

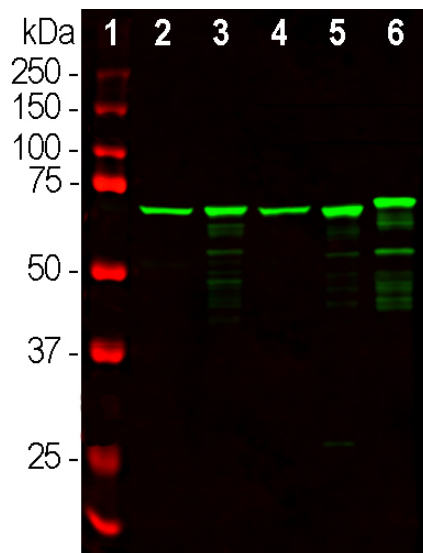
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**HGNC Name:** NEFL  
**UniProt:** P07196  
**RRID:** AB\_2149931  
**Immunogen:** Recombinant human NF-L protein  
**Format:** Concentrated IgY preparation in PBS plus 0.02% Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub>  
**Storage:** Store at 4°C.  
**Recommended dilutions:**  
WB: 1:5,000. IF/ICC and IHC: 1:2,000.

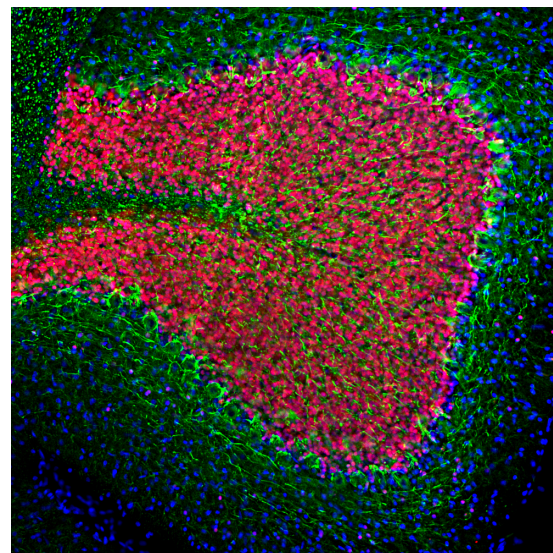
### References:

1. Hoffman et al. Neurofilament gene expression: a major determinant of axonal caliber. *PNAS* 84:3472-6 (1987). 2. Perrot R, et al. Review of the Multiple Aspects of Neurofilament Functions, and their Possible Contribution to Neurodegeneration. *Mol. Neurobiol.* 38:27-65 (2008). 3. Lépinoux-Chambaud C, Eyer J. Review on intermediate filaments of the nervous system and their pathological alterations. *Histochem. Cell Biol.* 140:13-22 (2013). 4. Liu Q, et al. Neurofilamentopathy in Neurodegenerative Diseases. *Open Neurol. J.* 5:58-62 (2011). 5. 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).

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		68-70kDa by SDS-PAGE	Hu, Rt, Ms, Bo, Po



Western blot analysis of tissue lysates probed with chicken pAb to NF-L, CPCA-NF-L, dilution 1:20,000 in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord and [6] cow spinal cord. Strong bands at ~68kDa corresponds to NF-L proteins which are known to have slightly different apparent SDS-PAGE molecular weights across species boundaries.



Immunofluorescent analysis of rat cerebellum section stained with chicken pAb to NF-L, CPCA-NF-L, dilution 1:2,000 in green, and costained with mouse mAb to FOX3/NeuN, MCA-1B7, dilution 1:5,000 in red. 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 above antibodies. CPCA-NF-L antibody labels perikarya and processes of neuronal cells, particularly strongly the axons of basket cells, while the FOX3/NeuN antibody stains the nuclei and proximal cytoplasm of neurons.

### 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 CPCA-NF-L 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). CPCA-NF-L antibody was made against a preparation of full length human recombinant NF-L protein. It binds NF-L from a variety of species including human, rat and mouse. We also generated highly specific rabbit polyclonal antibodies, [RPCA-NF-L](#) and [RPCA-NF-L-ct](#), and several mouse monoclonal antibodies, [MCA-7D1](#), [MCA-1B11](#), and [MCA-6H112](#).

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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*.