

p34-ARC (F-5): sc-515754

BACKGROUND

Actin polymerization is required for a variety of cell functions. Cells trigger Actin polymerization through either the *de novo* nucleation of filaments from monomeric Actin, the severing of existing filaments to create uncapped barbed ends, or the uncapping existing barbed ends. The nucleation of Actin is a rate-limiting and unfavorable reaction in Actin polymerization and therefore requires the involvement of the Arp2/3 complex, which helps create new filaments and promotes the end-to-side cross-linking of Actin filaments into the branching meshwork. The Arp2/3 complex consists of the Actin-related proteins Arp2 and Arp3, as well as p41-Arc, p34-ARC, p21-Arc, p20-Arc and p16-Arc. The Arp2/3 complex promotes Actin nucleation by binding the pointed end of Actin filaments, or by associating with the side of an existing filament, and nucleates growth in the barbed direction. In addition, the Arp2/3 complex mediates Actin cytoskeletal outgrowths that are regulated by the Rho family of small GTPases. In response to GTP-binding Cdc42, the Arp2/3 complex binds the Cdc42 substrates, namely the WASP proteins, and initiates the formation of lamellipodia and filopodia.

REFERENCES

- Mullins, R.D., et al. 1998. The interaction of Arp2/3 complex with Actin: nucleation, high affinity pointed end capping, and formation of branching networks of filaments. *Proc. Natl. Acad. Sci. USA* 95: 6181-6186.
- Bailly, M., et al. 1999. Relationship between Arp2/3 complex and the barbed ends of Actin filaments at the leading edge of carcinoma cells after epidermal growth factor stimulation. *J. Cell Biol.* 145: 331-345.
- Higgs, H.N. and Pollard, T.D. 1999. Regulation of Actin polymerization by Arp2/3 complex and WASp/Scar proteins. *J. Biol. Chem.* 274: 32531-32534.

CHROMOSOMAL LOCATION

Genetic locus: ARPC2 (human) mapping to 2q35; Arpc2 (mouse) mapping to 1 C3.

SOURCE

p34-ARC (F-5) is a mouse monoclonal antibody raised against amino acids 1-300 representing full length p34-ARC of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p34-ARC (F-5) is available conjugated to agarose (sc-515754 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515754 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515754 PE), fluorescein (sc-515754 FITC), Alexa Fluor® 488 (sc-515754 AF488), Alexa Fluor® 546 (sc-515754 AF546), Alexa Fluor® 594 (sc-515754 AF594) or Alexa Fluor® 647 (sc-515754 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515754 AF680) or Alexa Fluor® 790 (sc-515754 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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APPLICATIONS

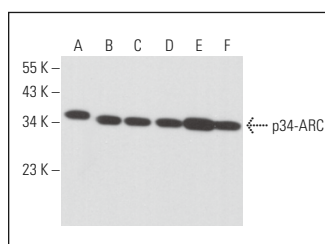
p34-ARC (F-5) is recommended for detection of p34-ARC of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for p34-ARC siRNA (h): sc-106767, p34-ARC siRNA (m): sc-155924, p34-ARC shRNA Plasmid (h): sc-106767-SH, p34-ARC shRNA Plasmid (m): sc-155924-SH, p34-ARC shRNA (h) Lentiviral Particles: sc-106767-V and p34-ARC shRNA (m) Lentiviral Particles: sc-155924-V.

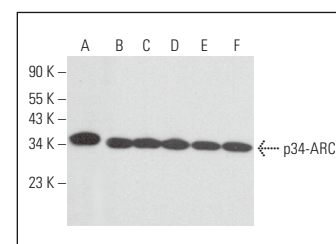
Molecular Weight of p34-ARC: 34 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, HL-60 whole cell lysate: sc-2209 or HT-1080 whole cell lysate: sc-364183.

DATA



p34-ARC (F-5): sc-515754. Western blot analysis of p34-ARC expression in HeLa (A), PC-3 (B), Jurkat (C), HUV-EC-C (D), HL-60 (E) and HT-1080 (F) whole cell lysates.



p34-ARC (F-5): sc-515754. Western blot analysis of p34-ARC expression in HeLa (A), ALL-SIL (B), WI-38 (C), U-87 MG (D), C2C12 (E) and RAW 264.7 (F) whole cell lysates.

SELECT PRODUCT CITATIONS

- Mohan, A.S., et al. 2019. Enhanced dendritic Actin network formation in extended lamellipodia drives proliferation in growth-challenged Rac1^{P29S} melanoma cells. *Dev. Cell* 49: 444-460.
- Choi, J., et al. 2019. Pimozide suppresses cancer cell migration and tumor metastasis through binding to ARPC2, a subunit of the Arp2/3 complex. *Cancer Sci.* 110: 3788-3801.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.