SYSY Antibodies

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ERC1b/2

Cat.No. 143 003; 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 TBS. 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 : 100 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 1000 **IHC**: 1 : 100 **IHC_P**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 939 to 948 from rat Erc1b (UniProt Id: Q811U3-1)
Reactivity	Reacts with: human (Q8IUD2, O15083), rat (Q811U3, Q8K3M6), mouse (Q99MI1, Q6PH08), hamster. No signal: zebrafish. Other species not tested yet.
Specificity	Specific for the brain specific isoforms ERC 1b and ERC 2.
Matching control	143-0P

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

Background

ELKS, also referred to as **ERC**s (ERC 1 and ERC 2) and **CAST**, are related proteins which share an identical C-terminal sequence. They interact with the conserved RIM PDZ domain via an unusual PDZ binding motif. Two splice variants of ERC 1 (1a and 1b) have been described. ERC 1b (CAST 2a) binds to RIM and is expressed exclusively in the brain. ERC 1a is a ubiquitously expressed cytosolic protein. ERC 2 (CAST 1) is only expressed as a single RIM binding variant.
All ERCs have been shown to interact with Rab 6, a protein involved in membrane trafficking at the Golgi complex. The function of these proteins has not been determined yet. They may link Rab 6 mediated non-neuronal membrane traffic at the Golgi complex to neuronal membrane traffic at the active zone executed via RIMs.

Selected References for 143 003

Extensive remodeling of the presynaptic cytomatrix upon homeostatic adaptation to network activity silencing.
Lazarevic V, Schöne C, Heine M, Gundelfinger ED, Fejtova A
The Journal of neuroscience : the official journal of the Society for Neuroscience (2011) 3128: 10189-200. . **WB, ICC**

Molecular dissection of the photoreceptor ribbon synapse: physical interaction of Bassoon and RIBEYE is essential for the assembly of the ribbon complex.
tom Dieck S, Altrock WD, Kessels MM, Qualmann B, Regus H, Brauner D, Fejtová A, Bracko O, Gundelfinger ED, Brandstätter JH
The Journal of cell biology (2005) 1685: 825-36. . **WB, IHC**

Liprin-α proteins are master regulators of human presynapse assembly.
Marcó de la Cruz B, Campos J, Molinaro A, Xie X, Jin G, Wei Z, Acuna C, Sterky FH
Nature neuroscience (2024) : . . **WB, ICC; tested species: human**

A presynaptic phosphosignaling hub for lasting homeostatic plasticity.
Müller JA, Betzin J, Santos-Tejedor J, Mayer A, Oprişoreanu AM, Engholm-Keller K, Paulußen I, Gulakova P, McGovern TD, Gschossman LJ, Schönhense E, et al.
Cell reports (2022) 393: 110696. . **WB, ICC; tested species: mouse**

Regulation of density of functional presynaptic terminals by local energy supply.
Zhou H, Liu G
Molecular brain (2015) 8: 42. . **WB, ICC**

Liprin-α2 promotes the presynaptic recruitment and turnover of RIM1/CASK to facilitate synaptic transmission.
Spangler SA, Schmitz SK, Kevenaar JT, de Graaff E, de Wit H, Demmers J, Toonen RF, Hoogenraad CC
The Journal of cell biology (2013) 2016: 915-28. . **ICC, WB; tested species: rat**

Volumetric super-resolution imaging by serial ultrasectioning and stochastic optical reconstruction microscopy in mouse neural tissue.
Vatan T, Minehart JA, Zhang C, Agarwal V, Yang J, Speer CM
STAR protocols (2021) 24: 100971. . **IHC; tested species: mouse**

A High-Resolution Method for Quantitative Molecular Analysis of Functionally Characterized Individual Synapses.
Holderith N, Heredi J, Kis V, Nusser Z
Cell reports (2020) 324: 107968. . **IHC; tested species: rat**

Syndapin I Loss-of-Function in Mice Leads to Schizophrenia-Like Symptoms.
Koch N, Koch D, Krueger S, Tröger J, Sabanov V, Ahmed T, McMillan LE, Wolf D, Montag D, Kessels MM, Balschun D, et al.
Cerebral cortex (New York, N.Y. : 1991) (2020) : . . **WB; tested species: mouse**

Synaptic weight set by Munc13-1 supramolecular assemblies.
Sakamoto H, Ariyoshi T, Kimpara N, Sugao K, Taiko I, Takikawa K, Asanuma D, Namiki S, Hirose K
Nature neuroscience (2018) 211: 41-49. . **ICC; tested species: rat**

Access the online factsheet including applicable protocols at https://sysy.com/product/143003 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.