

MDGA1

Cat.No. 421 002; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/ Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°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: external data (see remarks) IP: not tested yet ICC: not tested yet IHC: 1 : 500 IHC-P: not tested yet IHC-Fr: external data (see remarks)
Immunogen	Recombinant protein corresponding to AA 19 to 917 from mouse MDGA1 (UniProt Id: Q0PMG2)
Reactivity	Reacts with: mouse (Q0PMG2). Other species not tested yet.
Specificity	K.O. validated PubMed: 35532105
Remarks	WB: Follow the Western blot protocol according to Zepillo et al. 2024 . IHC-Fr: Follow the IHC-Fr protocol (methanol fixation) according to Zepillo et al. 2024 .

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

Background

MAM domain GPI anchor 1 and 2 proteins (MDGA1 and MDGA2) are Ig superfamily adhesion molecules composed of six IG domains, a fibronectin III domain, a MAM domain, and a GPI anchor. MDGAs are required for radial migration and positioning of cortical neurons making it a useful layer and area specific marker during neural development. They play a role in the formation or maintenance of Neuroligin2 positive inhibitory synapses.

Selected References for 421 002

MDGAs are fast-diffusing molecules that delay excitatory synapse development by altering neuroligin behavior. Toledo A, Letellier M, Bimbi G, Tessier B, Daburon S, Favereaux A, Chamma I, Vennekens K, Vanderlinden J, Sainlos M, de Wit J, et al. eLife (2022) 11: . . **WB, IP, IHC; KO verified; tested species: mouse**

Functional Neuroligin-2-MDGA1 interactions differentially regulate synaptic GABAARs and cytosolic gephyrin aggregation. Zepillo T, Ali H, Ravichandran S, Ritter TC, Wenger S, López-Murcia FJ, Gideons E, Signorelli J, Schmeisser MJ, Wiltfang J, Rhee J, et al. Communications biology (2024) 71: 1157. . **WB, IHC-FR; KO verified; tested species: mouse**

Chronic stress induces depression through MDGA1-Neuroligin2 mediated suppression of inhibitory synapses in the lateral habenula. Wang X, Wei H, Hu Z, Jiang J, Dong X, Zhu J, Chen H, Brose N, Lipstein N, Xu T, Connor SA, et al. Theranostics (2025) 155: 1842-1863. . **WB, IHC; KO verified; tested species: mouse**

Proteomics analysis of the brain from a Gaucher disease mouse identifies pathological pathways including a possible role for transglutaminase 1. Blumenreich S, Ben-Yashar DP, Shalit T, Kupervaser M, Milenkovic I, Joseph T, Futerman AH Journal of neurochemistry (2024) 1681: 52-65. . **WB, IHC; KD verified; tested species: rat**

Upregulation of Spinal MDGA1 in Rats After Nerve Injury Alters Interactions Between Neuroligin-2 and Postsynaptic Scaffolding Proteins and Increases GluR1 Subunit Surface Delivery in the Spinal Cord Dorsal Horn. Li HL, Guo RJ, Ai ZR, Han S, Guan Y, Li JF, Wang Y Neurochemical research (2024) 492: 507-518. . **WB, IHC; tested species: rat**

Selected General References

MDGAs interact selectively with neuroligin-2 but not other neuroligins to regulate inhibitory synapse development. Lee K et al. Proc. Natl. Acad. Sci. U.S.A. (2013) PubMed:23248271

IgSF molecule MDGA1 is involved in radial migration and positioning of a subset of cortical upper-layer neurons. Ishikawa T et al. Dev. Dyn. (2011) PubMed:21104742

Radial migration of superficial layer cortical neurons controlled by novel Ig cell adhesion molecule MDGA1. Takeuchi A et al. J. Neurosci. (2006) PubMed:16641224

MDGA1, an IgSF molecule containing a MAM domain, heterophilically associates with axon- and muscle-associated binding partners through distinct structural domains. Fujimura Y et al. Brain Res. (2006) PubMed:16782075

Access the online factsheet including applicable protocols at <https://sysy.com/product/421002> 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 at 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.