

**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  
**UniProt:** P07196  
**RRID:** AB\_2572362  
**Immunogen:** Enzymatically dephosphorylated full length pig NF-L protein  
**Format:** Purified antibody at 1mg/mL in 50% PBS, 50% glycerol plus 5mM NaN<sub>3</sub>  
**Storage:** Store at 4°C for short term, for longer term at -20°C.  
**Recommended dilutions:**  
WB: 1:5,000. IF/ICC: 1:1,000. IHC: 1:2,000.

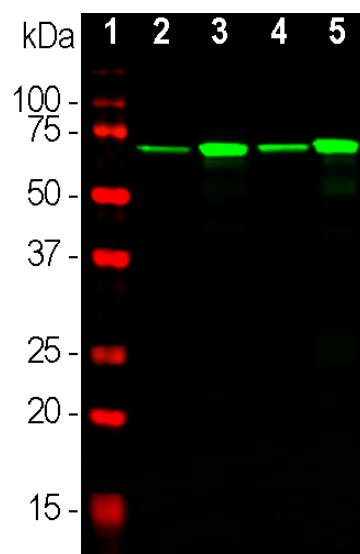
## References:

- Hoffman et al. Neurofilament gene expression: a major determinant of axonal caliber. *PNAS* 84:3472-6 (1987).
- Perrot R, et al. Review of the Multiple Aspects of Neurofilament Functions, and their Possible Contribution to Neurodegeneration. *Mol. Neurobiol.* 38:27-65 (2008).
- Lépinoux-Chambaud C. Eyer J. Review on intermediate filaments of the nervous system and their pathological alterations. *Histochem. Cell Biol.* 140:13-22 (2013).
- Liu Q. et al. Neurofilamentopathy in Neurodegenerative Diseases. *Open Neurol. J.* 5:58-62 (2011).
- Bacioglu M, et al. Neurofilament light chain in blood and CSF as marker of disease progression in mouse models and in neurodegenerative diseases. *Neuron* 91:56-66 (2016).
- Evans, J, et al. Characterization of mitotic neurons derived from adult rat hypothalamus and brain stem. *J. Neurophysiol.* 87:1076-1085 (2002).
- Shaw G, et al. Uman type neurofilament light antibodies are effective reagents for the imaging of neurodegeneration. *Brain Communications*  
[doi.org/10.1093/braincomms/fcad067](https://doi.org/10.1093/braincomms/fcad067).

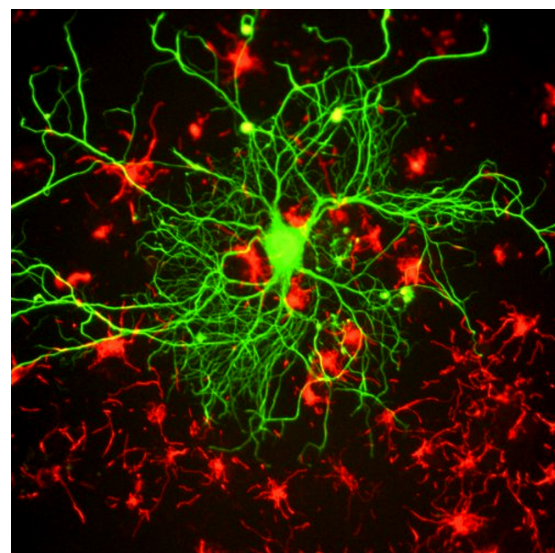
Peer reviewed publications which make use of this antibody as supplied by EnCor can be found through a [CiteAb](#) search by selecting [this link](#).

The antibody has also been sold through many OEM partners, and peer-reviewed publications making use of it can be found by searching Google Scholar for "MCA-DA2 AND Antibody" or, if you are viewing this online, simply by selecting [this link](#).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Mouse	IgG1 heavy, κ light	68-70kDa by SDS-PAGE	Hu, Rt, Ms, Co, Pi, Ho



Western blot analysis of whole tissue lysates using mouse mAb to NF-L, MCA-DA2, dilution 1:5,000 in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord. The strong band at 68-70kDa corresponds to the NF-L protein.



A well known and widely utilized image of a neuron in cell culture stained with the MCA-DA2 antibody at a dilution of 1:1,000 in green, see [here](#). The culture was derived from adult rat cortex grown under conditions to induce neuronal survival and differentiation, see reference 6 for details. The culture was counterstained with EnCor rabbit polyclonal antibody to α-interneuron in red, [RPCA-a-Int](#). The α-interneuron antibody highlights a network of small neurons at an early stage of differentiation.

## 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, though other filament proteins may be included also. The major function of neurofilaments is likely to control the diameter of large axons (1). NF-L is the neurofilament light or low molecular weight polypeptide and runs on SDS-PAGE gels at 68-70kDa with some variability across species. Antibodies to NF-L like MCA-DA2 are useful for identifying neuronal cells and their processes in cell culture and sectioned material. NF-L antibody can also be useful for the visualization of neurofilament rich accumulations seen in many neurological diseases, such as Lou Gehrig's disease (ALS), giant axon neuropathy, Charcot-Marie Tooth disease and others (2-4). Much interest has recently been focused on the detection of NF-L released from neurons into blood and CSF as a surrogate marker of primarily axonal loss in a variety of types of CNS injury and degeneration (5).

MCA-DA2 antibody was made against a preparation of NF-L isolated from pig spinal cord. The antibody works well for western blotting and for IF, ICC and IHC on a variety of species including human, rat and mouse (for IHC see data under "Additional Info" tab). We recently epitope mapped this antibody to a short peptide in the C-terminal "tail" region of the molecule within the sequence SYTSHVQEEQIEVE, amino acids 441-455 of the human sequence. We recently found that the epitope for this antibody is rapidly degraded during neurodegeneration so this antibody is related to our novel Degenotag™ reagents, see our recent paper for details (7). An alternate mouse monoclonal antibody made against recombinant full length human NF-L is [MCA-1B11](#), which recognizes an epitope in the α-helical coiled coil region of NF-L (7). Also available from EnCor are rabbit and chicken polyclonal antibodies to NF-L made against recombinant full length human NF-L, [RPCA-NF-L](#), and [CPCA-NF-L](#). All four antibodies work on a variety of species and are clean and specific on western blots, cell and tissue staining.

**FOR RESEARCH USE ONLY. NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE.**

## 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*.