Product Data Sheet:
Neurofilament Medium (NF-M)

Cat. No:	MAB-10583
Size:	100 ug
Clone:	3H11
Concentration:	1mg/ml
Host:	Ms
Isotype:	IgG1k
Immunogen:	Recombinant fusion protein containing the extreme C-terminus of rat NF-M, amino acids 677-845, expressed in and purified from E. coli
Reactivity:	Hu, Ms, Rt, Ct, Ch
Applications:	Western Blot: 1:5,000 Immunofluorescence: 1:500 Immunohistochemistry: 1:500 Immunocytochemistry: 1:500
Molecular Weight:	145-160kD
Purification:	Purified
Background:	Neurofilaments are the 10nm or intermediate filament proteins found specifically in neurons, and are composed predominantly of three major proteins called NF-L, NF-M and NF-H. NF-M is the neurofilament middle or medium molecular weight polypeptide and runs on SDS-PAGE gels at 145-160kDa, with some species variability, though the real molecular weight is ~105kDa. The major function of neurofilaments is likely to control the diameter of large axons (1). Antibodies to NF-M such as MAB-10583are useful for identifying neuronal cells and their processes in tissue sections and in cell culture. NF-M antibodies can also be useful to visualize neurofilament rich accumulations seen in many neurological diseases, such as myotrophic Lateral Sclerosis (a.k.a. Lou Gehrig's disease) and Alzheimer's disease (2-4). Much recent evidence has suggested that the detection of NF-L and NF-H in blood and CSF might be a useful prognostic or diagnostic biomarkers of neuronal damage and degeneration associated with a variety of CNS pathologies (5,6). The potential utility of NF-M in this fashion has not to date been examined. The MAB-10583antibody was made against a recombinant fusion protein of E. coli TrpE fused to the C-terminus of rat NF-M, amino acids 677-845 (7). The epitope was mapped using protein cleavage to the extreme C-terminal sequence, amino acids 762-845, a region of very conserved protein sequence which includes some interesting sequence repeats of currently unknown function (8). This epitope corresponds to amino acids 833-916 of the slightly larger human NF-M sequence. The antibody works on a variety of species and is clean on western blots of crude lysates, on cells in culture and staining of sectioned material. The antibody has been widely used for many years, for example the original observation that the widely used HEK293 cell line has unexpected neuronal properties was made with this antibody (9).
Form:	Liquid
Buffer:	Affinity purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN3
Storage:	Store at 4°C for short term, for longer term at -20°C

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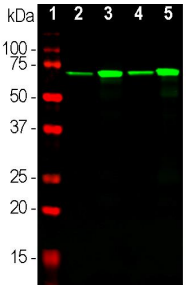
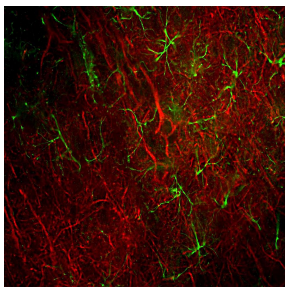


Western blot analysis of neuronal tissue lysates using mouse mAb to NF-M, , dilution 1:10,000 in green: [1] protein standard
(red), [2] rat spinal cord, [3] mouse spinal cord, [4] cow spinal cord, [5] rat sciatic nerve. Strong bands at 145kDa correspond to rodent NF-M while that at about 160kDa corresponds to the significantly larger bovine NF-M protein.



Immunofluorescence analysis of adult rat frontal cortex section
stained with mouse mAb to neurofilament NF-M, MAB-10583, dilution 1:5,000 in green, and costained with chicken pAb to neurofilament NF-H, NF-H, dilution 1:5,000 in red. Following transcardial perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45µM, and free-floating sections were stained with above antibodies. MAB-10583 antibody labels neuron cell bodies and dendrites of pyramidal neurons, as well as dendrites and axons of other neuronal cells, while the NF-H antibody stains the network of neuronal axons only.

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