

## α-Protocadherin

Cat.No. 190 003; Polyclonal rabbit antibody, 50 µg specific antibody (lyophilized)

### Data Sheet

|                            |   |
|----------------------------|---|
| Reconstitution/<br>Storage | 50 µg specific antibody, lyophilized. Affinity purified with the immunogen. Albumin was added for stabilization. For <b>reconstitution</b> add 50 µl H <sub>2</sub> 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               | <b>WB:</b> 1 : 500 up to 1 : 1000 (AP staining)<br><b>IP:</b> not tested yet<br><b>ICC:</b> 1 : 500<br><b>IHC:</b> 1 : 500<br><b>IHC-P:</b> not tested yet  |
| Immunogen                  | Recombinant protein corresponding to AA 796 to 946 from rat α-Protocadherin (UniProt Id: Q767I8)  |
| Reactivity                 | Reacts with: human, rat (Q767I8), mouse (O88689).<br>Other species not tested yet.  |
| Specificity                | Detects all α-protocadherins since they share the constant cytoplasmic tail. K.O. validated PubMed: <a href="https://pubmed.ncbi.nlm.nih.gov/29439167/">29439167</a>  |

**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 190 003

Axonal mRNA binding of hnRNP A/B is crucial for axon targeting and maturation of olfactory sensory neurons. Fukuda N, Fukuda T, Percipalle P, Oda K, Takei N, Czaplinski K, Touhara K, Yoshihara Y, Sasaoka T Cell reports (2023) 425: 112398. . **IHC; 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**

## 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/190003> 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.