abcam

ab129018

Anti-Arp2 antibody [EPR7979]

Recombinant | RabMAb

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR7979
Purification technique	Affinity purification Protein A
Dissociation constant	1.75×10^{-11} M
Concentration	0.11 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

WB

Tested

Species	Human
Dilution info	1/1000 - 1/10000
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

ICC/IF

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/10 - 1/100

Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information ACTR2

Function	ATP-binding component of the Arp2/3 complex, a multiprotein complex that mediates actin polymerization upon stimulation by nucleation-promoting factor (NPF) (PubMed:9000076). The Arp2/3 complex mediates the formation of branched actin networks in the cytoplasm, providing the force for cell motility (PubMed:9000076). Seems to contact the pointed end of the daughter actin filament (PubMed:9000076). In podocytes, required for the formation of lamellipodia downstream of AVIL and PLCE1 regulation (PubMed:29058690). In addition to its role in the cytoplasmic cytoskeleton, the Arp2/3 complex also promotes actin polymerization in the nucleus, thereby regulating gene transcription and repair of damaged DNA (PubMed:17220302, PubMed:29925947). The Arp2/3 complex promotes homologous recombination (HR) repair in response to DNA damage by promoting nuclear actin polymerization, leading to drive motility of double-strand breaks (DSBs) (PubMed:29925947).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Storage information	Stable for 12 months at -20°C

Notes

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal antibody?
This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	Arp2 also known as actin-related protein 2 is a subunit of the Arp2/3 complex which plays an important role in nucleating actin filaments. This protein facilitates the formation of branched actin networks important for cellular functions. Arp2 has a mass of approximately 44 kDa and is widely expressed across different tissues especially in regions with significant actin cytoskeletal remodeling such as the cortex of cells.
Biological function summary	Arp2 acts as a central component within the Arp2/3 complex which regulates actin polymerization and branching. This complex consists of seven subunits and Arp2 in concert with Arp3 and additional regulatory proteins initiates new actin filament branches from pre-existing ones. As a result it is essential for cellular processes like cell movement phagocytosis and maintaining cell shape by controlling the spatial and temporal organization of actin filaments.
Pathways	The Arp2/3 complex is integral to the actin polymerization pathway and the pathway for cell motility. Arp2 influences the dynamics of filamentous actin interacting with proteins such as Wiskott-Aldrich syndrome protein (WASP) to promote branching. This process affects various cellular activities linked to actin forming connections with the Rho GTPase signaling network which regulates cytoskeletal dynamics and cellular signaling pathways.
Associated diseases and disorders	Disruptions in the function of the Arp2/3 complex have been associated with Wiskott-Aldrich syndrome and cancer metastasis. Wiskott-Aldrich syndrome linked with mutations in the WASP protein shows impaired actin branching capability due to insufficient Arp2/3 complex activity. Additionally aberrant regulation of actin polymerization in cancer cells leads to enhanced invasive properties implicating Arp2 as a potential factor in the pathology of metastatic progression.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

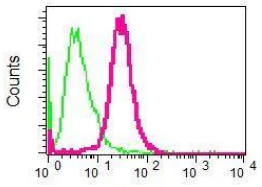
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

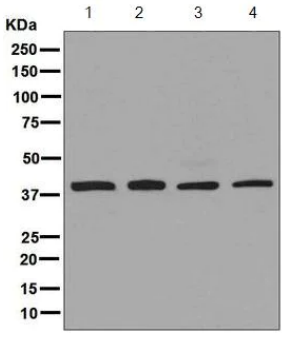
4 product images



Flow Cytometry (Intracellular) - Anti-Arp2 antibody [EPR7979] (ab129018)

Arp2 Flow Cytometry (Intracellular) staining using rabbit Anti-Arp2 antibody

Intracellular flow cytometric analysis of permeabilized MCF-7 cells using ab129018 at 1/10 (red) or a rabbit IgG (negative) (green)



Western blot - Anti-Arp2 antibody [EPR7979] (ab129018)

All lanes:
Western blot - Anti-Arp2 antibody [EPR7979] (ab129018) at 1/1000 dilution

Lane 1:
Jurkat cell lysate at 10 µg

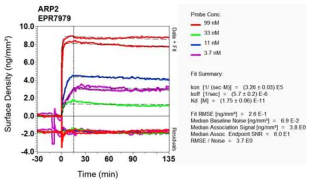
Lane 2:
HUVEC cell lysate at 10 µg

Lane 3:
MCF-7 cell lysate at 10 µg

Lane 4:
HeLa cell lysate at 10 µg

Predicted band size: 45 kDa

Observed band size: 37 kDa



OI-RD Scanning - Anti-Arp2 antibody [EPR7979] (ab129018)

We have systematically measured KD (the equilibrium dissociation constant between the antibody and its antigen), of more than 840 recombinant antibodies to assess not only their individual KD values but also to see the average affinity of antibody. Based on the comparison with published literature values for mouse monoclonal antibodies, Recombinant antibodies appear to be on average 1-2 order of magnitude higher affinity.

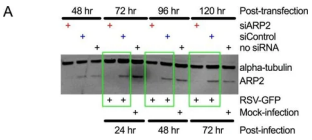


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Western blot - Anti-Arp2 antibody [EPR7979] (ab129018)

Arp2 western blot using anti-Arp2 antibody [EPR7979] ab129018. Publication image and figure legend from Mehedi, M., McCarty, T., et al., 2016, PLoS Pathog, PubMed 27926942.

ab129018 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab129018 please see the product overview.

ARP2 knockdown in human respiratory epithelial A549 cells.(A) Knockdown of ARP2 protein expression. Replicate monolayers of A549 cells were transfected with siARP2, siControl, or no siRNA, as indicated. At 48 hr post-transfection, one set of monolayers was harvested. The others were infected with RSV-GFP (MOI = 1) or mock-infected, and harvested at 24, 48, and 72 hpi, as indicated. The cells were processed for Western blot. ARP2 protein was detected using a primary rabbit mAb and an anti-rabbit IgG IRDye800 secondary Ab. Alpha-tubulin, as a loading control, was detected with a primary mouse mAb and an anti-mouse IgG IRDye680 secondary Ab. Bound antibodies were visualized by infrared fluorescence. One representative of four independent experiments is shown. (B) Knockdown of ARP2 mRNA expression. A549 cells were transfected with siARP2, siControl, or no siRNA, as indicated. Sets of monolayers were harvested 24 and 48 hr post-transfection. The remaining monolayers were infected with RSV-GFP (MOI = 1) or mock-infected, and harvested at 24, 48, and 72 hpi, as indicated. Total cell-associated ARP2 mRNA was quantified by real-time PCR using a TaqMan assay for ARP2. 18S ribosomal RNA was used as an endogenous control for normalization of each reaction, and the values of ARP2 expression are shown as fold-change relative to the no-siRNA control 24 hr post-transfection. Each sample was tested in quadruplicate by TaqMan assay and the averages are presented. (C) ARP2 knockdown did not reduce cell viability. A549 cells were transfected with siARP2, siControl or no siRNA for 48 hr. Cell viability was compared using alamarBlue and expressed relative to the no-siRNA control. Data from three independent experiments, each done in triplicate were combined for analysis. Error bars show standard deviation (SD).

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