

p-Cofilin 1 (hSer 3)-R: sc-12912-R

BACKGROUND

LIM-kinase 1 (LIMK-1) is a serine/threonine kinase containing LIM and PDZ domains. LIMK-1 phosphorylates Cofilin on Ser 3 both *in vitro* and *in vivo*. Cofilin is an actin-depolymerizing factor and regulates actin cytoskeletal reorganization. Phosphorylation of Cofilin on Ser 3 is known to block these activities. Phosphorylation of ADF/Cofilin proteins by LIMK-1 or other enzymes will tend to stabilize actin filaments by inhibiting the ability of these proteins to sever and depolymerize older actin filaments that have hydrolyzed their bound ATP and dissociated the phosphate. The rapid turnover of actin filaments and the tertiary meshwork formation are regulated by a variety of actin-binding proteins. Cofilin, therefore, is a terminal effector of signaling cascades that evokes actin cytoskeletal rearrangement.

CHROMOSOMAL LOCATION

Genetic locus: CFL1 (human) mapping to 11q13.1; Cfl1 (mouse) mapping to 19 A.

SOURCE

p-Cofilin 1 (hSer 3)-R is a rabbit polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 3 phosphorylated Cofilin 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-12912 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Cofilin 1 (hSer 3)-R is recommended for detection of Ser 3 phosphorylated Cofilin 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).

p-Cofilin 1 (hSer 3)-R is also recommended for detection of correspondingly phosphorylated Cofilin 1 in additional species, including bovine and porcine.

Suitable for use as control antibody for Cofilin 1 siRNA (h): sc-35078, Cofilin 1 siRNA (m): sc-35079, Cofilin 1 shRNA Plasmid (h): sc-35078-SH, Cofilin 1 shRNA Plasmid (m): sc-35079-SH, Cofilin 1 shRNA (h) Lentiviral Particles: sc-35078-V and Cofilin 1 shRNA (m) Lentiviral Particles: sc-35079-V.

Molecular Weight of p-Cofilin: 19-21 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, HeLa + hydrogen peroxide cell lysate: sc-24681 or L6 whole cell lysate: sc-364196.

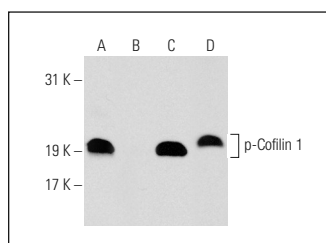
STORAGE

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

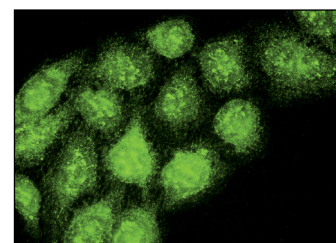
RESEARCH USE

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

DATA



Western blot analysis of Cofilin 1 phosphorylation in untreated (A,C) and lambda protein phosphatase (sc-200312A) treated (B,D) NIH/3T3 whole cell lysates. Antibodies tested include p-Cofilin 1 (hSer 3)-R: sc-12912-R (A,B) and Cofilin 1 (5): sc-53934 (C,D).



p-Cofilin 1 (hSer 3)-R: sc-12912-R. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization.

SELECT PRODUCT CITATIONS

- Meng, Y., et al. 2003. Synaptic transmission and plasticity in the absence of AMPA glutamate receptor GluR-2 and GluR-3. *Neuron* 39: 163-176.
- Vogel, S., et al. 2010. Prolyl hydroxylase domain (PHD) 2 affects cell migration and F-actin formation via RhoA/rho-associated kinase-dependent cofilin phosphorylation. *J. Biol. Chem.* 285: 33756-33763.
- Jiang, X., et al. 2010. HGAL, a germinal center specific protein, decreases lymphoma cell motility by modulation of the RhoA signaling pathway. *Blood* 116: 5217-5227.
- Talens-Visconti, R., et al. 2010. RhoE stimulates neurite-like outgrowth in PC12 cells through inhibition of the RhoA/ROCK-I signalling. *J. Neurochem.* 112: 1074-1087.
- Makrodouli, E., et al. 2011. BRAF and RAS oncogenes regulate Rho GTPase pathways to mediate migration and invasion properties in human colon cancer cells: a comparative study. *Mol. Cancer* 10: 118.
- Peris, B., et al. 2012. Neuronal polarization is impaired in mice lacking RhoE expression. *J. Neurochem.* 121: 903-914.
- Zhang, X., et al. 2013. Interactome analysis reveals that C1QBP (complement component 1, q subcomponent binding protein) is associated with cancer cell chemotaxis and metastasis. *Mol. Cell. Proteomics MCP.* 12: 3199-3209.
- Chevalier, B., et al. 2015. miR-34/449 control apical actin network formation during multiciliogenesis through small GTPase pathways. *Nat. Commun.* 6: 8386.

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Try **p-Cofilin 1 (E-5): sc-271921** or **p-Cofilin 1 (H-2): sc-271923**, our highly recommended monoclonal alternatives to p-Cofilin 1 (hSer 3).