# SANTA CRUZ BIOTECHNOLOGY, INC.

# 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 re-organization. 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 hydro-lyzed 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.
- 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  $\mu g$  lgG\_{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  $\mu$ g/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365882 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365882 PE), fluorescein (sc-365882 FITC), Alexa Fluor<sup>®</sup> 488 (sc-365882 AF488), Alexa Fluor<sup>®</sup> 546 (sc-365882 AF546), Alexa Fluor<sup>®</sup> 594 (sc-365882 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-365882 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-365882 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-365882 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365882 P, (100  $\mu$ g 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

- 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.
- 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.
- 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.
- 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.