SYSY Antibodies

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p16-Arc (ARPC5)

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 : 200 up to 1 : 1000 (AP staining) (see remarks) **IP**: not tested yet **ICC**: 1 : 500 **IHC**: not tested yet **IHC-P (FFPE)**: 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
Remarks	**WB**: Due to the small size of this protein, we recommend 12% BIS-TRIS gels with a MES based running buffer.

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 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.