NEUROMICS

GFAP Data Sheet

Catalog Number:	GT22107	**Host:**	Goat
Product Type:	Goat Polyclonal	**Species Reactivity:**	Human, Rat, Mouse
Immunogen Sequence:	Recombinant full length human GFAP isotype 1 expressed in and purified from *E. coli*.	**Format:**	Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN3
Applications:	Immunofluorescence: 1:5,000 Immunohistochemistry: 1:5,000 Western Blot: 1:5,000		
Storage:	Dilutions listed as a recommendation. Optimal dilution should be determined by investigator. Antibody can also be aliquotted and stored frozen at -20° C in a manual defrost freezer for six months without detectable loss of activity. The antibody can be stored at 2° - 8° C for 1 month without detectable loss of activity. Avoid repeated freeze-thaw cycles.		

Application Notes

Description/Data

Glial Fibrillary Acidic Protein (GFAP) is a major CNS protein which runs on SDS-PAGE as a ~50kDa protein, usually associated with somewhat lower molecule weight bands which are alternate transcripts from the single gene or in vivo proteolytic fragments. GFAP is strongly and specifically expressed in astrocytes and certain other glia in the central nervous system, in satellite cells in peripheral ganglia, in non-myelinating Schwann cells in peripheral nerves and is also a useful marker of neural stem cells. Astrocytes respond to many damage and disease states resulting in “astrogliosis” or the presence of a “glial response”. GFAP antibodies are widely used to study reactive astrocytes which form part of this response, since these cells stain much more strongly with GFAP antibodies than normal astrocytes. GFAP also forms a major component of the so-called glial scar, an astrocyte rich structure apparently forming part of the barrier to nerve fiber regeneration following damage in the central nervous system. Neural stem cells frequently strongly express GFAP but many lose this if they develop into neurons or oligodendrocytes. Finally, Alexander disease was recently shown to be caused by point mutations in the protein coding region of the GFAP gene. All forms of Alexander disease are characterized by the presence of Rosenthal fibers, which are GFAP containing cytoplasmic inclusions found in astrocytes.

Antibodies to GFAP are therefore very useful as a marker of normal and reactive glial cells in central and peripheral nerve system, as well as of developing neural stem cells.

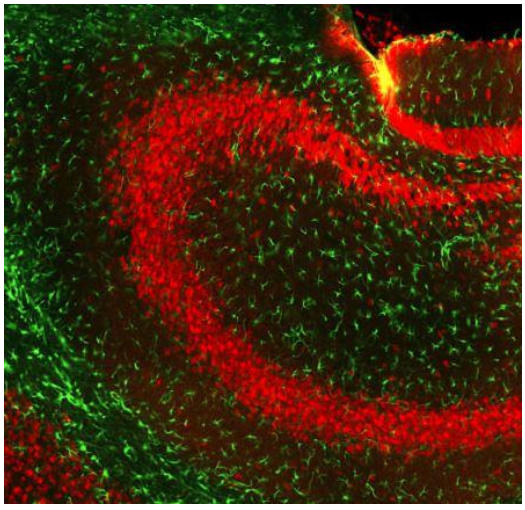

Image: Immunofluorescent analysis of mouse hippocampus section stained with goat pAb to GFAP, GT22107, dilution 1:5,000 in green, and costained with mouse mAb to FOX3/NeuN, dilution 1:2,000, in red. The blue is Hoechst staining of nuclear DNA. Following transcardial perfusion of mouse with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45µM, and free-floating sections were stained with above antibodies. The GFAP antibody stains the network of astrocytic glial cells, while the FOX3/NeuN antibody specifically labels nuclei and proximal perikarya of neurons.

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