SYSY Antibodies

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ERC2

Cat.No. 143 103; 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 : 100 up to 1 : 2000 (AP staining) **IP**: not tested yet **ICC**: not tested yet **IHC**: not tested yet **IHC-P (FFPE)**: not tested yet
Immunogen	Synthetic peptide corresponding to AA 655 to 670 from rat ERC2 (UniProt Id: Q8K3M6)
Reactivity	Reacts with: rat (Q8K3M6), mouse (Q6PH08), hamster. No signal: zebrafish. Other species not tested yet.
Specificity	K.O. validated PubMed: 27422015
Matching control	143-1P

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 143 103

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**

The Exocyst Component Exo70 Modulates Dendrite Arbor Formation, Synapse Density, and Spine Maturation in Primary Hippocampal Neurons.
Lira M, Arancibia D, Orrego PR, Montenegro-Venegas C, Cruz Y, García J, Leal-Ortiz S, Godoy JA, Gundelfinger ED, Inestrosa NC, Garner CC, et al.
Molecular neurobiology (2018) : . . **WB; tested species: rat**

The active zone protein CAST regulates synaptic vesicle recycling and quantal size in the mouse hippocampus.
Kobayashi S, Hida Y, Ishizaki H, Inoue E, Tanaka-Okamoto M, Yamasaki M, Miyazaki T, Fukaya M, Kitajima I, Takai Y, Watanabe M, et al.
The European journal of neuroscience (2016) 445: 2272-84. . **WB; KO verified**

Molecular anatomy of the hair cell's ribbon synapse.
Uthaiah RC, Hudspeth AJ
The Journal of neuroscience : the official journal of the Society for Neuroscience (2010) 3037: 12387-99. . **WB**

Molecular anatomy of a trafficking organelle.
Takamori S, Holt M, Stenius K, Lemke EA, Grønborg M, Riedel D, Urlaub H, Schenck S, Brügger B, Ringler P, Müller SA, et al.
Cell (2006) 1274: 831-46. . **WB**

Selected General References

Physical and functional interaction of the active zone proteins, CAST, RIM1, and Bassoon, in neurotransmitter release.
Takao-Rikitsu E et al. J. Cell Biol. (2004) PubMed:14734538

CAST2: identification and characterization of a protein structurally related to the presynaptic cytomatrix protein CAST.
Deguchi-Tawarada M et al. Genes Cells (2004) PubMed:14723704

Interaction of the ERC family of RIM-binding proteins with the liprin-alpha family of multidomain proteins.
Ko J et al. J. Biol. Chem. (2003) PubMed:12923177

Cast: a novel protein of the cytomatrix at the active zone of synapses that forms a ternary complex with RIM1 and munc13-1.
Ohtsuka T et al. J. Cell Biol. (2002) PubMed:12163476

A family of RIM-binding proteins regulated by alternative splicing: Implications for the genesis of synaptic active zones.
Wang Y et al. Proc. Natl. Acad. Sci. U.S.A. (2002) PubMed:12391317

Access the online factsheet including applicable protocols at https://sysy.com/product/143103 or scan the QR-code.

FAQ - How should I store my antibody?

Shipping Conditions

- All SYSY antibodies and control proteins/peptides are shipped lyophilized (vacuum freeze-dried). In this form, they remain stable 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. **Do not freeze lyophilized antibodies**. Temperatures below 0°C may impair performance.
- **Fluorescence-labeled antibodies** should be reconstituted immediately upon receipt. Long-term storage of lyophilized fluorophore-conjugates may cause aggregation.
- **Control peptides** should be stored at -20°C before reconstitution.

Long Term Storage after Reconstitution (General Considerations)

- **Do not use frost-free ("no-frost") freezers.** These units periodically warm to remove ice buildup, causing freeze–thaw cycles that can damage antibodies.
- Store vials in areas with minimal temperature fluctuation - preferably toward the back of the freezer, not on the door.
- Aliquot reconstituted antibodies and store at –20°C to –80°C.
- Avoid very small aliquots (<20 µL), as evaporation and adsorption to tube surfaces can reduce antibody concentration and activity.
- Use the smallest practical storage vial to minimize surface area.
- Adding glycerol to a final concentration of 50% prevents freezing at -20°C, allowing storage in liquid form and effectively avoiding freeze–thaw cycles.

Product Specific Hints for Storage

Control proteins / peptides

- Store at -20°C to -80°C

Monoclonal Antibodies

- **Ascites and hybridoma supernatant:** Store at -20°C to -80°C
  Prolonged storage at 4°C is not recommended, as proteases present in ascites may degrade antibodies.
- **Purified IgG:** Store at -20°C to -80°C
  Adding a carrier protein (e.g., BSA) enhances long-term stability.
  Many SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Polyclonal Antibodies

- **Crude antisera:** Can be stored at 4°C with antimicrobials added, but -20°C to -80°C is preferred
- **Affinity-purified antibodies:** Less stable than antisera; store at -20°C to -80°C
  Adding a carrier protein such as BSA improves long-term stability.
  Most SYSY antibodies already contain carrier proteins - refer to the respective datasheet for details.

Fluorescence-labeled Antibodies

- Store as a liquid with 1:1 (v/v) glycerol at -20°C, and protect from light exposure

Avoid repeated freeze-thaw cycles for all antibodies!

FAQ - How should I reconstitute my antibody?

Reconstitution

- All purified SYSY antibodies are lyophilized from PBS. To reconstitute the antibody in PBS, add the volume of deionized water specified in the corresponding datasheet. If a larger final volume is desired, first add the recommended amount of water, then adjust with PBS and, if needed, add a stabilizing carrier protein (e.g., BSA) to a final concentration of 2%. Some SYSY antibodies already contain albumin; please take this into account before adding additional carrier protein.

For complete reconstitution, carefully remove the vial cap. After adding water, briefly vortex the solution. To collect the liquid at the bottom of the vial, place the vial inside a 50 ml centrifuge tube padded with paper and centrifuge briefly.

- If desired, small amounts of azide or thimerosal may be added to prevent microbial growth. This is particularly recommended when storing an aliquot at 4°C.
- After reconstitution of fluorescence-labeled antibodies, add glycerol 1:1 (v/v) to achieve a final concentration of 50%. This prevents freezing at –20°C and keeps the antibody in liquid form, effectively avoiding freeze–thaw cycles.
- Glycerol may also be added to unlabeled primary antibodies as a general measure to prevent freeze–thaw damage.
- For further guidance, please refer to our **storage tips** and recommendations for reconstituted antibodies, control peptides, and control proteins.