

# Profilin-1 (C-2): sc-166191

## 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

Profilin-1 (C-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 2-37 at the N-terminus of Profilin-1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-166191 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

## APPLICATIONS

Profilin-1 (C-2) is recommended for detection of Profilin-1 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Profilin-1 (C-2) 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.

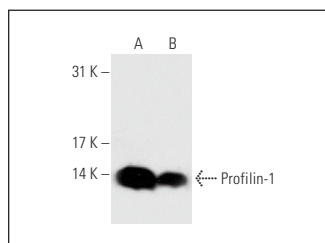
Molecular Weight of Profilin-1: 12-15 kDa.

Positive Controls: Profilin-1 (h): 293 Lysate: sc-110512, KNRK whole cell lysate: sc-2214 or human platelet extract: sc-363773.

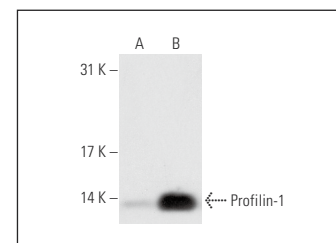
## RECOMMENDED SUPPORT REAGENTS

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 (C-2): sc-166191. Western blot analysis of Profilin-1 expression in human platelet extract (A) and KNRK (B) whole cell lysates.



Profilin-1 (C-2): sc-166191. Western blot analysis of Profilin-1 expression in non-transfected: sc-110760 (A) and human Profilin-1 transfected: sc-110512 (B) 293 whole cell lysates.

## SELECT PRODUCT CITATIONS

- Caglayan, E., et al. 2010. Profilin-1 is expressed in human atherosclerotic plaques and induces atherogenic effects on vascular smooth muscle cells. *PLoS ONE* 5: e13608.
- Wang, Y., et al. 2018. Role and regulation of Abelson tyrosine kinase in Crk-associated substrate/Profilin-1 interaction and airway smooth muscle contraction. *Respir. Res.* 19: 4.
- Wang, R., et al. 2022. Smooth muscle myosin localizes at the leading edge and regulates the redistribution of Actin-regulatory proteins during migration. *Cells* 11: 2334.

## 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.