SANTA CRUZ BIOTECHNOLOGY, INC.

Profilin-1 (48): sc-136432

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Profilins regulate Actin polymerization by binding to and sequestering the Actin monomer. Profilins act as a nucleotide exchange factor that charges Actin with ATP after binding the Actin monomer through a 1:1 stoichiometric relationship. Human Profilin-1 and Profilin-2 are encoded by two separate genes mapping to chromosomes 17p13.2 and 3q25.1, respectively. Both Profilin-1 and Profilin-2 are abundantly expressed in kidney. Profilin-1 is highly expressed in lung, liver, placenta and kidney while Profilin-2 is highly expressed in brain and skeletal muscle. In axonal and dendritic processes of mouse brain, profilins co-localize with Dynamin I and synapsin. Profilin may play a role in mediating cell adhesion. The overexpression of profilin in endothelial cells results in increased adhesion to Fibronectin. In food allergy, plant Profilin is considered a pan-allergen. Case studies indicate individuals with allergies to various foods including celery, carrots, zucchini and peanuts are actually sensitive to the Profilin proteins in these foods.

REFERENCES

1. Kwiatkowski, D.J., et al. 1990. Identification of the functional Profilin gene, its localization to chromosome subband 17p13.3, and demonstration of its deletion in some patients with Miller-Dieker syndrome. Am. J. Hum. Genet. 46: 559-567.
2. Goldschmidt-Clermont, P.J., et al. 1992. The control of Actin nucleotide exchange by thymosin β4 and Profilin. A potential regulatory mechanism for Actin polymerization in cells. Mol. Biol. Cell 3: 1015-1024.
3. Valenta, R., et al. 1992. Profilins constitute a novel family of functional plant pan-allergens. J. Exp. Med. 175: 377-385.
4. Honore, B., et al. 1993. Cloning and expression of a novel human Profilin variant, Profilin-2. FEBS Lett. 330: 151-155.
5. Naylor, S.L., et al. 1996. Report of the sixth international workshop on human chromosome 3 mapping 1995. Cytogenet. Cell Genet. 72: 255-270.
6. Moldovan, N.I., et al. 1997. Regulation of endothelial cell adhesion by Profilin. Curr. Biol. 7: 24-30.
7. Witke, W., et al. 1998. In mouse brain Profilin-1 and Profilin-2 associate with regulators of the endocytic pathway and Actin assembly. EMBO J. 17: 967-976.

CHROMOSOMAL LOCATION

Genetic locus: PFN1 (human) mapping to 17p13.2; Pfn1 (mouse) mapping to 11 B3.

SOURCE

Profilin-1 (48) is a mouse monoclonal antibody raised against amino acids 4-122 of Profilin-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.

APPLICATIONS

Profilin-1 (48) is recommended for detection of Profilin-1 of mouse, rat, human and canine 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)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for Profilin-1 siRNA (h): sc-36316, Profilin-1 siRNA (m): sc-36317, Profilin-1 shRNA Plasmid (h): sc-36316-SH, Profilin-1 shRNA Plasmid (m): sc-36317-SH, Profilin-1 shRNA (h) Lentiviral Particles: sc-36316-V and Profilin-1 shRNA (m) Lentiviral Particles: sc-36317-V.

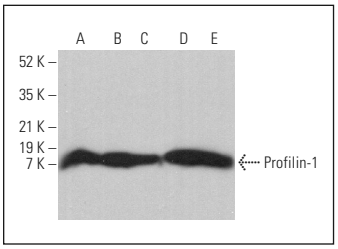
Molecular Weight of Profilin-1: 12-15 kDa.

Positive Controls: PC-3 cell lysate: sc-2220, 3T3-L1 cell lysate: sc-2243 or c4 whole cell lysate: sc-364186.

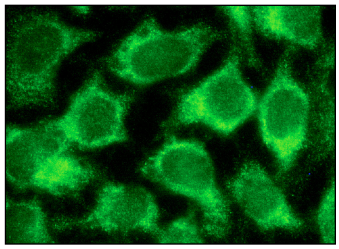
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



Profilin-1 (48): sc-136432. Western blot analysis of Profilin-1 expression in PC-3 (**A**), AT3B-1 (**B**), 3T3-L1 (**C**), c4 (**D**) and F9 (**E**) whole cell lysates.



Profilin-1 (48): sc-136432. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Gordón-Alonso, M., et al. 2013. Actin-binding protein drebrin regulates HIV-1-triggered actin polymerization and viral infection. J. Biol. Chem. 288: 28382-28397.

STORAGE

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

RESEARCH USE

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