Native Bovine NEFH Protein

Cat. No. NEFH-181B **Lot. No.** (See product label)

SPECIFICATION

Product Overview	Native Bovine NEFH Protein
Species	Bovine
Description	Neurofilaments are the 10 nm or intermediate filament proteins found specifically in neurons, d are composed predominantly of four major proteins called NF-L, NF-M, NF-H and α-internexin. NF-H is the neurofilament heavy or high molecular weight polypeptide and runs on SDS-PAGE gels at 200-220kDa in the heavily phosphorylated axonal form. The molecule has an unusual and interesting region consisting of multiple Lysine-Serine-Proline peptides, about 40 of these in human. These peptide repeats are heavily phosphorylated on the Serine residues in axons. Enzymatic removal of these phosphate groups will increase the SDS-PAGE mobility to about 160kDa, likely due to protein conformational changes due to the removal of charge. Even the non-phosphorylated form runs aberrantly on SDS-PAGE, as the real molecular weight of NF-H is about 110kDa, with some variation in different species. This is likely due to an unusually high content of charged amino acids. Non-phosphorylated forms of NF-H are found in dendrites and perikarya and early in development, but the majority of NF-H in the adult is this heavily phosphorylated axonal form. Our preparation was isolated from cow spinal cord using a modification of the method of Leung and Liem, which purifies out the heavily phosphorylated axonal form, often referred to as pNF-H. The HGNC name for this protein is NEFH.
Molecular Mass	~220kDa by SDS-PAGE

Tel: 1-631-559-9269 1-516-512-3133
Email: info@creative-biomart.com Fax: 1-631-938-8127
45-1 Ramsey Road, Shirley, NY 11967, USA

Applications	ELISA, western blotting standard
Storage	Store at -20 centigrade
Concentration	1 mg/mL
Storage Buffer	6M Urea

GENE INFORMATION

Gene Name	NEFH neurofilament heavy chain [Bos taurus (cattle)]
Official Symbol	NEFH
Synonyms	NEFH; neurofilament heavy chain; NF-H; LOW QUALITY PROTEIN: neurofilament heavy polypeptide; 200 kDa neurofilament protein; Neurofilament triplet H protein; neurofilament heavy polypeptide
Gene ID	528842
mRNA Refseq	XM_005218112
Protein Refseq	XP_005218169
UniProt ID	F1MSQ6

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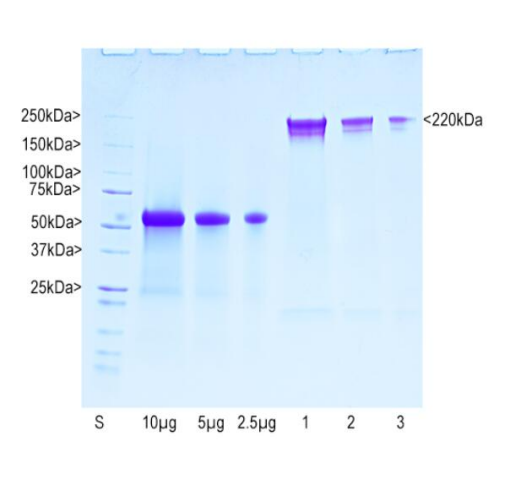

SDS-PAGE

Coomassie brilliant blue stained SDS-PAGE gel of cow pNF-H preparation. First lane shows molecular weight standards of indicated molecular size. Next three lanes show BSA at 10, 5 and 2.5 μg respectively as indicated. Next three lanes show undiluted, 1:1 diluted and 1:4 diluted aliquots of the pNF-H preparation. The pNF-H was isolated from cow spinal cord using a modified version of the Triton X100/sucrose extraction method of Leung and Liem as far as the 6M urea solubilization and batch ion exchange chromatography on hydroxyapatite step. The material was then fractionated using a phosphate gradient of 10mM to 300mM on DEAE-cellulose in 6M urea at pH=7.5. The pNF-H elutes cleanly at about 50mM phosphate as shown. The cow pNF-H runs on SDS-PAGE with an apparent molecular weight of 220kDa.

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