

# Villin (BDID2C3): sc-66022

## 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  $Ca^{2+}$ -regulated and is the major structural component of the brush border of absorptive cells.

## CHROMOSOMAL LOCATION

Genetic locus: VIL1 (human) mapping to 2q35; Vil1 (mouse) mapping to 1 C3.

## SOURCE

Villin (BDID2C3) is a mouse monoclonal antibody raised against purified full length native Villin of chicken origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

Villin (BDID2C3) is recommended for detection of Villin of mouse, rat, human and avian origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000); non cross-reactive with breast cancer.

Suitable for use as control antibody for Villin siRNA (h): sc-29521, Villin siRNA (m): sc-36818, Villin shRNA Plasmid (h): sc-29521-SH, Villin shRNA Plasmid (m): sc-36818-SH, Villin shRNA (h) Lentiviral Particles: sc-29521-V and Villin shRNA (m) Lentiviral Particles: sc-36818-V.

Molecular Weight of Villin: 93 kDa.

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

## STORAGE

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

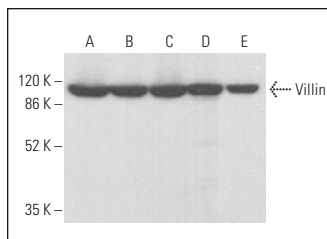
## PROTOCOLS

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

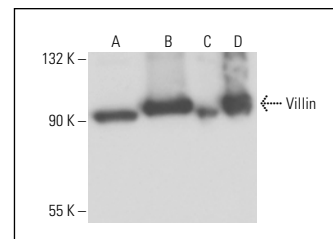
## RESEARCH USE

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

## DATA



Villin (BDID2C3): sc-66022. Western blot analysis of Villin expression in Caco-2 (A), COLO 205 (B), Hep G2 (C), HCT-8 (D) and c4 (E) whole cell lysates.



Villin (BDID2C3): sc-66022. Western blot analysis of Villin expression in human colon tumor tissue (A,C) and mouse kidney tissue (B,D) under reducing (A,B) and non-reducing (C,D) conditions.

## SELECT PRODUCT CITATIONS

- Mishra, J., et al. 2012. Identification of molecular switch regulating interactions of Janus kinase 3 with cytoskeletal proteins. *J. Biol. Chem.* 287: 41386-41391.
- Raval, M.H., et al. 2016. Impact of the motor and tail domains of class III myosins on regulating the formation and elongation of Actin protrusions. *J. Biol. Chem.* 291: 22781-22792.
- Kang, C.K., et al. 2017. The expression of VILL protein is hypoosmotic-dependent in the lamellar gill ionocytes of Otocephala teleost fish, *Chanos chanos*. *Comp. Biochem. Physiol., Part A Mol. Integr. Physiol.* 203: 59-68.
- Hou, X., et al. 2018. Short-term and long-term human or mouse organoid units generate tissue-engineered small intestine without added signalling molecules. *Exp. Physiol.* 103: 1633-1644.
- Postema, M.M., et al. 2019. PACSIN2-dependent apical endocytosis regulates the morphology of epithelial microvilli. *Mol. Biol. Cell* 30: 2515-2526.
- Gilliam, E.A., et al. 2020. Grading TESI: crypt and villus formation in tissue-engineered small intestine alters with stem/progenitor cell source. *Am. J. Physiol. Gastrointest. Liver Physiol.* 319: G261-G279.
- Morales, E.A., et al. 2022. Mitotic spindle positioning (MISP) is an actin bundler that selectively stabilizes the rootlets of epithelial microvilli. *Cell Rep.* 39: 110692.
- Gaeta, I.M. and Tyska, M.J. 2023. BiolD2 screening identifies KIAA1671 as an EPS8 proximal factor that marks sites of microvillus growth. *Mol. Biol. Cell* 34: ar31.



See **Villin (1D2C3): sc-58897** for Villin (BDID2C3) antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.