SANTA CRUZ BIOTECHNOLOGY, INC.

Cofilin 2 (D-5): sc-166958

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Cofilin 2, also known as CFL2 or Cofilin, muscle isoform, is a 166 amino acid protein that localizes to the cytoplasm and the cytoskeleton, as well as to the nuclear matrix, and contains one ADF-H domain. Existing as two alternatively spliced isoforms, one of which is known as CFL2a and is expressed in heart and skeletal muscle, and the other of which is known as CFL2b and is expressed ubiquitously, Cofilin 2 binds both F- and G-Actin and functions to control pH-dependent Actin polymerization and depolymerization. Cofilin 2 is subject to post-translational phosphorylation on Ser 24, an event which may prevent the nuclear localization of Cofilin 2. Defects in the gene encoding Cofilin 2 are the cause of nemaline myopathy type 7 (NEM7), a form of congenital myopathy that varies with age and is characterized by abnormal thread- or rod-like structures in muscle fibers.

REFERENCES

1. Gillett, G.T., et al. 1996. Mapping of human non-muscle type Cofilin (CFL1) to chromosome 11q13 and muscle-type Cofilin (CFL2) to chromosome 14. Ann. Hum. Genet. 60: 201-211.
2. Nebl, G., et al. 1996. Dephosphorylation of Serine 3 regulates nuclear translocation of Cofilin. J. Biol. Chem. 271: 26276-26280.
3. Bamburg, J.R., et al. 1999. Putting a new twist on Actin: ADF/Cofilins modulate Actin dynamics. Trends Cell Biol. 9: 364-370.

CHROMOSOMAL LOCATION

Genetic locus: CFL2 (human) mapping to 14q13.1; Cfl2 (mouse) mapping to 12 C1.

SOURCE

Cofilin 2 (D-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 125-155 near the C-terminus of Cofilin 2 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 2 (D-5) is available conjugated to agarose (sc-166958 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-166958 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166958 PE), fluorescein (sc-166958 FITC), Alexa Fluor® 488 (sc-166958 AF488), Alexa Fluor® 546 (sc-166958 AF546), Alexa Fluor® 594 (sc-166958 AF594) or Alexa Fluor® 647 (sc-166958 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166958 AF680) or Alexa Fluor® 790 (sc-166958 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166958 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

RESEARCH USE

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

APPLICATIONS

Cofilin 2 (D-5) is recommended for detection of Cofilin 2, muscle isoform 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).

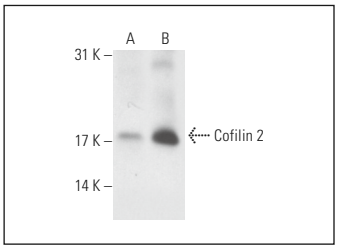
Cofilin 2 (D-5) is also recommended for detection of Cofilin 2, muscle isoform in additional species, including canine, bovine, porcine and avian.

Suitable for use as control antibody for Cofilin 2 siRNA (h): sc-37027, Cofilin 2 siRNA (m): sc-37026, Cofilin 2 shRNA Plasmid (h): sc-37027-SH, Cofilin 2 shRNA Plasmid (m): sc-37026-SH, Cofilin 2 shRNA (h) Lentiviral Particles: sc-37027-V and Cofilin 2 shRNA (m) Lentiviral Particles: sc-37026-V.

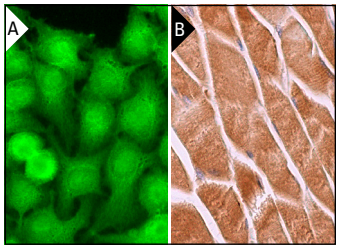
Molecular Weight of Cofilin 2: 21 kDa.

Positive Controls: rat skeletal muscle extract: sc-364810 or Sol8 whole cell lysate: sc-2249.

DATA



Cofilin 2 (D-5): sc-166958. Western blot analysis of Cofilin 2 expression in Sol8 whole cell lysate (**A**) and rat skeletal muscle tissue extract (**B**).



Cofilin 2 (D-5): sc-166958. Immunofluorescence staining of formalin-fixed HeLa cells showing cytoplasmic and nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human skeletal muscle tissue showing cytoplasmic staining of myocytes (**B**).

SELECT PRODUCT CITATIONS

1. Rong, X., et al. 2020. Chronic periodontitis and Alzheimer disease: a putative link of serum proteins identification by 2D-DIGE proteomics. Front. Aging Neurosci. 12: 248.
2. Zeng, Q., et al. 2021. Cofilin 2 acts as an inflammatory linker between chronic periodontitis and Alzheimer's disease in amyloid precursor protein/ Presenilin 1 mice. Front. Mol. Neurosci. 14: 728184.
3. Zhang, X., et al. 2022. Identification of serum biomarkers in patients with Alzheimer's disease by 2D-DIGE proteomics. Gerontology 68: 686-698.
4. Li, J., et al. 2023. Sensory nerves directly promote osteoclastogenesis by secreting peptidyl-prolyl *cis-trans* isomerase D (Cyp40). Bone Res. 11: 64.

STORAGE

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