

Cofilin 1 (5): sc-53934

BACKGROUND

Cofilin is ubiquitously expressed in eukaryotic cells where it binds to Actin, thereby regulating the rapid cycling of Actin assembly and disassembly, essential for cellular viability. Cofilin is a low molecular weight protein that binds to filamentous F-Actin by bridging two longitudinally-associated Actin subunits, changing the F-Actin filament twist. This process is allowed by the dephosphorylation of Cofilin Ser 3 by factors like opsonized zymosan. LIM kinase 1 (LIMK-1), a serine kinase, phosphorylates Cofilin and renders it unable to bind and depolymerize F-Actin.

REFERENCES

- Moriyama, K., et al. 1996. Phosphorylation of Ser 3 of Cofilin regulates its essential function on Actin. *Genes Cells* 1: 73-86.
- Yahara, I., et al. 1996. A role of Cofilin/destrin in reorganization of Actin cytoskeleton in response to stresses and cell stimuli. *Cell Struct. Funct.* 21: 421-424.

CHROMOSOMAL LOCATION

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

SOURCE

Cofilin 1 (5) is a mouse monoclonal antibody raised against full length Cofilin 1 of human 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.

Cofilin 1 (5) is available conjugated to either Alexa Fluor[®] 546 (sc-53934 AF546) or Alexa Fluor[®] 594 (sc-53934 AF594), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-53934 AF680) or Alexa Fluor[®] 790 (sc-53934 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cofilin 1 (5) is recommended for detection of 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), 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.

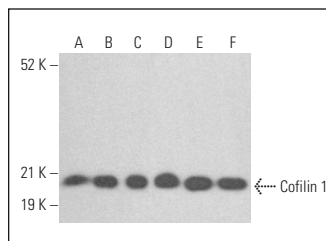
Molecular Weight of Cofilin 1: 19-21 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, MCF7 whole cell lysate: sc-2206 or NIH/3T3 whole cell lysate: sc-2210.

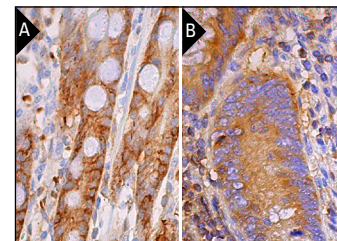
STORAGE

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

DATA



Cofilin 1 (5): sc-53934. Western blot analysis of Cofilin 1 expression in NIH/3T3 (A), MCF7 (B), HEK293 (C), Caco-2 (D), Raji (E) and A-431 (F) whole cell lysates.



Cofilin 1 (5): sc-53934. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing cytoplasmic and membrane staining of glandular cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human appendix tissue showing cytoplasmic staining of glandular cells and lymphoid cells (B).

SELECT PRODUCT CITATIONS

- Xu, Y.L., et al. 2010. Silencing of Cofilin-1 gene attenuates biological behaviours of stromal cells derived from eutopic endometria of women with endometriosis. *Hum. Reprod.* 25: 2480-2488.
- Jiang, W., et al. 2013. Proteomic analysis of protein expression profiles during hyperthermia-induced apoptosis in Tca8113 cells. *Oncol. Lett.* 6: 135-143.
- Xiao, P., et al. 2016. Anticancer effect of docetaxel induces apoptosis of prostate cancer via the cofilin-1 and paxillin signaling pathway. *Mol. Med. Rep.* 13: 4079-4084.
- He, X., et al. 2017. Cucurbitacin E induces apoptosis of human prostate cancer cells via Cofilin-1 and mTORC1. *Oncol. Lett.* 13: 4905-4910.
- Han, F., et al. 2017. Novel derivative of Paeonol, Paeononilatie sodium, alleviates behavioral damage and hippocampal dendritic injury in Alzheimer's disease concurrent with Cofilin1/phosphorylated-Cofilin1 and Rac1/Cdc42 alterations in rats. *PLoS ONE* 12: e0185102.
- Sun, X., et al. 2018. Tumor-extrinsic discoidin domain receptor 1 promotes mammary tumor growth by regulating adipose stromal interleukin 6 production in mice. *J. Biol. Chem.* 293: 2841-2849.
- 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.
- Bi, B., et al. 2019. Quantitative proteomic analysis reveals impaired axonal guidance signaling in human postmortem brain tissues of chronic traumatic encephalopathy. *Exp. Neurobiol.* 28: 362-375.

RESEARCH USE

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

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