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Product Information

Monoclonal Anti-O-Glycosylated Neurofilament-M Clone NL6
produced in mouse, purified immunoglobulin

Catalog Number **G9670**

Synonym: Anti-O-glycosylated NF-M

Product Description

Monoclonal Anti-O-Glycosylated Neurofilament-M (mouse IgG2a isotype) is derived from the hybridoma NL6 produced by the fusion of mouse myeloma cells (X63Ag8.653 cells) and splenocytes from BALB/c mice immunized with a protein fraction enriched for components of the human neuronal cytoskeleton [from cell lines NT2-N and SK-N-BE(2)].[1] The isotype is determined using a double diffusion immunoassay using Mouse Monoclonal Antibody Isotyping Reagents, Catalog Number ISO2.

Monoclonal Anti-O-Glycosylated Neurofilament-M recognizes human[1] and rat[1] but not mouse[1] and bovine[1] O-Glycosylated NF-M (approx. 160 kDa).[1] The O-Glycosylated epitope is localized in the carboxy-terminal tail domain of NF-M.[1] The product is useful in immunoblotting,[1,5] immunohistochemistry[1,5] and immunocytochemistry.[1,5]

Intermediate filaments (IFs), having a diameter of 8-10 nm, are a distinct class of heterogeneous protein subunits apparent by both immunological and biochemical criteria. IFs are components of most eukaryotic cells and differ significantly from other cellular cytoskeletal elements, namely microtubules and microfilaments. Neurofilaments are one of the five major groups of IFs and are found predominantly in cells or tissues of neuronal origin.[2, 3] They are composed of three major proteins of apparent molecular weights 68 kDa, 160 kDa, and 200 kDa termed NF-L, NF-M and NF-H. 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 modifications, which results in their heterogeneity including different levels of phosphorylation. The phosphorylation of neurofilament polypeptides has been suggested to modulate their function by influencing their interaction with cytoplasmic organelles.[2, 3] Neurofilaments are modified by O-linked GlcNAc on several identified sites located in the head region of NF-L and NF-M.[4] NL6 antibody recognizes specifically an O-glycosylated epitope in the projection domain of NF-M. In a rat model for amyotrophic lateral sclerosis (ALS), this specific modification is strongly decreased compared with wild-type animals.[1]

Reagent

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

Antibody concentration: ~ 2 mg/mL

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.

Storage/Stability

For extended storage, freeze at –20 °C in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, 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 0.5-1 µg/mL is recommended using human NT2 cell extracts.

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

References

1. Ludemann., N., et al., *J. Biol. Chem*., **280**, 31648-31658 (2005).
2. Trojanowski, J.Q., et al*., Ann. Med*., **21**, 113-116 (1989).

3. Trojanowski, J.Q. and Lee, V.M.Y., *Ann. NY Acad. Sci.*, **747**, 92-109 (1994).
4. Dong, D.L., et al., *J. Biol. Chem*., **268**, 16679-16687 (1993).
5. Deng, Y., et al., *FASEB J*., **22**, 138-145 (2008).

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