SYSY Antibodies

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γ-Protocadherin

Cat.No. 190 103; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

Data Sheet

Reconstitution/ Storage	50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin and azide were 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) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: external data (see remarks) **IHC-P (FFPE)**: not tested yet
Immunogen	Recombinant protein corresponding to AA 808 to 931 from rat γ-Protocadherin (UniProt Id: I6LBW6)
Reactivity	Reacts with: rat (I6LBW6). Other species not tested yet.
Specificity	Detects different γ-protocadherins since they share the constant cytoplasmic tail. K.O. validated PubMed: 29439167
Remarks	**IHC**: This antibody has been successfully used and published for this application by customers (see application-specific references). It is not compatible with our standard protocols.

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

Background

Cadherins are a complex protein superfamily involved in many cellular processes including cell recognition, cell signaling, cell communication during embryogenesis, and the formation of neural circuits in the central nervous system. **Protocadherins** constitute the largest group within the cadherin superfamily and can be subdivided into three groups: **α**-, β- and **γ**-protocadherins. Genes for these subgroups are organized in closely related gene clusters and encode variable extracellular and transmembrane domains. The short cytosolic tails are constant and shared within one subgroup.

Selected References for 190 103

Developmental neuronal origin regulates neocortical map formation.
Lin Y, Zhang XJ, Yang J, Li S, Li L, Lv X, Ma J, Shi SH
Cell reports (2023) 423: 112170. . **WB, IHC; KO verified; tested species: mouse**

The Role of Protocadherin γ in Adult Sensory Neurons and Skin Reinnervation.
Long RM, Ong H, Wang WX, Komirishetty P, Areti A, Chandrasekhar A, Larouche M, Lefebvre JL, Zochodne DW
The Journal of neuroscience : the official journal of the Society for Neuroscience (2023) 4349: 8348-8366. . **WB, IHC; KO verified; tested species: mouse**

Combinatorial effects of Alpha- and Gamma-Protocadherins on neuronal survival and dendritic self-avoidance.
Ing-Esteves S, Kostadinov D, Marocha J, Sing AD, Joseph KS, Laboulaye M, Sanes JR, Lefebvre JL
The Journal of neuroscience : the official journal of the Society for Neuroscience (2018) : . . **WB; KO verified; tested species: mouse**

Phosphorylation of protocadherin proteins by the receptor tyrosine kinase Ret.
Schalm SS, Ballif BA, Buchanan SM, Phillips GR, Maniatis T
Proceedings of the National Academy of Sciences of the United States of America (2010) 10731: 13894-9. . **WB; tested species: mouse**

Selected General References

Combinatorial expression of alpha- and gamma-protocadherins alters their presenilin-dependent processing.
Bonn S et al. Mol. Cell. Biol. (2007) PubMed:17403907

Gamma protocadherin expression in the embryonic chick nervous system.
Cronin KD et al. Int. J. Biol. Sci. (2006) PubMed:17200686

Cytoplasmic domain of protocadherin-alpha enhances homophilic interactions and recognizes cytoskeletal elements.
Triana-Baltzer GB et al. J. Neurobiol. (2006) PubMed:16408303

Molecular evolution of cadherin-related neuronal receptor/protocadherin(alpha) (CNR/Pcdh(alpha)) gene cluster in Mus musculus subspecies.
Taguchi Y et al. Mol. Biol. Evol. (2005) PubMed:15758202

Molecular mechanisms governing Pcdh-gamma gene expression: evidence for a multiple promoter and cis-alternative splicing model.
Wang X et al. Genes Dev. (2002) PubMed:12154121

Protocadherin Pcdh2 shows properties similar to, but distinct from, those of classical cadherins.
Obata S et al. J. Cell. Sci. (1995) PubMed:8719883

Access the online factsheet including applicable protocols at https://sysy.com/product/190103 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.