SANTA CRUZ BIOTECHNOLOGY, INC.

Profilin-1 (B-10): sc-137235

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 Dyamin I and synapsin. Profilin may play a role in mediating cell adhesion. The overexpression of Profilin in endo-thelial 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 (B-10) 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_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Profilin-1 (B-10) is available conjugated to agarose (sc-137235 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-137235 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-137235 PE), fluorescein (sc-137235 FITC), Alexa Fluor® 488 (sc-137235 AF488), Alexa Fluor® 546 (sc-137235 AF546), Alexa Fluor® 594 (sc-137235 AF594) or Alexa Fluor® 647 (sc-137235 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-137235 AF680) or Alexa Fluor® 790 (sc-137235 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-137235 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

APPLICATIONS

Profilin-1 (B-10) 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).

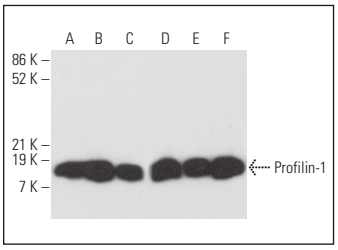
Profilin-1 (B-10) is also recommended for detection of Profilin-1 in additional species, including equine, bovine and porcine.

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.

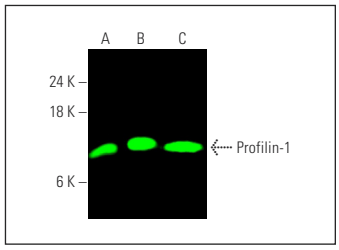
Molecular Weight of Profilin-1: 12-15 kDa.

Positive Controls: JAR cell lysate: sc-2276, Hep G2 cell lysate: sc-2227 or KNRK whole cell lysate: sc-2214.

DATA



Profilin-1 (B-10): sc-137235. Western blot analysis of Profilin-1 expression in Hep G2 (**A**), JAR (**B**), NIH/3T3 (**C**), Jurkat (**D**), MCF7 (**E**) and A549 (**F**) whole cell lysates.



Profilin-1 (B-10): sc-137235. Near-infrared western blot analysis of Profilin-1 expression in Hep G2 (**A**), JAR (**B**) and KNRK (**C**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 680: sc-516180.

SELECT PRODUCT CITATIONS

1. Xia, X., et al. 2019. EspF is crucial for *Citrobacter rodentium*-induced tight junction disruption and lethality in immunocompromised animals. PLoS Pathog. 15: e1007898.
2. Zhang, S., et al. 2021. Adaptor SH3BGRL promotes breast cancer metastasis through PFN1 degradation by translational STUB1 upregulation. Oncogene 40: 5677-5690.
3. De Marco, G., et al 2022. Effects of intracellular calcium accumulation on proteins encoded by the major genes underlying amyotrophic lateral sclerosis. Sci. Rep. 12: 395.
4. Jiang, X., et al. 2022. Fine-grained, nonlinear registration of live cell movies reveals spatiotemporal organization of diffuse molecular processes. PLoS Comput. Biol. 18: e1009667.

RESEARCH USE

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