SYSY Antibodies

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VAChT

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**: 1 : 500 **iDISCO**: 1 : 400
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**: VAChT aggregates after boiling, making it necessary to run SDS-PAGE only with non-boiled samples.

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**

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**

Characteristics of Electrical Synapses, C-terminals and Small-conductance Ca2+ activated Potassium Channels in the Sexually Dimorphic Cremaster Motor Nucleus in Spinal Cord of Mouse and Rat.
Singhal P, Senecal JMM, Senecal JEM, Silwal P, Lynn BD, Nagy JI
Neuroscience (2023) 521: 58-76. . **IHC; tested species: mouse**

Detection of VAMP Proteolysis by Tetanus and Botulinum Neurotoxin Type B In Vivo with a Cleavage-Specific Antibody.
Fabris F, Šoštarić P, Matak I, Binz T, Toffan A, Simonato M, Montecucco C, Pirazzini M, Rossetto O
International journal of molecular sciences (2022) 238: . . **ICC; tested species: rat**

ERR2 and ERR3 promote the development of gamma motor neuron functional properties required for proprioceptive movement control.
Khan MN, Cherukuri P, Negro F, Rajput A, Fabrowski P, Bansal V, Lancelin C, Lee TI, Bian Y, Mayer WP, Akay T, et al.
PLoS biology (2022) 2012: e3001923. . **IHC; tested species: mouse**

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 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.