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Product Information

Monoclonal Anti-Neurofilament 200 (Phos. and Non-Phos.), clone N52
produced in mouse. ascites fluid

Catalog Number **N0142**

Product Description

Monoclonal Anti-Neurofilament 200 (phosphorylated and non-phosphorylated) (mouse IgG1 isotype) is derived from the hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse. The carboxyterminal tail segment of enzymatically dephosphorylated pig neurofilament H-subunit was used as the immunogen. The isotype is determined by a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-Neurofilament 200 (phosphorylated and non-phosphorylated) specifically localizes the neurofilaments of molecular weight 200 kDa in rat spinal cord extract using an immunoblotting technique. It will stain the 200 kDa band in both alkaline phosphatase dephosphorylated and non-treated preparations of rat spinal cord. When tested by immunoblotting on pig neurofilament polypeptides, the antibody reacts with an epitope in the tail domain of neurofilament 200 (also referred to as the H-subunit) which is present on both the phosphorylated and non-phosphorylated forms of this polypeptide. The antibody stains formalin-fixed, paraffin-embedded and frozen tissue sections using immunohistology.[1,2] Monoclonal Anti-Neurofilament 200 (phosphorylated and non-phosphorylated) stains fibrous profiles in neuronal perikarya, dendrites, and axons. The antibody does not cross react with the other intermediate filament proteins. It shows broad species cross reactivity by recognizing neurofilaments in the central and peripheral nervous systems of human, monkey, pig, rabbit, hamster, rat, and mouse.

Monoclonal Anti-Neurofilament 200 (phosphorylated and non-phosphorylated) may be used to study the changes in the level of neurofilament phosphorylation associated with differentiation or neuronal damage. The antibody can be used to stain neural specific antigens in formalin-fixed, paraffin-embedded and frozen tissue sections using immunofluorescent or immunoperoxidase staining techniques.

Intermediate filaments (IFs), with characteristic 10 nm diameter are a distinct class of heterogenous protein subunits apparent by both immunological and biochemical criteria. IFs differ significantly from the other cytoskeletal elements of the cell, namely microtubules and microfilaments, and are components of most eukaryotic cells. The neurofilaments are one of the five major groups of IFs and are found predominantly in cells or tissues of neuronal origin. They are composed of three major proteins of apparent molecular weights 68 kD, 160 kDa and 200 kDa. Neurofilament proteins are synthesized in the neuronal perikarya, assembled to form filaments and then slowly transported within the axons towards the synaptic terminals. These molecules undergo post-translational modification, which results in their heterogeneity, including different levels of phosphorylation. The phosphorylation of neurofilament polypeptides has been suggested to modulate their function by influencing the interaction between neurofilament and cytoplasmic organelles.

Reagents

Supplied as ascites fluid containing 15 mM sodium azide as a preservative.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Product Profile

Immunohistochemistry: **a** minimum working dilution of 1:400 is determined by indirect immunofluorescent labeling of formalin-fixed, paraffin-embedded rat cerebellum sections (no enzyme treatment).

Immunoblotting: a minimum working dilution of 1:1,000 is determined using rat brain extract.

Note: In order to obtain optimum results, it is recommended that each individual user determine optimal working dilution by titration assay.

Storage

For continuous use, store at 2-8 °C for up to one month. For extended storage, solution may be frozen in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify by centrifugation before use.

References

1. Debus, E., et al., *Differentiation*, **25**, 193 (1983).
2. Franke, F.E., et al., *Amer. J. Pathol*., **139**, 67 (1991).

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