SANTA CRUZ BIOTECHNOLOGY, INC.

p-Cofilin 1 (H-2): sc-271923

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. Maekawa, M., et al. 1999. Signaling from Rho to the Actin cytoskeleton through protein kinases ROCK and LIM-kinase. Science 285: 895-898.
3. 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Cofilin 1 (H-2) is a mouse monoclonal antibody raised against a short amino acid sequence containing Ser 3 phosphorylated Cofilin 1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-Cofilin 1 (H-2) is available conjugated to agarose (sc-271923 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-271923 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271923 PE), fluorescein (sc-271923 FITC), Alexa Fluor® 488 (sc-271923 AF488), Alexa Fluor® 546 (sc-271923 AF546), Alexa Fluor® 594 (sc-271923 AF594) or Alexa Fluor® 647 (sc-271923 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-271923 AF680) or Alexa Fluor® 790 (sc-271923 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-271923 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

p-Cofilin 1 (H-2) 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).

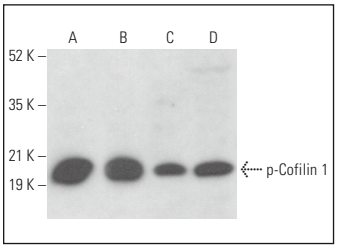
p-Cofilin 1 (H-2) is also recommended for detection of correspondingly phosphorylated Cofilin 1 in additional species, including bovine and porcine.

Suitable for use as control antibody for Cofilin 1 siRNA (h): sc-35078, Cofilin 1 siRNA (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.

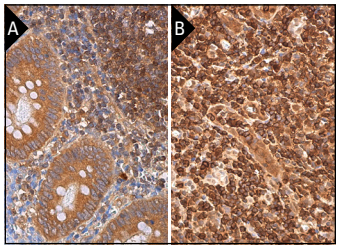
Molecular Weight of p-Cofilin 1: 19-21 kDa.

Positive Controls: K-562 whole cell lysate: sc-2203, c4 whole cell lysate: sc-364186 or C6 whole cell lysate: sc-364373.

DATA



p-Cofilin 1 (H-2): sc-271923. Western blot analysis of Cofilin 1 phosphorylation in K-562 (**A**), c4 (**B**), C6 (**C**) and A-10 (**D**) whole cell lysates.



p-Cofilin 1 (H-2): sc-271923. Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and cytoplasmic and nuclear staining of lymphoid cells (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic, membrane and nuclear staining of cells in germinal center (**B**).

SELECT PRODUCT CITATIONS

1. Al-Ali, H., et al. 2013. Chemical interrogation of the neuronal kinome using a primary cell-based screening assay. ACS Chem. Biol. 8: 1027-1036.
2. Ishii, K., et al. 2022. Reelin regulates the migration of late-born hippocampal CA1 neurons via cofilin phosphorylation. Mol. Cell. Neurosci. 124: 103794.
3. Hwang, J., et al. 2023. A novel role for DOC2B in ameliorating palmitate-induced glucose uptake dysfunction in skeletal muscle cells via a mechanism involving β-AR agonism and cofilin. Int. J. Mol. Sci. 25: 137.
4. Iibushi, J., et al. 2024. ATG9B regulates bacterial internalization via Actin rearrangement. iScience 27: 109623.

RESEARCH USE

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