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## Purified Mouse Anti-Neurofilament heavy protein Monoclonal Antibody

**CLX140AP**

**Lot:**

**Size:** 0.1 mg

**Clone:** NF-01

**Isotype:** Mouse IgG1

**Specificity:** The antibody NF-01 recognizes a phosphorylated epitope on heavy neurofilament protein (210 kDa) of various species. Antibodies to the various neurofilament subunits are very useful cell type markers since the proteins are among the most abundant of the nervous system, are expressed only in neurons and are biochemically very stable.

**Immunogen:** Pellet of porcine brain cold-stable proteins after depolymerization of microtubules.

**Species Reactivity:** Mammalian

**Application:** Immunohistochemistry (paraffin sections)  
Western Blotting  
Immunocytochemistry

**Purity:** > 95% (by SDS-PAGE)

**Purification:** Purified from ascites by protein-A affinity chromatography.

**Concentration:** 1 mg/ml

**Storage Buffer:** Phosphate buffered saline (PBS) with 15 mM sodium azide, approx. pH 7.4

**Storage / Stability:** Store at 2-8°C. Do not use after expiration date stamped on vial label. For long-term storage aliquot and store at -20°C. Avoid freeze/thaw cycles.

**Background:** Neurofilaments (NFs) are a type of intermediate filament (IF) expressed almost exclusively in neuronal cells, and in those cells most prominently in large axons. NFs in most vertebrates are composed of three different polypeptide chains with different molecular weights; neurofilament heavy protein (NF-H), medium (NF-M) and light protein (NF-L), which share sequence and structural similarity in a coiled-coil core domain, but differ in the length and sequence of their N-termini and more dramatically of their C-termini which in the case of NF-M and NF-H form the flexible extensions that link NFs to each other and to other elements in the cytoplasm.

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The protein segment on the C-terminal side of the human NF-H rod is uniquely long (more than 600 amino acids) compared to other IF proteins and is highly charged (> 24 % Glu, > 25 % Lys), rich in proline (> 12 %) and impoverished in cysteine, methionine and aromatic amino acids. Its most remarkable feature is a repetitive sequence that covers more than half its length and includes the sequence motif Lys-Ser-Pro (KSP) greater than 40 times. Plasma neurofilament heavy chain level has been proposed as a marker of axonal injury and clinical use of its degeneration and loss has been suggested as a biomarker of several neurodegenerative diseases.

**References:**

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- \*Lukas Z, Draber P, Bucek J, Draberova E, Viklicky V, Dolezel S: Expression of phosphorylated high molecular weight neurofilament protein (NF-H) and vimentin in human developing dorsal root ganglia and spinal cord. *Histochemistry*. 1993 Dec; 100(6):495-502.

**Laboratory Reagent For Research Use Only**