

## Technical Data Sheet

## Purified Mouse Anti-Human Villin

## Product Information

|                         |                                                                              |
|-------------------------|------------------------------------------------------------------------------|
| <b>Material Number:</b> | <b>610358</b>                                                                |
| <b>Size:</b>            | 50 µg                                                                        |
| <b>Concentration:</b>   | 250 µg/ml                                                                    |
| <b>Clone:</b>           | 12/Villin                                                                    |
| <b>Immunogen:</b>       | Cow Villin aa. 1-827                                                         |
| <b>Isotype:</b>         | Mouse IgG1                                                                   |
| <b>Reactivity:</b>      | QC Testing: Human                                                            |
| <b>Target MW:</b>       | 95 kDa                                                                       |
| <b>Storage Buffer:</b>  | Aqueous buffered solution containing BSA, glycerol, and ≤0.09% sodium azide. |

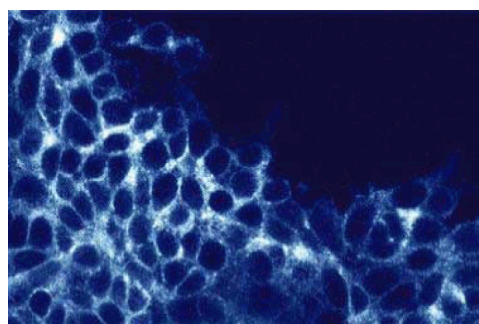
## Description

The isolated intestinal microvillus cytoskeleton (core) consists of four major proteins: actin, villin, fimbrin, and brush border myosin-I. These proteins can assemble in vitro into structures resembling native microvillus cores. Of these components, villin, and brush border myosin-I show tissue-specific expression, so they may be involved in the morphogenesis of intestinal microvilli. Found in association with the microvillar actin bundles of the intestinal brush border, villin is a 95 kDa protein composed of two very similar domains of approximately 44 kDa each, the core, and a C-terminal domain of 8 kDa, the headpiece. The core has been shown to contain villin's Ca<sup>2+</sup> regulated capping, nucleating, and severing activities, but it cannot induce the formation of microfilament bundles without the headpiece. Villin is a useful differentiation marker of early embryogenesis and may be useful in diagnosis and follow-up of colorectal cancers. It has been demonstrated that villin is necessary for both the cytoskeletal and membrane protein organization of a functional brush border.

This antibody is routinely tested by western blot analysis. Other applications were tested at BD Biosciences Pharmingen during antibody development only or reported in the literature.



**Western blot analysis of Villin on HCT-8 lysate.** Lane 1: 1:1000, lane 2: 1:2000, lane 3: 1:4000 dilution of anti-Villin antibody.



**Immunofluorescent staining of HCT-8 cells**

## Preparation and Storage

The monoclonal antibody was purified from tissue culture supernatant or ascites by affinity chromatography. Store undiluted at -20° C.

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## Application Notes

### Application

|                      |                           |
|----------------------|---------------------------|
| Western blot         | Routinely Tested          |
| Immunofluorescence   | Tested During Development |
| Immunohistochemistry | Tested During Development |
| Immunoprecipitation  | Not Recommended           |

## Suggested Companion Products

| Catalog Number | Name                     | Size   | Clone      |
|----------------|--------------------------|--------|------------|
| 611474         | HCT-8 Cell Lysate        | 500 µg | (none)     |
| 554002         | HRP Goat Anti-Mouse Igs  | 1.0 ml | (none)     |
| 554001         | FITC Goat Anti-Mouse Igs | 0.5 mg | Polyclonal |

## Product Notices

1. Since applications vary, each investigator should titrate the reagent to obtain optimal results.
2. Please refer to [www.bdbiosciences.com/pharmingen/protocols](http://www.bdbiosciences.com/pharmingen/protocols) for technical protocols.
3. Caution: Sodium azide yields highly toxic hydrazoic acid under acidic conditions. Dilute azide compounds in running water before discarding to avoid accumulation of potentially explosive deposits in plumbing.
4. Source of all serum proteins is from USDA inspected abattoirs located in the United States.

## References

Friederich E, Pringault E, Arpin M, Louvard D. From the structure to the function of villin, an actin-binding protein of the brush border. *Bioessays*. 1990; 12(9):403-408.(Biology)

Friederich E, Vancompernelle K, Huet C, et al. An actin-binding site containing a conserved motif of charged amino acid residues is essential for the morphogenic effect of villin. *Cell*. 1992; 70(1):81-92.(Biology)

McSwine RL, Musch MW, Bookstein C, Xie Y, Rao M, Chang EB. Regulation of apical membrane Na<sup>+</sup>/H<sup>+</sup> exchangers NHE2 and NHE3 in intestinal epithelial cell line C2/bbe. *Am J Physiol*. 1998; 275(3):C693-C701.(Clone-specific: Western blot)

Nies AT, Konig J, Cui Y, Brom M, Spring H, Keppler D. Structural requirements for the apical sorting of human multidrug resistance protein 2 (ABCC2). *Eur J Biochem*. 2002; 269(7):1866-1876.(Clone-specific: Immunofluorescence)

Zhai L, Zhao P, Panebra A, Guerrero AL, Khurana S. Tyrosine phosphorylation of villin regulates the organization of the actin cytoskeleton. *J Biol Chem*. 2001; 276(39):36163-36167.(Clone-specific: Western blot)