

Alexa Fluor® 488 anti-GFAP Antibody

Catalog# / Size	837507 / 25 µg 837508 / 100 µg
Clone	SMI 25
Regulatory Status	RUO
Other Names	Glial fibrillary acidic protein
Isotype	Mouse IgG2b, κ
Description	<p>Glial fibrillary acidic protein is an intermediate filament (IF) protein that is expressed by numerous cell types of the central nervous system (CNS) including astrocytes and ependymal cells. GFAP has also been found to be expressed in glomeruli and peritubular fibroblasts, Leydig cells of the testis, keratinocytes, osteocytes and chondrocytes and stellate cells of the pancreas and liver. GFAP is a type III IF protein that is closely related to its non-epithelial family members, vimentin, desmin, and peripherin, which are all involved in the structure and function of the cell's cytoskeleton. GFAP is thought to help to maintain astrocyte mechanical strength, as well as the shape of cells.</p>

Type III intermediate filaments are highly conserved and contain three domains, named the head, rod and tail domains. This rod domain coils around that of another filament to form a dimer, with the N-terminal and C-terminal of each filament aligned. Type III filaments such as GFAP are capable of forming both homodimers and heterodimers; GFAP can polymerize with other type III proteins or with neurofilament protein (NF-L). Interestingly, GFAP and other type III IF proteins cannot assemble with keratins, the type I and II intermediate filaments: in cells that express both proteins, two separate intermediate filament networks form.

To form networks, the initial GFAP dimers combine to make staggered tetramers, which are the basic subunits of an intermediate filament. The non-helical head and tail domains are necessary for filament formation. The head and tail regions have greater variability of sequence and structure. In spite of this increased variability, the head of GFAP contains two conserved arginines and an aromatic residue that are required for proper assembly.

Product Details

Verified Reactivity	Human, Mouse, Rat
Antibody Type	Monoclonal
Host Species	Mouse
Formulation	Phosphate-buffered solution, pH 7.2, containing 0.09% sodium azide.
Preparation	The antibody was purified by affinity chromatography and conjugated with Alexa Fluor® 488 under optimal conditions.
Concentration	0.5 mg/ml
Storage & Handling	The antibody solution should be stored undiluted between 2°C and 8°C, and protected from prolonged exposure to light. Do not freeze.
Application	IHC-P - Quality tested
Recommended Usage	<p>Each lot of this antibody is quality control tested by formalin-fixed paraffin-embedded immunohistochemical staining. For immunohistochemistry, a concentration range of 5.0 - 10 µg/ml is suggested. It is recommended that the reagent be titrated for optimal performance for each application.</p> <p>* Alexa Fluor® 488 has a maximum emission of 519 nm when it is excited at 488 nm.</p> <p>Alexa Fluor® and Pacific Blue™ are trademarks of Life Technologies Corporation.</p> <p>View full statement regarding label licenses</p>
Excitation Laser	Blue Laser (488 nm)

RRID

AB_2728554 (BioLegend Cat. No. 837507)
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Antigen Details

Structure	GFAP is a 432 amino acid protein with a molecular mass of approximately 50 kD.
Distribution	Tissue distribution: GFAP is expressed by numerous cell types of the central nervous system (CNS) including astrocytes, ependymal cells, and Bergmann glia cells (protoplasmic astrocyte). GFAP is expressed in cells lacking fibronectin. Cellular distribution: cytoskeleton and cytosol
Function	GFAP is a class-III intermediate filament and a structural constituent of the cytoskeleton. It is a cell-specific marker that is used to distinguish astrocytes from other glial cells during the development of the CNS.
Biology Area	Cell Biology, Cell Motility/Cytoskeleton/Structure, Neuroscience, Neuroscience Cell Markers
Molecular Family	Intermediate Filaments
Antigen References	1. Khakh BS, Sofroniew MV. 2015. <i>Nat. Neurosci.</i> 18:942-52. PubMed
Gene ID	2670

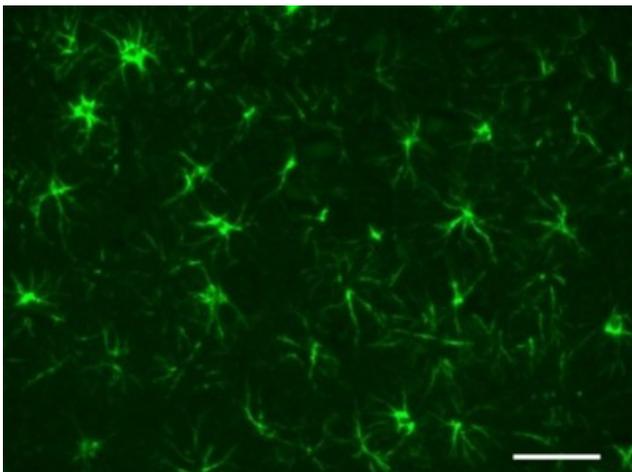
Related Protocols

[Immunohistochemistry Protocol for Paraffin-Embedded Sections](#)

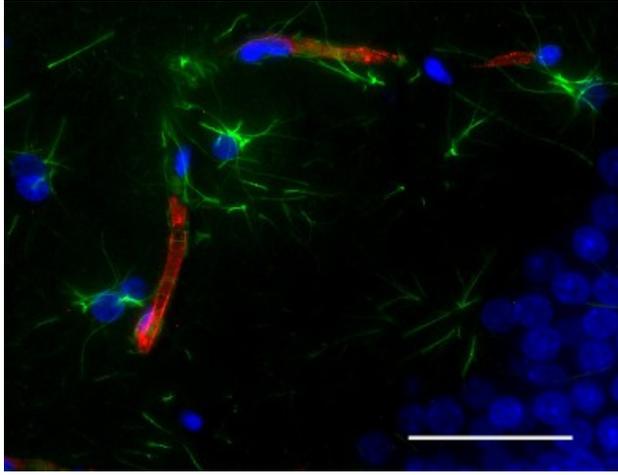
Other Formats

Anti-GFAP, Purified anti-GFAP, HRP anti-GFAP, Alexa Fluor® 594 anti-GFAP, Alexa Fluor® 488 anti-GFAP, Alexa Fluor® 647 anti-GFAP

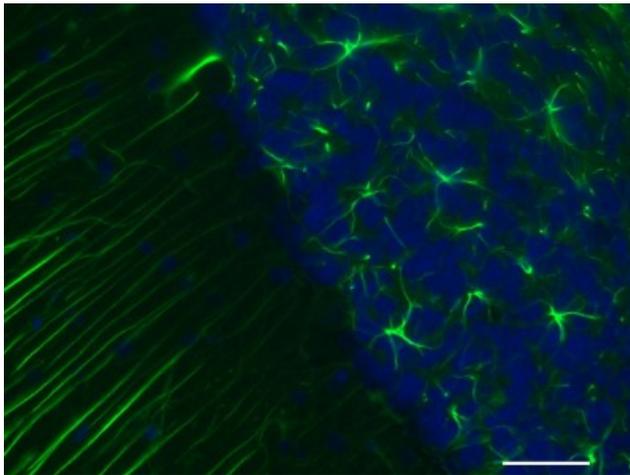
Product Data



IHC staining of Alexa Fluor® 488 anti-GFAP antibody (clone SMI 25) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using sodium citrate, the tissue was incubated with 5 µg/ml of the primary antibody over night at 4°C. The image was captured using 40X objective. Scale bar: 50 µm



IHC staining of Alexa Fluor® 594 anti-Rat Blood-Brain Barrier antibody (clone SMI 71) and Alexa Fluor® 488 anti-GFAP antibody (clone SMI 25) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using Retrieve-All Antigen Unmasking System 3 (Cat. No. 927801), the tissue was incubated with the primary antibodies at 5 µg/mL overnight at 4°C. Nuclei were counterstained with DAPI. The image was captured with a 40X objective. Scale bar: 50 µm.



IHC staining of Alexa Fluor® 488 anti-GFAP antibody (clone SMI 25) on formalin-fixed paraffin-embedded rat brain tissue. Following antigen retrieval using sodium citrate, the tissue was incubated with 5 µg/ml of the primary antibody over night at 4°C. The image was captured using 40X objective. Scale bar: 50 µm

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BioLegend Inc., 8999 BioLegend Way, San Diego, CA 92121 www.biolegend.com
Toll-Free Phone: 1-877-Bio-Legend (246-5343) Phone: (858) 768-5800 Fax: (877) 455-9587