

Dynamin1/2/3

Cat.No. 115-0P; control peptide, 100 µg peptide (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg peptide, lyophilized. For reconstitution add 100 µl H ₂ O to get a 1mg/ml solution in PBS. Then aliquot and store at -20°C to -80°C until use. Control peptides should be stored at -20°C when still lyophilized! For detailed information, see back of the data sheet.
Immunogen	Synthetic peptide corresponding to AA 2 to 17 from rat Dynamin1 (UniProt Id: P21575)
Recommended dilution	Optimal concentrations should be determined by the end-user.
Matching antibodies	115 002, 115 003
Remarks	This control peptide consists of the synthetic peptide (GNRGMEDLIPLVNLQ) that has been used for immunization. It has been tested in preadsorption experiments and blocks efficiently and specifically the corresponding signal in Western blots. The amount of peptide needed for efficient blocking depends on the titer and on the affinity of the antibody to the antigen.

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 General References

Dynamin and its role in membrane fission.
Hinshaw JE
Annual review of cell and developmental biology (2000) 16: 483-519. .

Accessory factors in clathrin-dependent synaptic vesicle endocytosis.
Slepnev VI, De Camilli P
Nature reviews. Neuroscience (2000) 13: 161-72. .

Sequential steps in clathrin-mediated synaptic vesicle endocytosis.
Brodin L, Löw P, Shupliakov O
Current opinion in neurobiology (2000) 103: 312-20. .

Synaptic vesicle biogenesis.
Hannah MJ, Schmidt AA, Huttner WB
Annual review of cell and developmental biology (1999) 15: 733-98. .

The synaptic vesicle cycle: a cascade of protein-protein interactions.
Südhof TC
Nature (1995) 3756533: 645-53. .

Complexins: cytosolic proteins that regulate SNAP receptor function.
McMahon HT, Missler M, Li C, Südhof TC
Cell (1995) 831: 111-9. .

Synaptic vesicles and exocytosis.
Jahn R, Südhof TC
Annual review of neuroscience (1994) 17: 219-46. .

Differential expression and regulation of multiple dynamins.
Sontag JM, Fykse EM, Ushkaryov Y, Liu JP, Robinson PJ, Südhof TC
The Journal of biological chemistry (1994) 2696: 4547-54. .

Dynamin GTPase regulated by protein kinase C phosphorylation in nerve terminals.
Robinson PJ, Sontag JM, Liu JP, Fykse EM, Slaughter C, McMahon H, Südhof TC
Nature (1993) 3656442: 163-6. .

Molecular cloning of the microtubule-associated mechanochemical enzyme dynamin reveals homology with a new family of GTP-binding proteins.
Obar RA, Collins CA, Hammarback JA, Shpetner HS, Vallee RB
Nature (1990) 3476290: 256-61. .

Access the online factsheet including applicable protocols at <https://sysy.com/product/115-0P> 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.