

Arp3 (yG-18): sc-11973

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 Arp 2/3 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

1. Tobacman, L.S. and Korn, E.D. 1983. The kinetics of Actin nucleation and polymerization. *J. Biol. Chem.* 258: 3207-3214.
2. Cooper, J.A., et al. 1983. Kinetic evidence for a monomer activation step in Actin polymerization. *Biochemistry* 22: 2193-2202.
3. Schroer, T.A., et al. 1994. Actin-related protein nomenclature and classification. *J. Cell Biol.* 127: 1777-1778.
4. 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.
5. 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.
6. 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.
7. 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.

SOURCE

Arp3 (yG-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Arp3 of *Saccharomyces cerevisiae* origin.

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-11973 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

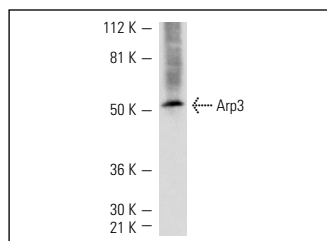
Arp3 (yG-18) is recommended for detection of Arp3 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 µg per 100–500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Arp3: 53 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-2333 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



Arp3 (yG-18): sc-11973. Western blot analysis of Arp3 expression in yeast extract.

SELECT PRODUCT CITATIONS

1. Pan, F., et al. 2004. ArpC1/Arc40 mediates the interaction of the Actin-related protein 2 and 3 complex with Wiskott-Aldrich syndrome protein family activators. *J. Biol. Chem.* 279: 54629-54636.
2. Hetrick, B., et al. 2013. Small molecules CK-666 and CK-869 inhibit actin-related protein 2/3 complex by blocking an activating conformational change. *Chem. Biol.* 20: 701-712.

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.



Try **Arp3 (A-10): sc-376625**, our highly recommended monoclonal alternative to Arp3 (yG-18).