SYSY Antibodies

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AP180

Cat.No. 155 003; 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 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 1000 **IHC-P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 279 to 297 from rat AP180 (UniProt Id: Q05140)
Reactivity	Reacts with: human (O60641), rat (Q05140), mouse (Q61548), dog. Other species not tested yet.
Specificity	Specific for AP 180. K.O. validated PubMed: 26412491
Matching control	155-0P

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

Background

During neurotransmitter release synaptic vesicles fuse with the presynaptic plasma membrane. A whole protein machinery consisting of e.g. amphiphysin, clathrin, endophilin and synaptojanin is involved in the subsequent endocytotic recycling of the synaptic vesicles.
AP 180 also known as **pp155**, **NP185**, **F1-20**, and **SNAP 91** is a clathrin binding phospho-protein and faciliates the formation of clathrin coats.

Selected References for 155 003

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, ICC, IHC; tested species: mouse,rat**

Physical exercise mediates cortical synaptic protein lactylation to improve stress resilience.
Yan L, Wang Y, Hu H, Yang D, Wang W, Luo Z, Wang Y, Yang F, So KF, Zhang L
Cell metabolism (2024) 369: 2104-2117.e4. . **WB, IP, IHC; tested species: mouse**

Pulse-Chase Proteomics of the App Knockin Mouse Models of Alzheimer's Disease Reveals that Synaptic Dysfunction Originates in Presynaptic Terminals.
Hark TJ, Rao NR, Castillon C, Basta T, Smukowski S, Bao H, Upadhyay A, Bomba-Warczak E, Nomura T, O'Toole ET, Morgan GP, et al.
Cell systems (2020) : . . **WB, IHC; tested species: mouse**

Selective endocytosis of Ca2+-permeable AMPARs by the Alzheimer's disease risk factor CALM bidirectionally controls synaptic plasticity.
Azarnia Tehran D, Kochlamazashvili G, Pampaloni NP, Sposini S, Shergill JK, Lehmann M, Pashkova N, Schmidt C, Löwe D, Napieczynska H, Heuser A, et al.
Science advances (2022) 821: eabl5032. . **WB; KO verified; tested species: mouse**

Quantitative Fluorescent in situ Hybridization Reveals Differential Transcription Profile Sharpening of Endocytic Proteins in Cochlear Hair Cells Upon Maturation.
Huang G, Eckrich S
Frontiers in cellular neuroscience (2021) 15: 643517. . **IHC; tested species: mouse**

AP180 promotes release site clearance and clathrin-dependent vesicle reformation in mouse cochlear inner hair cells.
Kroll J, Özçete ÖD, Jung S, Maritzen T, Milosevic I, Wichmann C, Moser T
Journal of cell science (2020) 1332: . . **IHC; KO verified; tested species: mouse**

Diffusional spread and confinement of newly exocytosed synaptic vesicle proteins.
Gimber N, Tadeus G, Maritzen T, Schmoranzer J, Haucke V
Nature communications (2015) 6: 8392. . **ICC; tested species: mouse**

Vesicular Synaptobrevin/VAMP2 Levels Guarded by AP180 Control Efficient Neurotransmission.
Koo SJ, Kochlamazashvili G, Rost B, Puchkov D, Gimber N, Lehmann M, Tadeus G, Schmoranzer J, Rosenmund C, Haucke V, Maritzen T, et al.
Neuron (2015) 882: 330-44. . **WB; KO verified; tested species: mouse**

Evidence for a Clathrin-independent mode of endocytosis at a continuously active sensory synapse.
Fuchs M, Brandstätter JH, Regus-Leidig H
Frontiers in cellular neuroscience (2014) 8: 60. . **IHC; tested species: rat**

Stiff person syndrome-associated autoantibodies to amphiphysin mediate reduced GABAergic inhibition.
Geis C, Weishaupt A, Hallermann S, Grünewald B, Wessig C, Wultsch T, Reif A, Byts N, Beck M, Jablonka S, Boettger MK, et al.
Brain : a journal of neurology (2010) 13311: 3166-80. . **ICC**

Synaptic and vesicular coexistence of VGLUT and VGAT in selected excitatory and inhibitory synapses.
Zander JF, Münster-Wandowski A, Brunk I, Pahner I, Gómez-Lira G, Heinemann U, Gutiérrez R, Laube G, Ahnert-Hilger G
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3022: 7634-45. . **WB**

Access the online factsheet including applicable protocols at https://sysy.com/product/155003 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.