SANTA CRUZ BIOTECHNOLOGY, INC.

Profilin-1 (N-20): sc-18346

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 ex-pressed 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. Valenta, R., et al. 1992. Profilins constitute a novel family of functional plant pan-allergens. J. Exp. Med. 175: 377-385.
3. Goldschmidt-Clermont, P.J., et al. 1992. The control of actin nucleotide exchange by thymosin beta 4 and Profilin. A potential regulatory mechanism for actin polymerization in cells. Mol. Biol. Cell 3: 1015-1024.
4. Honore, B., et al. 1993. Cloning and expression of a novel human Profilin variant, Profilin II. FEBS Lett. 330: 151-155.

CHROMOSOMAL LOCATION

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

SOURCE

Profilin-1 (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Profilin-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-18346 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

Profilin-1 (N-20) is recommended for detection of Profilin-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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

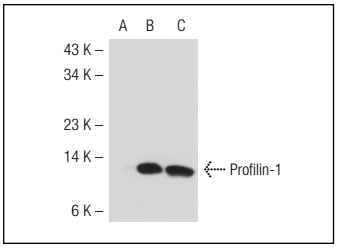
Profilin-1 (N-20) is also recommended for detection of Profilin-1 in additional species, including equine, bovine and porcine.

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.

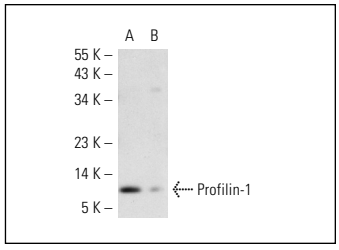
Molecular Weight of Profilin-1: 12-15 kDa.

Positive Controls: Profilin-1 (m): 293T Lysate: sc-125858, Profilin-1 (h2): 293 Lysate: sc-111317 or human platelet extract: sc-363773.

DATA



Profilin-1 (N-20): sc-18346. Western blot analysis of Profilin-1 expression in non-transfected: sc-117752 (**A**) and mouse Profilin-1 transfected: sc-125858 (**B**) 293T whole cell lysates and human platelet extract (**C**).



Profilin-1 (N-20): sc-18346. Western blot analysis of Profilin-1 expression in human Profilin-1 transfected: sc-111317 (**A**) and non-transfected: sc-110760 (**B**) 293 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Messaoudi, E., et al. 2007. Sustained Arc/Arg3.1 synthesis controls long-term potentiation consolidation through regulation of local Actin polymerization in the dentate gyrus *in vivo*. J. Neurosci. 27: 10445-10455.
2. Kursula, I., et al. 2008. Structural basis for parasite-specific functions of the divergent profilin of *Plasmodium falciparum*. Structure 16: 1638-1648.
3. Braun, M., et al. 2009. Down-regulation of microfilamental network-associated proteins in leukocytes of breast cancer patients: potential application to predictive diagnosis. Cancer Genomics Proteomics 6: 31-40.
4. Berglund, S.R., et al. 2009. Proteomic analysis of low dose arsenic and ionizing radiation exposure on keratinocytes. Proteomics 9: 1925-1938.