SYSY Antibodies

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# P2X7

**Cat.No. 177 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)**

## Data Sheet

| | |
|---|---|
| Reconstitution/ Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was 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 : 1000 (AP staining) (see remarks)<br>**IP**: not tested yet<br>**ICC**: not tested yet<br>**IHC**: not tested yet<br>**IHC-P**: not tested yet |
| Immunogen | Recombinant protein corresponding to AA 363 to 595 from mouse P2X7 (UniProt Id: Q9Z1M0) |
| Reactivity | Reacts with: rat (Q64663), mouse (Q9Z1M0).<br>Other species not tested yet. |
| Specificity | K.O. validated PubMed: 25700737 |
| Remarks | Detects mouse protein with higher sensitivity.<br>**WB**: This antibody detects an additional band at 30 kDa of unknown identity. |

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

## Background

Neurotransmitters are released from synaptic vesicles into the synaptic cleft where they can bind to neurotransmitter receptors located in the plasma membrane. Purines can act as neurotransmitters and the corresponding receptors can be subdivided into two families: P1 receptors are sensitive to adenosine while P2 receptors are triggered by ATP.
The P2 receptor family is composed of two major groups, the metabotrophic G protein coupled P2Y receptors and the ionotrophic ATP-gated cation channels receptors P2X. Seven P2X receptors have been identified so far which all share a similar transmembrane topology. They consist of N- and C-termini facing the cytoplasm, two transmembrane spanning domains and a large extracellular loop. Compared to P2X1-6 **P2X7** has a much longer cytoplasmic C-terminal tail. The P2X1-7 receptors are able to form hetero- or homo-multimers. The tissue distribution and function of P2X7 is still under discussion.

## Selected References for 177 003

P2RX7 purinoceptor: a therapeutic target for ameliorating the symptoms of duchenne muscular dystrophy.
Sinadinos A, Young CN, Al-Khalidi R, Teti A, Kalinski P, Mohamad S, Floriot L, Henry T, Tozzi G, Jiang T, Wurtz O, et al.
PLoS medicine (2015) 1210: e1001888. . **ICC, WB**

Re-evaluation of neuronal P2X7 expression using novel mouse models and a P2X7-specific nanobody.
Kaczmarek-Hajek K, Zhang J, Kopp R, Grosche A, Rissiek B, Saul A, Bruzzone S, Engel T, Jooss T, Krautloher A, Schuster S, et al.
eLife (2018) 7: . . **WB, IHC; tested species: mouse**

P2X7 Purinoceptor Affects Ectopic Calcification of Dystrophic Muscles.
Rumney RMH, Róg J, Chira N, Kao AP, Al-Khalidi R, Górecki DC
Frontiers in pharmacology (2022) 13: 935804. . **WB, ICC; KO verified; tested species: mouse**

P2X7R antagonism suppresses long-lasting brain hyperexcitability following traumatic brain injury in mice.
Alves M, de Diego-Garcia L, Vegliante G, Moreno O, Gil B, Ramos-Cabrer P, Mitra M, Martin AF, Menéndez-Méndez A, Wang Y, Strogulski NR, et al.
Theranostics (2025) 154: 1399-1419. . **WB; tested species: mouse**

Establishment and behavioural characterization of a novel constitutive P2X7 receptor knockout mouse line.
von Mücke-Heim IA, Oldekamp J, Metzger MW, Kläffgen S, Tang H, Walser SM, Dedic N, Rammes G, Holsboer F, Wurst W, Deussing JM, et al.
Purinergic signalling (2025) : . . **WB; tested species: mouse**

Spatiotemporal diversity in molecular and functional abnormalities in the mdx dystrophic brain.
Pomeroy J, Borczyk M, Kawalec M, Hajto J, Carlson E, Svärd S, Verma S, Bareke E, Boratyńska-Jasińska A, Dymkowska D, Mellado-Ibáñez A, et al.
Molecular medicine (Cambridge, Mass.) (2025) 311: 108. . **WB; tested species: mouse**

iTRAQ-based proteomics implies inflammasome pathway activation in the prefrontal cortex of CSDS mice may influence resilience and susceptibility.
Lan T, Bai M, Chen X, Wang Y, Li Y, Tian Y, He Y, Wu Z, Yu H, Chen Z, Chen C, et al.
Life sciences (2020) 262: 118501. . **WB; tested species: mouse**

Sustained activation of P2X7 induces MMP-2-evoked cleavage and functional purinoceptor inhibition.
Young CNJ, Chira N, Róg J, Al-Khalidi R, Benard M, Galas L, Chan P, Vaudry D, Zablocki K, Górecki DC
Journal of molecular cell biology (2017) : . . **WB; tested species: mouse**

A novel mechanism of autophagic cell death in dystrophic muscle regulated by P2RX7 receptor large-pore formation and HSP90.
Young CN, Sinadinos A, Lefebvre A, Chan P, Arkle S, Vaudry D, Gorecki DC
Autophagy (2015) 111: 113-30. . **WB; KO verified**

Access the online factsheet including applicable protocols at https://sysy.com/product/177003 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.