Hello Bio, Inc.
304 Wall St., Princeton, NJ 08540 USA

T. 609-683-7500
F. 609-228-4994

customercare-usa@hellobio.com

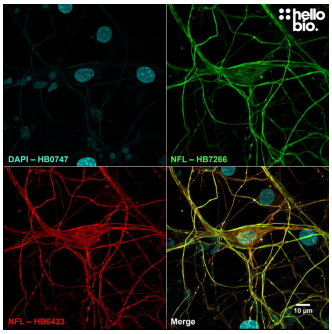
DATASHEET

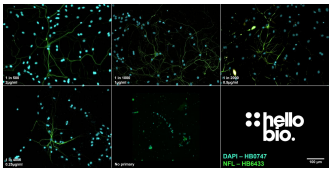
Anti-Neurofilament L (NF-L) antibody ValidAb™

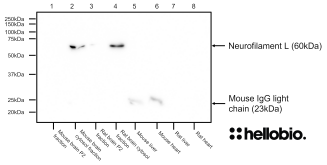
Product overview

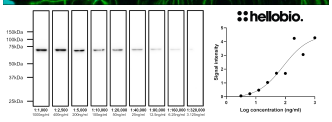
Name	Anti-Neurofilament L (NF-L) antibody ValidAb™
Cat No	HB6433
Host	Mouse
Clonality	Monoclonal
Target	Neurofilament L
Description	Antibody to Neurofilament L - neurofilament component expressed in neurones. Part of the ValidAb ™ range of highly validated, data-rich antibodies.

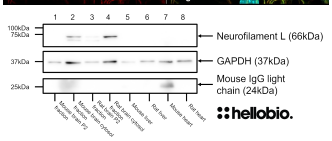
Validation data

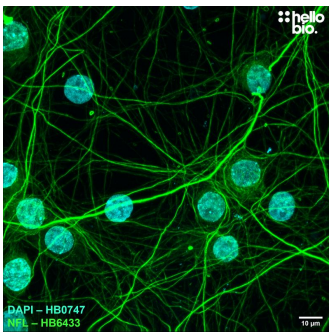


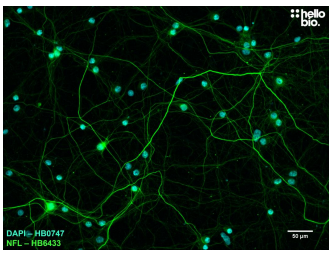


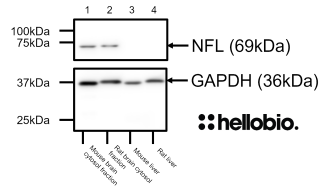












Product information

Immunogen	Full length dephosphorylated neurofilament L protein of porcine origin
Epitope	Amino acids 446 - 456 (HVQEEQIEVE)
Clone number	DA2
Isotype	IgG1
Purification	Protein G affinity chromatography
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide

Predicted species reactivity	Mouse, Rat, Human, Pig, Cow, Horse
Tested species reactivity	Mouse, Rat

Tested applications

Applications	ICC, WB
Western blot optimal concentration	50ng/ml (1:20,000 dilution) as tested in rat brain cytosol fraction
ICC optimal concentration	1µg/ml (1:1000) as measured in cultured rat neurones
Positive control	Neurofilament L is highly expressed in neural tissue and also found in HEK293 cells.
Negative control	Any tissue not of neural origin and nearly all cell lines.
Open data link	Please follow this link to OSF

Target information

Other names	NF-L, NFL, 68 kDa neurofilament protein, Neurofilament triplet L protein, Neurofilament light polypeptide
UniProt ID	P07196
Gene name	NEFL
NCBI full gene name	neurofilament light chain
Entrez gene ID	4747
Amino acids	543 (61.5kDa)
Isoforms	NFL has no isoforms other than the canonical sequence
Expression	Expressed within neurones only throughout the body
Subcellular expression	Expressed within the cytoskeleton and axons only
Target function	Neurofilament L (NFL) is a key component, along with Neurofilaments M and H, internexin and peripherin of neurofilaments. NFL forms heterodimers with the other neurofilament components to make up the neurofilaments that stabilise and maintain axonal diameter.
Processing	The leading methionine is removed to leave the mature polypeptide chain.
Post translational modifications	Has 7 phosphorylation sites, 2 glycosylation sites and 3 other modified residues. The high number of phosphorylation sites makes NFL appear to run at a higher molecular weight in SDS-PAGE than it's structure would predict.
Homology (compared to human)	Mouse and rat show 97.3% and 97.5% homology to human neurofilament L respectively.
Similar proteins	The most similar proteins, assessed using BLAST, are alpha-internexin (52.2% identity), vimentin (49.9% identity), neurofilament M (44.4% identity) and neurofilament H (44.9% identity).
Epitope homology (between species)	Human Neurofilament L has 100% homology wheras rat and mouse have 90% homology with the epitope sequence.
Epitope homology (other proteins)	Transcription initiation factor TFIID subunit 1 (212.7kDa) and kinesin like protein KIF11 (119.1kDa) show 80% and 88.9% homology with the epitope sequence for HB6433. Neither of these proteins have been identified as showing reactivity with HB6433 during QC.

Storage & Handling

Storage instructions	-20°C
Shipping Conditions	On ice
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

Neurofilaments and Neurofilament Proteins in Health and Disease

Yuan A et al (2017) Cold Spring Harbor Perspectives in Biology 9(4)
PubMedID 28373358

Neurofilaments at a glance

Yuan A et al (2012) Journal of Cell Science 125(14)
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Neurofilament subunits are integral components of synapses and modulate neurotransmission and behavior in vivo

Yuan A et al (2015) Molecular Psychiatry 20(8)

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Neurofilament light chain as a biomarker in neurological disorders

Gaetani L et al (2019) J Neurol Neurosurg Psychiatry 90(8)
PubMedID 30967444

Serum neurofilament light levels in normal aging and their association with morphologic brain changes

Khalil M et al (2020) Nature Communications 11(1)
PubMedID 32041951