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) **IP**: not tested yet **ICC**: not tested yet **IHC**: external data **IHC-P (FFPE)**: 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). Other species not tested yet.
Specificity	K.O. validated PubMed: 25700737
Remarks	Detects mouse protein with higher sensitivity. **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**

Different localization of P2X4 and P2X7 receptors in native mouse lung - lack of evidence for a direct P2X4-P2X7 receptor interaction.
Sierra-Marquez J, Schaller L, Sassenbach L, Ramírez-Fernández A, Alt P, Rissiek B, Zimmer B, Schredelseker J, Hector J, Stähler T, Koch-Nolte F, et al.
Frontiers in immunology (2024) 15: 1425938. . **WB, IHC; KO verified; 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**

The role of alveolar epithelial junctions in early lung injury and COVID-19-induced fibrosis.
Wiegner J, Kasper M, Schmidt MHH, Barth K
Histochemistry and cell biology (2026) 1641: . . **IHC-P; tested species: human**

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**

Genetic Deletion of the Purinergic Receptor P2rx7 Worsens the Phenotype of α□Sarcoglycan Muscular Dystrophy.
Astigiano C, Principi E, Pintus S, Benzi A, Baratto S, Panicucci C, Passalacqua M, Sierra-Marquez J, Nicke A, Antonini F, Del Zotto G, et al.
ACS pharmacology & translational science (2025) 810: 3477-3489. . **IHC; tested species: mouse**

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 SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.