Anti-Collagen I antibody ab34710

Overview

Product name
Anti-Collagen I antibody

Description
Rabbit polyclonal to Collagen I

Host species
Rabbit

Tested applications
Suitable for: WB, IHC-P

Species reactivity
Reacts with: Human

Immunogen
Full length native protein (purified) corresponding to Human Collagen I aa 1-1464. Collagen Type I from human and bovine placenta.
Database link: P02452

Positive control

General notes
Anti-Collagen I antibody (ab34710) is stable at 4°C as an undiluted liquid. Dilute only prior to immediate use. For extended storage, mix with an equal volume of glycerol, aliquot contents and freeze at -20° C or below.

This collagen antibody was developed using non-denatured 3D epitopes, you must be careful not to denature the collagen protein during your experiment.

PLEASE READ THESE IMPORTANT PROTOCOL TIPS, click here for the english version or here for the mandarin version.

It is often extremely difficult to generate antibodies with specificities to collagens due to the uninterrupted "Glycine-X-Y" triplet repeat that is a necessary part of the triple helical structure. The development of type specific antibodies is dependent on NON-DENATURED three-dimensional epitopes - this may result in diminished reactivity of some antibodies with denatured collagen or formalin-fixed, paraffin embedded tissues.

Reproducibility is key to advancing scientific discovery and accelerating scientists’ next breakthrough.

Abcam is leading the way with our range of recombinant antibodies, knockout-validated antibodies and knockout cell lines, all of which support improved reproducibility.

We are also planning to innovate the way in which we present recommended applications and species on our product datasheets, so that only applications & species that have been tested in our own labs, our suppliers or by selected trusted collaborators are covered by our Abpromise™ guarantee.

In preparation for this, we have started to update the applications & species that this product is Abpromise guaranteed for.
We are also updating the applications & species that this product has been "predicted to work with," however this information is not covered by our Abpromise guarantee.

Applications & species from publications and Abreviews that have not been tested in our own labs or in those of our suppliers are not covered by the Abpromise guarantee.

Please check that this product meets your needs before purchasing. If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, as well as customer reviews and Q&As.

Properties

Form
Liquid

Storage instructions

Storage buffer
Preservative: 0.01% Sodium azide
Constituents: 0.8766% Sodium chloride, 0.42% Potassium phosphate

Purity
Immunogen affinity purified

Purification notes
ab34710 has been prepared by immunoaffinity chromatography using immobilized antigens followed by extensive cross-adsorption against other collagens, human serum proteins and non-collagen extracellular matrix proteins to remove any unwanted specificities. Sterile filtered.

Clonality
Polyclonal

Isotype
IgG

Applications

Our Abpromise guarantee covers the use of ab34710 in the following tested applications.

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

<table>
<thead>
<tr>
<th>Application</th>
<th>Abreviews</th>
<th>Notes</th>
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</thead>
<tbody>
<tr>
<td>WB</td>
<td>🌟🌟🌟🌟🌟</td>
<td>1/1000 - 1/10000. This product is not recommended for use under denaturing conditions in WB, IP, and ELISA. We would suggest testing it under native conditions. Denaturing and reducing conditions will greatly diminish reactivity and selectivity of this antibody. Abcam does not test ab34710 with endogenous samples in WB. We do recommend to look at the guidelines for blotting large proteins here. Customers have been successful using ab34710 in this application, please see references below (Tillgren V et al. J Biol Chem 290:918-25; 2015). Positive Control: Hu stomach, skin and adrenal gland tissue lysates.</td>
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<tr>
<td>IHC-P</td>
<td>🌟🌟🌟🌟🌟</td>
<td>1/50 - 1/200. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.</td>
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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.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human lung tissue labeling Collagen I with ab34710 at 1/400 dilution followed by the addition of Peroxidase goat anti-rabbit secondary antibody at 1/10,000 dilution for 45 min at RT. Strong staining was observed in the extracellular matrix of the lung. Epithelial cells were negative. Staining: antibody as precipitated red signal with a hematoxylin purple nuclear counterstain.

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of normal kidney tissue (distal tubules) labeling Collagen I with ab34710 at 1/100 dilution. Samples were incubated with primary antibody (ab34710) for 4 hours at room temperature followed by the addition of secondary antibody and substrate reaction. No antigen retrieval was performed.

Anti-Collagen I antibody (ab34710) at 1/1000 dilution + Human collagen, 50 ng

Secondary
DyLight™ 649 anti-rabbit secondary antibody at 1:20,000 for 30 min at RT.

Blocking Buffer for 30 min at room temperature - proprietary protein formulation in TRIS buffered saline at pH 7.6 with thimerosal added as an antimicrobial agent.

Other Band(s): Collagen Type I splice variants and isoforms.
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Collagen I antibody (ab34710)

IHC image of Collagen I staining in normal human placenta formalin fixed paraffin embedded tissue section*, performed on a Leica Bond™ system using the standard protocol F. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6, epitope retrieval solution 1) for 20 minutes. The section was then incubated with ab34710 at 5 µg/ml, 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

Immunohistochemical analysis of human colon tissue sections labelling Collagen I with ab34710 at a dilution of 1/200 for 32 minutes at 35°C. The sections were fixed with formaldehyde. The secondary antibody used was an HRP conjugated rabbit IgG. Antigen retrieval was heat mediated using CC1.

This image is courtesy of an abreview submitted by David Krull
Immunohistochemistry of breast carcinoma staining Collagen I with ab34710 at 5μg/ml

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