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Catalogue# Prot-r-NF-L: Purified recombinant full length human peripherin

Background: Peripherin is a ~57 kDa intermediate filament subunit found initially in sensory neurons of the peripheral nervous systems, which gives the protein its name (1). Peripherin was later found in some sensory and other neurons of the central nervous system, in rat pheochromacytoma PC12 cells, in certain neuroendocrine tumors and in the insulin producing cells of the pancreas (2,3). Peripherin belongs to the Class III family of intermediate filament subunits and is often co-expressed with vimentin and neurofilament subunits. The HGNC code for peripherin is PRPH, and this protein is also referred to peripherin 1. Peripherin 1 should not be confused with peripherin 2, HGNC code PRPH2, which is an unrelated protein of the retina. This protein can be used as an ELISA standard or to test for anti-peripherin antibodies as are seen associated with diabetes and other neurological disorders (e.g. 4).



Left: Coomassie brilliant blue stained SDS-PAGE gel of various full length human recombinant proteins. His-tagged human peripherin, was expressed and purified from *E. coli* BL21 strain using immobilized metal affinity chromatography. 1µg of pure protein was run on each lane, and the lane indicated with "Peri" contains the peripherin protein. The other lanes show recombinant Histagged α -internexin (α -Int), neurofilament NF-L (NF-L) and vimentin (Vim) as indicated. Protein molecular weight standards are in the first lane and apparent molecular weights are as indicated. In each case the molecules run at ~5kDa slower than the native protein due to the addition of the His-tag and other pET vector derived sequence.

Protein Characteristics: A codon optimized cDNA designed to express full length human peripherin was inserted into pET30a (+) eukaryotic expression vector, which adds an N-terminal in frame His-tag and some other vector sequence. This was transformed into *E. coli* and recombinant protein was purified in 6M urea using immobilized metal affinity chromatography. Purified protein was diluted to 1.0 mg/mL and is supplied in 6M urea.

References:

1. Portier MM, de Néchaud B, Gros F. Peripherin, a new member of the intermediate filament protein family. <u>Dev Neurosci. 6:335-44</u> (1984).

2. Troy CM, Brown K, Greene LA, Shelanski ML. Ontogeny of the neuronal intermediate filament protein, peripherin, in the mouse embryo. <u>Neuroscience. 36:217-37 (1990)</u>.

3. Aletta JM, Angeletti R, Liem RK, Purcell C, Shelanski ML, Greene LA. Relationship between the nerve growth factor-regulated clone 73 gene product and the 58-kilodalton neuronal intermediate filament protein (peripherin). <u>J Neurochem. 51:1317-20 (1988)</u>.

4. Chamberlain JL, et al. Peripherin-IgG Association with Neurologic and Endocrine Autoimmunity. J. Autoimmun. 34:469-77 (2010).

Limitations: This product is for research use only and is not approved for use in humans or in clinical diagnosis.

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