SANTA CRUZ BIOTECHNOLOGY, INC.

Cofilin (E-8): sc-376476

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 such as opsonized zymosan. Lim kinase 1, a serine kinase, phosphorylates Cofilin and renders it unable to bind and depolymerise F-Actin.

REFERENCES

1. Moriyama, K., et al. 1996. Phosphorylation of Ser-3 of Cofilin regulates its essential function on Actin. Genes Cells 1: 73-86.
2. 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, CFL2 (human) mapping to 14q13.1; Cfl1 (mouse) mapping to 19 A, Cfl2 (mouse) mapping to 12 C1.

SOURCE

Cofilin (E-8) is a mouse monoclonal antibody raised against amino acids 1-166 representing full length 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.

Cofilin (E-8) is available conjugated to agarose (sc-376476 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376476 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376476 PE), fluorescein (sc-376476 FITC), Alexa Fluor® 488 (sc-376476 AF488), Alexa Fluor® 546 (sc-376476 AF546), Alexa Fluor® 594 (sc-376476 AF594) or Alexa Fluor® 647 (sc-376476 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376476 AF680) or Alexa Fluor® 790 (sc-376476 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

Cofilin (E-8) is recommended for detection of Cofilin 1 and Cofilin 2 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).

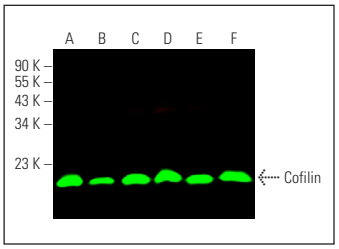
Molecular Weight of Cofilin: 19-21 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, K-562 whole cell lysate: sc-2203 or Jurkat whole cell lysate: sc-2204.

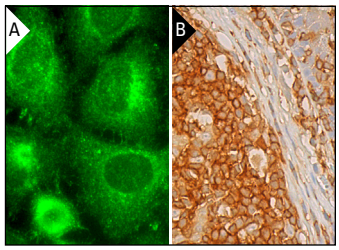
STORAGE

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

DATA



Cofilin (E-8) Alexa Fluor® 680: sc-376476 AF680. Direct near-infrared western blot analysis of Cofilin expression in NIH/3T3 (**A**), HeLa (**B**), Jurkat (**C**), K-562 (**D**) and SK-N-MC (**E**) whole cell lysates and rat thymus tissue extract (**F**). Blocked with UltraCruz® Blocking Reagent: sc-516214.



Cofilin (E-8): sc-376476. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Cofilin (E-8) HRP: sc-376476 HRP. Direct Immunoperoxidase staining of formalin fixed, paraffin-embedded human tonsil tissue showing cytoplasmic and membrane staining of cells in germinal center and cells in non-germinal center, and cytoplasmic staining of squamous epithelial cells. Blocked with 0.25X UltraCruz® Blocking Reagent: sc-516214 (**B**).

SELECT PRODUCT CITATIONS

1. Li, G., et al. 2015. Mitochondrial translocation and interaction of Cofilin and Drp1 are required for erucin-induced mitochondrial fission and apoptosis. Oncotarget 6: 1834-1849.
2. Kim, T.H. and Cho, S.G. 2017. Kisspeptin inhibits cancer growth and metastasis via activation of EIF2AK2. Mol. Med. Rep. 16: 7585-7590.
3. Wille, C., et al. 2018. PKD regulates Actin polymerization, neutrophil deformability, and transendothelial migration in response to fMLP and trauma. J. Leukoc. Biol. 104: 615-630.
4. Maurin, J., et al. 2018. Combined strategy of siRNA and osteoclast Actin cytoskeleton automated imaging to identify novel regulators of bone resorption shows a non-mitotic function for anillin. Eur. J. Cell Biol. 97: 568-579.
5. Ziesemer, S., et al. 2019. Sphingomyelin depletion from plasma membranes of human airway epithelial cells completely abrogates the deleterious actions of *S. aureus* α-toxin. Toxins 11: 126.
6. Flores, L.R., et al. 2019. Lifeact-GFP alters F-Actin organization, cellular morphology and biophysical behaviour. Sci. Rep. 9: 3241.
7. Jalal, S., et al. 2019. Actin cytoskeleton self-organization in single epithelial cells and fibroblasts under isotropic confinement. J. Cell Sci. 132: jcs220780.
8. Cruz-Ortega, J.S. and Boucard, A.A. 2019. Actin cytoskeleton remodeling defines a distinct cellular function for adhesion G protein-coupled receptors ADGRL/Latrophilins 1, 2 and 3. Biol. Open 8: bio039826.

RESEARCH USE

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