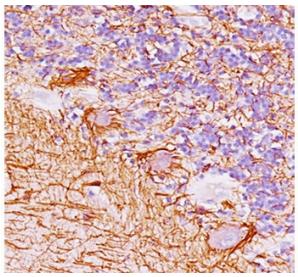
Neurofilament Heavy Chain Antibody NF421 / Axonal Cytoskeleton Marker [clone NF421] (V2212)

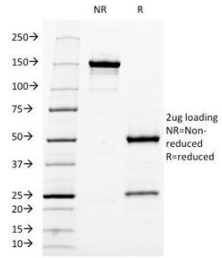
Catalog No.	Formulation	Size
V2212-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2212-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2212SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2212IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

Bulk quote request

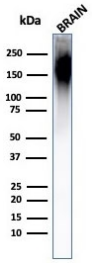
Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	NF421
Purity	Protein G purified Neurofilament antibody
Buffer	1X PBS, pH 7.4
Gene ID	4744
Localization	Cytoplasmic, membranous
Applications	Western blot: 1-2ug/ml Flow cytometry: 0.5-1ug/million cells Immunofluorescence: 1-2ug/ml Immunohistochemistry (FFPE): 0.25-0.5ug/ml for 30 min at RT
Limitations	This Neurofilament Heavy Chain Antibody NF421 / Axonal Cytoskeleton Marker is available for research use only.



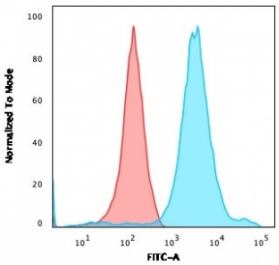
Neurofilament Heavy Chain Antibody NF421 in Human Cerebellum IHC. Immunohistochemistry staining of FFPE human cerebellum tissue with Neurofilament Heavy Chain Antibody / Axonal Cytoskeleton Marker. HIER was performed by boiling tissue sections in 10 mM citrate buffer, pH 6, for 10-20 min followed by cooling at RT for 20 min. The observed staining highlights NF-H expression in neuronal structures of the human cerebellum.



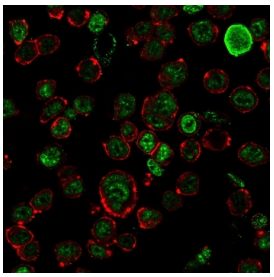
Purified Neurofilament Heavy Chain Antibody NF421 SDS-PAGE. Gel run analysis of purified, BSA-free Neurofilament Heavy Chain Antibody / Axonal Cytoskeleton Marker. Analysis of the purified mouse monoclonal antibody provides confirmation of antibody integrity and purity.



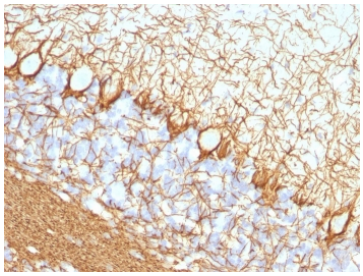
Neurofilament Heavy Chain Antibody NF421 in Human Brain WB. Western blot testing of human brain lysate with Neurofilament Heavy Chain Antibody / Axonal Cytoskeleton Marker. Clone NF421 is specific for the heavy neurofilament subunit. A band is detected at approximately 200 kDa, consistent with the apparent molecular weight of NF-H.



Neurofilament Heavy Chain Antibody NF421 in HEK293 Cells FACS. Flow cytometry analysis of permeabilized human HEK293 cells with Neurofilament Heavy Chain Antibody clone NF421. Red represents the isotype control and blue represents NF421 antibody staining. Antibody-associated fluorescence was observed in HEK293 cells by FACS.



Neurofilament Heavy Chain Antibody NF421 in HEK293 Cells IF. Immunofluorescence staining of permeabilized human HEK293 cells with Neurofilament Heavy Chain Antibody clone NF421 (green) and Phalloidin (red). Fluorescent staining was observed in HEK293 cells by IF.



Neurofilament Heavy Chain Antibody NF421 in Rat Cerebellum IHC. Immunohistochemistry staining of FFPE rat cerebellum tissue with Neurofilament Heavy Chain Antibody / Axonal Cytoskeleton Marker. HIER was performed by boiling tissue sections in 10 mM citrate buffer, pH 6, for 10-20 min followed by cooling at RT for 20 min. NF-H staining highlights neuronal structures within rat cerebellum and supports detection of this axonal cytoskeleton protein.

Description

Neurofilament Heavy Chain Antibody NF421 / Axonal Cytoskeleton Marker detects neurofilament heavy chain (NF-H), a neuronal intermediate filament protein encoded by the NEFH gene. NF-H is one of the major components of neurofilaments, specialized cytoskeletal structures that are particularly abundant in axons. Together with other neurofilament subunits, NF-H contributes to the structural stability and organization of neuronal processes and plays an important role in maintaining axonal caliber and architecture.

Neurofilaments are assembled primarily from light, medium and heavy subunits, commonly designated NF-L, NF-M and NF-H. The heavy subunit has an apparent molecular weight of approximately 200 kDa and contains an extended C-terminal tail rich in repeated lysine-serine-proline motifs. This region undergoes extensive phosphorylation, particularly within axons, and contributes to interactions between neurofilaments and other cytoskeletal components. These properties help establish the spacing and organization of neurofilament networks that provide mechanical support to neuronal processes.

As an axonal cytoskeleton marker, neurofilament heavy chain is widely studied in neuroscience, neurodevelopment and neuropathology. NF-H expression can be used to visualize neuronal processes and investigate axonal organization, differentiation and maturation. Neurofilament staining is also relevant to the characterization of neural and neuroendocrine tissues and tumors, providing a useful approach for examining neuronal differentiation in experimental and pathological samples.

Changes in NF-H organization, transport and phosphorylation are associated with neuronal injury and neurodegenerative processes. Disruption of normal neurofilament dynamics can lead to abnormal accumulation of neurofilament proteins and alterations in axonal structure. NF-H and its phosphorylated forms are therefore investigated in conditions involving neuroaxonal damage, including amyotrophic lateral sclerosis, multiple sclerosis and other neurological disorders. Neurofilament heavy chain is also studied as a marker of axonal integrity and as part of the broader neurofilament response to nervous system injury.

Clone NF421 is a mouse monoclonal antibody specific for the heavy neurofilament subunit. It has been evaluated by Western blot, immunohistochemistry, immunofluorescence and flow cytometry, with stated reactivity to human, mouse and rat NF-H. NSJ Bioreagents supplies antibodies for neuroscience and neural marker research. A Neurofilament Heavy Chain Antibody can be used to investigate axonal cytoskeleton organization, neuronal differentiation, neurofilament biology and mechanisms associated with neuronal injury and degeneration.

For related reagents used to investigate neurons, axonal structure and nervous system biology, explore our Neuroscience Antibodies page.

Application Notes

The usable concentrations in the Applications Details are suggestions only. The use of different protocols/secondaries/substrates may require the Neurofilament Heavy Chain Antibody NF421 / Axonal Cytoskeleton Marker to be titered for optimal performance.

1. The NF421 antibody is specific to the heavy subunit.
2. FFPE tissues requires boiling tissue sections in 10mM citrate buffer, pH 6.0, for 10-20 min followed by cooling at RT for 20 minutes.
3. The prediluted format is supplied in a dropper bottle and is optimized for use in IHC. After epitope retrieval step (if required), drip mAb solution onto the tissue section and incubate at RT for 30 min.

Immunogen

Human recombinant Neurofilament protein was used as the immunogen. (1)

Storage

Store the Neurofilament Heavy Chain Antibody NF421 at 2-8oC (with azide) or aliquot and store at -20oC or colder (without azide).

Alternate Names

Neurofilament Heavy Chain antibody, NEFH antibody, NF-H antibody, Neurofilament Heavy Polypeptide antibody, Axonal Cytoskeleton Marker antibody

References (2)

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