SANTA CRUZ BIOTECHNOLOGY, INC.

Arp2 (yN-16): sc-11968



BACKGROUND

The generation of cortical Actin filaments is necessary for processes such as cell motility and cell polarization. Actin-related proteins Arp2 and Arp3 are essential components of the yeast Actin cytoskeleton that form a complex, which localizes to cortical Actin patches that are required for polarized cell growth. The Arp2/3 complex is a key factor in the nucleation of Actin filaments in diverse eukaryotic organisms. The highly conserved seven-polypeptide Arp2/3 complex nucleates the assembly of Actin filaments with free barbed ends and also binds the sides of Actin filaments to create a branched network. Barbed-end branching by Arp2/3 quantitatively accounts for polymerization kinetics and for the length correlation of the branches of filaments. The functional antagonism between the Arp2/3 complex and capping proteins is essential in the maintenance of the steady state of Actin assembly and Actin-based motility.

REFERENCES

- Tobacman, L.S. and Korn, E.D. 1983. The kinetics of Actin nucleation and polymerization. J. Biol. Chem. 258: 3207-3214.
- Cooper, J.A., et al. 1983. Kinetic evidence for a monomer activation step in Actin polymerization. Biochemistry 22: 2193-2202.
- Schroer, T.A., et al. 1994. Actin-related protein nomenclature and classification. J. Cell Biol. 127: 1777-1778.
- McCollum, D., et al. 1996. The Schizosaccharomyces pombe Actin-related protein, Arp3, is a component of the cortical Actin cytoskeleton and interacts with profilin. EMBO J. 15: 6438-6346.
- Peterson, C.L., et al. 1998. Subunits of the yeast SWI/SNF complex are members of the Actin-related protein (ARP) family. J. Biol. Chem. 273: 23641-23644.
- Cairns, B.R., et al. 1998. Two Actin-related proteins are shared functional components of the chromatin-remodeling complexes RSC and SWI/SNF. Mol. Cell 2: 639-651.
- Morrell, J.L., et al. 1999. A mutant of Arp2p causes partial disassembly of the Arp2/3 complex and loss of cortical Actin function in fission yeast. Mol. Biol. Cell 10: 4201-4215.
- Cooper, J.A. and Schafer, D.A. 2000. Control of Actin assembly and disassembly at filament ends. Curr. Opin. Cell Biol. 12: 97-103.
- Jay, P., et al. 2000. ARP3β, the gene encoding a new human Actin-related protein, is alternatively spliced and predominantly expressed in brain neuronal cells. Eur. J. Biochem. 267: 2921-2928.

SOURCE

Arp2 (yN-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Arp2 of *Saccharomyces cerevisiae* 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 lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11968 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Arp2 (yN-16) is recommended for detection of Arp2 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

Molecular Weight of Arp2: 43 kDa.

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-2033 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

- Rogers, S.L., et al. 2003. Molecular requirements for actin-based lamella formation in *Drosophila* S2 cells. J. Cell Biol. 162: 1079-1088.
- Cai, L., et al. 2007. F-actin binding is essential for coronin 1B function *in vivo*. J. Cell Sci. 120: 1779-1790.
- Zhang, X., et al. 2012. Asiatic acid protects primary neurons against C2-ceramide-induced apoptosis. Eur. J. Pharmacol. 679: 51-59.

RESEARCH USE

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

PROTOCOLS

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