SYSY Antibodies

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p16-Arc

Cat.No. 305 011; Monoclonal mouse antibody, 100 µg purified IgG (lyophilized)

Data Sheet

Reconstitution/ Storage	100 µg purified IgG, lyophilized. Albumin and azide were added for stabilization. For **reconstitution** add 100 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**: 1 : 500 **IHC**: not tested yet **IHC-P**: not tested yet
Clone	323H3
Subtype	IgG2a (κ light chain)
Immunogen	Recombinant protein corresponding to AA 1 to 151 from human p16-Arc (UniProt Id: O15511)
Epitop	AA 19 to 24 from human p16-Arc (UniProt Id: O15511)
Reactivity	Reacts with: human (O15511), rat (Q4KLF8), mouse (Q9CPW4), hamster. Other species not tested yet.
Specificity	K.O. validated PubMed: 37349293

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

Background

Actin polymerization is a necessary event for cell motility. Spontanous actin oligomerization is slow at given monomeric actin concentrations in cells. The **Arp 2/3 complex** which is about 220 kDa in size has turned out to initiate the polymerization of new actin filaments. This complex consists of two actin like proteins Arp2 and Arp3 and five additional proteins: **p16-Arc** (ArpC5), p20-Arc (ArpC4), **p21-Arc** (ArpC3), **p34-Arc** (ArpC2) and p41-Arc (ArpC1). Expression of partial complexes revealed that a heterodimer of p20-Arc and p34-Arc constitutes the core of the complex whereas the remaining subunits are peripherally located.

Selected References for 305 011

Ezrin promotes actin assembly at the phagosome membrane and regulates phago-lysosomal fusion.
Marion S, Hoffmann E, Holzer D, Le Clainche C, Martin M, Sachse M, Ganeva I, Mangeat P, Griffiths G
Traffic (Copenhagen, Denmark) (2011) 124: 421-37. . **WB; tested species: mouse**

Microtubules as platforms for assaying actin polymerization in vivo.
Oelkers JM, Vinzenz M, Nemethova M, Jacob S, Lai FP, Block J, Szczodrak M, Kerkhoff E, Backert S, Schlüter K, Stradal TE, et al.
PloS one (2011) 65: e19931. . **ICC**

Inherited ARPC5 mutations cause an actinopathy impairing cell motility and disrupting cytokine signaling.
Nunes-Santos CJ, Kuehn H, Boast B, Hwang S, Kuhns DB, Stoddard J, Niemela JE, Fink DL, Pittaluga S, Abu-Asab M, Davies JS, et al.
Nature communications (2023) 141: 3708. . **WB; KO verified; tested species: human**

ARPC5 isoforms and their regulation by calcium-calmodulin-N-WASP drive distinct Arp2/3-dependent actin remodeling events in CD4 T cells.
Sadhu L, Tsopoulidis N, Hasanuzzaman M, Laketa V, Way M, Fackler OT
eLife (2023) 12: . . **WB; KD verified; tested species: mouse**

ArpC5 isoforms regulate Arp2/3 complex-dependent protrusion through differential Ena/VASP positioning.
Fäßler F, Javoor MG, Datler J, Döring H, Hofer FW, Dimchev G, Hodirnau VV, Faix J, Rottner K, Schur FKM
Science advances (2023) 93: eadd6495. . **ICC; tested species: mouse**

MICAL2 enhances branched actin network disassembly by oxidizing Arp3B-containing Arp2/3 complexes.
Galloni C, Carra D, Abella JVG, Kjær S, Singaravelu P, Barry DJ, Kogata N, Guérin C, Blanchoin L, Way M
The Journal of cell biology (2021) 2208: . . **WB; tested species: human**

The Arp1/11 minifilament of dynactin primes the endosomal Arp2/3 complex.
Fokin AI, David V, Oguievetskaia K, Derivery E, Stone CE, Cao L, Rocques N, Molinie N, Henriot V, Aumont-Nicaise M, Hinckelmann MV, et al.
Science advances (2021) 73: . . **WB; tested species: mouse**

Loss of MAGEL2 in Prader-Willi syndrome leads to decreased secretory granule and neuropeptide production.
Chen H, Victor AK, Klein J, Tacer KF, Tai DJ, de Esch C, Nuttle A, Temirov J, Burnett LC, Rosenbaum M, Zhang Y, et al.
JCI insight (2020) 517: . . **WB; tested species: human**

Protein kinase Cdelta and calmodulin regulate epidermal growth factor receptor recycling from early endosomes through Arp2/3 complex and cortactin.
Lladó A, Timpson P, Vilà de Muga S, Moretó J, Pol A, Grewal T, Daly RJ, Enrich C, Tebar F
Molecular biology of the cell (2008) 191: 17-29. . **ICC**

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**

Filopodia formation in the absence of functional WAVE- and Arp2/3-complexes.
Steffen A, Faix J, Resch GP, Linkner J, Wehland J, Small JV, Rottner K, Stradal TE
Molecular biology of the cell (2006) 176: 2581-91. . **WB**

Access the online factsheet including applicable protocols at https://sysy.com/product/305011 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.