SYSY Antibodies

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Dynamin1/2/3

Cat.No. 115 003; 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 up to 1 : 5000 (AP staining) **IP**: yes **ICC**: 1 : 500 **IHC**: 1 : 500 **IHC-P (FFPE)**: 1 : 500
Immunogen	Synthetic peptide corresponding to AA 2 to 17 from rat Dynamin1 (UniProt Id: P21575)
Reactivity	Reacts with: human (Q05193, P50570, Q9UQ16), rat (P21575, P39052, Q08877), mouse (P39053, P39054, Q8BZ98), cow. Other species not tested yet.
Specificity	Recognizes dynamin 1, 2 and 3 with a preference for dynamin 1.
Matching control	115-0P

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

Background

Dynamin was discovered because of its binding to microtubules. It was later shown not to function in the cytoskeleton but in endocytosis. Dynamin is required for clathrin - mediated endocytosis. It contains a NH2 - terminal GTPase domain, a middle pleckstrin - homology domain, and a COOH-terminal proline - rich sequence. The COOH - terminal sequence binds to amphiphilin which contains a SH3 domain that recognizes the proline - rich sequence of dynamin.
There are at least three isoforms of dynamin: Dynamin 1 is enriched in synapses whereas dynamin 2 is ubiquitous and dynamin 3 is expressed in brain and testis. Neuronal dynamin 1 is phosphorylated by protein kinase C and dephosphorylated by calcineurin during an action potential in the nerve terminal. It is possible that the dephosphorylation provides a trigger for endocytosis.

Selected References for 115 003

Identification of Synaptic DGKθ Interactors That Stimulate DGKθ Activity.
Barber CN, Goldschmidt HL, Ma Q, Devine LR, Cole RN, Huganir RL, Raben DM
Frontiers in synaptic neuroscience (2022) 14: 855673. . **WB; tested species: rat**

Selected General References

Dynamin and its role in membrane fission.
Hinshaw JE et al. Annu. Rev. Cell Dev. Biol. (2000) PubMed:11031245

Accessory factors in clathrin-dependent synaptic vesicle endocytosis.
Slepnev VI et al. Nat. Rev. Neurosci. (2000) PubMed:11257904

Sequential steps in clathrin-mediated synaptic vesicle endocytosis.
Brodin L et al. Curr. Opin. Neurobiol. (2000) PubMed:10851177

Synaptic vesicle biogenesis.
Hannah MJ et al. Annu. Rev. Cell Dev. Biol. (1999) PubMed:10611977

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC et al. Nature (1995) PubMed:7791897

Complexins: cytosolic proteins that regulate SNAP receptor function.
McMahon HT et al. Cell (1995) PubMed:7553862

Synaptic vesicles and exocytosis.
Jahn R et al. Annu. Rev. Neurosci. (1994) PubMed:8210174

Differential expression and regulation of multiple dynamins.
Sontag JM et al. J. Biol. Chem. (1994) PubMed:8308025

Dynamin GTPase regulated by protein kinase C phosphorylation in nerve terminals.
Robinson PJ et al. Nature (1993) PubMed:8371759

Molecular cloning of the microtubule-associated mechanochemical enzyme dynamin reveals homology with a new family of GTP-binding proteins.
Obar RA et al. Nature (1990) PubMed:2144893

Access the online factsheet including applicable protocols at https://sysy.com/product/115003 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.