat. No:	AB-10678
Conjugate:	Unconjugated
Size:	100 ul
Clone:	POLY
Concentration:	1mg/ml
Host:	Ch
Isotype:	IgY
Immunogen:	Native GFAP, purified from bovine spinal cord
Reactivity:	Hu, Ms, Rt, Ct, Mamm
Applications:	Western blot: 1:5,000 Immunocytochemistry/Immunofluorescence in cell tissues using a fluorescent antibody : 1:2,500 Immunohistochemistry in tissue sections (paraffin)&(frozen): 1:1,000 Immunohistochemistry: when using Peroxidase or other enzyme linked methods: 1:5,000
Molecular Weight:	55kDa
Purification:	Aff. Pur.
Background:	Glial Fibrillary Acidic Protein (GFAP) was discovered by Amico Bignami and coworkers as a major fibrous protein of multiple sclerosis plaques (1). It was subsequently found to be a member of the 10nm or intermediate filament protein family, specifically the intermediate filament protein family Class III, which also includes peripherin, desmin and vimentin. The GFAP protein runs on gels at ~55kDa protein, usually associated with lower molecule weight bands which are thought to be proteolytic fragments and alternate transcripts from the single gene. GFAP is strongly and specifically expressed in astrocytes and certain other astroglia in the central nervous system, in satellite cells in peripheral ganglia, and in non-myelinating Schwann cells in peripheral nerves. In many damage and disease states GFAP expression is heavily upregulated in astrocytes. In addition neural stem cells frequently strongly express GFAP. Antibodies to GFAP are therefore very useful as markers of astrocytic cells and neural stem cells. In addition many types of brain tumor, presumably derived from astrocytic cells, heavily express GFAP. Finally, Alexander's disease was recently shown to be caused by point mutations in protein coding region of the GFAP gene (2). All forms of Alexander disease are characterized by the presence of Rosenthal fibers, which are GFAP containing cytoplasmic inclusions found in astrocytes.
Form:	Liquid
Buffer:	Supplied in 50% PBS, 50% glycerol plus 5mM NaN3
Storage:	Store at 4°C for short term. For long term storage, leave frozen at -20°C. Avoid freeze / thaw cycles.

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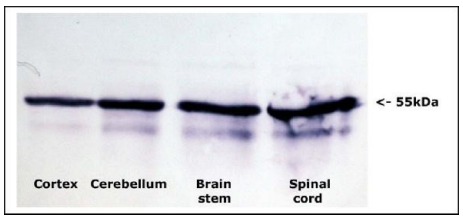
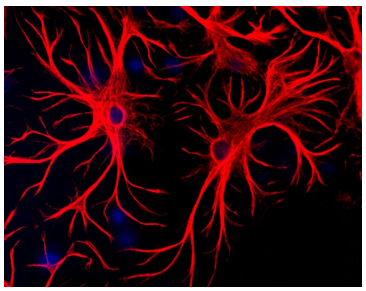
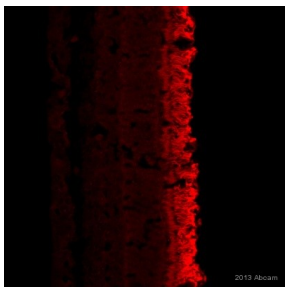


Left: Western blots of crude whole tissue homogenates of adult rat cortex, cerebellum, brain stem and spinal cord. 100µg of wet weight of tissue loaded per lane, electrophoretically transferred to nitrocellulose and blotted with GFAP, used at a dilution of 1:5,000.

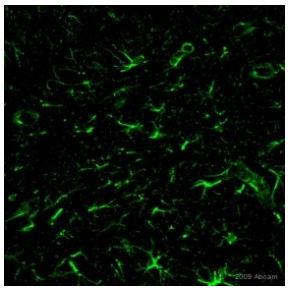


ICC/IF: Mixed cultures of neurons and glia stained with GFAP (red), and DNA (blue). Astrocytes stain strongly and specifically in a clearly filamentous fashion with this antibody.



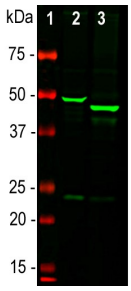
Immunohistochemistry (PFA perfusion fixed frozen sections).

AB-10678 staining GFAP in Rabbit eye tissue sections .
Tissue samples were fixed by perfusion with formaldehyde and blocked with BSA for 2 hours at 4°C. The sample was incubated with primary antibody (1/1000) at 4°C for 12 hours. a goat anti-chicken IgY Alexa Fluor® 647 (1/1000), was used as the secondary antibody.



Immunohistochemistry (PFA perfusion fixed frozen sections)

AB-10678 staining GFAP in mouse hippocampus tissue section
Tissue samples were fixed by perfusion with 4% PFA and blocking with 10% serum for 30 minutes at 250C was performed. The sample was incubated with primary antibody (1/500) for 16 hours at 250C in 10% NGS in PBS + 0.1% TX100. An Alexa Fluor®488-conjugated Goat polyclonal to chicken IgG was used as secondary antibody at 1/400 dilution



Western blot analysis of whole brain lysates using chicken pAb to GFAP, , dilution 1:5,000 in green: [1] protein standard (red), [2] rat brain, [3] mouse brain. The strong band at about 50 kDa corresponds to the GFAP protein. Smaller proteolytic fragments and alternate transcripts of GFAP may also be detected on such blots.

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