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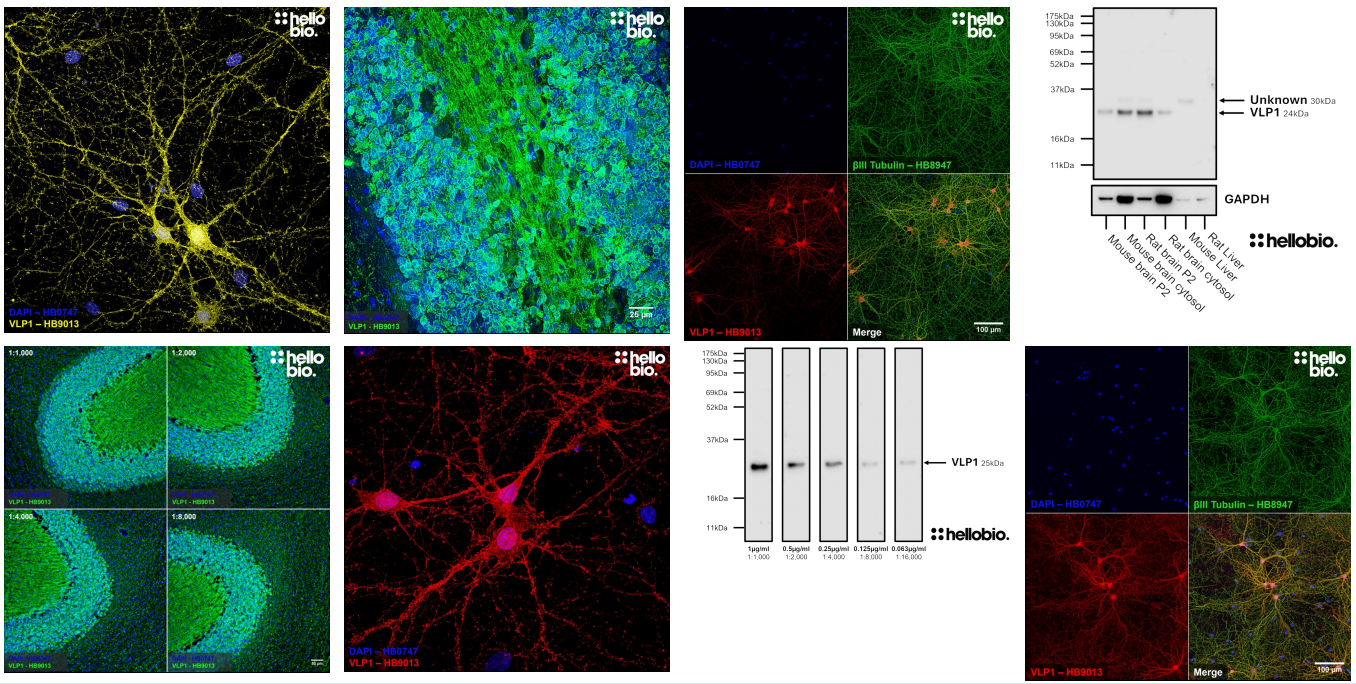
# DATASHEET

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 <i>E. coli</i>
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

<b>Immunogen</b>	Human full-length VLP1 expressed in and purified from <i>E. coli</i>
<b>Tested species reactivity</b>	Mouse, Rat

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

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## Target information

<b>Other names</b>	VLP1, VILIP, VSNL1, VILIP-1, Hippocalcin-like protein 3 (HLP3), visinin like 1
<b>UniProt ID</b>	P62760
<b>Gene name</b>	VSNL1
<b>NCBI full gene name</b>	visinin like 1
<b>Entrez gene ID</b>	<a href="#">7447</a>
<b>Amino acids</b>	191 (22.1kDa)
<b>Isoforms</b>	VLP1 has no major isoforms other than the canonical sequence
<b>Expression</b>	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.
<b>Subcellular expression</b>	VLP1 is localized to the neuronal cytosol during periods of low activity where $\text{Ca}^{2+}$ concentrations are low but then translocates and associates with both membranes of organelles and the cell membrane during periods of high neuronal firing when $\text{Ca}^{2+}$ is elevated
<b>Target function</b>	VLP1 functions primarily as a neuronal calcium sensor protein, equipped with a myristoylation-consensus sequence and four EF-hand motifs that enable a $\text{Ca}^{2+}$ -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/ $\beta$ -catenin signaling pathway, contributing to apoptosis resistance in colorectal cancer cells, a role that also depends on its myristoylation, $\text{Ca}^{2+}$ -binding, and dimerization.
<b>Post translational modifications</b>	VLP1 is subject to removal of the initial methionine and there have been reports of ubiquitination on residues 18 and 63.

<b>Other names</b>	VLP1, VILIP, VSNL1, VILIP-1, Hippocalcin-like protein 3 (HLP3), visinin like 1
<b>Homology (compared to human)</b>	Mouse and rat VLP1 have 99.48% homology with human VLP1 due to a single base change (A to V at position 104)
<b>Similar proteins</b>	Hippocalcin-like protein 4 (HLP4) is the most similar human protein to VLP1 (89.5% identity) with other proteins having <70% similarity scores.

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## Storage & Handling

<b>Storage instructions</b>	-20 °C
<b>Important</b>	This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not for human or veterinary use

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## 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](#)

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