BOSTER BIOLOGICAL TECHNOLOGY
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Anti-MUC2 Antibody

Catalog Number: A01212

About MUC2

Mucin 2, also known as MUC2, is a protein that in humans is encoded by the MUC2 gene. This gene encodes a member of the mucin protein family. It is mapped to 11p15.5. Mucin 2 is particularly prominent in the gut where it is secreted from goblet cells in the epithelial lining into the lumen of the large intestine. There, mucin 2, along with small amounts of related-mucin proteins, polymerizes into a gel of which 80% by weight is oligosaccharide side-chains that are added as post-translational modifications to the mucin proteins. This gel provides an insoluble mucous barrier that serves to protect the intestinal epithelium. The primary function of the MUC2 gene product is to provide a protective barrier between the epithelial surfaces and the gut lumen. There is decreased expression of MUC2 in colonic cancer and defective polymerization of secreted mucin in ulcerative colitis.

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Overview

Product Name	Anti-MUC2 Antibody
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-MUC2 Antibody catalog # A01212. Tested in IF, IHC applications. This antibody reacts with Human, Mouse, Rat.
Application	IF, IHC
Clonality	Polyclonal
Formulation	Each vial contains 4 mg Trehalose, 0.9 mg NaCl and 0.2 mg Na2HPO4.
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	Q02817

Technical Details

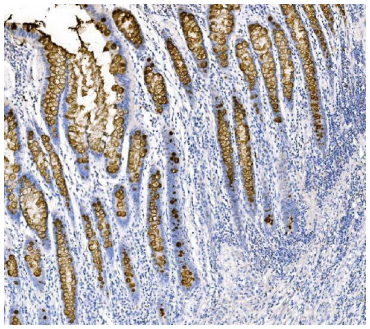
Immunogen	A synthetic peptide corresponding to a sequence at the N-terminus of human MUC2, which shares 86.1% amino acid (aa) sequence identity with both mouse and rat MUC2.
Recommended Detection Systems	Boster recommends HRP Conjugated anti-Rabbit IgG Super Vision Assay Kit (SV0002-1) for IHC(P).

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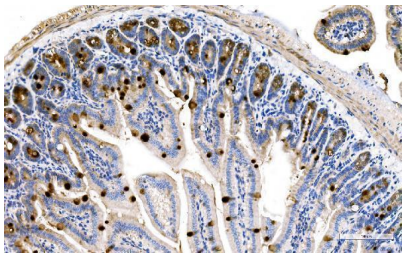
Cross Reactivity	No cross-reactivity with other proteins.
Isotype	Rabbit IgG
Form	Lyophilized
Concentration	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml.
Purification	Immunogen affinity purified.
Suggested Dilutions	Immunohistochemistry (Paraffin-embedded Section), 2-5ug/ml, Human, Mouse, Rat Immunofluorescence, 5ug/ml, Human, Mouse

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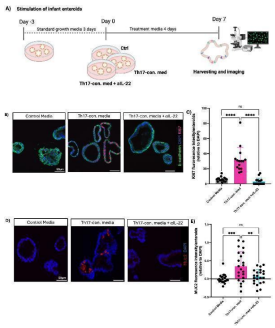
Anti-MUC2 Antibody (A01212) Images



IHC analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in a paraffin-embedded section of human colon cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



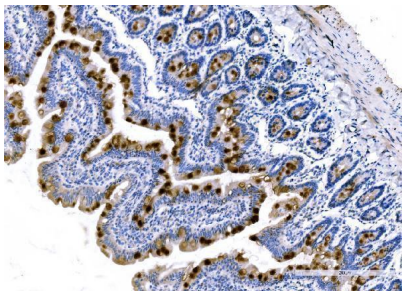
IHC analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in a paraffin-embedded section of mouse colon tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



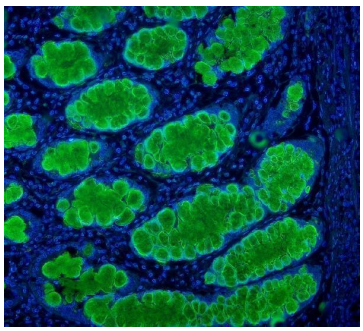
IL-22 is the key cytokine underlying the effects of the human infant Th17-conditioned media. (A) Experimental design for enteroid stimulation. (B) Representative immunofluorescent staining of Ki67 (red), E-cadherin (green), and DAPI (blue) in infant enteroids cultured in control media (left), control media supplemented with infant Th17-conditioned media (middle), or control media plus Th17-conditioned media plus neutralizing anti-IL-22 (right) (Scale bars, 50 um). (C, E) Fluorescence intensity of Ki67 and MUC2 per enteroid relative to DAPI following exposure to Th17-conditioned media. (technical replicates n=5; N= 4 individuals, statistical difference calculated by one-way ANOVA). Enteroids exposed to infant Th17-conditioned media showed more goblet cell (MUC2) staining as compared to control, and Th17-conditioned media plus neutralizing IL-22 groups (Scale bar, 50 um). (D) Infant enteroids stimulated by neonatal Th17-conditioned media display increased goblet cell numbers/size as indicated by increased MUC2 intensity per enteroid. MUC2 intensity was normalized to DAPI (technical replicates n=5; N= 4 individuals, statistical differences calculated by t-test **P < 0.01, *** P <0.001, **** P <0.0001) (Scale bar, 50 um). Enteroid samples used N001, N002, N011 and N012.Index in PubMed under a CC BY license. PMID: 40375988

IHC analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in a paraffin-embedded section of rat

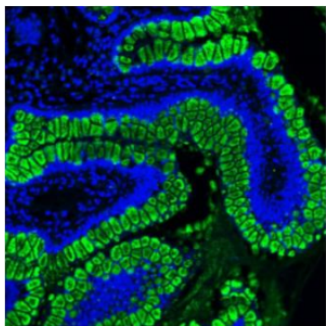
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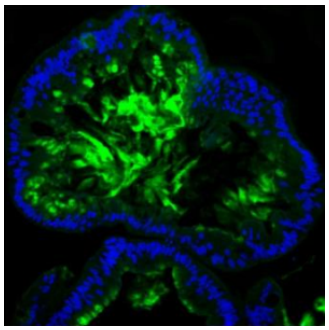
colon tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. Biotinylated goat anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using Strepavidin-Biotin-Complex (SABC) (Catalog # SA1022) with DAB as the chromogen.



IF analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in paraffin-embedded section of human intestine cancer tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



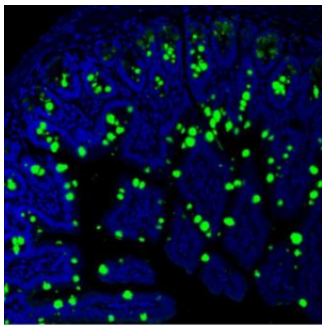
IF analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in paraffin-embedded section of human ileum tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



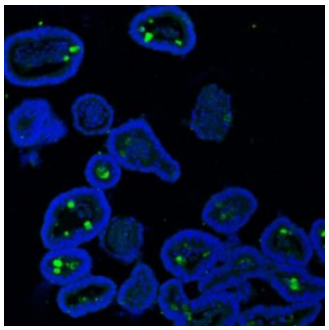
IF analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in paraffin-embedded section of human colon organoid tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

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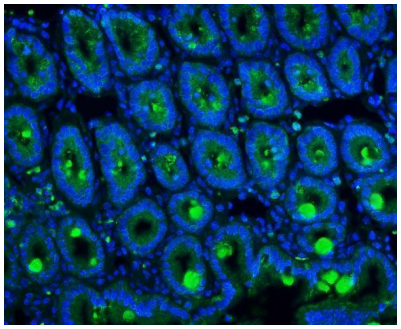
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MUC2 Antibody (A01212) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



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IF analysis of MUC2 using anti-MUC2 antibody (A01212). MUC2 was detected in paraffin-embedded section of mouse intestine tissue. Heat mediated antigen retrieval was performed in citrate buffer (pH6, epitope retrieval solution) for 20 mins. The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5ug/mL rabbit anti-MUC2 Antibody (A01212) overnight at 4°C. DyLight®488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:100 dilution and incubated for 30 minutes at 37°C. The section was counterstained with DAPI. Visualize using a fluorescence microscope and filter sets appropriate for the label used.

3 Publications Citing This Product

1. PubMed ID: 10.1016/j.envpol.2019.07.021, Subchronic exposure of environmentally relevant concentrations of F-53B in mice resulted in gut barrier dysfunction and colonic inflammation in a sex-independent manner

2. PubMed ID: 10.1016/j.jff.2020.104045, Bifidobacterium breve ATCC15700 pretreatment prevents alcoholic liver disease through modulating gut microbiota in mice exposed to chronic alcohol intake

3. PubMed ID: 10.1016/j.scitotenv.2021.148775, Maternal exposure to sodium rho-perfluorous nonenoxybenzene sulfonate during pregnancy and lactation disrupts intestinal barrier and may cause obstacles to the nutrient transport and metabolism in F0 and F1 generations of mice

Visit bosterbio.com/anti-muc2-antibody-a01212-boster.html to see all 3 publications.

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