

Twinfilin-1 (C-19): sc-51241

BACKGROUND

Twinfilin is a highly conserved Actin monomer-binding protein that regulates cytoskeletal dynamics in organisms from yeast to mammals. Twinfilin is composed of two ADF-homology domains; it coordinates filament severing and monomer sequestering at sites of rapid actin turnover, thus preventing assembly of the monomer into filaments. Twinfilin-1 is the mammalian homolog and is expressed in embryos and in most adult non-muscle cell types. Twinfilin-1 binds ADP-G-Actin and efficiently halts actin filament assembly by inhibiting the nucleotide exchange on actin monomers and directly interacting with the capping protein. Phosphatidylinositol (4,5)-bisphosphate inhibits the activity of Twinfilin-1 and Rac1 and Cdc42, two small GTPases, induce the redistribution of Twinfilin-1 to membrane ruffles and cell-cell contacts, respectively.

REFERENCES

- Goode, B.L., et al. 1998. Regulation of the cortical actin cytoskeleton in budding yeast by Twinfilin, a ubiquitous Actin monomer-sequestering protein. *J. Cell Biol.* 142: 723-733.
- Vartiainen, M., et al. 2000. Mouse A6/Twinfilin is an actin monomer-binding protein that localizes to the regions of rapid actin dynamics. *Mol. Cell Biol.* 20: 1772-1783.
- Palmgren, S., et al. 2001. Inter activity and localization of yeast Twinfilin. *J. Cell Biol.* 155: 251-260.
- Wahlström, G., et al. 2001. Twinfilin is required for Actin-dependent developmental processes in *Drosophila*. *J. Cell Biol.* 155: 787-796.
- Palmgren, S., et al. 2002. Twinfilin, a molecular mailman for actin monomers. *J. Cell Sci.* 115: 881-886.
- Vartiainen, M.K., et al. 2003. Mammals have two Twinfilin isoforms whose subcellular localizations and tissue distributions are differentially regulated. *J. Biol. Chem.* 278: 34347-34355.
- Falck, S., et al. 2004. Biological role and structural mechanism of Twinfilin-capping protein interaction. *EMBO J.* 23: 3010-3019.

CHROMOSOMAL LOCATION

Genetic locus: PTK9 (human) mapping to 12q12; Ptk9 (mouse) mapping to 15 E3.

SOURCE

Twinfilin-1 (C-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Twinfilin-1 of human 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-51241 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

Twinfilin-1 (C-19) is recommended for detection of Twinfilin-1 of mouse, rat and human 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)], 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).

Twinfilin-1 (C-19) is also recommended for detection of Twinfilin-1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Twinfilin-1 siRNA (h): sc-61738, Twinfilin-1 siRNA (m): sc-61739, Twinfilin-1 shRNA Plasmid (h): sc-61738-SH, Twinfilin-1 shRNA Plasmid (m): sc-61739-SH, Twinfilin-1 shRNA (h) Lentiviral Particles: sc-61738-V and Twinfilin-1 shRNA (m) Lentiviral Particles: sc-61739-V.

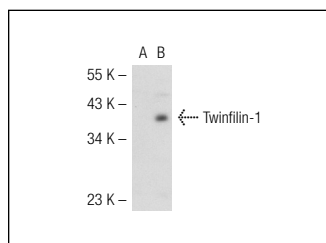
Molecular Weight of Twinfilin-1: 40 kDa.

Positive Controls: Twinfilin-1 (m): 293T Lysate: sc-124373, HeLa whole cell lysate: sc-2200 or HeLa nuclear extract: sc-2120.

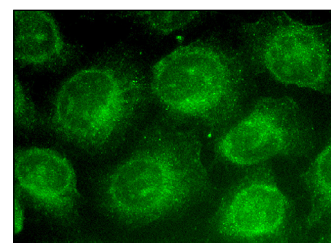
RECOMMENDED SECONDARY REAGENTS

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). 3) 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.

DATA



Twinfilin-1 (C-19): sc-51241. Western blot analysis of Twinfilin-1 expression in non-transfected: sc-117752 (A) and mouse Twinfilin-1 transfected: sc-124373 (B) 293T whole cell lysates.



Twinfilin-1 (C-19): sc-51241. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

STORAGE

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

PROTOCOLS

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