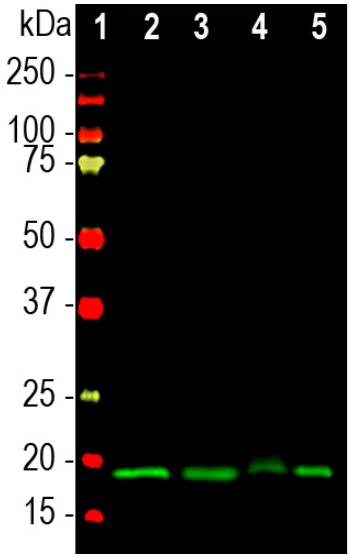
Visinin-like protein 1 Chicken Polyclonal Antibody

CPCA-VLP1

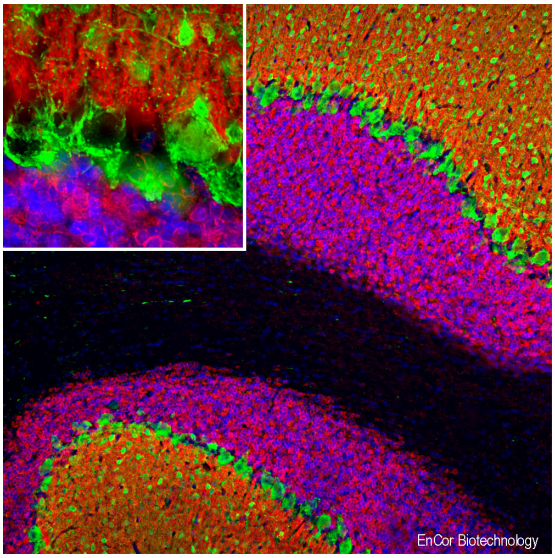
Ordering Information
Web *www.encorbio.com*
Email *admin@encorbio.com*
Phone *352-372-7022*
Fax *352-372-7066*

HGNC Name: *VSNL1*
UniProt: *P62760*
RRID: *AB_2572401*
Immunogen: *Full length recombinant human VLP1*
Format: *Concentrated IgY preparation in PBS plus 0.02% NaN_3*
Storage: *Store at 4°C*
Recommended dilutions:
WB: 1:5,000-10,000, IF/ICC: 1:1,000-2,000, IHC: 1:5,000

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Chicken		18kDa	Hu, Rt, Ms, Co, Pi



Western blot analysis of different tissue lysates using chicken pAb to visinin-like protein 1 (VLP1), CPCA-VLP1, dilution 1:10,000 in green: [1] protein standard (red), [2] rat brain, [3] mouse brain, [4] pig hippocampus, and [5] cow cerebellum. The band at ~20kDa corresponds to the VLP1 protein.



Immunofluorescent analysis of rat brain cerebellum section stained with chicken pAb to VLP, CPCA-VLP1, dilution 1:2,000 in red, and costained with mouse mAb to parvalbumin, MCA-3C9, dilution 1:1,000, in green. Following transcardial perfusion of rat with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45 µM, and free-floating sections were stained with above antibodies. The VLP1 antibody reveals the protein expressed in the granule cells membranes and in the neuronal synapses of the molecular and granule layers of the cerebellum, while parvalbumin antibody labels basket and other neuronal cells.

Background:

Visinin was originally isolated biochemically from chicken retina as a major protein of ~24kDa on SDS-PAGE gels (1). Following cloning and sequencing of visinin, several visinin like proteins were discovered by homology screening (2,3). One of these, visinin-like protein 1 is a low molecular weight protein which is very abundant in the nervous system and is found only in neurons, though different neurons have different levels of expression (4,5). The protein was discovered independently by several groups and is therefore also sometimes known as hippocalcin-like protein 3, HLP3, HPCAL3, HUVISL1, VLP-1, VILIP and VILIP-1. The protein belongs to the large superfamily of calmodulin and paravalbumin type proteins which function by binding Calcium ions. Calcium binding alters the conformation of these proteins and allow them to interact with other binding partners, the properties of which they may alter. Visinin-like protein 1 has four "EF hand" domains, which are negatively charged helix-turn-helix peptides which are responsible for Calcium binding. The protein is 191 amino acids in size and has a molecular weight on SDS-PAGE of 18kDa. The protein has recently been suggested to be a useful blood biomarker of Alzheimer's disease and traumatic brain injury (6-8). The CPCA-VLP1 antibody was made against full length recombinant human VSNL1. It can be used to track VSNL1 by ELISA, on western blots and in cells in culture and sections, including formalin fixed and paraffin embedded human and rodent sections. We also manufacture mouse monoclonal antibodies and a rabbit polyclonal antibody to this protein, MCA-3A9, MCA-2D11 and RPCA-VLP1 respectively.

References:

1. Hatakenaka S, Kuo CH, Miki N. Analysis of a distinctive protein in chick retina during development. Brain Res. 312:155-63 (1983). 2. Kuno T, et al. cDNA cloning of a neural visinin-like Ca(2+)-binding protein. Biochem. Biophys. Res. Commun. 184:1219-25 (1992). 3. Polymeropoulos MH, Ide S, Soares MB, Lennon GG. Sequence characterization and genetic mapping of the human VSNL1 gene, a homologue of the rat visinin-like peptide RNVP1. Genomics 29:273-5 (1995). 4. Bernstein HG, et al. Regional and cellular distribution of neural visinin-like protein immunoreactivities (VILIP-1 and VILIP-3) in human brain. J. Neurocytol. 28:655-62 (1999). 5. Paterlini M, Revilla V, Grant AL, Wisden W Expression of the neuronal calcium sensor protein family in the rat brain. Neuroscience 99:205-16 (2000). 6. Laterza OF, et al. Identification of novel brain biomarkers. Clin. Chem. 9:1713-21 (2006). 7. Lee JM, et al. The brain injury biomarker VLP-1 is increased in the cerebrospinal fluid of Alzheimer disease patients. Clin. Chem. 10:1617-23 (2008). 8. Tarawneh R, et al. Visinin-like protein-1: diagnostic and prognostic biomarker in Alzheimer disease. Ann Neurol. 70:274-85 (2011).

Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.