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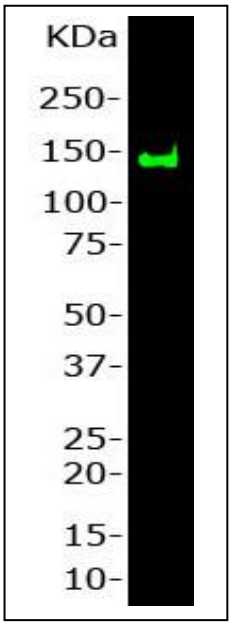
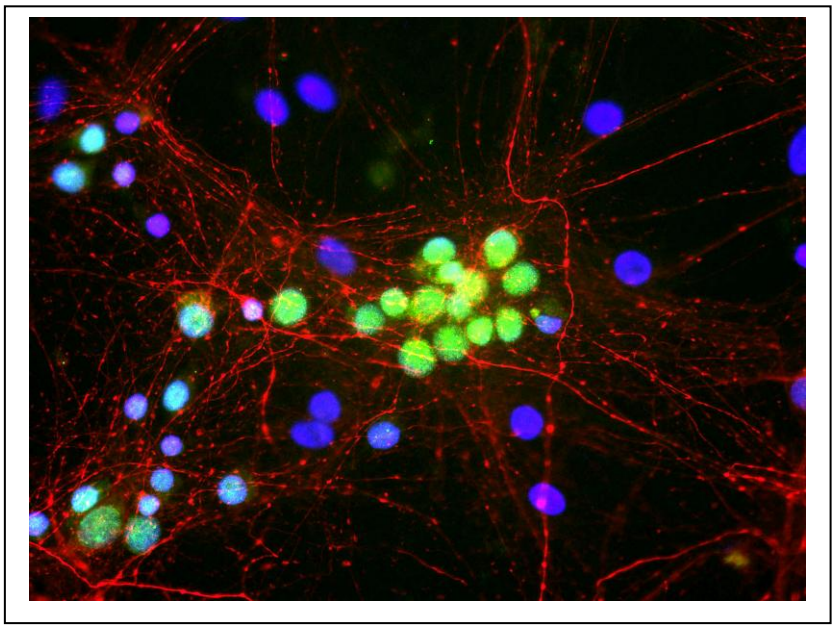
Catalogue# RPCA-NF-M: Rabbit Polyclonal Antibody to Neurofilament NF-M

The Immunogen: Neurofilaments can be defined as the intermediate or 10nm diameter filaments found in neuronal cells. They are composed of a mixture of subunits which often includes the neurofilament triplet proteins, NF-L, NF-M and NF-H, so called due to their relative molecular weights of "light", "medium" and "heavy". Neurofilaments may also include peripherin, α-internexin, nestin and, in some cases, vimentin. Antibodies to the various neurofilament subunits are very useful cell type markers since the proteins are quite abundant, biochemically stable and found only in neurons. NF-M, the middle subunit, appears to have a role in maintaining axonal diameter and contains a highly conserved C-terminal region which may be functionally important, since it contains conserved repeated sequences (1, 2). We expressed this segment, specifically amino acids 677-845, in bacteria and raised this and several other antibodies to it. These antibodies are clean and specific on blots and work well on cells in tissue culture and in immunohistochemistry and bind NF-M in all mammals, birds and reptiles tested to date. As a result, this particular antibody has been widely used and is sold through many other companies on an OEM basis. However, we are the original manufacturer of this antibody, and so can provide the most competitive pricing and detailed product data.





Left: Blot of crude rat spinal cord extract probed with RPCA-NF-M serum at 1: 1,000, revealing a single strong band at 145 kDa, the size expected for rat NF-M. **Right**: Mixed neuron/glia cultures stained with RPCA-NF-M (red) and MCA-1G10 (green), EnCor's mouse monoclonal antibody to Fox1, an mRNA binding protein closely related to Fox3/NeuN. The RPCA-NF-M antibody stains axonal, dendritic and perikaryal profiles of neurons cleanly and specifically. Like antibody to Fox3/NeuN, the Fox1 antibody binds to the nuclei of neurons only. DNA is shown in blue with DAPI.

Antibody Characteristics: Antibody was raised in rabbit. The immunogen was amino acids 677-845, the extreme carboxy terminal region of rat NF-M, which was expressed in *E. coli* and purified by ion exchange chromatography. The production and characterization of an antibody similar to but not identical to RPCA-NF-M is described in reference 1 below. Store at 4°C or -20°C. Avoid repeat freezing and thawing.

Suggestions for use: Try at dilutions of 1:1,000-1: 2,000 for immunofluorescence. For western blots try at 1:1,000-2,000. Antibody will stain a prominent band at 145-160 kDa in crude homogenates of brain or spinal cord, apparent molecular weight being a little different in different species, with larger species tending to have slightly larger apparent sizes. A more minor band running at about 110 kDa is also frequently seen, which appears to be an *in vivo* proteolytic fragment of NF-M.

References:

1. Harris, J., Ayyub, C. and Shaw G. A molecular dissection of the carboxyterminal tails of the major neurofilament subunits NF-M and NF-H. J. Neurosci Res 30:47-62 (1991).

2. Perrot, R., Berges, R., Bocquet, A. and Eyer, J. Review of the multiple aspects of neurofilament functions, and their possible contribution to neurodegeneration. Mol Neurobiol 38:27–65 (2008).

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.