

## Active Zone

**Cat.No. 364 003; 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 <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> not recommended <b>IP:</b> not recommended <b>ICC:</b> 1 : 500 <b>IHC:</b> 1 : 1000 <b>IHC-P:</b> 1 : 500 up to 1 : 1000
Immunogen	Synthetic peptide corresponding to AA 41 to 59 from mouse Piccolo (UniProt Id: Q9QYX7-1)
Reactivity	Reacts with: rat (Q9JIS1), mouse (Q9QYX7-1). Other species not tested yet.
Specificity	This epitope is conserved in the active zone proteins Rim1, Rim2 and Piccolo.

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

## Background

The **active zone** is the region in the presynaptic nerve terminal that mediates neurotransmitter release. It consists of the presynaptic membrane and a dense protein structure called the **cytomatrix** at the **active zone (CAZ)**.

### Selected References for 364 003

Analysis of RIM Expression and Function at Mouse Photoreceptor Ribbon Synapses.  
Löhner M, Babai N, Müller T, Gierke K, Atorf J, Joachimsthaler A, Peukert A, Martens H, Feigenspan A, Kremers J, Schoch S, et al. The Journal of neuroscience : the official journal of the Society for Neuroscience (2017) 3733: 7848-7863. . **ICC, IHC; tested species: mouse**

Spatial proteomics in neurons at single-protein resolution.  
Unterauer EM, Shetab Boushehri S, Jevdokimenko K, Masullo LA, Ganji M, Sograte-Idrissi S, Kowalewski R, Strauss S, Reinhardt SCM, Perovic A, Marr C, et al. Cell (2024) 1877: 1785-1800.e16. . **DNA\_PAINT; tested species: rat**

Homozygous Expression of Mutant ELOVL4 Leads to Seizures and Death in a Novel Animal Model of Very Long-Chain Fatty Acid Deficiency.  
Hopiauvori BR, Deák F, Wilkerson JL, Brush RS, Rocha-Hopiauvori NA, Hopiauvori AR, Ozan KG, Sullivan MT, Wren JD, Georgescu C, Szveda L, et al. Molecular neurobiology (2018) 552: 1795-1813. . **ICC; tested species: mouse**

### Selected General References

Role of Bassoon and Piccolo in Assembly and Molecular Organization of the Active Zone.  
Gundelfinger ED et al. Front Synaptic Neurosci (2015) PubMed:26793095

The structure and function of 'active zone material' at synapses.  
Szule JA et al. Philos. Trans. R. Soc. Lond., B, Biol. Sci. (2015) PubMed:26009768

The presynaptic active zone: A dynamic scaffold that regulates synaptic efficacy.  
Michel K et al. Exp. Cell Res. (2015) PubMed:25720549

Access the online factsheet including applicable protocols at <https://sysy.com/product/364003> 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.