BOSTER
antibody and ELISA experts

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

Anti-Villin/VIL1 Antibody Picoband®

Catalog Number: PB9457

About VIL1

Villin is known as VIL1. This gene encodes a member of a family of calcium-regulated actin-binding proteins. This protein represents a dominant part of the brush border cytoskeleton which functions in the capping, severing, and bundling of actin filaments. Two mRNAs of 2.7 kb and 3.5 kb have been observed; they result from utilization of alternate poly-adenylation signals present in the terminal exon. In vertebrates, the villin proteins help to support the microfilaments of the microvilli of the brush border. It may play a role in cell plasticity through F-actin severing.

Overview

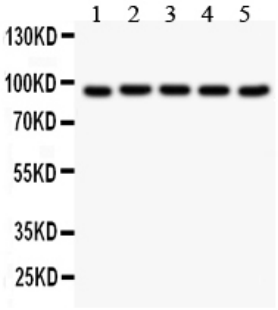
Product Name	Anti-Villin/VIL1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Villin/VIL1 Antibody Picoband® catalog # PB9457. Tested in Flow Cytometry, IF, IHC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody that guarantees superior quality, high affinity, and strong signals with minimal background in Western blot applications. Only our best-performing antibodies are designated as Picoband, ensuring unmatched performance.
Application	Flow Cytometry, IF, IHC, WB
Clonality	Polyclonal
Formulation	Each vial contains antibody formulated with stabilizing components, 0.9 mg NaCl, 0.2 mg Na2HPO4, and 0.05 mg NaN3. *This antibody is supplied in a stabilized formulation. Compatibility with conjugation reactions depends on the chemistry of the conjugation method used. For conjugation methods that are not compatible with the stabilizing components present in this formulation, a carrier-free antibody format is required.
Storage Instructions	Store at -20˚C for one year from date of receipt. After reconstitution, at 4˚C for one month. It can also be aliquotted and stored frozen at -20˚C for six months. Avoid repeated freeze-thaw cycles.
Host	Rabbit
Uniprot ID	P09327

Technical Details

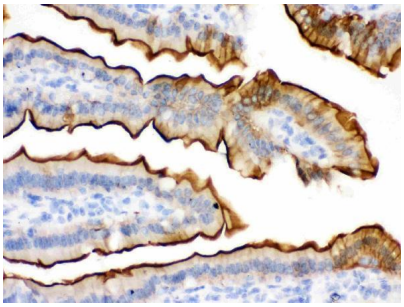
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of human Villin, different from the related mouse sequence by three amino acids.
Recommended Detection Systems	Boster recommends Enhanced Chemiluminescent Kit with anti-Rabbit IgG (EK1002) for Western blot, and HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).
Cross Reactivity	No cross-reactivity with other proteins

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

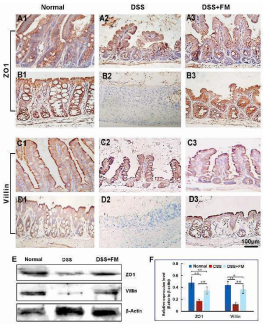
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 0.5-1ug/ml, Human, Mouse, Rat Immunofluorescence, 2ug/ml, Human, Mouse, Rat Flow Cytometry (Fixed), 1-3ug/1x10^6 cells, Human



Western blot analysis of Villin using anti-Villin antibody (PB9457). Electrophoresis was performed on a at 70V (Stacking gel) / 90V (Resolving gel) for 2-3 hours. Lane 1: Rat Intestine Tissue Lysate at 50ug Tissue Lysate at 50ug Lane 3: RH35 Whole Cell Lysate at 40ug Lane 4: HEPG2 Whole Cell Lysate at 4 Whole Cell Lysate at 40ug. After electrophoresis, proteins were transferred to a nitrocellulose membr 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane w rabbit anti-Villin antigen affinity purified polyclonal antibody (Catalog # PB9457) at 0.5 ug/mL overnig washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HR at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an Enhanced Chemiluminesce (Catalog # EK1002) with Tanon 5200 system. A specific band was detected for Villin at approximately band size for Villin is at 93 kDa.

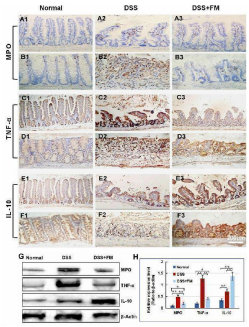


IHC analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in a paraffin-embedded s intestine tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retri tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml Antibody (PB9457) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibod minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog as the chromogen.

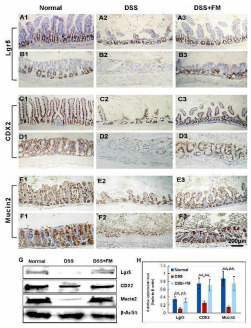


The subcellular localization and relative expression level detection of ZO-1 and villin in the intestinal m after termination of DSS intake. (A) The ZO-1 immunohistochemistry staining of the small intestinal ep (A1) the normal group: the villi and crypts were arranged compactly, and the ZO-1-positive staining (re showed the dotted line (brown) along the surface of the villi and the crypts; (A2) the DSS group: ZO-1 in the residual villi of the small intestinal mucosa; (A3) the DSS + B. subtilis -fermented milk group: th the dotted line (brown, representing the TJP) at the subsurface of the regenerative villi. (B) The ZO-1 ir staining of the colonic epithelial TJP (brown dots): (B1) the normal group: ZO-1-positive staining distrib the epithelial cell membrane (representing the TJP); (B2) the DSS group: there was no ZO-1-positive st the DSS + B. subtilis -fermented milk group: the ZO-1-positive staining distributed on the inner side of epithelial cell membrane (representing the TJP). (C) The villin immunohistochemistry staining (brown s intestinal microvilli: (C1) the normal group: villin-positive staining showed a strip-like distribution on th the normal small intestinal mucosa; (C2) the DSS group: villin distributed at the surface of the residual subtilis -fermented milk group: villin-positive staining formed an integrative strip (brown) enclosing the regenerative villi. (D) The villin immunohistochemistry staining of the colonic epithelium: (D1) the norm staining (brown) showed banded distribution on the surface of the epithelium; (D2) the DSS group: alm staining was observed in the scar due to damage of the epithelium; (D3) the DSS + B. subtilis -fermen positive staining (brown) showed banded distribution on the surface of the regenerated epithelium in t The western blotting analysis for the relative expression level of ZO-1 and villin in the samples contain colon. The expression level of ZO-1 and villin in the DSS group was significantly lower than that of the The expression level of ZO-1 and villin and in the DSS + B. subtilis -fermented milk (FM) group was sig that of the DSS group (n = 5, * represents $p < 0.05$, ** represents $p < 0.01$).Index in PubMed under a 33519783

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com



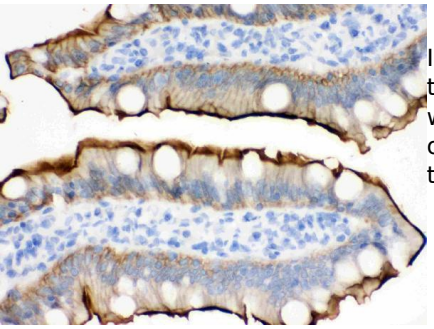
The infiltration of MPO + neutrophils, and the cellular distribution and relative expression level detecti
in the small intestinal and colonic mucosa at 7 days after the termination of DSS administration. (A) Th
immunohistochemistry staining of the small intestinal mucosa: (A1) the normal group: few neutrophils
small intestinal mucosa; (A2) the DSS group: a number of accumulative MPO + neutrophils (brown) inf
epithelium; (A3) the DSS + B. subtilis- fermented milk group: only limited neutrophil infiltration could b
intestinal mucosa. (B) The MPO immunohistochemistry staining of the colonic mucosa: (B1) the norma
were observed in the colonic mucosa; (B2) the DSS group: colonic epithelium and the glands disappea
locally replaced by scars and a number of accumulative MPO + neutrophils (brown) were observed in t
B. subtilis -fermented milk group: only limited MPO + neutrophils observed in the colonic mucosa. (C)
immunohistochemistry staining of the small intestinal mucosa: (C1) the normal group: the epithelium
yellow staining, suggesting low expression of TNF; (C2) the DSS group: the villus structure is not integ
cells showed black brown, suggesting overexpression of TNF; (C3) the DSS + B. subtilis -fermented mi
the glands were almost integrated, and the staining of epithelial cells was similar to that of the normal
low expression of TNF. (D) The TNF immunohistochemistry staining of the colonic mucosa: (D1) the no
the epithelium was integrated with low TNF expression (faint yellow); (D2) the DSS group: the epithel
glands were destroyed and replaced by a scar, and there were a number of TNF + inflammatory cells
scar; (D3) the DSS + B. subtilis -fermented milk group: the recovered epithelium showed faint yellow,
expression. (E) The IL-10 immunohistochemistry staining of the small intestinal mucosa: (E1) the norm
mucosa: the IL-10 staining dispersed in the villi and the crypts with faint yellow, suggesting low-level e
the DSS group, the residual epithelium and the crypts were light brown, suggesting mid-level of IL-10
+ B. subtilis -fermented milk group: the dark brown staining of the regenerative epithelium represente
of IL-10. (F) The IL-10 immunohistochemistry staining of the colonic mucosa: (F1) the normal group: th
dispersed in the glands with bright yellow, suggesting low-level expression of IL-10; (F2) the DSS grou
+ cells in the scars; (F3) the DSS + B. subtilis -fermented milk group, the dark brown staining of the ep
represented high-level expression of IL-10. (G,H) Western blotting analysis for the expression of MPO,
samples containing equivalent ileum and colon. The expression level of MPO, TNF, and IL-10 in the DSS
higher than that of the normal (control) group. The expression level of MPO and TNF in the DSS + B. su
(FM) group was significantly lower than that of the DSS group, while the expression level of IL-10 in the
-fermented milk (FM) group was significantly higher than that of the DSS group (n = 5, * represents p
< 0.01).Index in PubMed under a CC BY license. PMID: 33519783



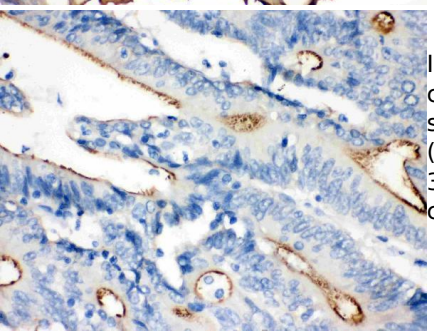
The distribution of Lgr5 + ISCs in the intestinalmucosa and the subcellular localization and relative exp
of epithelial function proteins CDX2 and villin in the intestinal mucosa of IBD at 7 days after terminatio
(A) The Lgr5 + ISCs (brown) in the small intestinal mucosa: (A1) the normal group, the villi and the cry
compactly, and Lgr5 + ISCs were observed in the crypts; (A2) the DSS group, the villi and the crypts w
Lgr5 + ISCs; (A3) the DSS + B. subtilis -fermented milk group, there were more Lgr5 + ISCs in villi and
those in the DSS group. (B) The Lgr5 + ISCs (brown) in the colonic mucosa: (B1) the normal group, the
compactly, and there were large amounts of Lgr5 + ISCs at the bottom of the glands; (B2) the DSS gro
replaced by scars. No Lgr5 + ISCs were observed in the scars; (B3) the DSS + B. subtilis -fermented m
epithelium was integrated, with some regenerated glands. A number of Lgr5 + ISCs were observed at
regenerated glands. (C) The CDX2 was localized in the epithelial cellular nuclei (brown) by immunohist
the small intestinal mucosa: (C1) the normal group: the villi and the crypts were arranged compactly,
cells were observed on the surface of the villi and the crypts; (C2) the DSS group: the villi and the cryp
few CDX2 + epithelial cells were observed on the surface of the crypt and the villi; (C3) the DSS + B. s
group: more villi and crypts were observed in comparison with the DSS group, and there were more CD
covering the villi and crypts. (D) The CDX2 was localized in the epithelial cellular nuclei (brown) by imm
staining in the colonic mucosa: (D1) the normal group: the colonic glands were arranged compactly, a
cells were observed on the surface of the glands; (D2) the DSS group: the glands were scattered, and
cells were observed in the scar; (D3) the DSS + B. subtilis -fermented milk group: more colonic glands
comparison with the DSS group, and there were more CDX2 + epithelial cells in the glands. (E) The Mu
cytoplasm of the goblet cells (brown) by immunohistochemistry staining in the small intestinal mucosa
a number of Mucin2 + goblet cells observed in the epithelium; (E2) the DSS group: only few Mucin2 +
observed in the remaining villi and crypts; (E3) the DSS + B. subtilis -fermented milk group: more Muc
observed in the recovered mucosa. (F) The Mucin2 was localized in the cytoplasm of the goblet cells (b
immunohistochemistry staining in the colonic mucosa: (F1) the normal group, large amounts of Mucin2
observed in the mucosa; (F2) the DSS group: only few Mucin2 + goblet cells were observed in the scar
subtilis -fermented milk group: more Mucin2 + goblet cells were observed in the recovered colonic mu
blotting was applied for detection of the relative expression level of Lgr5, CDX2, and Mucin2 in the sam
equivalent ileum and colon. The expression level of Lgr5, CDX2, and Mucin2 in the DSS group was sign

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

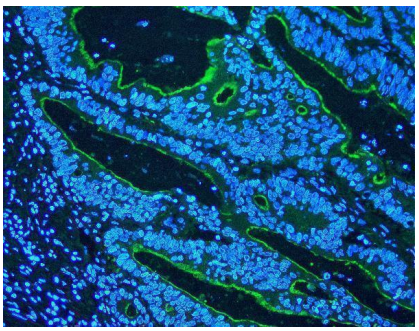
of the normal (control) group. The expression level of Lgr5, CDX2, and Mucin2 in the DSS + B. subtilis group was significantly higher than that of the DSS group (n = 5, ** represents p < 0.01).Index in Pub license. PMID: 33519783



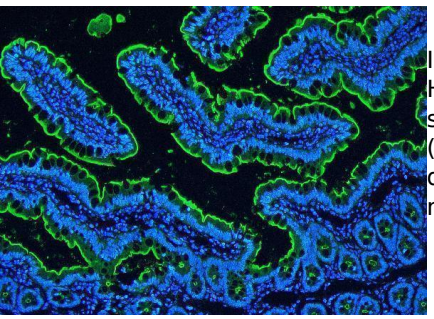
IHC analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in a paraffin-embedded se tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solutio was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit anti-Villi overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB a



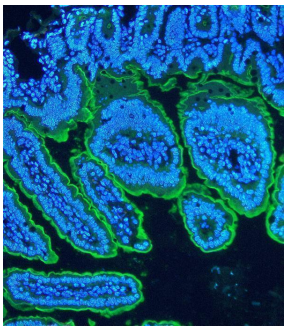
IHC analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in a paraffin-embedded se cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieva section was blocked with 10% goat serum. The tissue section was then incubated with 1 ug/ml rabbit a (PB9457) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incul 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) chromogen.



IF analysis of Villi using anti-Villi antibody (PB9457) Villi was detected in paraffin-embedded section of tissues. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solutio tissue section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL r (PB9457) overnight at 4°C. DyLight488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as second dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize usi microscope and filter sets appropriate for the label used.



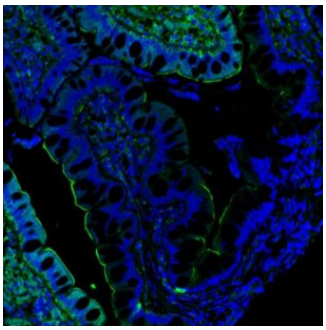
IF analysis of Villi using anti-Villi antibody (PB9457) Villi was detected in paraffin-embedded section of Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 2 section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL rabbit a (PB9457) overnight at 4°C. DyLight488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as second dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize usi microscope and filter sets appropriate for the label used.



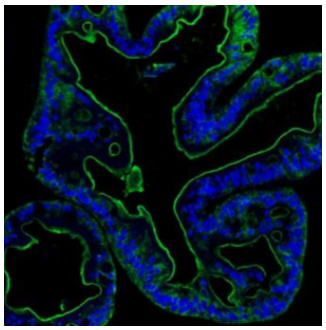
IF analysis of Villi using anti-Villi antibody (PB9457) Villi was detected in paraffin-embedded section of Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 2 section was blocked with 10% goat serum. The tissue section was then incubated with 1ug/mL rabbit a (PB9457) overnight at 4°C. DyLight488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as second dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize usi microscope and filter sets appropriate for the label used.

IF analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in paraffin-embedded sectio

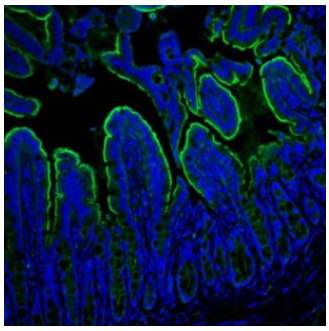
BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com



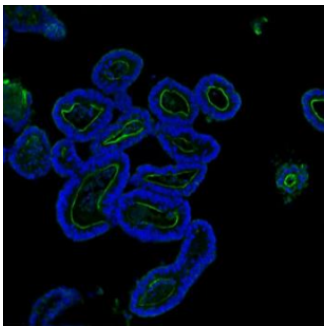
Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit a (PB9457) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as seco dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize usi microscope and filter sets appropriate for the label used.



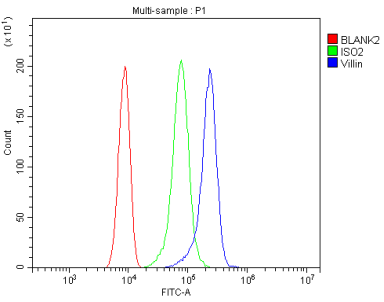
IF analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in paraffin-embedded sectio organoid tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieva The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/ Antibody (PB9457) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was use at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visu fluorescence microscope and filter sets appropriate for the label used.



IF analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in paraffin-embedded sectio Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit a (PB9457) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as seco dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize usi microscope and filter sets appropriate for the label used.



IF analysis of Villin using anti-Villin antibody (PB9457). Villin was detected in paraffin-embedded sectio organoid tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieva The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/ Antibody (PB9457) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was use at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visu fluorescence microscope and filter sets appropriate for the label used.



Flow Cytometry analysis of CACO-2 cells using anti-Villin antibody (PB9457). Overlay histogram showir with PB9457 (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with Antibody (PB9457, 1 ug/1x106 cells) for 30 min at 20°C. DyLight®488 conjugated goat anti-rabbit IgG cells) was used as secondary antibody for 30 minutes at 20°C. Isotype control antibody (Green line) wa ug/1x106) used under the same conditions. Unlabelled sample without incubation with primary antibo antibody (Red line) was used as a blank control.

2 Publications Citing This Product

1. PubMed ID: 10.3389/fmicb.2020.622354, Prevention and Alleviation of Dextran Sulfate Sodium Salt-Induced Inflam Mice With Bacillus subtilis-Fermented Milk via Inhibition of the Inflammatory Responses and Regulation of the Intestin

BOSTER BIOLOGICAL TECHNOLOGY
3942 B Valley Ave, Pleasanton, CA 94566
888-466-3604 | support@bosterbio.com | www.bosterbio.com

2. PubMed ID: 10.1080/00365520902998661, Acid and bile salt up-regulate BMP4 expression in human esophageal e

Visit bosterbio.com/anti-villin-picoband-trade-antibody-pb9457-boster.html to see all 2 publications.

Anti-Villin/VIL1 Antibody

For Research Use Only. Not for use in diagnostic procedures.