SYSY Antibodies

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CAPS1

Cat.No. 262 013; 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 **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 (see remarks) **IP**: not tested yet **ICC**: 1 : 200 up to 1 : 500 **IHC**: not tested yet **IHC-P**: not tested yet
Immunogen	Recombinant protein corresponding to AA 18 to 107 from mouse CAPS1 (UniProt Id: Q80TJ1)
Reactivity	Reacts with: rat (Q62717), mouse (Q80TJ1). Other species not tested yet.
Specificity	Specific for CAPS 1, no cross-reactvity to CAPS 2 K.O. validated PubMed: 25719439
Remarks	**WB**: Cat. no. 262 003 is recommended for this application.

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

Background

The **Ca**$^{2+}$-dependent activator **p**rotein for **s**ecretion (CAPS) regulates exocytosis of catecholamine- or neuropeptide-containing dense-core vesicles (DCVs) at secretion sites.
Two differen isoforms CAPS 1/CADPS 1 and **CAPS 2/CADPS 2** that are mainly expressed in brain have been identified in mammals. Both have been shown to be essential components of the synaptic vesicle priming machinery.

Selected References for 262 013

Paralogs of the Calcium-Dependent Activator Protein for Secretion Differentially Regulate Synaptic Transmission and Peptide Secretion in Sensory Neurons.
Shaib AH, Staudt A, Harb A, Klose M, Shaaban A, Schirra C, Mohrmann R, Rettig J, Becherer U
Frontiers in cellular neuroscience (2018) 12: 304. . **WB, ICC; KO verified; tested species: mouse**

Munc13-1 is a Ca2+-phospholipid-dependent vesicle priming hub that shapes synaptic short-term plasticity and enables sustained neurotransmission.
Lipstein N, Chang S, Lin KH, López-Murcia FJ, Neher E, Taschenberger H, Brose N
Neuron (2021) : . . **WB; tested species: mouse**

RNA editing-mediated regulation of calcium-dependent activator protein for secretion (CAPS1) localization and its impact on synaptic transmission.
Shumate KM, Tas ST, Kavalali ET, Emeson RB
Journal of neurochemistry (2021) 1582: 182-196. . **ICC; tested species: mouse**

Tomosyn associates with secretory vesicles in neurons through its N- and C-terminal domains.
Geerts CJ, Mancini R, Chen N, Koopmans FTW, Li KW, Smit AB, van Weering JRT, Verhage M, Groffen AJA
PloS one (2017) 127: e0180912. . **ICC; tested species: mouse**

CAPS-1 promotes fusion competence of stationary dense-core vesicles in presynaptic terminals of mammalian neurons.
Farina M, van de Bospoort R, He E, Persoon CM, van Weering JR, Broeke JH, Verhage M, Toonen RF
eLife (2015) 4: . . **ICC; KO verified**

Selected General References

Interaction of calcium-dependent activator protein for secretion 1 (CAPS1) with the class II ADP-ribosylation factor small GTPases is required for dense-core vesicle trafficking in the trans-Golgi network.
Sadakata T, Shinoda Y, Sekine Y, Saruta C, Itakura M, Takahashi M, Furuichi T
The Journal of biological chemistry (2010) 28549: 38710-9. .

CAPS1 and CAPS2 regulate stability and recruitment of insulin granules in mouse pancreatic beta cells.
Speidel D, Salehi A, Obermueller S, Lundquist I, Brose N, Renström E, Rorsman P
Cell metabolism (2008) 71: 57-67. .

Tissue distribution of Ca2+-dependent activator protein for secretion family members CAPS1 and CAPS2 in mice.
Sadakata T, Washida M, Morita N, Furuichi T
The journal of histochemistry and cytochemistry : official journal of the Histochemistry Society (2007) 553: 301-11. .

CAPS-1 and CAPS-2 are essential synaptic vesicle priming proteins.
Jockusch WJ, Speidel D, Sigler A, Sørensen JB, Varoqueaux F, Rhee JS, Brose N
Cell (2007) 1314: 796-808. .

Differential distributions of the Ca2+ -dependent activator protein for secretion family proteins (CAPS2 and CAPS1) in the mouse brain.
Sadakata T, Itakura M, Kozaki S, Sekine Y, Takahashi M, Furuichi T
The Journal of comparative neurology (2006) 4956: 735-53. .

CAPS1 regulates catecholamine loading of large dense-core vesicles.
Speidel D, Bruederle CE, Enk C, Voets T, Varoqueaux F, Reim K, Becherer U, Fornai F, Ruggieri S, Holighaus Y, Weihe E, et al.
Neuron (2005) 461: 75-88. .

Access the online factsheet including applicable protocols at https://sysy.com/product/262013 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.