SANTA CRUZ BIOTECHNOLOGY, INC.

p34-ARC (C-13): sc-32196

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The Power to Question

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

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.
5. 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.
6. Carlier, M.F., et al. 2000. GRB2 Links signalling to actin assembly by enhancing interaction of neural Wiskott-Aldrich syndrome protein (N-WASP) with Actin-related-protein (Arp2/3) complex. J. Biol. Chem. 275: 21946-21952.

CHROMOSOMAL LOCATION

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

SOURCE

p34-ARC (C-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of p34-ARC of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-32196 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p34-ARC (C-13) 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), 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).

p34-ARC (C-13) is also recommended for detection of p34-ARC in additional species, including equine, canine, bovine and porcine.

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 or mouse kidney extract: sc-2255.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

1. Liao, G., et al. 2011. Mis-localization of Arp2 mRNA impairs persistence of directional cell migration. Exp. Cell Res. 317: 812-822.

RESEARCH USE

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