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

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

customercare-usa@hellobio.com

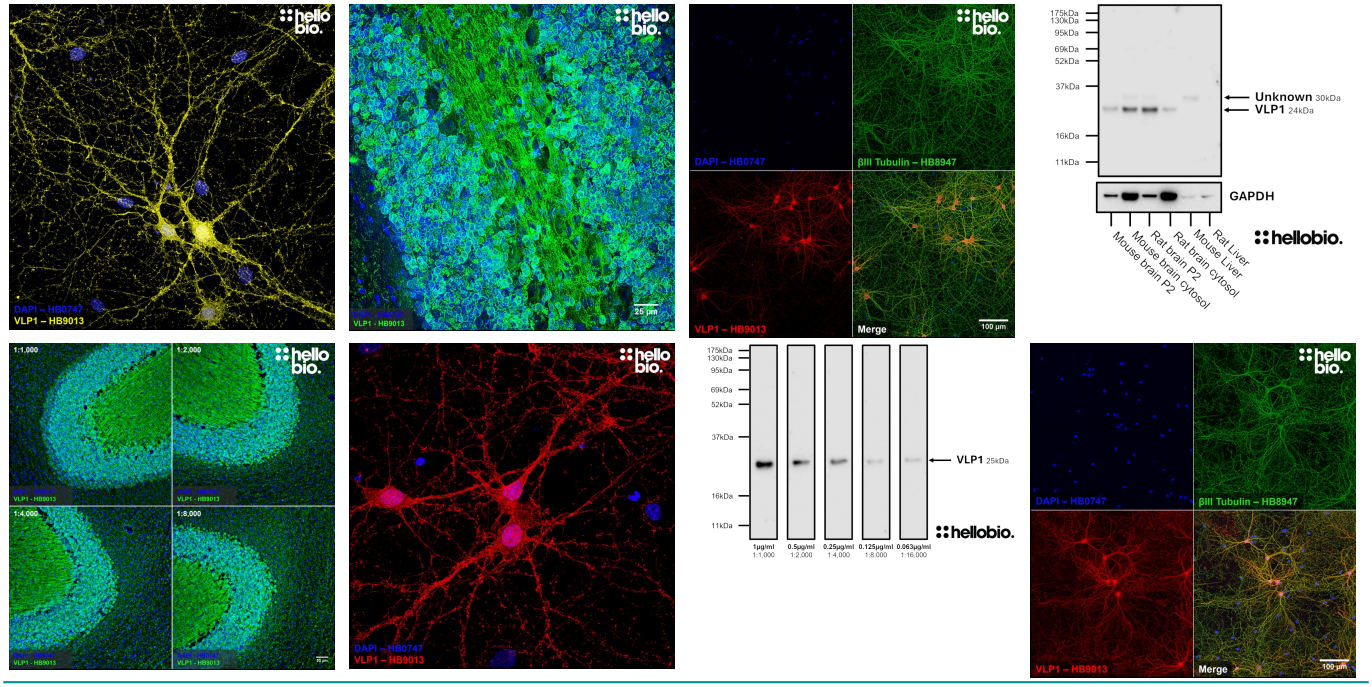
DATASHEET

Anti Visinin-Like Protein 1 (VLP1) antibody ValidAb™

Product overview

Name	Anti Visinin-Like Protein 1 (VLP1) antibody ValidAb™
Cat No	HB9013
Alternative names	Visinin Like Protein 1, VILIP-1, VSNL1
Host	Mouse
Clonality	Monoclonal
Target	VLP1
Description	Antibody to Visinin-Like Protein 1 (VLP1) - calcium sensor protein and marker of neuronal damage. Part of the ValidAb™ range of highly validated, data-rich antibodies.

Validation data



Product information

Immunogen	Human full-length VLP1 expressed in and purified from *E. coli*
Clone number	2D11
Isotype	IgG1
Purification	Protein G affinity chromatography
Concentration	1mg/ml
Formulation	50% PBS, 50% glycerol + 5mM sodium azide
Predicted species reactivity	Mouse, Rat, Human, Chicken
Tested species reactivity	Mouse, Rat

Tested applications

Applications	ICC, WB, IHC(IF)
Western blot optimal concentration	0.5µg/ml (1:2,000) as tested in a rat brain cytosol preparation.
IHC(IF) optimal concentration	0.25µg/ml (1:4,000), as tested in PFA fixed horizontal rat brain cerebellum sections
ICC optimal concentration	0.25µg/ml (1:4,000), as tested in cultured rat hippocampal neurons.
Positive control	Tissue from the brain, especially the retina or cerebellum form an excellent positive control.
Negative control	VLP1 is expressed widely throughout a range of tissues in the body therefore a cell line such as HEK293T forms the best negative control.
Open data link	Please follow this link to OSF

Target information

Other names	VLP1, VILIP, VSNL1, VILIP-1, Hippocalcin-like protein 3 (HLP3), visinin like 1
UniProt ID	P62760
Gene name	VSNL1
NCBI full gene name	visinin like 1
Entrez gene ID	7447
Amino acids	191 (22.1kDa)
Isoforms	VLP1 has no major isoforms other than the canonical sequence
Expression	Visinin-like protein 1 (VLP1) is found exclusively within the neurons of the nervous system, where it has abundant expression. While present throughout the nervous system, the specific levels of its expression vary between different neuronal populations with particularly strong expression in cerebellar granule cells.
Subcellular expression	VLP1 is localized to the neuronal cytosol during periods of low activity where Ca^{2+} concentrations are low but then translocates and associates with both membranes of organelles and the cell membrane during periods of high neuronal firing when Ca^{2+} is elevated
Target function	VLP1 functions primarily as a neuronal calcium sensor protein, equipped with a myristoylation-consensus sequence and four EF-hand motifs that enable a Ca^{2+}-myristoyl switch for calcium-dependent membrane targeting and dimerization. This mechanism allows VLP1 to modulate intracellular signaling pathways, particularly in the central nervous system. In the brain, VLP1 is implicated in calcium-mediated neuronal injury and its elevated levels in cerebrospinal fluid serve as a biomarker for neuronal damage in conditions such as Alzheimer's disease, stroke, and general brain injury. Beyond the nervous system, VLP1 is expressed in various other tissues and notably acts as a target gene of the Wnt/β-catenin signaling pathway, contributing to apoptosis resistance in colorectal cancer cells, a role that also depends on its myristoylation, Ca^{2+}-binding, and dimerization.
Post translational modifications	VLP1 is subject to removal of the initial methionine and there have been reports of ubiquitination on residues 18 and 63.
Homology (compared to human)	Mouse and rat VLP1 have 99.48% homology with human VLP1 due to a single base change (A to V at position 104)
Similar proteins	Hippocalcin-like protein 4 (HLP4) is the most similar human protein to VLP1 (89.5% identity) with other proteins having <70% similarity scores.

Storage & Handling

Storage instructions	-20°C
Shipping Conditions	Stable for ambient temperature shipping. Follow storage instructions on receipt.
Storage of solutions	Prepare and use solutions on the same day if possible. Store solutions at -20°C for up to one month if storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.
Important	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

References

The brain injury biomarker VLP-1 is increased in the cerebrospinal fluid of Alzheimer disease patients.

Lee JM, Blennow K, Andreasen N, Laterza O, Modur V, Olander J, Gao F, Ohlendorf M, Ladenson JH. (2008) Clin Chem

PubMedID 18703769

Visinin-like protein 1 levels in blood and CSF as emerging markers for Alzheimer's and other neurodegenerative diseases.

Halbgebauer S, Steinacker P, Riedel D, Oeckl P, Anderl-Straub S, Lombardi J, von Arnim CAF, Nagl M, Giese A, Ludolph AC, Otto M. (2022) Alzheimers Res Ther.

PubMedID 36419075

The Role of Visinin-Like Protein-1 in the Pathophysiology of Alzheimer's Disease.

Groblewska M, Muszyński P, Wojtulewska-Supron A, Kulczyńska-Przybik A, Mroczko B. (2015) J Alzheimers Dis

PubMedID	26402751