PRODUCT INFORMATION

GFAP (human, recombinant)

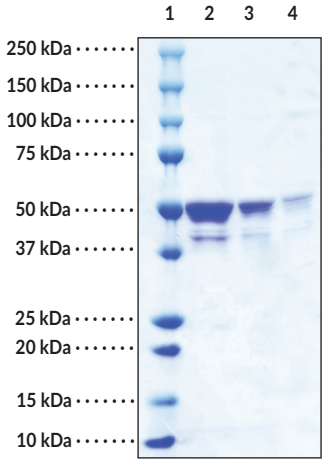
Item No. 27353

Overview and Properties

Synonyms:	ALXDRD, Glial Fibrillary Acidic Protein, Intermediate Filament Protein
Source:	Recombinant N-terminal histidine-tagged GFAP expressed in *E. coli*
Amino Acids:	2-432
Uniprot No.:	P14136
Molecular Weight:	51.9 kDa
Storage:	-80°C (as supplied)
Stability:	≥1 year
Purity:	***batch specific*** (≥65% estimated by SDS-PAGE)
Supplied in:	10 mM Tris, pH 8.0
Protein Concentration:	***batch specific*** mg/ml

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: GFAP (8 µg)
Lane 3: GFAP (4 µg)
Lane 4: GFAP (2 µg)

Representative gel image shown; actual purity may vary between each batch.

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Description

Glial fibrillary acidic protein (GFAP) is a protein encoded by the *GFAP* gene in humans and a member of the class III intermediate filament (IF) protein family.[1] It is composed of an N-terminal head domain, a highly conserved α-helical rod domain, and a C-terminal tail domain that mediate GFAP self-assembly, dimerization, and oligomerization, respectively.[2,3] GFAP is expressed in, and has commonly been used as a pan marker for, mature astrocytes.[1] GFAP IFs form a dynamic network of cytosolic filament proteins that collectively provide structure and strength to the cytoskeleton of astrocytes, thus supporting their morphology and function.[1] Isolated astrocytes from neonatal *Gfap*$^{-/-}$ mouse brain have reduced numbers of IFs and IF bundles, increased proliferation, and loss of contact-inhibited growth.[4,5] *Gfap*$^{-/-}$ mice develop more diffuse and infiltrative brain lesions compared to wild-type littermates in a mouse model of experimental autoimmune encephalomyelitis (EAE).[6] Mutations in the rod and tail domains of *GFAP* have been associated with Rosenthal fiber formation, a hallmark of Alexander disease.[7] Transgenic overexpression of *Gfap* in mice increases the expression of certain cytokines and antioxidative enzymes in the olfactory bulb and has been used as a mouse model of Alexander disease.[8] GFAP can be citrullinated on the arginine residue at position 270 (R270) and at R416 by protein arginine deiminase 1 (PAD1; Item No. 10784) and PAD2 (Item No. 10785).[9] Citrullinated GFAP has been found in rat cerebral cortex in a model of traumatic brain injury, as well as in postmortem hippocampus from patients with Alzheimer's disease.[9,10]

References

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