

VGLUT3

Cat.No. 135 203; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

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|------------------------|---|
| Reconstitution/Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. For reconstitution add 50 µl H ₂ O 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 : 1000 up to 1 : 5000 (AP staining) (see remarks) IP: not tested yet ICC: yes IHC: 1 : 100 up to 1 : 1000 IHC-P: 1 : 200 FACTS: yes |
| Immunogen | Recombinant protein corresponding to residues near the carboxy terminus of mouse VGLUT 3 (UniProt Id: Q8BFU8) |
| Reactivity | Reacts with: rat (Q7TSF2), mouse (Q8BFU8). No signal: human. Other species not tested yet. |
| Specificity | K.O. validated PubMed: 21297271 |
| Matching control | 135-2P |
| Remarks | WB: Due to the low abundance of this protein in the brain, immunoblotting is difficult. |

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

Background

The vesicular glutamate transporter **3 VGLUT 3** is closely related to VGLUT 1 and VGLUT 2 by sequence similarity. However, VGLUT 3 defines a new distinct glutamatergic system in brain which is strictly separated from VGLUT 1 and VGLUT 2 synapses. Co-localization with the acetylcholine transporter VACHT and the monoamine transporter 2 VMAT 2 has been observed.

Selected References for 135 203

- A hybridization-chain-reaction-based method for amplifying immunosignals.
Lin R, Feng Q, Li P, Zhou P, Wang R, Liu Z, Wang Z, Qi X, Tang N, Shao F, Luo M, et al.
Nature methods (2018) 154: 275-278. . **IHC; tested species: mouse**
- Transient focal cerebral ischemia significantly alters not only EAATs but also VGLUTs expression in rats: relevance of changes in reactive astroglia.
Sánchez-Mendoza E, Burguete MC, Castelló-Ruiz M, González MP, Roncero C, Salom JB, Arce C, Cañadas S, Torregrosa G, Alborch E, Oset-Gasque MJ, et al.
Journal of neurochemistry (2010) 1135: 1343-55. . **IHC, WB; tested species: rat**
- Vesicular glutamate transporters play a role in neuronal differentiation of cultured SVZ-derived neural precursor cells.
Sánchez-Mendoza EH, Bellver-Landete V, Arce C, Doepfner TR, Hermann DM, Oset-Gasque MJ
PloS one (2017) 125: e0177069. . **WB, ICC**
- The human VGLUT3-pT81 mutation elicits uneven striatal DA signaling, food or drug maladaptive consumption in male mice.
Favier M, Martin Garcia E, Ickick R, de Almeida C, Jehl J, Desplanque M, Zimmermann J, Henrion A, Mansouri-Guilani N, Mounier C, Ribeiro S, et al.
Nature communications (2024) 151: 5691. . **ICC, IHC; tested species: mouse**
- Vesicular Glutamate Transporters (SLCA17 A6, 7, 8) Control Synaptic Phosphate Levels.
Cheret C, Ganzella M, Preobraschenski J, Jahn R, Ahnert-Hilger G
Cell reports (2021) 342: 108623. . **WB, ICC; tested species: human,mouse**
- Lack of evidence for vesicular glutamate transporter expression in mouse astrocytes.
Li D, Héroult K, Silm K, Evrard A, Wojcik S, Oheim M, Herzog E, Ropert N
The Journal of neuroscience : the official journal of the Society for Neuroscience (2013) 3310: 4434-55. . **WB, IHC; KO verified; tested species: mouse**
- Region- and age-specific changes in glutamate transport in the AβPP23 mouse model for Alzheimer's disease.
Schallier A, Smolders I, Van Dam D, Loyens E, De Deyn PP, Michotte A, Michotte Y, Massie A
Journal of Alzheimer's disease : JAD (2011) 242: 287-300. . **WB, IHC; KO verified; tested species: mouse**
- Spatial proteomics in neurons at single-protein resolution.
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al.
Cell (2024) 1877: 1785-1800.e16. . **DNA_PAINT; tested species: rat**
- Colocalization of different neurotransmitter transporters on synaptic vesicles is sparse except for VGLUT1 and ZnT3.
Upmanyu N, Jin J, Emde HV, Ganzella M, Bösch L, Malviya VN, Zhuleku E, Politi AZ, Ninov M, Silbern I, Leutenegger M, et al.
Neuron (2022) : . . **UPTAKE; tested species: rat**
- Ebf1 is a mouse deafness gene and deletion causes a dramatic increase in hair cells and support cells of the organ of Corti.
Powers KG, Wilkerson BA, Beach K, Seo SS, Rodriguez JS, Baxter AN, Hunter SE, Bermingham-McDonogh O
Development (Cambridge, England) (2024) : . . **IHC; tested species: mouse**
- The Role of Vesicular Glutamate Transporter Type 3 in Social Behavior, with a Focus on the Median Raphe Region.
Fazekas CL, Török B, Correia P, Chaves T, Bellardie M, Sipos E, Horváth HR, Gaszner B, Dóra F, Dobolyi Á, Zelena D, et al.
eNeuro (2024) 116: . . **IHC; tested species: mouse**
- EBF1 Limits the Numbers of Cochlear Hair and Supporting Cells and Forms the Scala Tympani and Spiral Limbus during Inner Ear Development.
Kagoshima H, Ohnishi H, Yamamoto R, Yasumoto A, Tona Y, Nakagawa T, Omori K, Yamamoto N
The Journal of neuroscience : the official journal of the Society for Neuroscience (2024) 447: . . **IHC; tested species: mouse**

Access the online factsheet including applicable protocols
at <https://sysy.com/product/135203> 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.