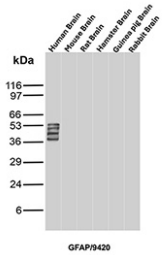
GFAP Antibody / Glial fibrillary acidic protein [clone GFAP/9420] (V5905)

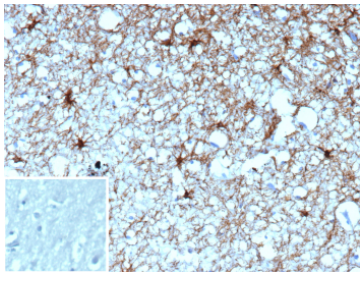
Catalog No.	Formulation	Size
V5905-100UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	100 ug
V5905-20UG	0.2 mg/ml in 1X PBS with 0.05% BSA, 0.05% sodium azide	20 ug
V5905SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug

Bulk quote request

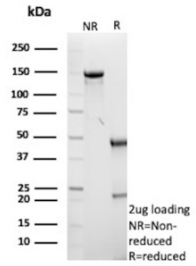
Species Reactivity	Human
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2, kappa
Clone Name	GFAP/9420
UniProt	P14136
Localization	Cytoplasm
Applications	Immunohistochemistry (FFPE) : 1-2ug/ml Western Blot : 2-4ug/ml
Limitations	This GFAP/Glial fibrillary acidic protein antibody is available for research use only.



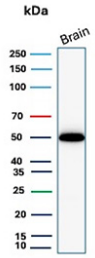
Western blot analysis of human, mouse, rat, hamster, guinea pig, and rabbit brain tissue lysates probed with GFAP/Glial fibrillary acidic protein antibody (clone GFAP/9420). A dominant band is detected near the predicted molecular weight of approximately 50 kDa, corresponding to full-length glial fibrillary acidic protein. Additional closely spaced bands are observed in the same molecular weight range and are consistent with known GFAP isoforms and post-translationally modified species, which are well documented in the literature. The conserved multi-band pattern across species supports specific detection of GFAP-related protein forms rather than non-specific binding.



Formalin-fixed, paraffin-embedded human brain stained with GFAP mouse monoclonal antibody (GFAP/9420). Widespread brown chromogenic staining highlights astrocytic cell bodies and an extensive network of cytoplasmic processes throughout the parenchyma, consistent with GFAP-positive astroglial filaments, while nuclei are counterstained blue. Inset shows a PBS-only negative control processed without primary antibody, demonstrating minimal non-specific background staining.



SDS-PAGE analysis of purified GFAP/Glial fibrillary acidic protein antibody (clone GFAP/9420). Confirmation of Purity and Integrity of Antibody.



Western blot analysis of human brain tissue lysate using GFAP/Glial fibrillary acidic protein antibody (clone GFAP/9420).

Description

GFAP antibody targets Glial fibrillary acidic protein, an intermediate filament protein that is a defining structural component of astrocytes in the central nervous system. Glial fibrillary acidic protein is encoded by the GFAP gene and is predominantly localized to the cytoplasm, where it forms filamentous networks that contribute to astrocyte shape, mechanical strength, and interactions with neighboring neurons and blood vessels. As a member of the type III intermediate filament family, GFAP plays a central role in maintaining astrocytic architecture and supporting normal neural tissue organization.

Glial fibrillary acidic protein is widely recognized as a canonical marker of astrocytes and astroglial lineage cells. GFAP expression is prominent in fibrous astrocytes of white matter and protoplasmic astrocytes of gray matter, as well as in specialized astrocytic populations such as radial glia and Bergmann glia. Because of this restricted and robust expression pattern, a GFAP antibody is extensively used to visualize astrocyte distribution, morphology, and density in brain and spinal cord tissue under both physiological and pathological conditions.

Beyond its structural role, GFAP is dynamically regulated in response to central nervous system injury, inflammation, and disease. Astrocyte activation, commonly referred to as reactive gliosis, is characterized by increased GFAP expression, hypertrophy of astrocytic processes, and cytoskeletal reorganization. Elevated GFAP levels are a hallmark of conditions such as traumatic brain injury, stroke, neurodegenerative diseases, and central nervous system tumors. A glial fibrillary acidic protein antibody is therefore an essential tool for studying astrocyte reactivity, glial scar formation, and neuroinflammatory responses.

GFAP exists in multiple isoforms generated through alternative splicing, with GFAP-alpha being the most abundant form in adult brain. Other isoforms contribute to region-specific and developmental regulation of astrocyte structure. The protein assembles into homopolymers or heteropolymers with other intermediate filament proteins, including vimentin and nestin, particularly during development or following injury. Use of a GFAP antibody enables investigation of these cytoskeletal dynamics and their relationship to astrocyte function and plasticity.

In clinical and translational research, GFAP has significant diagnostic relevance. GFAP immunoreactivity is a defining feature of astrocytic tumors such as astrocytoma and glioblastoma, and GFAP antibody staining is routinely used to distinguish glial tumors from neuronal or metastatic neoplasms. In addition, circulating GFAP fragments have been explored as biomarkers of brain injury and neurodegeneration, further underscoring the biological importance of this protein.

Clone GFAP/9420 is designed to recognize glial fibrillary acidic protein and supports detection of astrocytes and astrocyte-derived structures in research applications. NSJ Bioreagents offers this GFAP antibody to aid investigations into glial biology, neurodevelopment, neuropathology, and central nervous system disease mechanisms.

Application Notes

Optimal dilution of the GFAP/Glial fibrillary acidic protein antibody should be determined by the researcher.

Immunogen

A recombinant fragment (around amino acids 150-250) of human GFAP protein (exact sequence is proprietary) was used as the immunogen for the GFAP/Glial fibrillary acidic protein antibody.

Storage

GFAP/Glial fibrillary acidic protein antibody with sodium azide - store at 2 to 8oC; antibody without sodium azide - store at -20 to -80oC.