

P2Y12

Cat.No. 476 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For reconstitution add 100 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: not recommended IP: not tested yet ICC: not tested yet IHC: 1 : 1:1000 up to 1 : 1:10000 IHC_P: 1 : 1:1000 up to 1 : 1:10000
Clone	SY-341D12
Subtype	IgG2b (κ light chain)
Immunogen	Synthetic peptide corresponding to residues near the carboxy terminus of ms P2Y12 receptor (UniProt Id: Q9CPV9)
Reactivity	Reacts with: mouse (Q9CPV9). No signal: rat (Q9EPX4), human (Q9H244). Other species not tested yet.

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

Background

P2Y12 receptor (P2RY12) is a G_i – coupled purinoceptor and is of particular relevance for microglia in the central nervous system (CNS) (1). The preferred agonist is ADP, the degradation product of ATP, which is released from neurons and other glial cells during physiological activity or after tissue damage. P2Y12 receptor is highly expressed in processes and somata of surveilling microglia and plays a major role in microglial chemotaxis in response to local CNS injury (2). More recently, P2Y12 receptors have been shown to be concentrated at microglia process-neuronal somata contacts (3) and to be critical for neuroprotection. To date, P2Y12 receptor is one of the most accepted microglia-specific markers used to distinguish CNS-resident microglia from CNS-associated macrophages (CAMs) and infiltrating monocytes/macrophages (4). The expression level of P2Y12 receptor is downregulated in an activated state of microglia referred to as disease-associated microglia (DAM). In the periphery, P2Y12 receptor is expressed in platelets and is a well-known biological target for anti-thrombotic drugs due to its central role in platelet activation, aggregation and blood clotting (5).

Selected General References

The Safeguarding Microglia: Central Role for P2Y12 Receptors.
Lin SS, Tang Y, Illes P, Verkhatsky A
Frontiers in pharmacology (2020) 11: 627760. .

Contribution of "Genuine Microglia" to Alzheimer's Disease Pathology.
Hashioka S, Inoue K, Otsuki K, Hayashida M, Wake R, Kawano N, Takeshita H, Inagaki M
Frontiers in aging neuroscience (2022) 14: 815307. .

Strategies for targeting the P2Y12 receptor in the central nervous system.
Ma BB, Montgomery AP, Chen B, Kassiou M, Danon JJ
Bioorganic & medicinal chemistry letters (2022) 71: 128837. .

Microglia monitor and protect neuronal function through specialized somatic purinergic junctions.
Cserép C, Pósfai B, Lénárt N, Fekete R, László ZI, Lele Z, Orsolits B, Molnár G, Heindl S, Schwarcz AD, Ujvári K, et al.
Science (New York, N.Y.) (2020) 3676477: 528-537. .

The P2Y12 receptor regulates microglial activation by extracellular nucleotides.
Haynes SE, Hollopeter G, Yang G, Kurpius D, Dailey ME, Gan WB, Julius D
Nature neuroscience (2006) 912: 1512-9. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/476011> 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.