

Villin (B-12): sc-373997

BACKGROUND

Caldesmon, Filamin 1, Nebulin and Villin are differentially expressed and regulated Actin binding proteins. Both muscular (CDh) and non-muscular (CDI) forms of Caldesmon have been identified and each has been shown to bind to Actin as well as to calmodulin and myosin. CDh is expressed predominantly on thin filaments in smooth muscle, whereas CDI is widely expressed in non-muscle tissues and cells. Filamin 1, which is ubiquitously expressed and exists as a homodimer, functions to crosslink Actin to filaments. Nebulin is a large filamentous protein specific to muscle tissue that may function as a ruler for filament length. Several isoforms of Nebulin are produced by alternative exon usage. Villin is Ca²⁺-regulated and is the major structural component of the brush border of absorptive cells.

REFERENCES

- Weihing, R.R. 1988. Actin-binding and dimerization domains of HeLa cell Filamin. *Biochemistry* 27: 1865-1869.
- Marston, S., et al. 1992. Caldesmon binds to smooth muscle myosin and myosin rod and crosslink thick filaments to Actin filaments. *J. Muscle Res. Cell Motil.* 13: 206-218.
- Maunoury, R., et al. 1992. Developmental regulation of Villin gene expression in the epithelial cell lineages of mouse digestive and urogenital tracts. *Development* 115: 717-728.
- Labeit, S., et al. 1995. The complete primary structure of human Nebulin and its correlation to muscle structure. *J. Mol. Biol.* 248: 308-315.

CHROMOSOMAL LOCATION

Genetic locus: VIL1 (human) mapping to 2q35.

SOURCE

Villin (B-12) is a mouse monoclonal antibody raised against amino acids 721-780 mapping near the C-terminus of Villin of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Villin (B-12) is recommended for detection of Villin of 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).

Suitable for use as control antibody for Villin siRNA (h): sc-29521, Villin shRNA Plasmid (h): sc-29521-SH and Villin shRNA (h) Lentiviral Particles: sc-29521-V.

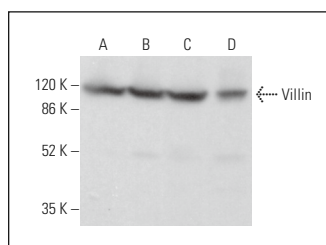
Molecular Weight of Villin: 93 kDa.

Positive Controls: Caco-2 cell lysate: sc-2262, COLO 205 whole cell lysate: sc-364177 or Hep G2 cell lysate: sc-2227.

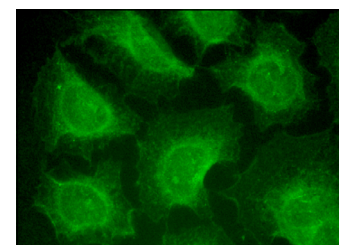
RECOMMENDED SUPPORT REAGENTS

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



Villin (B-12): sc-373997. Western blot analysis of Villin expression in COLO 205 (A), Caco-2 (B), Hep G2 (C) and WiDr (D) whole cell lysates.



Villin (B-12): sc-373997. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

- Lin, S.C., et al. 2022. Generation of CRISPR-Cas9-mediated genetic knock-out human intestinal tissue-derived enteroid lines by lentivirus transduction and single-cell cloning. *Nat. Protoc.* 17: 1004-1027.
- Ayyar, B.V., et al. 2023. CLIC and membrane wound repair pathways enable pandemic norovirus entry and infection. *Nat. Commun.* 14: 1148.
- Tenge, V., et al. 2024. Bile acid-sensitive human norovirus strains are susceptible to sphingosine-1-phosphate receptor 2 inhibition. *J. Virol.* 98: e0202023.

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 for detailed protocols and support products.



See **Villin (1D2C3): sc-58897** for Villin antibody conjugates, including AC, HRP, FITC, PE, Alexa Fluor® 488, 546, 594, 647, 680 and 790.