Rabbit pAb to GFAP RPCA-GFAP

Ordering Information
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Phone 352-372-7022
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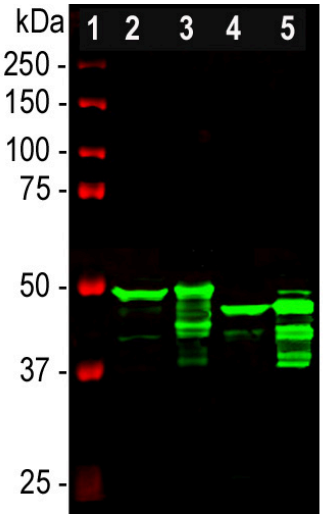
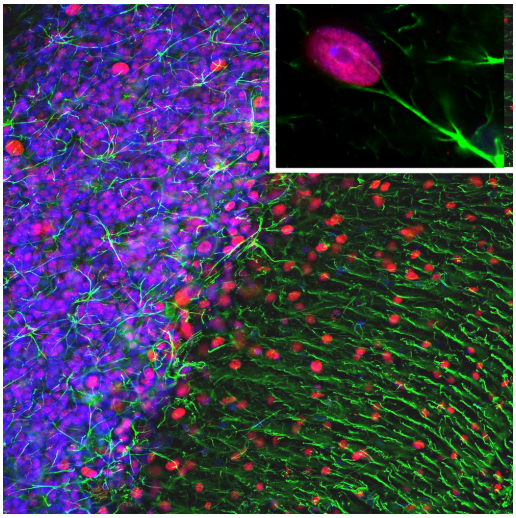
HGNC name: GFAP
RRID: AB_2572310
Immunogen: Recombinant human full length GFAP protein
Format: Antibody is supplied as an aliquot of serum
Storage: Shipped on ice. Store at 4°C for short term, for longer term at -20°C. Avoid freeze / thaw cycles.
Recommended dilutions: Western blot: 1:5,000 IF/ICC and IHC 1:1,000-1,5,000

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
Western blot, ICC/IF, IHC	**Rabbit**		**50 kDa**	**Hu, Rt, Ms, Bo, Po, Ho**



Western blot analysis of RPCA-GFAP. Blot of rat brain lysate was probed with RPCA-GFAP, at dilution of 1:5,000. A prominent band running with an apparent SDS-PAGE molecular weight of ~50 kDa corresponds to rodent GFAP.



Mixed neuron-glial cultures stained with rabbit GFAP (red channel) and chicken vimentin CPCA-Vim (green channel). The fibroblastic cells contain only vimentin and so are green, while astrocytes contain either vimentin and GFAP, so appearing golden, or predominantly GFAP, in which case they appear red. Blue is nuclear DNA stain

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 ~50 kDa protein, usually associated with some lower molecule weight bands which are a combination of 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. The HGNC name for this protein is GFAP.

The initial challenge was performed with a preparation of recombinant GFAP expressed in bacteria and highly purified. Subsequent boosts were performed with GFAP purified from a Triton X-100 extract of myelin associated material from bovine spinal cord, following an "axonal flotation" procedure (3). The GFAP was further purified by centrifugation and ion exchange chromatography in 6M urea on DEAE cellulose. This antibody is provided as crude serum and has an extremely high titer (see recommended use).

References:

1. Bignami A, Eng LF, Dahl D, Uyeda CT. Localization of the glial fibrillary acidic protein in astrocytes by immunofluorescence. Brain Res. 43:429-35 1972.
2. Brenner M, Johnson AB, Boespflug-Tanguy O, Rodriguez D, Goldman JE and Messing A. Mutations in GFAP, encoding glial fibrillary acidic protein, are associated with Alexander disease. Nat Genet 27:117-20 2001
3. Liem RKH, Yen SH, Salomon GD and Shelanski ML. Intermediate filaments in nervous tissues. J Cell Biol 79:637-745 (1978).

Abbreviation Key:
mAb—Monoclonal Antibody **pAb**—Polyclonal Antibody **WB**—Western Blot **IF**—Immunofluorescence **ICC**—Immunocytochemistry **IHC**—Immunohistochemistry **E**—ELISA **Hu**—Human **Mo**—Monkey **Do**—Dog **Rt**—Rat **Ms**—Mouse **Bo**—Cow **Po**—Pig **Ho**—Horse **Ch**—Chicken **Dr**—*D. rerio* **Dm**—*D. melanogaster* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli.*