

Rudolf-Wissell-Str. 28a 37079 Göttingen, Germany

Phone: +49 551-50556-0
Fax: +49 551-50556-384
E-mail: sales@sysy.com
Web: www.sysy.com

# Synaptophysin1 (p38-1)

Cat.No. 101 308; Recombinant Guinea pig antibody, 50 µg recombinant IgG (lyophilized)

# **Data Sheet**

| Reconstitution/<br>Storage | 50 µg purified recombinant IgG, lyophilized. Albumin and azide were 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: 1000 up to 1: 10000 (AP staining) <b>IP</b> : not tested yet <b>ICC</b> : 1: 500 up to 1: 1000 <b>IHC</b> : 1: 500 up to 1: 1000 <b>IHC</b> -P: 1: 1000 up to 1: 5000   |
| Clone                      | Gp7.2  |
| Subtype                    | IgG2 (κ light chain)   |
| Immunogen                  | Full-length rat Synaptophysin 1 recombinant protein (UniProt Id: P07825)   |
| Epitop                     | AA 219 to 307 from rat Synaptophysin1 (UniProt Id: P07825)   |
| Reactivity                 | Reacts with: human (P08247), rat (P07825), mouse (Q62277), mammals. Weaker signal: zebrafish, other vertebrates. Other species not tested yet.   |
| Specificity                | K.O. validated   |
| Remarks                    | This antibody is a chimeric antibody based on the well-known monoclonal mouse antibody clone 7.2. The constant regions of the heavy and light chains have been replaced by Guinea pig specific sequences. Therefore, the antibody can be used with standard anti-Guinea pig secondary reagents. The antibody has been expressed in mammalian cells.  Synaptophysin 1 is widely used as marker for nerve terminals and neuroendocrine tumors. For reasons still unknown, neuronal synaptophysin is better recognized than neuroendocrine synaptophysin. If this is a problem, the polyclonal rabbit antibody, cat. no. 101 002, is recommended. |

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

# Background

**Synaptophysin1**, also referred to as **p38-1**, is a membrane glycoprotein of synaptic vesicles that is ubiquitously expressed in all neurons and in many endocrine cells. It is currently the most widely used marker for nerve terminals and probably the best marker for the pathologist in differentiating neuroendocrine tumors.

Synaptophysin1 has four transmembrane domains with both N- and C-terminus facing the cytoplasm. It binds to synaptobrevin1 and synaptobrevin2 in detergent extracts but its function has not been elucidated completely. It forms a complex with dynamin at high Ca<sup>2+</sup> concentration suggesting an involvement in synaptic vesicle endocytosis. As typical for synaptic vesicle proteins, synaptophysin1 represents a small protein family with two additional members, synaptoporin (synaptophysin2) and panthophysin. Like synaptophysin1, synaptoporin is widely expressed in neurons and colocalizes with synaptophysin1 on synaptic vesicles whereas panthophysin is expressed in all tissues.

For more information on protein expression pattern, please refer to the overview image in our SYSY Antibodies ATLAS.

### Selected References for 101 308

Identification of p38 MAPK inhibition as a neuroprotective strategy for combinatorial SMA therapy.
Carlini MJ, Espinoza-Derout J, Van Alstyne M, Tisdale S, Workman E, Triplett MK, Tattoli I, Yadav S, Henderson CE, Watterson DM, Pellizzoni L, et al.

EMBO molecular medicine (2025):.. IHC; tested species: mouse

Group 2 innate lymphoid cells drive inhibitory synapse formation with lasting effects on learning and memory. Steffen J, Deshpande D, Düsedau HP, Schmitz J, Figueiredo CA, Velleman L, Pitzer C, Klose CSN, Dunay IR Journal of neuroinflammation (2025) 221: 163. FACS; tested species: mouse

Synaptic vesicle proteins and ATG9A self-organize in distinct vesicle phases within synapsin condensates. Park D, Wu Y, Wang X, Gowrishankar S, Baublis A, De Camilli P
Nature communications (2023) 141: 455.. ICC; tested species: mouse

#### **Selected General References**

Essential roles in synaptic plasticity for synaptogyrin I and synaptophysin I. Janz R et al. Neuron (1999) PubMed:10595519

Synaptophysin, a major synaptic vesicle protein, is not essential for neurotransmitter release. McMahon HT et al. Proc. Natl. Acad. Sci. U.S.A. (1996) PubMed:8643476

The synaptic vesicle cycle: a cascade of protein-protein interactions. Südhof TC et al. Nature (1995) PubMed:7791897

Cloning and sequence analysis of cDNA encoding p38, a major synaptic vesicle protein. Buckley KM et al. J. Cell Biol. (1987) PubMed:3121632

Synaptophysin: molecular organization and mRNA expression as determined from cloned cDNA. Leube RE et al. EMBO J. (1987) PubMed:3123215

A synaptic vesicle protein with a novel cytoplasmic domain and four transmembrane regions. Südhof TC et al. Science (1987) PubMed:3120313

Access the online factsheet including applicable protocols at <a href="https://sysy.com/product/101308">https://sysy.com/product/101308</a> 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 freezedried) 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 freezethaw cycles.
- Please refer to our tips and hints for subsequent storage of reconstituted antibodies and control peptides and proteins.