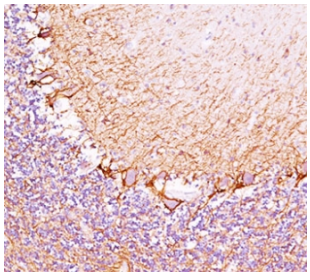
Neurofilament Heavy Antibody RT97 / Phosphorylated Neurofilament Marker [clone RT97] (V2213)

Catalog No.	Formulation	Size
V2213-100UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	100 ug
V2213-20UG	0.2 mg/ml in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide	20 ug
V2213SAF-100UG	1 mg/ml in 1X PBS; BSA free, sodium azide free	100 ug
V2213IHC-7ML	Prediluted in 1X PBS with 0.1 mg/ml BSA (US sourced) and 0.05% sodium azide; *For IHC use only*	7 ml

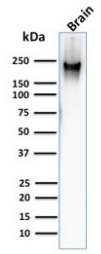
Citations (8)

Bulk quote request

Species Reactivity	Human, Mouse, Rat
Format	Purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG1, kappa
Clone Name	RT97
Purity	Protein G affinity chromatography
Buffer	1X PBS, pH 7.4
Gene ID	4744
Localization	Cytoplasmic, membranous
Applications	Western blot: 1-2ug/ml Immunohistochemistry (FFPE): 0.25-0.5ug/ml for 30 min at RT
Limitations	This Neurofilament Heavy Antibody RT97 is available for research use only.



Neurofilament Heavy Antibody RT97 in Cerebellum IHC. Immunohistochemistry staining of FFPE cerebellum tissue with Neurofilament Heavy Antibody RT97 / Phosphorylated Neurofilament 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 neuronal structures recognized by the phosphorylation-dependent RT97 neurofilament epitope.



Neurofilament Heavy Antibody RT97 in Human Brain WB. Western blot testing of human brain lysate with Neurofilament Heavy Antibody RT97 / Phosphorylated Neurofilament Marker at 1-2 ug/ml. Clone RT97 recognizes phosphorylation-dependent neurofilament epitopes associated primarily with NF-H. The observed high molecular weight signal demonstrates RT97 reactivity in human brain lysate.

Description

Neurofilament Heavy Antibody RT97 recognizes phosphorylation-dependent neurofilament epitopes associated primarily with neurofilament heavy chain (NF-H), a neuronal intermediate filament protein encoded by the NEFH gene. NF-H is a major component of the neuronal cytoskeleton and is particularly abundant within axons. Together with the light and medium neurofilament subunits, NF-H contributes to the structural organization of neuronal processes, regulation of axonal caliber and maintenance of mature axonal architecture.

Neurofilament heavy chain contains an extended C-terminal tail rich in lysine-serine-proline (KSP) repeats that undergo extensive phosphorylation. These modifications influence neurofilament organization, interactions between neighboring filaments and properties of the axonal cytoskeleton. Studies characterizing clone RT97 have demonstrated that its recognition is phosphorylation-dependent and have mapped RT97-reactive phospho-epitopes to KSP-containing motifs within neurofilament tail domains.

The RT97 epitope has been extensively studied in neuronal development and axonal biology. Phosphorylation of neurofilament tail domains changes during neuronal differentiation and maturation, making RT97 useful for examining neuronal processes, axonal pathways and cytoskeletal organization. The antibody has consequently become a well-established neuronal marker in studies of central and peripheral nervous system development.

RT97 is also used in research involving neuronal injury and neurodegeneration, where changes in neurofilament phosphorylation, transport and distribution can accompany disruption of axonal integrity. Although NF-H is the principal neurofilament target associated with RT97 staining, published characterization indicates that the antibody can recognize related phosphorylated epitopes on NF-M and certain other neuronal proteins. This behavior reflects recognition of a phosphorylation-dependent epitope rather than an NF-H amino acid sequence independent of phosphorylation.

Clone RT97 is a mouse monoclonal antibody generated against the Triton X-100 insoluble protein fraction of rat brain. This purified antibody has been evaluated by Western blot and immunohistochemistry and has stated reactivity with human, mouse and rat samples. Your current product data do not themselves establish phosphorylation dependence; that property is supported by the extensive published characterization of clone RT97. NSJ Bioreagents supplies antibodies for neuroscience and neural marker research. A Neurofilament Heavy Antibody can be used to investigate neurofilament phosphorylation, axonal organization, neuronal maturation and changes associated with neuroaxonal injury.

For additional research on NF-H expression, axonal structure and neurofilament biology, see our Neurofilament Heavy Chain Antibody / Axonal Cytoskeleton Marker page.

Application Notes

The concentration stated for each application is a general starting point. Variations in protocols, secondaries and substrates may require the Neurofilament Heavy Antibody RT97 to be titered up or down for optimal performance.

1. Staining of formalin-fixed tissues requires boiling tissue sections in 10mM citrate buffer, pH 6.0, for 10-20 min followed by cooling at RT for 20 minutes.

2. 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

The triton-X 100 insoluble protein fraction of rat brain was used as the immunogen for this Neurofilament Heavy Antibody RT97.

Storage

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

Alternate Names

Neurofilament Heavy antibody, RT97 antibody, NF-H antibody, NEFH antibody, Neurofilament Heavy Chain antibody

References (1)

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