SANTA CRUZ BIOTECHNOLOGY, INC.

p34-ARC (14X-07): sc-100923

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 of 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

1. 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.
2. 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.
3. Svitkina, T.M. and Borisy, G.G. 1999. Arp2/3 complex and Actin depolymerizing factor/Cofilin in dendritic organization and treadmilling of Actin filament array in lamellipodia. J. Cell Biol. 145: 1009-1026.
4. Egile, C., et al. 1999. Activation of the Cdc42 effector N-WASP by the *Shigella flexneri* IcsA protein promotes Actin nucleation by Arp2/3 complex and bacterial Actin-based motility. J. Cell Biol. 146: 1319-1332.

CHROMOSOMAL LOCATION

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

SOURCE

p34-ARC (14X-07) is a mouse monoclonal antibody raised against recombinant p34-ARC of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

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.

APPLICATIONS

p34-ARC (14X-07) is recommended for detection of p34-ARC of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

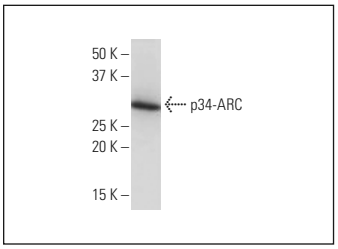
Molecular Weight of p34-ARC: 43/50 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200 or mouse kidney extract: sc-2255.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



p34-ARC (14X-07): sc-100923. Western blot analysis of p34-ARC expression in HeLa whole cell lysate.

PROTOCOLS

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