

Complexin1/2 SNARE binding domain

Cat.No. 122 102; Polyclonal rabbit antibody, 200 µl antiserum (lyophilized)

Data Sheet

Reconstitution/Storage	200 µl antiserum, lyophilized. For reconstitution add 200 µl H ₂ O, then aliquot and store at -20°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 up to 1 : 20000 (AP staining) IP: yes (see remarks) ICC: 1 : 200 up to 1 : 500 IHC: yes (see remarks) IHC-P: 1 : 200
Immunogen	Synthetic peptide corresponding to AA 45 to 81 from mouse Complexin2 (UniProt Id: P84086)
Reactivity	Reacts with: human (O14810, Q6PUV4), rat (P63041, P84087), mouse (P63040, P84086), Guinea pig, cow, zebrafish, rabbit. Other species not tested yet.
Specificity	Recognizes complexin 1 and 2. K.O. validated PubMed: 11163241
Remarks	IP: Co-immunoprecipitates the SNARE complex. Immunogen is located inside the mapped binding domain of complexin 2 to the SNARE complex (aa 41 - 91). IHC: For optimal results, mild fixation (immersion fixation with 4% PFA for 15 min) according to Gierke et al. 2023 is recommended.

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

Background

Complexins are enriched in neurons where they colocalize with syntaxin 1 and SNAP 25. In addition, complexin 2, also referred to as **synaphin 1**, is expressed ubiquitously at low levels. Complexins bind weakly to syntaxin 1 alone and not at all to synaptobrevin and SNAP 25, but strongly to the SNAP receptor-core complex composed of these three molecules. They compete with α-SNAP for binding to the core complex but not with other interacting molecules, suggesting that complexins regulate the sequential interactions of α-SNAP and synaptotagmins with the SNAP receptor during exocytosis. In retinal ribbon synapses complexin 3 and complexin 4 functionally replace complexin 1 (**synaphin 2**) and 2. They have similar biochemical binding properties and are farnesylated at their C-terminus.

Selected References for 122 102

Involvement of complexin 2 in docking, locking and unlocking of different SNARE complexes during sperm capacitation and induced acrosomal exocytosis.

Tsai PS, Brewis IA, van Maaren J, Gadella BM
PloS one (2012) 73: e32603. . **WB, ICC; tested species: mouse,pig**

Complexin 2 modulates vesicle-associated membrane protein (VAMP) 2-regulated zymogen granule exocytosis in pancreatic acini.

Falkowski MA, Thomas DD, Groblewski GE
The Journal of biological chemistry (2010) 28546: 35558-66. . **WB, ICC**

Immunocytochemical evidence for SNARE protein-dependent transmitter release from guinea pig horizontal cells.

Lee H, Brecha NC
The European journal of neuroscience (2010) 318: 1388-401. . **IHC**

The proteomic landscape of synaptic diversity across brain regions and cell types.

van Oostrum M, Blok TM, Giandomenico SL, Tom Dieck S, Tushev G, Fürst N, Langer JD, Schuman EM
Cell (2023) 18624: 5411-5427.e23. . **WB; tested species: mouse**

Cell Types and Synapses Expressing the SNARE Complex Regulating Proteins Complexin 1 and Complexin 2 in Mammalian Retina.

Lux UT, Ehrenberg J, Joachimsthaler A, Atorf J, Pircher B, Reim K, Kremers J, Gießl A, Brandstätter JH
International journal of molecular sciences (2021) 2215: . . **IHC; KO verified; tested species: mouse**

Composition of isolated synaptic boutons reveals the amounts of vesicle trafficking proteins.

Wilhelm BG, Mandad S, Truckenbrodt S, Kröhnert K, Schäfer C, Rammner B, Koo SJ, Claßen GA, Krauss M, Haucke V, Urlaub H, et al.

Science (New York, N.Y.) (2014) 3446187: 1023-8. . **WB**

Complexins regulate a late step in Ca²⁺-dependent neurotransmitter release.

Reim K, Mansour M, Varoqueaux F, McMahon HT, Südhof TC, Brose N, Rosenmund C
Cell (2001) 1041: 71-81. . **WB; KO verified; tested species: mouse**

Selected General References

The synaptic vesicle cycle: a cascade of protein-protein interactions.

Südhof TC et al. Nature (1995) PubMed:7791897

Complexins: cytosolic proteins that regulate SNAP receptor function.

McMahon HT et al. Cell (1995) PubMed:7553862

Synaptic vesicles and exocytosis.

Jahn R et al. Annu. Rev. Neurosci. (1994) PubMed:8210174

Access the online factsheet including applicable protocols at <https://sysy.com/product/122102> 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 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 freeze-thaw cycles.
- Please refer to our **tips and hints for subsequent storage** of reconstituted antibodies and control peptides and proteins.