



Qty: 100 µg/200 µl
Mouse anti-NF-M
Catalog No. 34-1000
Lot No.

Mouse anti-NF-M (Neurofilament – Midsized)

FORM

This monoclonal antibody is supplied as a 200 µl aliquot at a concentration of 0.5 mg/ml in PBS, pH 7.4, containing 0.1% sodium azide. This antibody is highly purified from mouse ascites by protein A chromatography.

CLONE: RMO 14.9

ISOTYPE: Mouse IgG₁

IMMUNOGEN

Rat NF-M.

SPECIFICITY

This antibody reacts with NF-M.

REACTIVITY

Reactivity is confirmed with human, rat, mouse, chicken, and rabbit NF-M cells.

Sample	ELISA	Immuno-fluorescence	Western Blotting	IHC (FFPE and frozen)
Human	+++	++	+++	++
Mouse	+++	++	+++	++
Rat	+++	++	+++	++

(Excellent +++, Good++, Poor +, No reactivity 0, Not applicable NA)

USAGE

Working concentrations for specific applications should be determined by the investigator. Appropriate concentrations will be affected by several factors, including secondary antibody affinity, antigen concentration, sensitivity of detection method, temperature and length of incubations, etc. The suitability of this antibody for applications other than those listed below has not been determined. The following concentration ranges are recommended starting points for this product.

ELISA: 0.1-1 µg/ml
Western Blotting: 1-5 µg/ml
IF: 5-10 µg/ml
IHC: 10 µg/ml

STORAGE

Store at 2-8°C for up to one month. Store at -20°C for long term storage. Avoid repeated freezing and thawing.

(cont'd)

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PI341000

(Rev 10/08) DCC-08-1089

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BACKGROUND

Neurofilaments (NFs) are prominent components of large myelinated axons. Based on sequence homology and intron placement, the NF genes have been classified as type IV IFs along with alpha-internexin, which is also expressed in the nervous system. NFs may function as effector proteins subject to a complex regulatory cross-talk between neurons and myelinating Schwann cells or oligodendrocytes. Mammalian neurofilaments are assembled from light (NF-L), mid-sized (NF-M), and heavy (NF-H) neurofilament proteins. NF-M is required if myelinated axons are to achieve maximal diameters and NF-M has been shown to regulate the level of NF-L. NF-M subunits mainly regulate axonal caliber by altering the level of NF-L and in turn the number of NFs in the axon. Results seem to explain as a perturbation of NF stoichiometry in which overexpression of NF-M leads to the formation of perikaryal NF inclusions in motor neurons and the depletion of NFs from axons. Overexpression of NF-M in combination with NF-L increased radial growth of axons, which suggests that NF-M or NF-H must coassemble into filaments with NF-L before they can affect the radial growth of axons. The immature form of NFs composed of NF-L and NF-M, might function in establishing the early neuronal phenotype and in maintaining neurite outgrowth.

REFERENCES

1. Elder GA, Friedrich VL Jr., Kang C, Bosco P, Gourov A, Tu PH, Zhang B, Lee VM, Lazzarini RA. Requirement of heavy neurofilament subunit in the development of axons with large calibers. *J Cell Biol.* 143(1): 195-205, 1998.
2. Elder GA, Friedrich VL Jr., Pereira D, Tu PH, Zhang B, Lee VM, Lazzarini RA. Mice with disrupted mid-sized and heavy neurofilament genes lack axonal neurofilaments but have unaltered numbers of axonal microtubules. *J Neurosci Res.* 57(1): 23-32, 1999.

RELATED PRODUCTS

Product	Clone/PAD*	Cat. No.
Mouse anti-NF-68 kD (NF-L)	DA2	13-0400
Mouse anti-NF-160 kD (NF-M)	RMO-44	13-0500
Mouse anti-NF-160 kD (NF-M)	RMO-270	13-0700
Mouse anti-NF-160 kD (NF-M)	RMO-281	13-0800
Mouse anti-NF-200 kD (NF-H)	RMO-24	13-1000
Mouse anti-NF-160/200 kD (NF-M+H)	RMO-20	13-1300
Mouse anti-NF-L+M+H (PAN)	DA2, FNP7, RmdO-20.11	18-0171
Protein A	Sepharose® 4B	10-1041
rec-Protein G	Sepharose® 4B	10-1241

*PAD: Polyclonal Antibody Designation

Conjugate	ZyMAX™ Goat x Rabbit IgG (H+L)	ZyMAX™ Goat x Mouse IgG (H+L)
Purified	81-6100	81-6500
FITC	81-6111	81-6511
TRITC	81-6114	81-6514
Cy™3	81-6115	81-6515
Cy™5	81-6116	81-6516
HRP	81-6120	81-6520
AP	81-6122	81-6522
Biotin	81-6140	81-6540

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