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DATASHEET

Anti Visinin-Like Protein 1 (VLP1) antibody Valid Ab^TM

Product overview

Name Anti Visinin-Like Protein 1 (VLP1) antibody ValidAbTM

Cat No HB9013

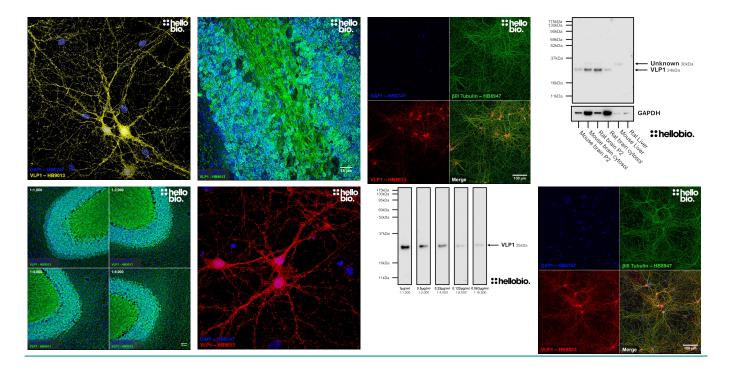
Alternative names Visinin Like Protein 1, VILIP-1, VSNL1

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 lsotype lgG1

Purification Protein G affinity chromatography

Concentration 1 mg/ml

Formulation 50% PBS, 50% glycerol + 5mM sodium azide

Predicted species reactivity Mouse, Rat, Human, Chicken

Tested species reactivity Mouse, Rat

Applications ICC, WB, IHC(IF)

Western blot optimal 0.5μg/ml (1:2,000) as tested in a rat brain cytosol preparation.

concentration

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

Visinin-like protein 1 (VLP1) is found exclusively within the neurons of the nervous system, where it has **Expression**

> 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 Ca²⁺ concentrations are

low but then translocates and associates with both membranes of organelles and the cell membrane

during periods of high neuronal firing when Ca²⁺ 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 Ca2+-myristoyl switch for calciumdependent 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, Ca²⁺-binding, and dimerization. VLP1 is subject to removal of the initial methionine and there have been reports of ubiquitination on

Post translational modifications

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)

residues 18 and 63.

Hippocalcin-like protein 4 (HLP4) is the most similar human protein to VLP1 (89.5% identity) with other Similar proteins

proteins having <70% similarity scores.

Storage & Handling

Storage instructions

-20°C

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

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

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