

Anti-Collagen I/COL1A1 Antibody Picoband®

Catalog Number: PA2140-2

About Col1a1

Collagen, type I, alpha 1, also known as COL1A1, is a human gene that encodes the major component of type I collagen, the fibrillar collagen found in most connective tissues, including cartilage. This gene is mapped to 17q21.33. This gene encodes the [pro-alpha1 chains of type I collagen](#) whose triple helix comprises two alpha1 chains and one alpha2 chain. Type I is a fibril-forming collagen found in most connective tissues and is abundant in bone, cornea, dermis and tendon. Mutations in this gene are associated with osteogenesis imperfecta types I-IV, Ehlers-Danlos syndrome type VIIA, Ehlers-Danlos syndrome Classical type, Caffey Disease and idiopathic osteoporosis.

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Overview

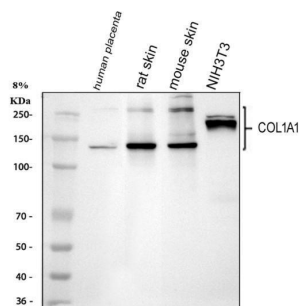
Product Name	Anti-Collagen I/COL1A1 Antibody Picoband®
Reactive Species	Human, Mouse, Rat
Description	Boster Bio Anti-Collagen I/COL1A1 Antibody catalog # PA2140-2. Tested in IF, IHC, ICC, WB applications. This antibody reacts with Human, Mouse, Rat. The brand Picoband indicates this is a premium antibody 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	IF, IHC, ICC, WB
Clonality	Polyclonal
Formulation	Each vial contains 4mg Trehalose, 0.9mg NaCl and 0.2mg 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	P11087

Technical Details

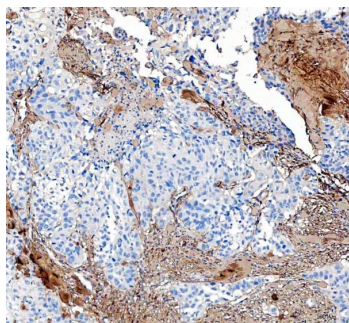
Immunogen	A synthetic peptide corresponding to a sequence at the C-terminus of mouse Collagen I, identical to the related rat sequence, and different from the related human sequence by two amino acids.
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Recommended Detection Systems	Boster recommends 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) and ICC.
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	Western blot, 0.1-0.5ug/ml, Human, Mouse, Rat Immunohistochemistry (Paraffin-embedded Section), 1-2ug/ml, Human, Mouse, Rat Immunocytochemistry/Immunofluorescence , 5ug/ml, Mouse Immunofluorescence, 5ug/ml, Human, Mouse, Rat

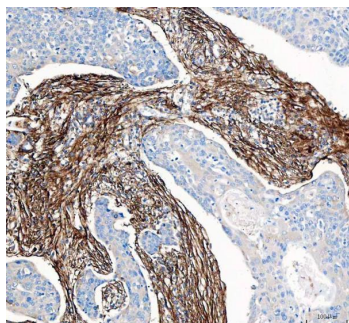
Anti-Collagen I/COL1A1 Antibody Picoband® (PA2140-2) Images



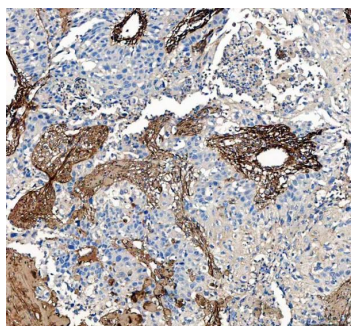
Western blot analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Electrophoresis was performed on a 8% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. The sample well of each lane was loaded with 30 ug of sample under reducing conditions. Lane 1: human placenta tissue lysates, Lane 2: rat skin tissue lysates, Lane 3: mouse skin tissue lysates, Lane 4: mouse NIH/3T3 whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-Collagen I/COL1A1 antigen affinity purified polyclonal antibody (Catalog # PA2140-2) at 0.5 ug/mL overnight at 4°C, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal is developed using an ECL Plus Western Blotting Substrate (Catalog # AR1196-200) with Tanon 5200 system. A specific band was detected for Collagen I/COL1A1 at approximately 130 kDa, 220 kDa, 250 kDa. The expected band size for Collagen I/COL1A1 is at 138 kDa.



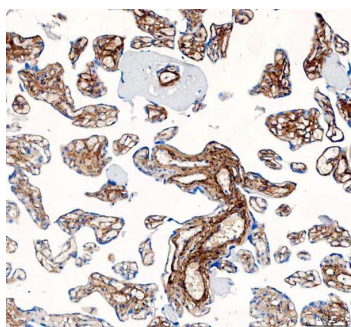
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human bladder cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



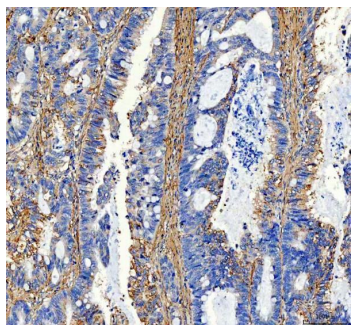
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human esophageal squamous cell carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



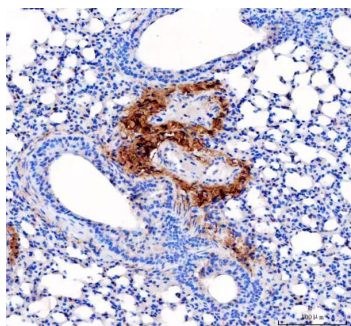
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human clear cell renal cell carcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



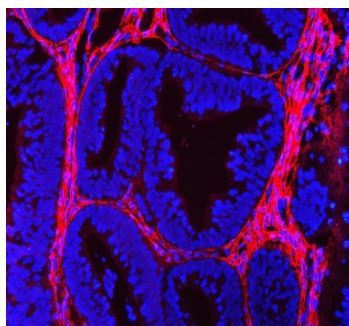
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human placenta tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



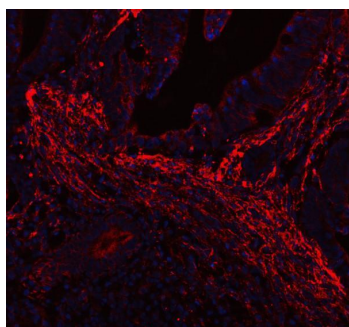
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human rectum adenocarcinoma tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



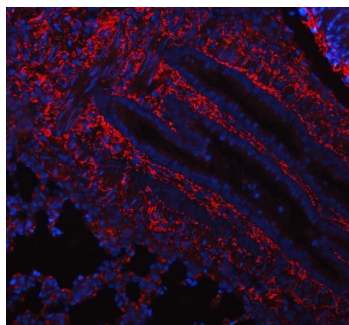
IHC analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of mouse lung tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 2 ug/ml rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Peroxidase Conjugated Goat Anti-rabbit IgG was used as secondary antibody and incubated for 30 minutes at 37°C. The tissue section was developed using HRP Conjugated Rabbit IgG Super Vision Assay Kit (Catalog # SV0002) with DAB as the chromogen.



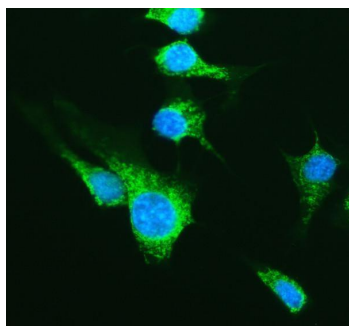
IF analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human endometrial cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5 ug/mL rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Fluoro550 Conjugated Goat Anti-Rabbit IgG (BA1135) was used as secondary antibody at 1:500 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.



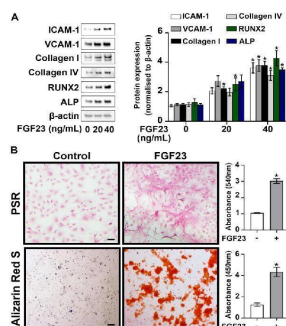
IF analysis of Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of human intestinal cancer tissue. Heat mediated antigen retrieval was performed in EDTA buffer (pH 8.0, epitope retrieval solution). The tissue section was blocked with 10% goat serum. The tissue section was then incubated with 5 ug/mL rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) was used as secondary antibody at 1:500 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 Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in a paraffin-embedded section of rat lung 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 5 ug/mL rabbit anti-Collagen I/COL1A1 Antibody (PA2140-2) overnight at 4°C. Cy3 Conjugated Goat Anti-Rabbit IgG (BA1032) was used as secondary antibody at 1:500 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 Collagen I/COL1A1 using anti-Collagen I/COL1A1 antibody (PA2140-2). Collagen I/COL1A1 was detected in an immunocytochemical section of NIH/3T3 cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent (AR0022) for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/mL rabbit anti-ANXA3 Antibody (PA2140-2) overnight at 4°C. Fluoro488 Conjugated Goat Anti-Rabbit IgG (BA1127) was used as secondary antibody at 1:500 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.



FGF23 induces AVIC fibrosis and calcification. (A) Human AVICs from normal valves were treated with recombinant FGF23 in different concentrations for 72 hours. Representative immunoblots (left) and densitometric data (right) show that FGF23 upregulates the expression of inflammatory (ICAM-1 and VCAM-1), fibrogenic (collagen I and collagen IV) and osteogenic (RUNX2 and ALP) mediators in AVICs. (B) Representative images of Picrosirius Red (PSR) staining (upper) and Alizarin Red S staining (lower), along with corresponding spectrophotometric data, show that prolonged treatment with recombinant FGF23 (10 days or 14 days) induces collagen and calcium deposition in AVICs. Images were taken using a 10x objective. Scale bar = 100 μ m. Quantitative data are expressed as mean $\pm$ SEM, n = 4 cell isolates from distinct donor valves in each group. * P < 0.05 versus untreated control. Index in PubMed under a CC BY license. PMID: 38993571

99 Publications Citing This Product

1. PubMed ID: 10.1186/s13395-018-0180-z, Myostatin and activin blockade by engineered follistatin results in hypertrophy and improves dystrophic pathology in mdx mouse more than myostatin blockade alone
2. PubMed ID: 10.1016/j.jbc.2021.101479, Heparan sulfate is necessary for the early formation of nascent fibronectin and collagen I fibrils at matrix assembly sites
3. PubMed ID: 10.1002/jat.3842, Food-grade titanium dioxide (E171) by solid or liquid matrix administration induces inflammation, germ cells sloughing in seminiferous tubules and blood-testis barrier disruption in mice

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Anti-Collagen I/COL1A1 Antibody

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