Store at -20°C

#2838

Neurofilament-M (RMO 14.9) Mouse mAb

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Entrez-Gene ID #4741
UniProt ID #P07197

rev. 07/29/19

For Research Use Only. Not For Use In Diagnostic Procedures.

Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP, IHC-P Endogenous	H, M, R	160 kDa	Mouse IgG1**

Background: The cytoskeleton consists of three types of cytosolic fibers: actin microfilaments, intermediate filaments, and microtubules. Neurofilaments are the major intermediate filaments found in neurons and consist of light (NFL), medium (NFM), and heavy (NFH) subunits (1). Similar in structure to other intermediate filament proteins, neurofilaments have a globular amino-terminal head, a central α-helical rod domain, and a carboxy-terminal tail. A heterotetrameric unit (NFL-NFM and NFL-NFH) forms a protofilament, with eight protofilaments comprising the typical 10 nm intermediate filament (2). While neurofilaments are critical for radial axon growth and determine axon caliber, microtubules are involved in axon elongation. PKA phosphorylates the head domain of NFL and NFM to inhibit neurofilament assembly (3,4). Research studies have shown neurofilament accumulations in many human neurological disorders including Parkinson's disease (in Lewy bodies along with α-synuclein), Alzheimer's disease, Charcot-Marie-Tooth disease, and Amyotrophic Lateral Sclerosis (ALS) (1).

Specificity/Sensitivity: Neurofilament-M (RMO 14.9) Mouse mAb detects endogenous levels of total Neurofilament-M protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with rat neurofilament, medium chain.

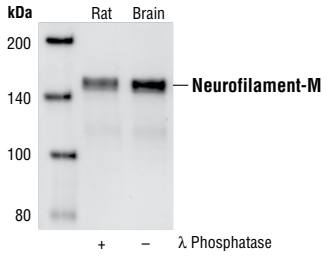
Background References:

(1) Al-Chalabi, A. and Miller, C.C. (2003) *Bioessays* 25, 346-355.

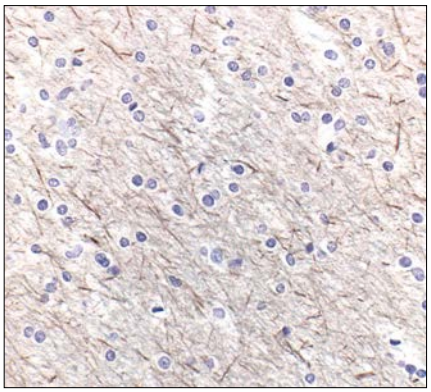
(2) Cohlberg, J.A. et al. (1995) *J. Biol. Chem.* 270, 9334-9339.

(3) Hisanaga, S. et al. (1994) *Mol. Biol. Cell* 5, 161-172.

(4) Sihag, R.K. et al. (1999) *J. Neurochem.* 72, 491-499.



Western blot analysis of extracts from rat brain, untreated or treated with λ phosphatase, using Neurofilament-M (RMO 14.9) Mouse mAb.



Immunohistochemical analysis of paraffin-embedded human brain, using Neurofilament-M (RMO 14.9) Mouse mAb.

Storage: Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. *Do not aliquot the antibody.*

***Species cross-reactivity is determined by western blot.**

****Anti-mouse secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50
Immunohistochemistry (Paraffin)	1:25

Optimal IHC dilutions determined using SignalStain® Boost IHC Detection Reagent.
Unmasking buffer: SignalStain® Citrate Unmasking Solution (10X) #14746
Antibody diluent: SignalStain® Antibody Diluent #8112
Detection reagent: SignalStain® Boost (HRP, Mouse) #8125

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com.

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IMPORTANT: For western blots, incubate membrane with diluted antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween®20 at 4°C with gentle shaking, overnight.

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Applications: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide **Species Cross-Reactivity:** **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.