Neurofilament NF-L Chicken Polyclonal Antibody

CPCA-NF-L

Ordering Information
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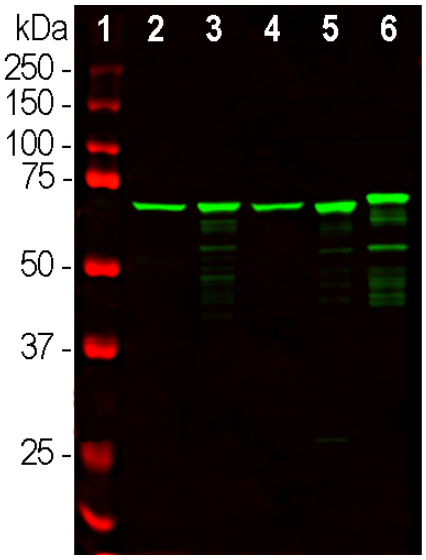
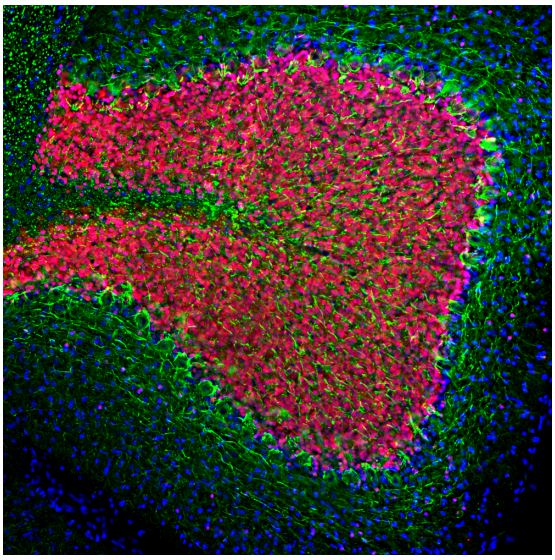
HGNC Name: *NEFL*
UniProt: *P07196*
RRID: *AB_2149931*
Immunogen: *Recombinant human NF-L protein*
Format: *Concentrated IgY preparation in PBS plus 0.02% NaN_3*
Storage: *Store at 4°C.*
Recommended dilutions:
WB: 1:5,000. IF/ICC and IHC: 1:2,000.

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.

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).

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.