

p-Cofilin 1 (E-5): sc-271921

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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Cofilin 1 (E-5) 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 IgM kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-271921 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

p-Cofilin 1 (E-5) 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 (E-5) 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: Caco-2 cell lysate: sc-2262, c4 whole cell lysate: sc-364186 or Jurkat whole cell lysate: sc-2204.

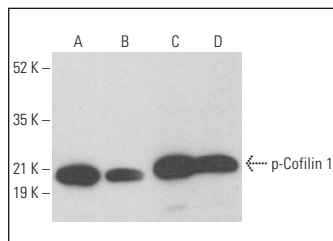
RESEARCH USE

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

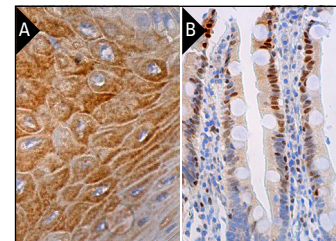
STORAGE

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

DATA



p-Cofilin 1 (E-5): sc-271921. Western blot analysis of Cofilin 1 phosphorylation in Jurkat (A), Caco-2 (B), c4 (C) and A-10 (D) whole cell lysates.



p-Cofilin 1 (E-5): sc-271921. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing nuclear staining of glandular cells (B).

SELECT PRODUCT CITATIONS

- Kim, T.H. and Cho, S.G. 2017. Kisspeptin inhibits cancer growth and metastasis via activation of EIF2AK2. *Mol. Med. Rep.* 16: 7585-7590.
- Martiskainen, H., et al. 2017. DHCR24 exerts neuroprotection upon inflammation-induced neuronal death. *J. Neuroinflammation* 14: 215.
- Islam, S.M.A., et al. 2019. The modulation of Actin dynamics via atypical protein kinase-C activated Cofilin regulates metastasis of colorectal cancer cells. *Cell Adh. Migr.* 13: 106-120.
- Flores, L.R., et al. 2019. Lifeact-GFP alters F-Actin organization, cellular morphology and biophysical behaviour. *Sci. Rep.* 9: 3241.
- Wang, S., et al. 2019. Caveolin-1 phosphorylation is essential for axonal growth of human neurons derived from iPSCs. *Front. Cell. Neurosci.* 13: 324.
- Cheng, Y. and Shen, P. 2020. miR-335 acts as a tumor suppressor and enhances ionizing radiation-induced tumor regression by targeting ROCK1. *Front. Oncol.* 10: 278.
- Huber, N., et al. 2021. C9orf72 hexanucleotide repeat expansion leads to altered neuronal and dendritic spine morphology and synaptic dysfunction. *Neurobiol. Dis.* 162: 105584.
- Park, M., et al. 2021. Circulating small extracellular vesicles activate TYRO3 to drive cancer metastasis and chemoresistance. *Cancer Res.* 81: 3539-3553.
- Yadav, R., et al. 2022. Effect of GNE mutations on cytoskeletal network proteins: potential gateway to understand pathomechanism of GNEM. *Neuromolecular Med.* 24: 452-468.

PROTOCOLS

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