

p-Cofilin 1 (F-11): sc-365882

BACKGROUND

LIM-kinase 1 (LIMK-1) is a serine/threonine kinase containing LIM and PDZ domains. LIMK1 phosphorylates Cofilin at Serine 3 both *in vitro* and *in vivo*. Cofilin is an Actin-depolymerizing factor and regulates Actin cytoskeletal reorganization. Phosphorylation of Cofilin on Serine 3 is known to block these activities. Phosphorylation of ADF/Cofilin proteins by LIMK1 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.

REFERENCES

1. Yang, N., et al. 1998. Cofilin phosphorylation by LIM-kinase 1 and its role in Rac-mediated Actin reorganization. *Nature* 393: 809-812.
2. Sumi, T., et al. 1999. Cofilin phosphorylation and Actin cytoskeletal dynamics regulated by Rho- and Cdc42-activated LIM-kinase 2. *J. Cell Biol.* 147: 1519-1532.
3. Maekawa, M., et al. 1999. Signaling from Rho to the Actin cytoskeleton through protein kinases ROCK and LIM-kinase. *Science* 285: 895-898.

CHROMOSOMAL LOCATION

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

SOURCE

p-Cofilin 1 (F-11) is a mouse monoclonal antibody epitope corresponding a short amino acid sequence containing Ser 3 phosphorylated Cofilin 1 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-Cofilin 1 (F-11) is available conjugated to agarose (sc-365882 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-365882 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365882 PE), fluorescein (sc-365882 FITC), Alexa Fluor® 488 (sc-365882 AF488), Alexa Fluor® 546 (sc-365882 AF546), Alexa Fluor® 594 (sc-365882 AF594) or Alexa Fluor® 647 (sc-365882 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365882 AF680) or Alexa Fluor® 790 (sc-365882 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365882 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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RESEARCH USE

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

APPLICATIONS

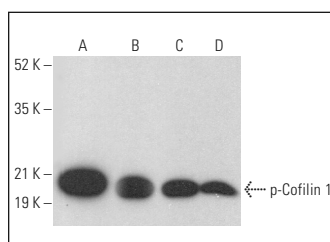
p-Cofilin 1 (F-11) is recommended for detection of Ser 3 phosphorylated Cofilin 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Cofilin 1 siRNA (h): sc-35078, Cofilin 1 siRNA (m2): sc-270324, Cofilin 1 shRNA Plasmid (h): sc-35078-SH, Cofilin 1 shRNA Plasmid (m2): sc-270324-SH, Cofilin 1 shRNA (h) Lentiviral Particles: sc-35078-V and Cofilin 1 shRNA (m2) Lentiviral Particles: sc-270324-V.

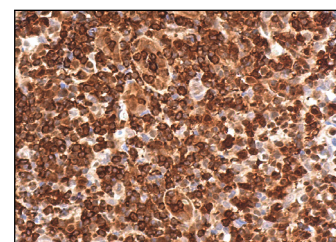
Molecular Weight of p-Cofilin 1: 19-21 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, c4 whole cell lysate: sc-364186 or A-10 cell lysate: sc-3806.

DATA



p-Cofilin 1 (F-11): sc-365882. Western blot analysis of Cofilin 1 phosphorylation in K-562 (A), c4 (B), A-10 (C) and C6 (D) whole cell lysates.



p-Cofilin 1 (F-11): sc-365882. Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic, membrane and nuclear staining of cells in germinal center.

SELECT PRODUCT CITATIONS

1. Yu, Q., et al. 2018. Inhibition of human prostate smooth muscle contraction by the LIM kinase inhibitors, SR7826 and LIMKi3. *Br. J. Pharmacol.* 175: 2077-2096.
2. Förstner, P., et al. 2020. Interference of neuronal activity-mediated gene expression through serum response factor deletion enhances mortality and hyperactivity after traumatic brain injury. *FASEB J.* 34: 3855-3873.
3. Li, X., et al. 2023. Involvement of paired immunoglobulin-like receptor B in cognitive dysfunction through hippocampal-dependent synaptic plasticity impairments in mice subjected to chronic sleep restriction. *Mol. Neurobiol.* 60: 1132-1149.
4. Yang, X., et al. 2023. The pseudokinase NRBP1 activates Rac1/Cdc42 via P-Rex1 to drive oncogenic signalling in triple-negative breast cancer. *Oncogene* 42: 833-847.

STORAGE

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