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Product Information

Anti-Neurofilament 200 (Phos. and Non-Phos.), Mouse monoclonal
clone N52, purified from hybridoma cell culture

Product Number **SAB4200705**

Product Description

Monoclonal Anti-Neurofilament 200 (phosphorylated and non-phosphorylated) (mouse IgG1 isotype) is derived from the N52 hybridoma produced by the fusion of mouse myeloma cells and splenocytes from an immunized mouse.[1] The carboxyterminal tail segment of enzymatically dephosphorylated pig neurofilament H-subunit was used as the immunogen (GeneID: 100156492). The isotype is determined by ELISA using Mouse Monoclonal Antibody Isotyping Reagents, Product Number ISO2. The antibody is purified from culture supernatant of hybridoma cells.

Monoclonal Anti-Neurofilament 200 (Phos. and Non-Phos.) also known as Neurofilament-H or Heavy subunit, specifically recognizes an epitope on the C-terminal tail domain of Neurofilament 200 which is present on both the phosphorylated and nonphosphorylated forms of this glycoprotein. The antibody shows reactivity with neurofilaments in the central and peripheral nervous systems from human[2], pig,[3] mouse[4], rat[5], monkey[6], feline[7] and bovine[8] origin. The antibody may be used in various immunochemical techniques including Immunoblotting (~200 kDa), Immunofluorescence and Immunohistochemistry.[1-8] The antibody stains fibrous profiles in neuronal perikarya, dendrites and axons and it does not cross react with other intermediate filament proteins.[1]

Neurofilaments are a type of intermediate filaments (IFs) that serve as major elements of the cytoskeleton supporting the axon cytoplasm of neuronal cells. IFs are the components of most eukaryotic cells and significantly differ from other cytoskeletal elements of the cell, namely microtubules and microfilaments. Neurofilaments undergo post-translational modifications including different levels of phosphorylation, which has been suggested to modulate their function by influencing the interaction between neurofilament and cytoplasmic organelles. Neurofilaments are built from three intertwined protofibrils of apparent molecular weights [68 (L), 160 (M) and 200 (H) kDa] which are themselves composed of two tetrameric protofilament complexes of monomeric proteins. Neurofilament 200 also known as Neurofilament heavy polypeptide (H-subunit), NF-H, NEFH or 200 kDa neurofilament protein, has an important function in mature axons that is not subserved by the two smaller neurofilament proteins. Defects in Neurofilament 200 are a cause of susceptibility to amyotrophic lateral sclerosis (ALS) and these accumulations are a hallmark of pathological lesion.[9-10] Neurofilaments can accumulate in large numbers within cell bodies and proximal axons of affected neurons in several pathological diseases, such as Charcot-Marie-Tooth (CMT), neurofilament inclusion disease (NFID), giant axonal neuropathy (GAN), diabetic neuropathy, spinal muscular atrophy (SMA) and spastic paraplegia. In addition, neurofilament accumulations was detected in Alzheimer's (AD) and Parkinson's disease (PD) patients.[10-13]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline pH 7.4, containing 15 mM sodium azide as a preservative.

Antibody Concentration: ~ 1.0 mg/mL

Precautions and Disclaimer

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

Storage/Stability

For continuous use, store at 2-8°C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working concentration of 2.5-5 µg/mL is recommended using human neuroblastoma SH-SY5Y cell line fresh lysate.

Immunohistochemistry: a working concentration of 10 µg/ml is recommended using heat-retrieved formalin-fixed, paraffin-embedded human Cerebellum sections.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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