Product Data Sheet:
Neurofilament Medium (NF-M)

Cat. No:	AB-10686
Conjugate:	Unconjugated
Size:	50 ul
Clone:	POLY
Concentration:	1mg/ml
Host:	Ch
Isotype:	IgG
Immunogen:	Recombinant construct containing the C-terminus of the human sequence (amino acids 708-877) expressed in and purified from E. coli.
Reactivity:	Hu, Rt, Ms, Ch
Applications:	Western Blot: 1:2,000-5,000 Immunofluorescence: 1:500-1,000 Immunocytochemistry: 1:500-1,000 Immunohistochemistry: 1:500-1,000
Molecular Weight:	145-160kDa by SDSPAGE
Purification:	Serum
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 NF-M are 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 Amyotrophic 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 -NF-M antibody 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). This region is very highly conserved in protein sequence across species boundaries and contains some interesting peptide repeats of currently unknown function (8).
Form:	Liquid
Buffer:	Antibody supplied as an aliquot of IgY preparation at 20-30 mg/mL with 5mM NaN3
Storage:	Store at 4°C. For long term storage, leave frozen at -20°C

Western blot analysis of different neuronal tissue and cell lysates using chicken pAb to NF-M, NF-M, dilution 1:2,000 in green: [1] protein standard (red), [2] rat brain [3] rat spinal cord, [4]

Immunofluorescent analysis of rat cerebellum section stained with chicken pAb to NF-M, NF-M, dilution 1:1,000 in red, and costained with mouse mAb to CNP, 1H10, dilution 1:500 in green. The

mouse brain, [5] mouse spinal cord, [6] NIH/3T3 cells, [7] HEK293, [8] HeLa, [9] SH-SY5Y, and [10] C6 cells. Strong band at 145kDa corresponds to rodent NF-M, and about 160kDa band corresponds to human NF-M protein, visible in SHSY-5Y and HEK293 cells which have neuronal properties. NF-M is not expressed in HeLa and other cell lines tested.

blue is DAPI staining of nuclear DNA. 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 the above antibodies. The NF-M antibody labels the network of axons of basket neurons and other neurons. The CNP antibody stains oligodendrocytes, cells that create myelin sheaths around axons.