SYSY Antibodies

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VIP

Cat.No. 443 005; Polyclonal Guinea pig antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were added for stabilization. For **reconstitution** add 50 µl H_2O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Antibodies should be stored at +4°C when still lyophilized. Do not freeze! For detailed information, see back of the data sheet.
Applications	**WB**: not tested yet **IP**: not tested yet **ICC**: 1 : 100 **IHC**: 1 : 100 up to 1 : 500 **IHC-P**: 1 : 100
Immunogen	Synthetic peptide corresponding to AA 125 to 152 from mouse VIP (UniProt Id: P32648)
Reactivity	Reacts with: mouse (P32648), rat (P01283), human (P01282). Other species not tested yet.
Specificity	The antibody is specific for VIP. It may crossreact with the precursor protein, but does not recognize the related neuropeptide PACAP.

TO BE USED IN VITRO / FOR RESEARCH ONLY
NOT TOXIC, NOT HAZARDOUS, NOT INFECTIOUS, NOT CONTAGIOUS

Background

VIP (**V**asoactive **i**ntestinal **p**eptide) is a 28 amino acid peptide hormone, a member of the secretin/glucagon superfamily, and evolutionarily well conserved. It is synthesized as part of a larger propeptide which is proteolytically processed to release bioactive VIP as well as two other neuropeptides.
VIP is expressed in gastrointestinal tissues and in the central and peripheral nervous system. It is released from neurons upon depolarization and is known to stimulate adenylyl cyclase.
In the brain, VIP acts as a neurotransmitter and is involved in rhythm generation in the suprachiasmatic nucleus, the regulation of neuroendocrine secretions in the hypothalamus and energy metabolism of glial cells.
Peripherally, VIP influences many functions including blood flow and cardiac output, smooth muscle activity, secretion in the digestive tract, gastric motility, bronchodilation and activity within the hypothalamic-pituitary-adrenal axis.
The Verner-Morrison or Watery Diarrhea Hypokalemia and Achlorhydria (WDHA) syndrome is a characteristic clinical syndrome associated with overproduction of VIP from endocrine tumors.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

Selected References for 443 005

Generation of self-organized autonomic ganglion organoids from fibroblasts.
Liu S, Xiang K, Yuan F, Xiang M
iScience (2023) 263: 106241. . **ICC, IHC; tested species: mouse**

Mouse hippocampal CA1 VIP interneurons detect novelty in the environment and support recognition memory.
Tamboli S, Singh S, Topolnik D, El Amine Barkat M, Radhakrishnan R, Guet-McCreight A, Topolnik L
Cell reports (2024) 434: 114115. . **IHC; tested species: mouse**

INSIHGT: an accessible multi-scale, multi-modal 3D spatial biology platform.
Yau CN, Hung JTS, Campbell RAA, Wong TCY, Huang B, Wong BTY, Chow NKN, Zhang L, Tsoi EPL, Tan Y, Li JJX, et al.
Nature communications (2024) 151: 10888. . **IHC; tested species: mouse**

Ciliary neuropeptidergic signaling dynamically regulates excitatory synapses in postnatal neocortical pyramidal neurons.
Tereshko L, Gao Y, Cary BA, Turrigiano GG, Sengupta P
eLife (2021) 10: . . **ICC; tested species: rat**

Selected General References

Recent advances in vasoactive intestinal peptide physiology and pathophysiology: focus on the gastrointestinal system.
Iwasaki M et al. F1000Res (2019) PubMed:31559013

The effects of vasoactive intestinal peptide in neurodegenerative disorders.
Deng G et al. Neurol. Res. (2017) PubMed:27786097

Vasoactive intestinal peptide/pituitary adenylate cyclase activating polypeptide, and their receptors and cancer.
Moody TW et al. Curr Opin Endocrinol Diabetes Obes (2016) PubMed:26702849

Select cognitive deficits in vasoactive intestinal peptide deficient mice.
Chaudhury D et al. BMC Neurosci (2008) PubMed:18616823

Vasoactive intestinal peptide and the mammalian circadian system.
Vosko AM et al. Gen. Comp. Endocrinol. () PubMed:17572414

Access the online factsheet including applicable protocols at https://sysy.com/product/443005 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All our antibodies and control proteins / peptides are shipped lyophilized (vacuum freeze-dried) and are stable in this form without loss of quality at ambient temperatures for several weeks.

Storage of Sealed Vials after Delivery

- **Unlabeled** and **biotin-labeled antibodies** and **control proteins** should be stored at 4°C before reconstitution. **They must not be stored in the freezer when still lyophilized!** Temperatures below zero may cause loss of performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long term storage (several months) may lead to aggregation.
- **Control peptides** should be kept at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- The storage freezer must not be of the frost-free variety ("no-frost freezer"). This cycle between freezing and thawing (to reduce frost-build-up), which is exactly what should be avoided. For the same reason, antibody vials should be placed in an area of the freezer that has minimal temperature fluctuations, for instance towards the back rather than on a door shelf.
- Aliquot the antibody and store frozen (-20°C to -80°C). Avoid very small aliquots (below 20 µl) and use the smallest storage vial or tube possible. The smaller the aliquot, the more the stock concentration is affected by evaporation and adsorption of the antibody to the surface of the storage vial or tube. Adsorption of the antibody to the surface leads to a substantial loss of activity.
- The addition of glycerol to a final concentration of 50% lowers the freezing point of your stock and keeps your antibody at -20°C in liquid state. This efficiently avoids freeze and thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C.

Monoclonal Antibodies

- **Ascites** and **hybridoma supernatant** should be stored at -20°C up to -80°C. **Prolonged storage at 4°C is not recommended!** Unlike serum, ascites may contain proteases that will degrade the antibodies.
- **Purified IgG** should be stored at -20°C up to -80°C. Adding a carrier protein like BSA will increase long term stability. Many of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Polyclonal Antibodies

- **Crude antisera**: With anti-microbials added, they may be stored at 4°C. However, frozen storage (-20°C up to -80°C) is preferable.
- **Affinity purified antibodies**: Less robust than antisera. Storage at -20°C up to -80°C is recommended. Adding a carrier protein like BSA will increase long term stability. Most of our antibodies already contain carrier proteins. Please refer to the data-sheet for detailed information.

Fluorescence-labeled Antibodies

- Store as a liquid with 1 : 1 (v/v) glycerol at -20°C. Protect these antibodies from light exposure.

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All our purified antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the amount of deionized water given in the respective datasheet. If higher volumes are preferred, add water as mentioned above and then the desired amount of PBS and a stabilizing carrier protein (e.g. BSA) to a final concentration of 2%. Some of our antibodies already contain albumin. Take this into account when adding more carrier protein.
  For complete reconstitution, carefully remove the lid. After adding water, briefly vortex the solution. You can spin down the liquid by placing the vial into a 50 ml centrifugation tube filled with paper.
- If desired, add small amounts of azide or thimerosal to prevent microbial growth. This is especially recommended if you want to keep an aliquot a 4°C.
- After reconstitution of fluorescence-labeled antibodies, add 1 : 1 (v/v) glycerol to a final concentration of 50%. This lowers the freezing point of your stock and keeps your antibody in liquid state at -20°C.
- Glycerol may also be added to unlabeled primary antibodies. It is a suitable way to avoid freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.