



## Visinin-Like Protein 1 Human, Rabbit Polyclonal Antibody

### Product Data Sheet

**Source of Antigen:** *E. coli*

**Host:** Rabbit

**Cat. No.:**

RD181119100 (0.1 mg)

**Other names:** Visinin-Like Protein 1, Hippocalcin-like protein 3, HLP3, VILIP, VLP-1, VSNL1, VISL1

### Research topic

Neural tissue markers, Oncology

### Preparation

The antibody was raised in rabbits by immunization with the recombinant Human Visinin-like protein 1.

### Amino Acid Sequence

The immunization antigen (23.4 kDa) is a protein containing 191 AA of recombinant Human Visinin-like protein 1 and 10 extra AA, N-terminal His-tag (highlighted). The AA sequence is identical to UniProtKB/Swiss-Prot entry P62760.

MKHHHHHHAS MGKQNSKLAP EVMEDLVKST EFNEHELKQW YKGFLKDCPS GRLNLEEFQQ LYVKFFPYGD ASKFAQHAFR  
TFDKNGDGTI DFREFICALS ITSRGSFEQK LNWAFNMYDL DGDGKITRVE MLEIIEAIYK MVTGVIMMKM NEDGLTPEQR  
VDKIFSKMDK NKDDQITLDE FKEAAKSDPS IVLLLQCDIQ K

### Species Reactivity

Human

Not yet tested in other species.

### Purification Method

Immunoaffinity chromatography on a column with immobilized recombinant Human Visinin-like protein 1.

### Antibody Content

0.1 mg (determined by BCA method, BSA was used as a standard)

### Formulation

The antibody is lyophilized in 0.05 M phosphate buffer, 0.1 M NaCl, pH 7.2. **AZIDE FREE.**

### Reconstitution

Add 0.1 ml of deionized water and let the lyophilized pellet dissolve completely. Slight turbidity may occur after reconstitution, which does not affect activity of the antibody. In this case clarify the solution by centrifugation.

### Shipping

At ambient temperature. Upon receipt, store the product at the temperature recommended below.

### Storage/Stability

The lyophilized antibody remains stable and fully active until the expiry date when stored at -20°C. Aliquot the product after reconstitution to avoid repeated freezing/thawing cycles and store frozen at -80°C. Reconstituted antibody can be stored at 4°C for a limited period of time; it does not show decline in activity after one week at 4°C.

### Expiration

See vial label.

### Lot Number

See vial label.

### Quality Control Test

Indirect ELISA - to determine titer of the antibody

SDS PAGE - to determine purity of the antibody

## **Applications**

ELISA, Western blotting

## **Introduction to the Molecule**

Visinin like protein 1 (VILIP-1, VLP-1 or VSNL-1) is a cytoplasmic protein of low molecular weight (approximately 22 kDa) consisting of 191 amino acid residues. It belongs to the visinin/recoverin subfamily of neuronal calcium sensor proteins involved in calcium-dependent signal transduction mechanisms in neurons. It is found primarily in the brain, in nerve cells, but it also has a peripheral distribution in liver, lung, kidney, spleen, pancreas and colon. When localized at the membrane, it modulates various cellular signal transduction pathways, including cyclic adenosine monophosphate (cAMP)- and cyclic guanosine monophosphate (cGMP)-signaling in neural cells, human embryonic kidney cells, the pancreatic beta cell line MIN6, and various skin tumor cell lines. It contains four internal repeats of 36-38 amino-acids, each containing a potential EF-hand domain. Two of the four EF-hand Ca<sup>2+</sup>-binding motifs of VILIP-1 are able to bind either Ca<sup>2+</sup> or Mg<sup>2+</sup> in a non-cooperative manner. Binding of Ca<sup>2+</sup> leads to specific conformational changes in the protein and this may regulate the interaction of VILIP with intracellular target molecules. VILIP-1 has been identified as a potential biomarker for brain injury and several neurodegenerative diseases. VILIP-1-expressing cells appear to be vulnerable to neurotoxic insults. As a result, the protein is released into the cerebrospinal fluid (CSF), and can be used as a biomarker for stroke and Alzheimer's disease. The intracellular protein was detected in cerebrospinal fluid (CSF) of a rat model of stroke and in plasma of patients after stroke. VILIP-1 was detected in 44% of subjects with stroke, in samples taken 24 hours after onset of stroke, and in 8% of controls with no stroke. In Alzheimer's disease, CSF levels of VILIP-1 were significantly higher than in healthy individuals. Post mortem studies in the hippocampus of schizophrenia patients revealed increased expression of VILIP-1 in interneurons, while its expression in pyramidal neurons was downregulated. Expressions of VILIP-1 were also found in different types of cancer and in pancreatic alpha- and beta-cells, being involved in the regulation of insulin secretion and insulin gene expression.

## **Note**

This product is for research use only.

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