

# Mouse Monoclonal to Neurofilament Light chain, NF-L. A marker of neuronal cells and processes.

## MCA-7D1

### Ordering Information

Web [www.encorbio.com](http://www.encorbio.com)

Email [admin@encorbio.com](mailto:admin@encorbio.com)

Phone 352-372-7022

Fax 352-372-7066

**HGNC name:** NEFL

**RRID:** [AB\\_2572363](https://eutils.ncbi.nlm.nih.gov/entrez/eutils/rrid.cgi?db=AB)

**Immunogen:** Pig full length protein purified from spinal cord

**Format:** Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN<sub>3</sub>

**Storage:** Shipped on ice. Store at 4°C for short term, for longer term at -20°C. Avoid freeze / thaw cycles.

### Recommended dilutions:

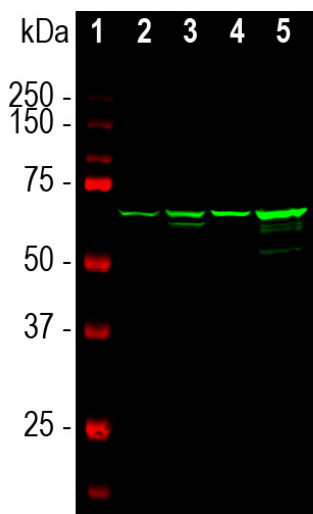
Western blot: 1:5,000-1:10,000.

IF/ICC and IHC: 1:100-1:500.

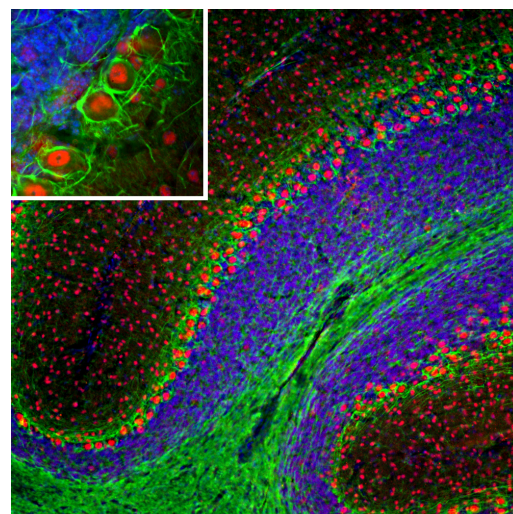
### References:

1. Mersiyanova IV, Perepelov AV, Polyakov AV, Sitnikov VF, Dadali EL, Oparin RB, Petrin AN and Evgrafov OV. A new variant of Charcot-Marie-Tooth disease type 2 is probably the result of a mutation in the neurofilament-light gene. *Am. J. Hum. Genet.* 67:37-46, 2000.

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
Western blot, ICC/IF, IHC	Mouse	IgG2b	68 kDa by SDS-PAGE	Hu, Rt, Ms, Bo, Po, Ho



Western blot analysis of different tissue lysates using mouse mAb to NF-L, MCA-7D1, dilution 1:5,000 in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, and [5] mouse spinal cord. The strong band at 68kDa corresponds to NF-L protein.



Immunofluorescent analysis of a section of mouse cerebellum stained with mouse mAb to NF-L, MCA-7D1, dilution 1:5,000 in green, and costained with chicken pAb to FOX2, CPCA-FOX2, dilution 1:2,000 in red. The blue is DAPI staining of nuclear DNA. Following transcardial perfusion of mouse with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45µm, and free-floating sections were stained with above antibodies. NF-L antibody labels dendrites and axons of neuronal cells predominantly axons in white matter and basket cell axons associated with Purkinje cells. The FOX2 antibody reveals protein expressed in a subset of neurons, including the Purkinje cells.

**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-L is the neurofilament lite or low molecular weight polypeptide and runs on SDS-PAGE gels at about 68 kDa. Antibodies to NF-L are useful for identifying neuronal cells and their processes in tissue sections and in tissue culture. NF-L antibody can also be useful in the diagnostics of neurofilament accumulations seen in many neurological diseases, such as Lou Gehrig's disease and Alzheimer's disease. Mutations in the protein coding region of the human NF-L gene cause some forms of Charcot-Marie-Tooth disease (1).

MCA-7D1 was raised against a preparation of pig neurofilament NF-H and NF-L. Screening was done by ELISA on the immunogen followed by immunofluorescence microscopy. Clones which revealed strong staining were further characterized biochemically. MCA-7D1 is a IgG2b class antibody. It reacts with NF-L from human, cow, pig, mouse, rat and all other mammals. It is strong and clean on western blots and works well on frozen sections, cells in tissue culture and on mildly formalin fixed histological sections.

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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 Bo—Cow Po—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.