


Product datasheet

Anti-Collagen I antibody [EPR7785] ab138492

KO VALIDATED Recombinant RabMAB

★★★★☆ [32 Abreviews](#) [151 References](#) [20 Images](#)

Overview

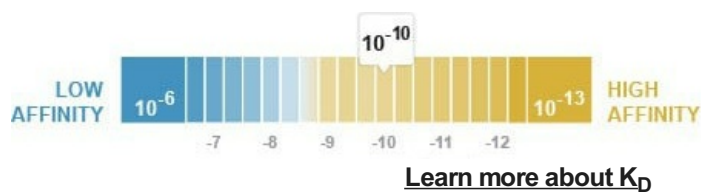
Product name	Anti-Collagen I antibody [EPR7785]
Description	Rabbit monoclonal [EPR7785] to Collagen I
Host species	Rabbit
Specificity	<p>Compared with ab138492, ab255809 has higher affinity. We recommend ab255809 as an alternative for testing pro-Collagen forms in western blot. ab138492 works in western blot in samples with high level of collagen I, like HFF-1, MRC-5, skin tissue etc.</p> <p>ab138492 is specific for pro-Collagen and 139kda mature form, while ab255809 is specific for pro-Collagen and 35kda C-terminal pro peptide.</p>
Tested applications	Suitable for: WB, IHC-P, ICC/IF, IHC-Fr
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	<p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none">- High batch-to-batch consistency and reproducibility- Improved sensitivity and specificity- Long-term security of supply- Animal-free production <p>For more information see here.</p> <p>Our RabMAB[®] technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAB[®] patents.</p> <p>Mouse, Rat: We have preliminary internal testing data to indicate this antibody may not react with these species. Please contact us for more information.</p>

Properties

Form Liquid

Storage instructions Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.

Dissociation constant (K_D) K_D = 1.22 x 10⁻¹⁰ M



Storage buffer Preservative: 0.01% Sodium azide
Constituents: 40% Glycerol, 0.05% BSA, PBS

Purity Protein A purified

Clonality Monoclonal

Clone number EPR7785

Isotype IgG

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab138492 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
WB	★★★★★ (1)	1/1000 - 1/10000. 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 lysates.
IHC-P	★★★★★ (20)	1/1500. Perform heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol. ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
ICC/IF	★★★★★ (5)	Use a concentration of 0.4 µg/ml.
IHC-Fr	★★★★★ (2)	Use a concentration of 0.1 - 0.5 µg/ml.

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.

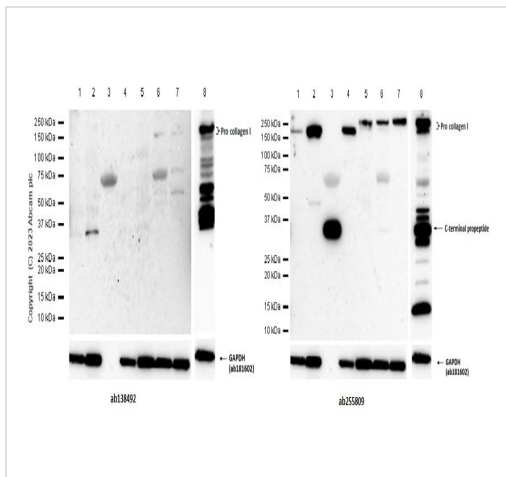
Post-translational modifications

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]
(ab138492)

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% NFD/MTBST.

Diluting buffer and concentration: 5% NFD/MTBST.

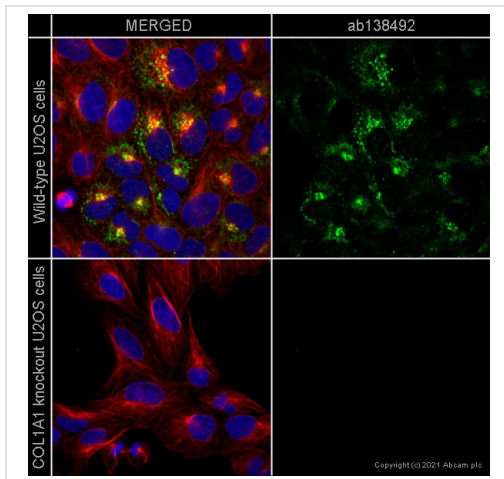
Exposure Time: Lane 1-7: 180 seconds, Lane 8: 60 seconds.

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 form, while **ab255809** is specific for pro-Collagen and 35kda C-terminal pro peptide.

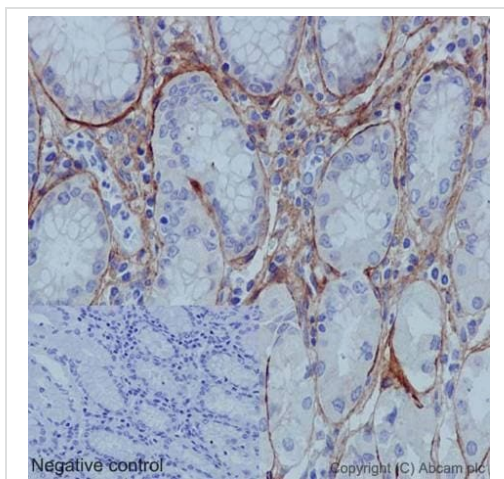
For better using **ab255809**, we recommend loading higher amount of lysate or using lower antibody dilution.



Immunocytochemistry/ Immunofluorescence - Anti-Collagen I antibody [EPR7785] (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).

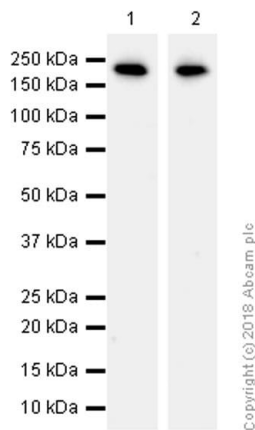


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human stomach tissue labeling 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.



Western blot - Anti-Collagen I antibody [EPR7785] (ab138492)

All lanes : Anti-Collagen I antibody [EPR7785] (ab138492) at 1/5000 dilution

Lane 1 : HFF-1 (human skin fibroblast) whole cell lysate

Lane 2 : MRC-5 (Human lung fibroblast) whole cell lysate

Lysates/proteins at 15 µg per lane.

Secondary

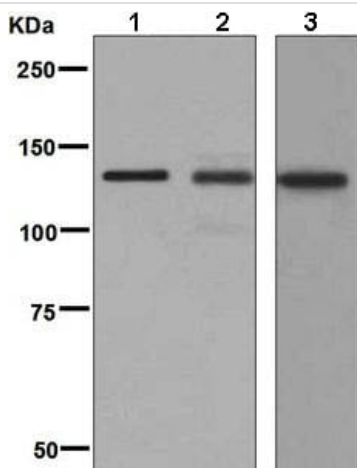
All lanes : Goat Anti-Rabbit IgG H&L (HRP) (**ab97051**) at 1/100000 dilution

Predicted band size: 139 kDa

Observed band size: 220 kDa

Blocking buffer: 5% NFDm/TBST.

Exposure time: 180 seconds.



Western blot - Anti-Collagen I antibody [EPR7785] (ab138492)

All lanes : Anti-Collagen I antibody [EPR7785] (ab138492) at 1/1000 dilution (unpurified)

Lane 1 : Human stomach tissue lysate

Lane 2 : Human skin lysate

Lane 3 : Human adrenal gland lysate

Lysates/proteins at 10 µg per lane.

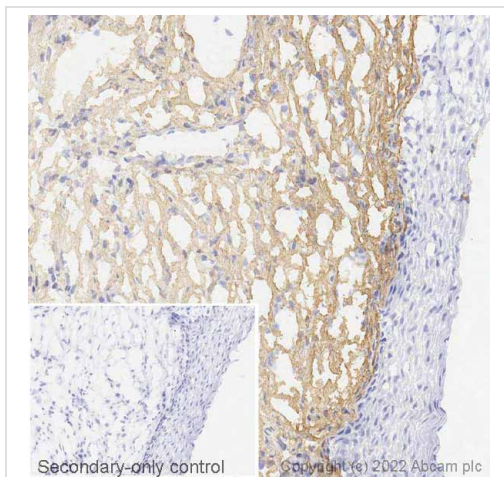
Secondary

Lane 1 : HRP-conjugated goat anti-rabbit IgG at 1/2000 dilution

Lanes 2-3 : HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 139 kDa

The lysate in this image is prepared by 1%SDS Hot lysis method. For Lysate preparation protocol, please refer to the protocol book in the protocol section and/or [here \(downloadable copy\)](#).

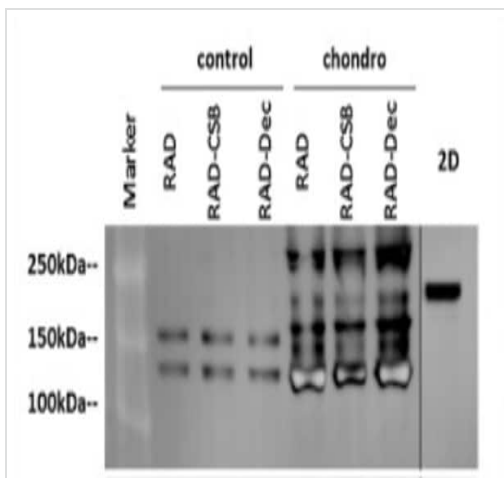


Immunohistochemistry (Frozen sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

IHC image of Collagen I staining in a section of frozen human cervix* performed on a Leica Biosystems BOND® RX instrument 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.



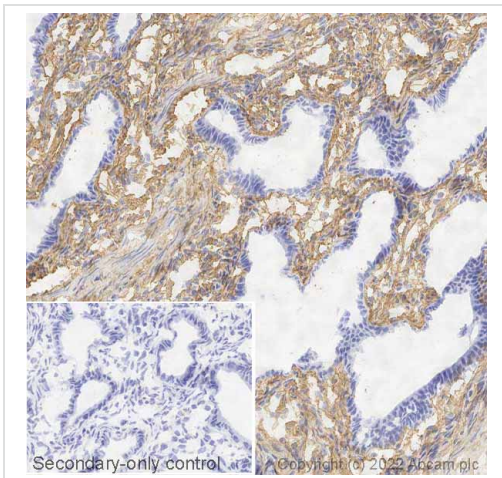
Western blot - Anti-Collagen I antibody [EPR7785] (ab138492)

Recha-Sancho et al PLoS One. 2016 Jun 17;11(6):e0157603. doi: 10.1371/journal.pone.0157603. eCollection 2016. Fig 7. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

Western blot results of Collagen I from ADSCs (human adipose derived stem cells) cultured in RAD16-I alone, RAD/CS or RAD/Decorin. Actin was used as an internal control. Samples were prepared in triplicate; control, control medium; chondro, chondrogenic medium.

Samples were lysed in RIPA buffer with a protease inhibitor cocktail. Acrylamide gels were prepared according to the size of the proteins, generally at concentrations of 7.5% or 10% (w/v). Cell lysates (5 mg) were run by applying 150 V for 90 min. Proteins were transferred to a PVDF membrane by applying 40 V for 2 hours at RT. The membrane was incubated at RT for 2 hours in blocking buffer (BB) consisting of 4% (w/v) nonfat milk powder in PBST. Membranes were incubated for 1 hour at RT with ab138492 at a final concentration of 1 mg/mL in PBST. An anti-rabbit (IgG-HRP) secondary antibody was added, at a final concentration of 1 mg/mL, and incubated at RT for 1 h.

For full image please see paper.

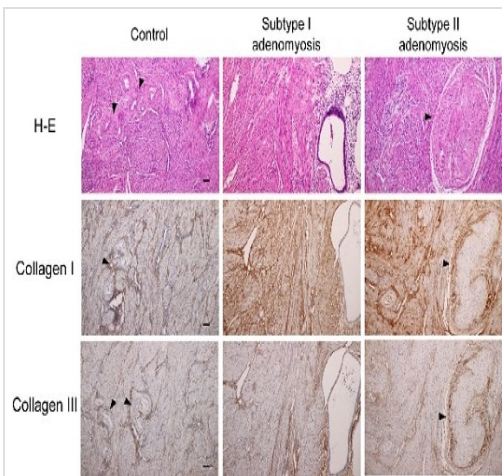


Immunohistochemistry (Frozen sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

IHC image of Collagen I staining in a section of frozen human uterus* performed on a Leica Biosystems BOND[®] RX instrument 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.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

Image from Kishi Y et al., PLoS One. 2017;12(12):e0189522. Fig 2.; doi: 10.1371/journal.pone.0189522. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

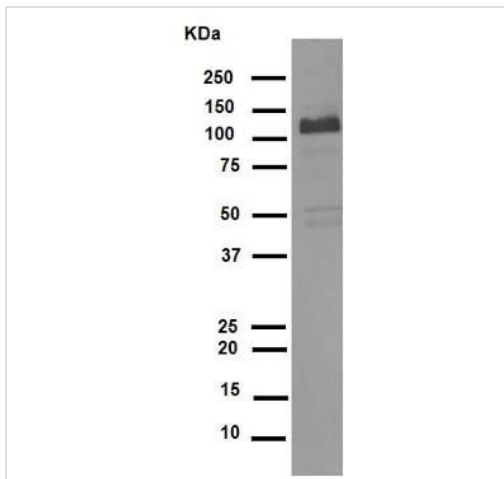
Type I collagen (ab138492) and Type III collagen immunostainings for control, Subtype I, and Subtype II adenomyotic cases.

The 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.



Western blot - Anti-Collagen I antibody [EPR7785]
(ab138492)

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.



Western blot - Anti-Collagen I antibody [EPR7785]
(ab138492)

Anti-Collagen I antibody [EPR7785] (ab138492) at 1/5000 dilution (unpurified) + Human skin tissue lysate at 10 µg

Secondary

HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG at 1/1000 dilution

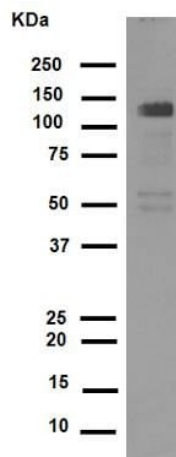
Predicted band size: 139 kDa

Observed band size: 139 kDa

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, 30 intervals).

The blocking and antibody incubations were performed in 5% non-fat milk (TBST).

The lysate in this image is prepared by 1%SDS Hot lysis method. For Lysate preparation protocol, please refer to the protocol book in the protocol section and/or [here \(downloadable copy\)](#).



Western blot - Anti-Collagen I antibody [EPR7785] (ab138492)

Anti-Collagen I antibody [EPR7785] (ab138492) at 1/5000 dilution (purified) + Human skin tissue lysate at 10 µg

Secondary

HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG at 1/5000 dilution

Predicted band size: 139 kDa

Observed band size: 139 kDa

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, 30 intervals).

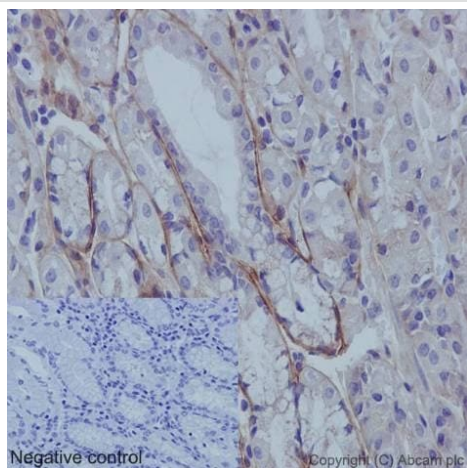
Blocking buffer and concentration: 5% NFDm/TBST.

Diluting buffer and concentration: 5% NFDm /TBST.

TBST).

The lysate in this image is prepared by 1%SDS Hot lysis method.

For Lysate preparation protocol, please refer to the protocol book in the protocol section and/or [here \(downloadable copy\)](#).

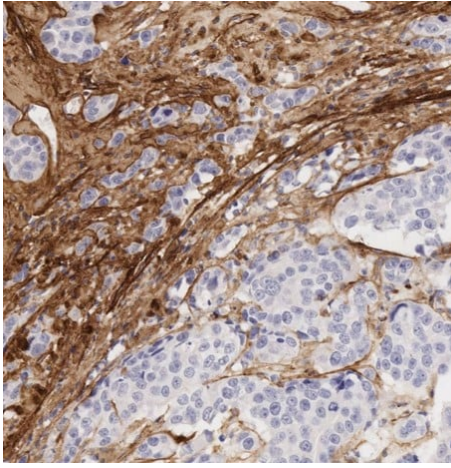


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

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.

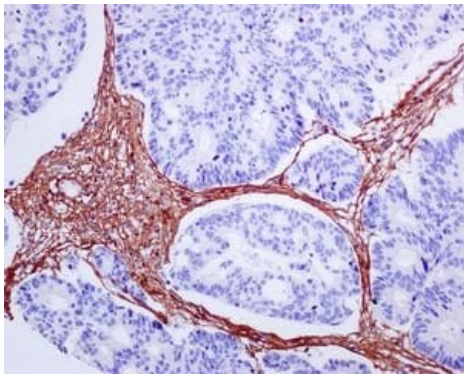
Counterstained with hematoxylin.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

Immunohistochemistry of human breast carcinoma tissue staining Collagen I with ab138492 at 0.5µg/ml.

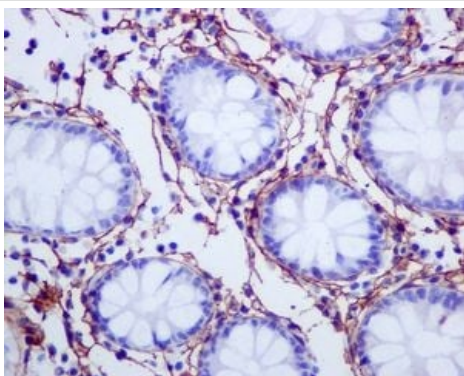
Heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 was performed before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

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

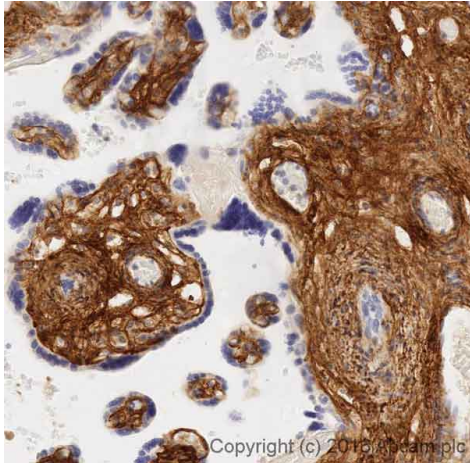
Heat mediated antigen retrieval with Tris/EDTA buffer pH 9.0 was performed before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

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

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

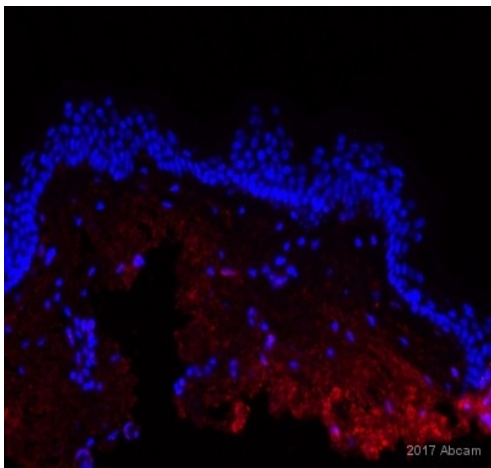


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

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.

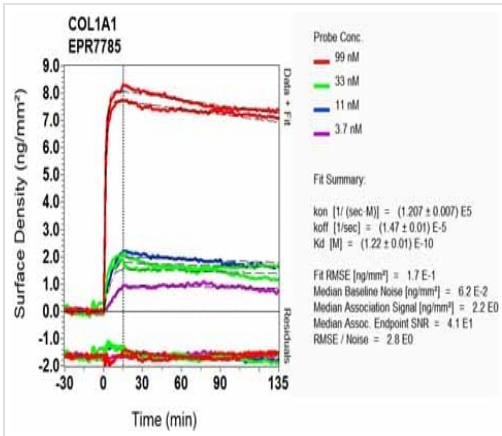
*Tissue obtained from the Human Research Tissue Bank, supported by the NIHR Cambridge Biomedical Research Centre



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody [EPR7785] (ab138492)

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.



OI-RD Scanning - Anti-Collagen I antibody
 [EPR7785] (ab138492)

Equilibrium dissociation constant (K_D)

Learn more about K_D

[Click here to learn more about \$K_D\$](#)

Why choose a recombinant antibody?

Research with confidence
 Consistent and reproducible results

Long-term and scalable supply
 Recombinant technology

Success from the first experiment
 Confirmed specificity

Ethical standards compliant
 Animal-free production

Anti-Collagen I antibody [EPR7785] (ab138492)

Please note: All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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