## Overview

**Product name**
Anti-Collagen I antibody [COL-1]

**Description**
Mouse monoclonal [COL-1] to Collagen I

**Host species**
Mouse

**Tested applications**
Suitable for: IHC-Fr, Dot blot, ICC/IF, Electron Microscopy, Indirect ELISA, ELISA, WB, IHC- FoFr

**Species reactivity**
Reacts with: Mouse, Rat, Rabbit, Cow, Cat, Dog, Human, Pig, Monkey, Rhesus monkey, Deer

**Immunogen**
Full length native protein (purified) corresponding to Cow Collagen I.

**Epitope**
The epitope recognized by the antibody may be sensitive to routine formalin fixation and paraffin embedding. There have been varying results when using this antibody in IHC-P. Please refer to our customer Abreviews for more protocol information and optimization steps when using this antibody in IHC-P.

**Positive control**
WB: Natural Cow Collagen I protein (ab7526), total pig skin lysate, human kidney lysate (see reviews)

**General notes**
Production of this antibody has been changed on 23rd June 2016. The following lots are from ascites and are still in stock as of 23rd June 2016: GR210978, GR175242, GR158374. Lot numbers higher than GR210978 will be from tissue culture supernatant. Please note that the dilutions may need to be adjusted accordingly.

## Properties

**Form**
Liquid

**Storage instructions**

**Storage buffer**
pH: 7.40
Preservative: 0.0976% Sodium azide
Constituent: PBS

**Purity**
Proprietary Purification

**Purification notes**
Purified from Tissue culture supernatant.

**Clonality**
Monoclonal

**Clone number**
COL-1

**Isotype**
IgG1
**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];

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**Applications**

Our Abpromise guarantee covers the use of ab6308 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>
</tr>
</thead>
<tbody>
<tr>
<td>IHC-Fr</td>
<td></td>
<td>Use a concentration of 3.5 - 7 µg/ml. (amplification required). Use on unfixed tissue or acetone fixed tissue.</td>
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<tr>
<td>Dot blot</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
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<tr>
<td>ICC/IF</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 17230415</td>
</tr>
<tr>
<td>Electron Microscopy</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 17016762</td>
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<tr>
<td>Indirect ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>IF</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 28135282</td>
</tr>
<tr>
<td>ELISA</td>
<td></td>
<td>Use at an assay dependent concentration.</td>
</tr>
<tr>
<td>WB</td>
<td></td>
<td>Use a concentration of 1 - 2 µg/ml. Use under non reducing condition. Detects a band of approximately 130 kDa (predicted molecular weight: 130 kDa). The antibody is reactive with the native (non-denaturing, helical) form of collagen type I and not reactive when tested on thermally denatured molecules. Use native (non-denaturing) conditions.</td>
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<tr>
<td>IHC-FoFr</td>
<td></td>
<td>Use at an assay dependent concentration. PubMed: 17016762 Fix in Zamboni's solution (2% paraformaldehyde, 0.2% picric acid in phosphate-buffered saline (PBS), pH 7.6) for 2 h at 4C, store in 20% sucrose in 0.5 mM PBS at 4C.</td>
</tr>
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**Target**
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**
Lane 1: Anti-Collagen I antibody [COL-1] (ab6308) at 2 µg/ml
Lane 2: Anti-Collagen I antibody [COL-1] (ab6308) at 1 µg/ml
Lane 3: Anti-Collagen I antibody [COL-1] (ab6308) at 0.5 µg/ml
Lane 4: Anti-Collagen I antibody [COL-1] (ab6308) at 0 µg/ml

All lanes: Recombinant human Collagen 1

Predicted band size: 130 kDa
ACE2 localizes at the sarcolemma and interstitial space in dystrophic skeletal muscle

Immunostaining of ACE2, collagen I (Coll), and decorin (DCN) in cryosections obtained from GAST and DIA of mdx. Nuclei were stained with Hoechst. The delimited area shows the same fibrotic tissue zone in three serial sections of GAST and DIA mdx muscles, where ACE2 immunostaining is probably associated with interstitial cells. Asterisks show a single fiber, in which ACE2 immunostaining is mainly localized at the sarcolemma. Bar 50 um.

Collagen I is detected using ab6308 in cryosections of mouse skeletal muscle tissue.

(After Figure 3 of Riquelme et al).

Immunoperoxidase staining of unfixed frozen tissue sections with ab6308. Picture of human kidney cortex showing two glomeruli and surrounding tubulointerstitium.
Acetone-fixed human tonsil tissue frozen section stained for Collagen I with ab6308 in immunohistochemical analysis.

ab6308 at a 1/1000 dilution staining in rabbit polymer scaffold with stem cells by Immunocytochemistry/Immunofluorescence, incubated for 2 hours at 20°C. PFA fixed. Permeabilized using 0.5% Triton X-100. Blocked with 3% BSA for 2 hours at 4°C. Secondary used at 1/1000 dilution monoclonal donkey anti-mouse IgG (H+L) conjugated to FITC. 1st column: DAPI stain (blue) 2nd column: collagen type I (green) 3rd column: merge image

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