SYSY Antibodies

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VAChT (SLC18A3)

Cat.No. 139 105; 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**: 1 : 500 up to 1 : 1000 (AP staining) (see remarks) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 200 up to 1 : 500 **IHC-P (FFPE)**: 1 : 500 **iDISCO**: external data (see remarks)
Immunogen	Recombinant protein corresponding to residues near the carboxy terminus of rat VAChT (UniProt Id: Q62666)
Reactivity	Reacts with: rat (Q62666), mouse (O35304), human (Q16572). Other species not tested yet.
Matching control	139-1P
Remarks	This antibody is less sensitive compared to the rabbit antibody. **WB**: To avoid protein aggregation, do not heat samples for SDS-PAGE. **iDISCO**: This antibody has been successfully applied and published for this method by customers (see application-specific references).

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

Background

The **v**esicular **a**cetyl**ch**oline **t**ransporter **VAChT** is an integral membrane protein with 12 putative trans-membrane domains. VAChT and choline acetyltransferase (ChAT) are encoded by genes organized in a single gene locus, and coregulation of the two genes has been reported several times. VAChT translocates acetylcholine from the cytoplasm into synaptic vesicles where it stays until release. After release from the presynaptic nerve terminal acetylcholine is hydrolyzed by acetylcholine esterase. During Alzheimer´s disease acetylcholine is one of the first neurotransmitters to be reduced.

Selected References for 139 105

Characterizing and targeting glioblastoma neuron-tumor networks with retrograde tracing.
Tetzlaff SK, Reyhan E, Layer N, Bengtson CP, Heuer A, Schroers J, Faymonville AJ, Langeroudi AP, Drewa N, Keifert E, Wagner J, et al.
Cell (2024) : . . **ICC, IHC-P; tested species: human,mouse**

Neuregulin-1 is concentrated in the postsynaptic subsurface cistern of C-bouton inputs to α-motoneurons and altered during motoneuron diseases.
Gallart-Palau X, Tarabal O, Casanovas A, Sábado J, Correa FJ, Hereu M, Piedrafita L, Calderó J, Esquerda JE
FASEB journal : official publication of the Federation of American Societies for Experimental Biology (2014) 288: 3618-32. . **IHC**

Enteric botulinum neurotoxins facilitate infection by Salmonella and Shigella.
Fabris F, Brun P, Megighian A, Bernabè G, Castagliuolo I, Drigo I, Bano L, Lista F, Bernardini ML, Johnson EA, Montecucco C, et al.
Science advances (2026) 129: eady9407. . **IHC; tested species: mouse**

Cholinergic inputs to motoneurons in the spinal cord augment focal muscle spasticity in rodents.
Meglić P, Šoštarić P, Tsape E, Galani M, Knezović A, Restani L, Pirazzini M, Rossetto O, Miles GB, Zagoraiou L, Matak I, et al.
British journal of pharmacology (2026) : . . **IHC; tested species: mouse**

Chronic Overexpression of Neuronal NRG1-III in Mice Causes Long-Term Detrimental Changes in Lower Motor Neurons, Neuromuscular Synapses and Motor Behaviour.
Salvany S, Hernández S, Casanovas A, Gras S, Piedrafita L, Bosch-Queralt M, Schwab MH, Calderó J, Esquerda JE, Tarabal O
International journal of molecular sciences (2025) 2623: . . **ICC; tested species: mouse**

Electrophysiology and 3D-imaging reveal properties of human intracardiac neurons and increased excitability with atrial fibrillation.
Ashton JL, Prince B, Sands G, Argent L, Anderson M, Smith JEG, Tedoldi A, Ahmad A, Baddeley D, Pereira AG, Lever N, et al.
The Journal of physiology (2024) : . . **IHC; tested species: human**

DLK signaling in axotomized neurons triggers complement activation and loss of upstream synapses.
Asghari Adib E, Shadrach JL, Reilly-Jankowiak L, Dwivedi MK, Rogers AE, Shahzad S, Passino R, Giger RJ, Pierchala BA, Collins CA
Cell reports (2024) 432: 113801. . **IHC; tested species: mouse**

Persistent NRG1 Type III Overexpression in Spinal Motor Neurons Has No Therapeutic Effect on ALS-Related Pathology in SOD1G93A Mice.
Hernández S, Salvany S, Casanovas A, Piedrafita L, Soto-Bernardini MC, Tarabal O, Blasco A, Gras S, Gatius A, Schwab MH, Calderó J, et al.
Neurotherapeutics : the journal of the American Society for Experimental NeuroTherapeutics (2023) : . . **IHC; tested species: mouse**

Thalamic regulation of ocular dominance plasticity in adult visual cortex.
Qin Y, Ahmadlou M, Suhai S, Neering P, de Kraker L, Heimel JA, Levelt CN
eLife (2023) 12: . . **IHC; tested species: mouse**

Facial neuromuscular junctions and brainstem nuclei are the target of tetanus neurotoxin in cephalic tetanus.
Fabris F, Varani S, Tonellato M, Matak I, Šoštarić P, Meglić P, Caleo M, Megighian A, Rossetto O, Montecucco C, Pirazzini M, et al.
JCI insight (2023) 811: . . **IHC; tested species: mouse,rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/139105 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.