

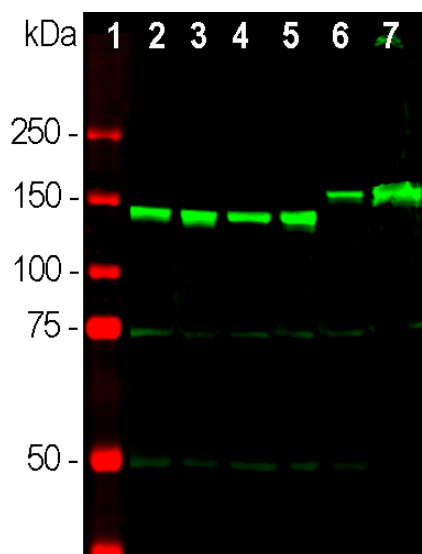
Ordering Information
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HGNC Name: NEFM
UniProt: P07197
RRID: AB_2572366
Immunogen: Recombinant fusion protein containing the extreme C-terminal segment of rat NF-M, amino acids 549-845
Format: Supplied as an aliquot of serum plus 5mM NaN₃
Storage: Storage for short term at 4°C recommended, for longer term at -20°C, minimize freeze/thaw cycles
Recommended dilutions:
 WB: 1:1,000-5,000. IF/ICC: 1:2,000 and IHC: 1:1,000-1:2,500.

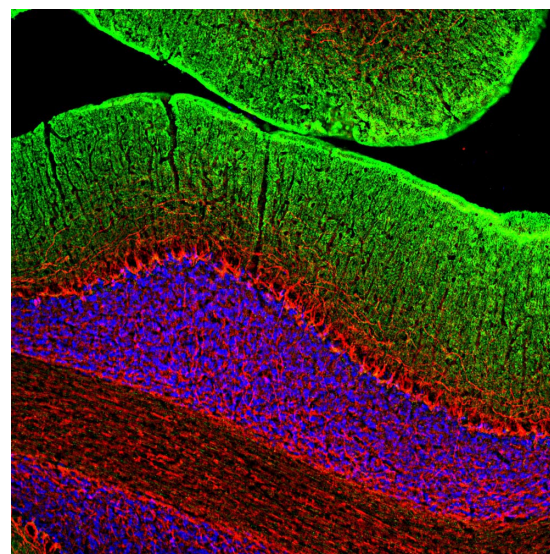
References:

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| Applications | Host | Isotype | Molecular Wt. | Species Cross-Reactivity |
|----------------------|--------|---------|---------------|----------------------------|
| WB, IF/ICC, IHC, ABC | Rabbit | | 145-160kDa | Hu, Rt, Ms, Bo, Po, Ho, Ck |



Western blot analysis of neuronal tissue lysates using rabbit pAb to NF-M, RPCA-NF-M, dilution 1:2,000 in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord, [6] pig brain and [7] pig spinal cord. Strong bands at 145kDa correspond to rodent NF-M molecules, while the NF-M of pig and other larger mammals including humans run at about 160kDa.



Immunofluorescent analysis of rat cerebellum section stained with rabbit pAb to NF-M, RPCA-NF-M, dilution 1:2,000 in red, and costained with mouse mAb to GAP43, MCA-3H14, dilution 1:2,000 in green. 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 RPCA-NF-M antibody strongly labels neuronal processes throughout the cerebellum, while the GAP43 antibody stains predominantly synaptic regions in the molecular layer.

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 RPCA-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 RPCA-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). The RPCA-NF-M antibody is very similar in properties to a rabbit polyclonal the production and characterization of which were described in reference 7. As shown here, the antibody works well for western blotting, IF, ICC and IHC. Also available from EnCor is a chicken polyclonal and a widely used mouse monoclonal antibody to the same immunogen **CPA-NF-M**, and **MCA-3H11**. All three antibodies works on a variety of species and are clean and specific on western blots, cell and tissue staining.

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Abbreviation Key:

mAb—Monoclonal Antibody **pAb**—Polyclonal Antibody **WB**—Western Blot **IF**—Immunofluorescence **ICC**—Immunocytochemistry
IHC—Immunohistochemistry **E**—ELISA **Hu**—Human **Mo**—Monkey **Do**—Dog **Rt**—Rat **Ms**—Mouse **Co**—Cow **Pi**—Pig **Ho**—Horse **Ch**—Chicken
Dr—*D. rerio* **Dm**—*D. melanogaster* **Sm**—*S. mutans* **Ce**—*C. elegans* **Sc**—*S. cerevisiae* **Sa**—*S. aureus* **Ec**—*E. coli*.