SYSY Antibodies

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CSP

Cat.No. 154 003; 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 : 10000 (AP staining) **IP**: yes **ICC**: 1 : 100 up to 1 : 1000 **IHC**: yes **IHC-P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 182 to 198 from rat CSP (UniProt Id: P60905)
Reactivity	Reacts with: human (Q9H3Z4), rat (P60905), mouse (P60904), cow, dog, chicken. Other species not tested yet.
Specificity	K.O. validated PubMed: 27881461

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

Background

Cysteine **S**tring **P**roteins **CSP**s are composed of an N-terminal J-domain and a central palmitoylated cysteine string. This post-translational modification shifts the molecular weight of CSP 1 in brain from 23 kDa to 34 kDa and confers membrane targeting of the protein.
CSP has been initially identified as a synaptic vesicle protein which is involved in Ca^{2+} triggered neurotransmitter release. Later CSP was also found on Large Dense Core Vesicles (LDCVs) of pancreatic insulin secretory β-cells, chromaffin cells and adipocytes. It has been shown to interact with SNARE proteins like VAMP 2, VAMP 7 and syntaxin 4.

Selected References for 154 003

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**

LuTHy: a double-readout bioluminescence-based two-hybrid technology for quantitative mapping of protein-protein interactions in mammalian cells.
Trepte P, Kruse S, Kostova S, Hoffmann S, Buntru A, Tempelmeier A, Secker C, Diez L, Schulz A, Klockmeier K, Zenkner M, et al.
Molecular systems biology (2018) 147: e8071. . **WB, ICC; tested species: mouse**

Lysosomal dysfunction disrupts presynaptic maintenance and restoration of presynaptic function prevents neurodegeneration in lysosomal storage diseases.
Sambri I, D'Alessio R, Ezhova Y, Giuliano T, Sorrentino NC, Cacace V, De Risi M, Cataldi M, Annunziato L, De Leonibus E, Fraldi A, et al.
EMBO molecular medicine (2017) 91: 112-132. . **WB, ICC; KO verified; tested species: mouse**

Molecular dynamics of photoreceptor synapse formation in the developing chick retina.
Wahlin KJ, Moreira EF, Huang H, Yu N, Adler R
The Journal of comparative neurology (2008) 5065: 822-37. . **WB, IHC**

Central biogenic amine deficiency with concomitant exploratory behavioral deficits in Dnajc12 knock-out mice.
Deng IB, Follett J, Fox JD, Wall S, Farrer MJ
NPJ Parkinson's disease (2025) 111: 143. . **WB; tested species: mouse**

Gestational exposure to metformin programs improved glucose tolerance and insulin secretion in adult male mouse offspring.
Gregg BE, Botezatu N, Brill JD, Hafner H, Vadrevu S, Satin LS, Alejandro EU, Bernal-Mizrachi E
Scientific reports (2018) 81: 5745. . **WB; tested species: mouse**

Ubiquitin-Synaptobrevin Fusion Protein Causes Degeneration of Presynaptic Motor Terminals in Mice.
Liu Y, Li H, Sugiura Y, Han W, Gallardo G, Khvotchev M, Zhang Y, Kavalali ET, Südhof TC, Lin W
The Journal of neuroscience : the official journal of the Society for Neuroscience (2015) 3533: 11514-31. . **WB**

Selective coexpression of synaptic proteins, α-synuclein, cysteine string protein-α, synaptophysin, synaptotagmin-1, and synaptobrevin-2 in vesicular acetylcholine transporter-immunoreactive axons in the guinea pig ileum.
Sharrad DF, Gai WP, Brookes SJ
The Journal of comparative neurology (2013) 52111: 2523-37. . **IHC**

α-Syn suppression reverses synaptic and memory defects in a mouse model of dementia with Lewy bodies.
Lim Y, Kehm VM, Lee EB, Soper JH, Li C, Trojanowski JQ, Lee VM
The Journal of neuroscience : the official journal of the Society for Neuroscience (2011) 3127: 10076-87. . **IHC**

Cysteine string protein-alpha prevents activity-dependent degeneration in GABAergic synapses.
García-Junco-Clemente P, Cantero G, Gómez-Sánchez L, Linares-Clemente P, Martínez-López JA, Luján R, Fernández-Chacón R
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3021: 7377-91. . **ICC**

Selected General References

Interaction between constitutively expressed heat shock protein, Hsc 70, and cysteine string protein is important for cortical granule exocytosis in Xenopus oocytes.
Smith GB et al. J. Biol. Chem. (2005) PubMed:16055447

Access the online factsheet including applicable protocols at https://sysy.com/product/154003 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.