

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, and 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

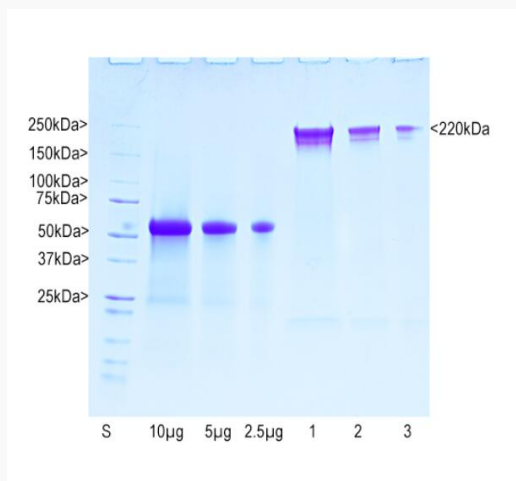
GENE INFORMATION

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.