abcam

Product datasheet

Anti-Collagen I antibody [EPR7785] - BSA and Azide free ab215969

KO VALIDATED Recombinant RabMAb

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Overview

Product name	Anti-Collagen I antibody [EPR7785] - BSA and Azide free
Description	Rabbit monoclonal [EPR7785] to Collagen I - BSA and Azide free
Host species	Rabbit
Specificity	Compared with **ab138492**, **ab255809** has higher affinity. We recommend **ab255809** as an alternative for testing pro-Collagen forms in western blot. **ab138492** works in western blot in samples with high level of collagen I, like HFF-1, MRC-5, skin tissue etc. **ab138492** is specific for pro-Collagen and 139kda mature from, while **ab255809** is specific for pro-Collagen and 35kda C-terminal pro peptide. **FURTHER INFORMATION ON SPECIFICITY (Chinese Version)**
Tested applications	**Suitable for: IHC-Fr, WB, IHC-P, ICC/IF**
Species reactivity	**Reacts with: Human** **Predicted to work with: Cow**
Immunogen	**Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.**
Positive control	**WB: HFF-1 and MRC-5 whole cell lysates, Human stomach, skin and adrenal gland tissue lysates. IHC-P: Human breast carcinoma, colon, placenta and stomach tissues. IHC-Fr: Frozen Human cervix and uterus tissue sections. ICC/IF: U2OS cells**
General notes	**ab215969 is the carrier-free version of ab138492**. Our **carrier-free** antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency. This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications. Use our **conjugation kits** for antibody conjugates that are ready-to-use in as little as 20 minutes with <1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold. This product is compatible with the Maxpar® Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar® is a trademark of Fluidigm Canada Inc.

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free production

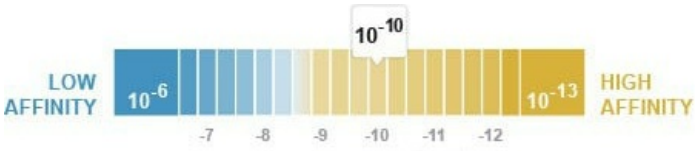
For more information **see here**.

Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to **RabMAb® patents**.

Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C. Do Not Freeze.
Dissociation constant (K_D)	$K_D = 1.22 \times 10^{-10}$ M



Learn more about K_D

Storage buffer	pH: 7.20 Constituent: 99% PBS
Carrier free	Yes
Purity	Protein A purified
Clonality	Monoclonal
Clone number	EPR7785
Isotype	IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab215969 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
IHC-Fr		Use at an assay dependent concentration.
WB		Use at an assay dependent concentration. Predicted molecular weight: 139 kDa. Sample preparation: frozen, ground tissue samples were added to hot lysis buffer (10 mM Tris-HCl (pH 8.0); 1%SDS; 1.0 mM Na-Orthovanadate), boiled for 10-20 minutes and sonicated (3 seconds at 40kW, 30 intervals) prior to centrifugation. Positive Control: Hu stomach, skin and adrenal gland tissue

Application	Abreviews	Notes
IHC-P		Use at an assay dependent concentration. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. **ab199376** - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
ICC/IF		Use at an assay dependent concentration.

Target

Function

Type I collagen is a member of group I collagen (fibrillar forming collagen).

Tissue specificity

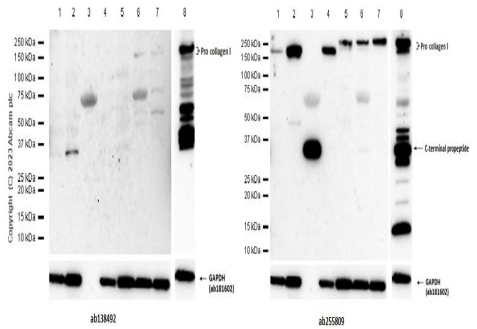
Forms the fibrils of tendon, ligaments and bones. In bones the fibrils are mineralized with calcium hydroxyapatite.

Involvement in disease

Defects in COL1A1 are the cause of Caffey disease (CAFFD) [MIM:114000]; also known as infantile cortical hyperostosis. Caffey disease is characterized by an infantile episode of massive subperiosteal new bone formation that typically involves the diaphyses of the long bones, mandible, and clavicles. The involved bones may also appear inflamed, with painful swelling and systemic fever often accompanying the illness. The bone changes usually begin before 5 months of age and resolve before 2 years of age.
Defects in COL1A1 are a cause of Ehlers-Danlos syndrome type 1 (EDS1) [MIM:130000]; also known as Ehlers-Danlos syndrome gravis. EDS is a connective tissue disorder characterized by hyperextensible skin, atrophic cutaneous scars due to tissue fragility and joint hyperlaxity. EDS1 is the severe form of classic Ehlers-Danlos syndrome.
Defects in COL1A1 are the cause of Ehlers-Danlos syndrome type 7A (EDS7A) [MIM:130060]; also known as autosomal dominant Ehlers-Danlos syndrome type VII. EDS is a connective tissue disorder characterized by hyperextensible skin, atrophic cutaneous scars due to tissue fragility and joint hyperlaxity. EDS7A is marked by bilateral congenital hip dislocation, hyperlaxity of the joints, and recurrent partial dislocations.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 1 (OI1) [MIM:166200]. A dominantly inherited connective tissue disorder characterized by bone fragility and blue sclerae. Osteogenesis imperfecta type 1 is non-deforming with normal height or mild short stature, and no dentinogenesis imperfecta.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 2A (OI2A) [MIM:166210]; also known as osteogenesis imperfecta congenita. A connective tissue disorder characterized by bone fragility, with many perinatal fractures, severe bowing of long bones, undermineralization, and death in the perinatal period due to respiratory insufficiency.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 3 (OI3) [MIM:259420]. A connective tissue disorder characterized by progressively deforming bones, very short stature, a triangular face, severe scoliosis, grayish sclera, and dentinogenesis imperfecta.
Defects in COL1A1 are a cause of osteogenesis imperfecta type 4 (OI4) [MIM:166220]; also known as osteogenesis imperfecta with normal sclerae. A connective tissue disorder characterized by moderately short stature, mild to moderate scoliosis, grayish or white sclera and dentinogenesis imperfecta.
Genetic variations in COL1A1 are a cause of susceptibility to osteoporosis (OSTEOP) [MIM:166710]; also known as involutional or senile osteoporosis or postmenopausal osteoporosis. Osteoporosis is characterized by reduced bone mass, disruption of bone microarchitecture without alteration in the composition of bone. Osteoporotic bones are more at

	risk of fracture. Note=A chromosomal aberration involving COL1A1 is found in dermatofibrosarcoma protuberans. Translocation t(17;22)(q22;q13) with PDGF.
Sequence similarities	Belongs to the fibrillar collagen family. Contains 1 fibrillar collagen NC1 domain. Contains 1 VWFC domain.
Post-translational modifications	Proline residues at the third position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some or all of the chains. Proline residues at the second position of the tripeptide repeating unit (G-X-Y) are hydroxylated in some of the chains. O-linked glycan consists of a Glc-Gal disaccharide bound to the oxygen atom of a post-translationally added hydroxyl group.
Cellular localization	Secreted > extracellular space > extracellular matrix.

Images



Western blot - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

All lanes : **ab138492** and **ab255809** at 1/1000 dilution

Lane 1 : A549 (Human lung carcinoma epithelial cell) whole cell lysate
Lane 2 : MDA-MB-231 (Human breast adenocarcinoma epithelial cell) whole cell lysate
Lane 3 : MDA-MB-231 (Human breast adenocarcinoma epithelial cell) supernatant lysate
Lane 4 : A431 (Human epidermoid carcinoma epithelial cell) whole cell lysate
Lane 5 : SW480 (Human colorectal adenocarcinoma epithelial cell) whole cell lysate
Lane 6 : Human lung tissue lysate
Lane 7 : Human liver tissue lysate
Lane 8 : HFF-1 (Human Skin fibroblast) whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/20000 dilution

Predicted band size: 139 kDa
Observed band size: 220 kDa

Blocking buffer and concentration: 5% NFDM/TBST.

Diluting buffer and concentration: 5% NFDM/TBST.

Exposure Time: Lane 1-7: 180 seconds, Lane 8: 60 seconds.

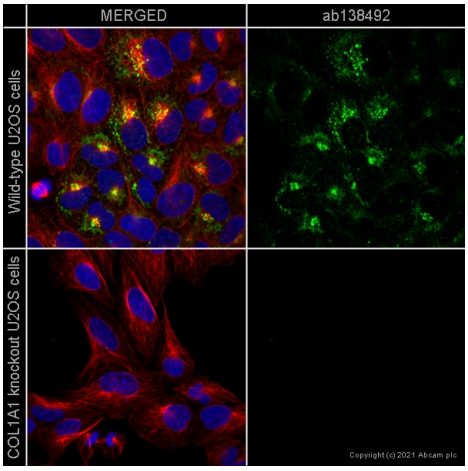
ab181602 was used as loading control.

Compared with **ab138492**, **ab255809** has higher affinity. We recommend **ab255809** as an alternative for testing pro-Collagen forms in western blot.

ab138492 is specific for pro-Collagen and 139kda mature from, while **ab255809** is specific for pro-Collagen and 35kda C-terminal pro peptide.

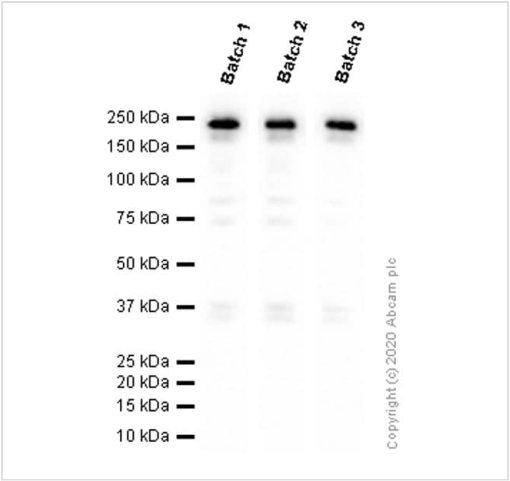
For better using **ab255809**, we recommend loading higher amount of lysate or using lower antibody dilution.

This data was developed using **ab138492**, the same antibody clone in a different buffer formulation.



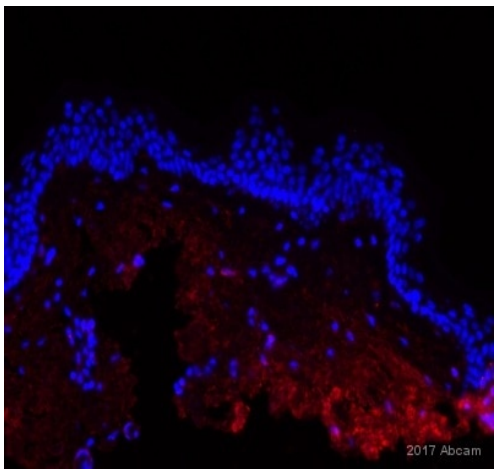
Immunocytochemistry/ Immunofluorescence - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

This data was developed using the same antibody clone in a different buffer formulation (**ab138492**). **ab138492** staining Collagen alpha-1 chain in wild-type U2OS cells (top panel) and COL1A1 knockout U2OS cells (bottom panel) (**ab273846**). The cells were fixed with 100% methanol (5 min) then permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with **ab138492** at 0.4µg/ml concentration and **ab7291** (Mouse monoclonal to alpha Tubulin) at 1/1000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat secondary antibody to rabbit IgG (Alexa Fluor® 488) (**ab150081**) at 2 µg/ml (shown in green) and a goat secondary antibody to mouse IgG (Alexa Fluor® 594) (**ab150120**) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).



Western blot - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

This data was developed using **ab138492**, the same antibody clone in a different buffer formulation. Different batches of **ab138492** were tested on HFF-1 (human skin fibroblast) lysate at 0.5 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 220 kDa.



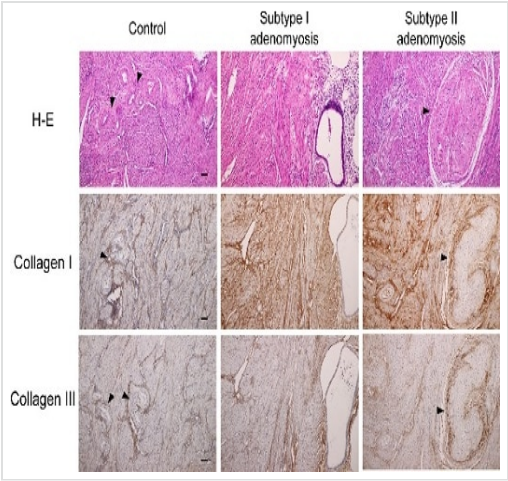
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

This image is courtesy of an anonymous Abreview.

Paraffin-embedded human skin tissue stained for Collagen I using **ab138492** at 1/3000 dilution in immunohistochemical analysis, followed by Goat anti rabbit Alexa Fluor® 555.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

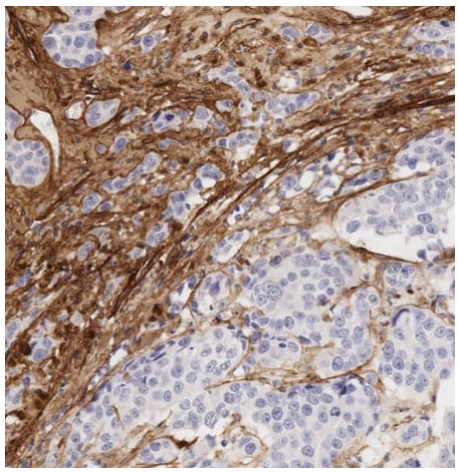
Image from Kishi Y et al. PLoS One. 2017;12(12):e0189522. Fig 2.; doi: 10.1371/journal.pone.0189522.

Type I collagen (**ab138492**) and Type III collagen immunostainings for control, Subtype I, and Subtype II adenomyotic cases.

The human type I collagen staining bands for adenomyotic cases were thicker than those of the control uteri, and were seen with more fine muscle bundles. Arrowheads indicate vascular walls. Original magnification: X100. Scale bar = 50μm.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

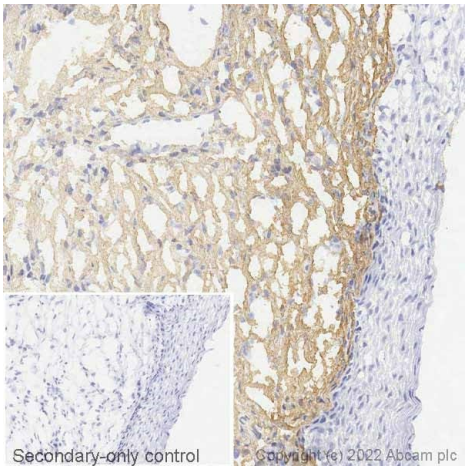


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Immunohistochemistry of breast carcinoma staining Collagen I with **ab138492** at 0.5μg/ml

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



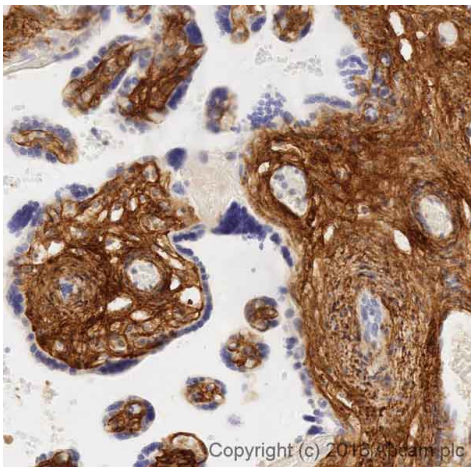
Immunohistochemistry (Frozen sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

IHC image of Collagen I staining in a section of frozen human cervix* performed on a Leica Biosystems BOND® RX instrumen using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with **ab138492**, 0.01 ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.

This data was developed using the same antibody clone in a different buffer formulation (**ab138492**).



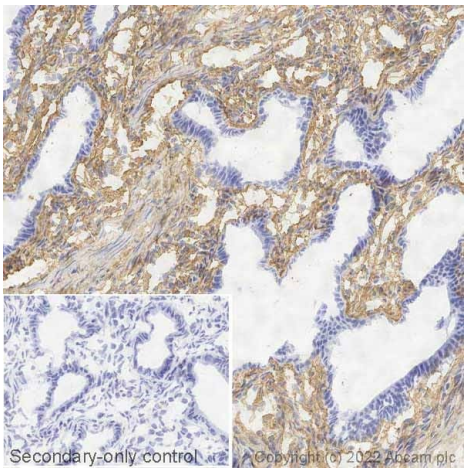
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

IHC image of Collagen I staining in human placenta formalin fixed paraffin embedded tissue section*, performed on a Leica Bond™ system using the standard protocol B. The section was pre-treated using heat mediated antigen retrieval (EDTA based pH 9.0 solution, epitope retrieval solution 2) for 20 minutes. The section was then incubated with **ab138492** at 1/1500, for 15 minutes at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).



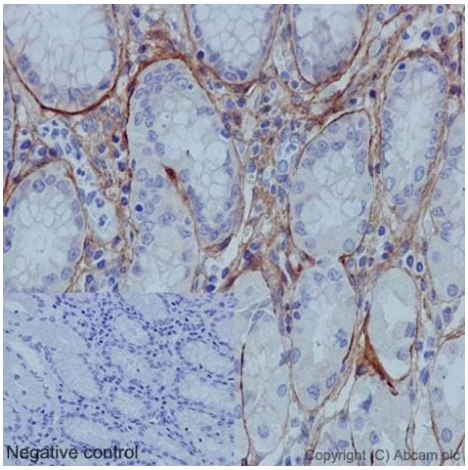
Immunohistochemistry (Frozen sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

IHC image of Collagen I staining in a section of frozen human uterus* performed on a Leica Biosystems BOND® RX instrumen using the standard protocol. The section was fixed in 10% paraformaldehyde (10 min) prior to staining. The section was incubated with **ab138492**, 0.05 ug/ml, for 15 mins at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX. The inset secondary-only control image is taken from an identical assay without primary antibody.

For other IHC staining systems (automated and non-automated) customers should optimize variable parameters such as antigen retrieval conditions, primary antibody concentration and antibody incubation times.

*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre.

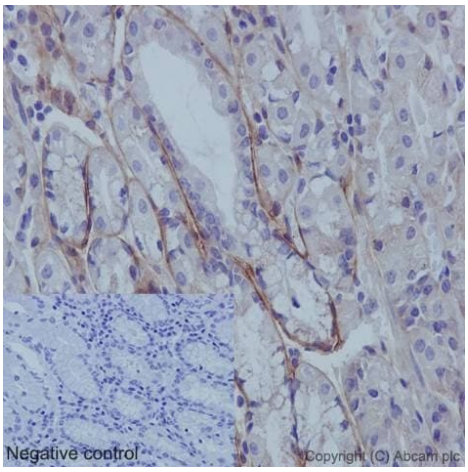
This data was developed using the same antibody clone in a different buffer formulation (**ab138492**).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human stomach tissue labelling Collagen I with purified **ab138492** at 1/1500. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.

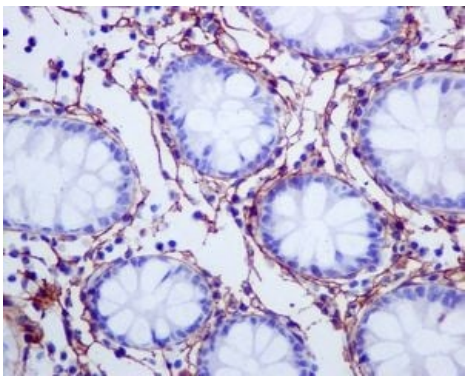
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human stomach tissue labelling Collagen I with unpurified **ab138492** at 1/1500. Heat mediated antigen retrieval was performed using Tris/EDTA buffer pH 9. A prediluted HRP-polymer conjugated anti-rabbit IgG was used as the secondary antibody. Negative control using PBS instead of primary antibody. Counterstained with hematoxylin.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

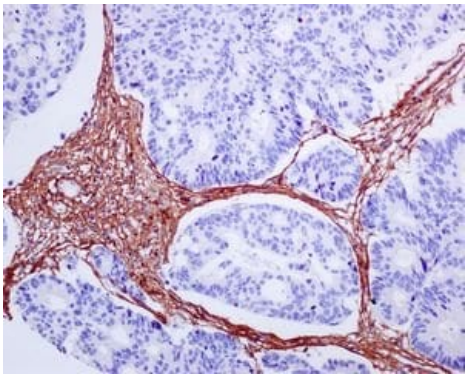


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Formalin/PFA-fixed paraffin-embedded sections of human colon tissue staining Collagen I with unpurified **ab138492** in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

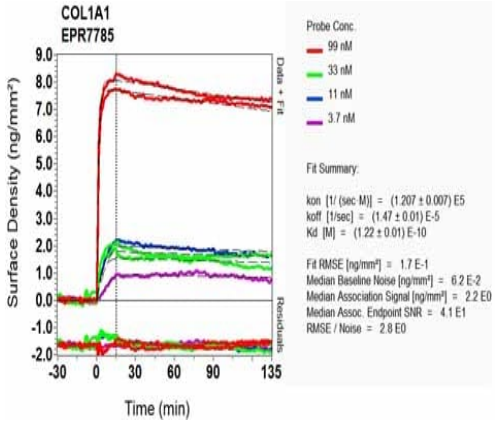


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Formalin/PFA-fixed paraffin-embedded sections of human breast carcinoma tissue stained for Collagen I with unpurified **ab138492** in immunohistochemical analysis.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Heat mediated antigen retrieval was performed with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.



OI-RD Scanning - Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

Equilibrium disassociation constant (K_D)

Learn more about K_D

Click here to learn more about K_D

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab138492**).

Anti-Collagen I antibody [EPR7785] - BSA and Azide free (ab215969)

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