# Anti-Collagen Type I (RABBIT) Antibody - 600-401-103S

**Code:** 600-401-103S **Size:** 25 µL

**Product Description:** Anti-Collagen Type I (RABBIT) Antibody - 600-401-103S

**Concentration:** 1.0 mg/ml by UV absorbance at 280 nm

**PhysicalState:** Liquid (sterile filtered)

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| **Label** | Unconjugated |
| **Host** | Rabbit |
| **Gene Name** | COL1A1/A2 |
| **Species Reactivity** | human, bovine |
| **Buffer** | 0.02 M Potassium Phosphate, 0.15 M Sodium Chloride, pH 7.2 |
| **Stabilizer** | None |
| **Preservative** | 0.01% (w/v) Sodium Azide |
| **Storage Condition** | Store vial at -20° C or below prior to opening. This vial contains a relatively low volume of reagent (25 µL). To minimize loss of volume dilute 1:10 by adding 225 µL of the buffer stated above directly to the vial. Recap, mix thoroughly and briefly centrifuge to collect the volume at the bottom of the vial. Use this intermediate dilution when calculating final dilutions as recommended below. Store the vial at -20°C or below after dilution. Avoid cycles of freezing and thawing. |
| **Synonyms** | rabbit anti-collagen type I antibody, Collagen Of Skin Tendon And Bone, Collagen Type 1 antibody, Collagen type I alpha 1 antibody, Collagen alpha-1 (I) chain, Alpha-1 type I collagen, type 1 procollagen alpha 1 |
| **Application Note** | Anti-Collagen antibodies have been used for indirect trapping ELISA for quantitation of antigen in serum using a standard curve, for immunoprecipitation and for native (non-denaturing, non-dissociating) PAGE and western blotting for highly sensitive qualitative analysis. |
| **Background** | Rockland produces highly active antibodies and conjugates to collagens. Collagens are highly conserved throughout evolution and are characterized by an uninterrupted "Glycine-X-Y" triplet repeat that is a necessary part of the triple helical structure. For these reasons, it is often extremely difficult to generate antibodies with specificities to collagens. The development of 'type' specific antibodies is dependent on NON-DENATURED three-dimensional epitopes. Rockland extensively purifies collagens for immunization from human and bovine placenta and cartilage by limited pepsin digestion and selective salt precipitation. This preparation results in a native conformation of the protein. Antibodies are isolated from rabbit antiserum and are extensively cross-adsorbed by immunoaffinity purification to produce 'type' specific antibodies. Greatly diminished reactivity and selectivity of these antibodies will result if denaturing and reducing conditions are used for SDS-PAGE and immunoblotting. Collagen Type I is a protein that strengthens and supports many tissues in the body, including cartilage, bone, tendon, skin and the white part of the eye (sclera). Collagen Type I triple helix comprises of two alpha1 chains and one alpha2 chain. COL1A1/A2 could be useful for detecting melanoma, lung, liver, glioma, skin, stomach, and other cancers. Mutations in the gene may be related to caffey disease, osteogenesis, and ehlers-danlos syndrome. Anti-Collagen Type I Antibody is ideal for investigators involved in extracellular matrix protein, osteoporosis research, Cell Biology, Signal Transduction, and Stem Cell research. |
| **Purity And Specificity** | Anti-Collagen Type I Antibody 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. Typically negligible cross reactivity against other types of collagens was detected by ELISA against purified standards. Some class-specific anti-collagens may be specific for three-dimensional epitopes which may result in diminished reactivity with denatured collagen or formalin-fixed, paraffin embedded tissues. This antibody reacts with human, bovine, and most mammalian Type I collagens with negligible cross-reactivity with Type II, III, IV, V or VI collagens. Non-specific cross-reaction of anti-collagen antibodies with other human serum proteins or non-collagen extracellular matrix proteins is negligible. |
| **Assay Dilutions** | User Optimized |
| **ELISA** | 1:5,000 - 1:50,000 |
| **Western Blot** | 1:1,000 - 1:10,000 |
| **FLISA** | 1:100 |
| **Immunohistochemistry** | 1:50 - 1:200 |
| **Other Assays** | User Optimized |
| **Expiration** | Expiration date is one (1) year from date of opening. |

**Immunogen**

Collagen Type I from human and bovine placenta

**Specific Reference**

Stefanovic, B, Schnabl, B, Brenner, DA (2002) Inhibition of collagen alpha 1(I) expression by the 5' stem-loop as a molecular decoy. J.Biol. Chem. 277(20):18229-18237.

Hashimoto, N et al. (2004) Bone marrow-derived progenitor cells in pulmonary fibrosis. J. Clin. Invest. 113:243-252.

Hazra, S et al. (2004) Peroxisome Proliferator-activated Receptor gamma Induces a Phenotypic Switch from Activated to Quiescent Hepatic Stellate Cells. J. Biol. Chem. 279(12):11392–11401.

She, H, Xiong, S, Hazra, S, Tsukamoto, H (2005) Adipogenic transcriptional regulation of hepatic stellate cells. J. Biol. Chem. 280(6):4959-4967.

Mak KM, Kwong AJ, Chu E, Hoo NM. (2011) Hepatic Steatosis, Fibrosis, and Cancer in Elderly Cadavers. Cancer Biology. 5 DEC 2011. DOI: 10.1002/ar.21525.

Yujie Zhang, Branko Stefanovic. (2016) Akt mediated phosphorylation of LARP6; critical step in biosynthesis of type I collagen. Scientific Reports volume 6, Article number: 22597 (2016) doi:10.1038/srep22597.

**Related Products**

| | |
|---|---|
| 001-001-103 | Bovine COLLAGEN Type I - 001-001-103 |
| 009-001-103 | Human COLLAGEN Type I - 009-001-103 |
| 600-401-103-0.1 | Anti-Collagen Type I (RABBIT) Antibody - 600-401-103-0.1 |
| 600-401-103-0.5 | Anti-Collagen Type I (RABBIT) Antibody - 600-401-103-0.5 |

**Related Links**

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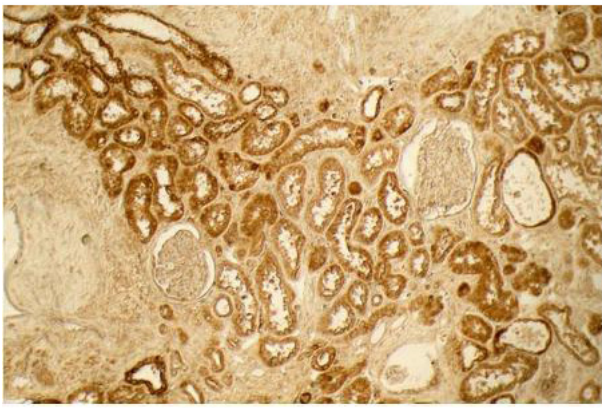
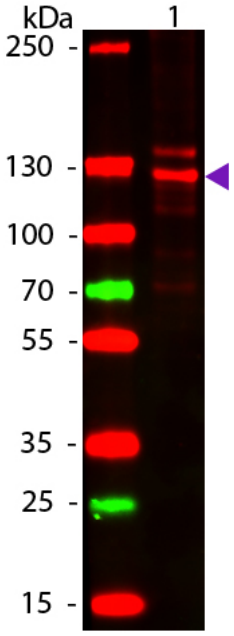
| | GeneID - 1277 |
| http://www.ncbi.nlm.nih.gov/sites/entrez?db=gene&cmd=Retrieve&dopt=full_report&list_uids=1277 | |
| NCBI - P02452.5 | http://www.ncbi.nlm.nih.gov/protein/P02452.5 |
| | UniProtKB - P02452 |

**Images**

1 Rockland's Affinity Purified anti-Collagen I antibody was used at a 1:100 dilution to detect distal tubules in normal kidney tissue. Note the absence of staining of glomeruli. The antibody was reacted with antibody for 4 hours at room temperature followed by the addition of secondary antibody and substrate reaction. Tissue was formalin-fixed and paraffin embedded. No antigen retrieval was performed.

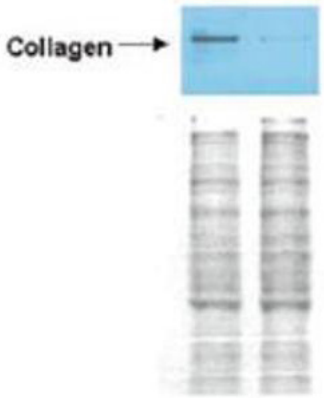


2 Western blot of Human Collagen Type I.Lane 1: Human Collagen Type 1.Load: 50 ng per lane.Primary antibody: Collagen Type I antibody at 1:1,000 overnight at 4°C.Secondary antibody: DyLight™ 649 rabbit secondary antibody at 1:20,000 for 30 min at RT.Block: MB-070 for 30 min at RT.Predicted/Observed size: 139 & 130 kDa, 139 & 130 kDa for Collagen Type I.Other Band(s): Collagen Type I splice variants and isoforms.



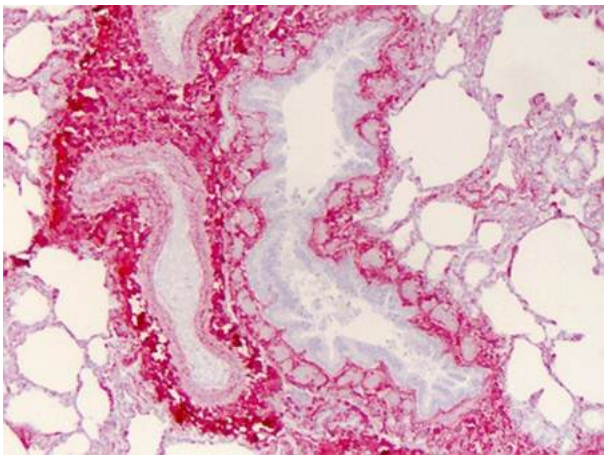

3

Western blot analysis is shown using Rockland's Affinity Purified anti-Collagen I antibody to detect expression of collagen I in Wistar rat hepatic stellate cells (HSC) in control (GFP-transduced) (left lane) and PPARg-transduced cell lysates (right lane). Protein staining shown below each blot depicts equal protein loading. An equal amount of the whole cell protein (100 µg) was separated by SDS-PAGE and electroblotted to nitro-cellulose membranes. Proteins were detected by incubating the membrane with anti-Collagen I antibody at a concentration of 0.2–2 µg/10 ml in TBS (100 mM Tris-HCl, 0.15 M NaCl, pH 7.4) with 5% Non-fat milk. Detection occurred by incubation with a horseradish peroxidase-conjugated secondary antibody at 1 µg/10 ml. Proteins were detected by a chemiluminescent method using the PIERCE ECL kit (Amersham Biosciences). Other detection systems will yield similar results. See Hazra et al. (2004) for additional details.




4

Immunohistochemistry of Collagen I antibody.Tissue: human lung.Fixation: formalin fixed paraffin embedded. Antigen retrieval: user optimized.Primary antibody: Collagen 1 at 1:400.Secondary antibody: Peroxidase goat anti-rabbit at 1:10,000 for 45 min at RT.Localization: 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.



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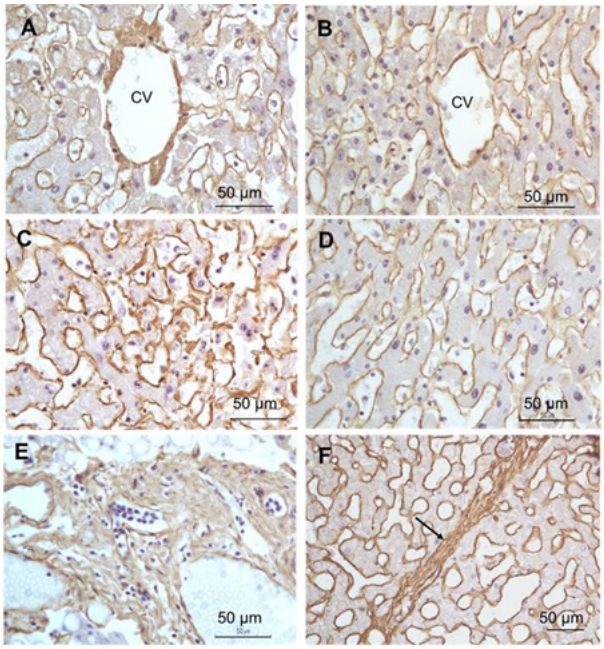
| 5 | Immunohistochemistry of Rabbit Anti-collagen type I antibody. Tissue: right lobe of the liver section. A:Central Vein (CV) fibrosis, B: Non-fibrotic CV, C: perisinusoidal fibrosis, D: Non-fibrotic area, E: Portal tract fibrosis, F: Septal fibrosis (arrow).Fixation: formalin fixed paraffin embedded. Antigen retrieval: not required.Primary antibody: Anti-collagen type I at 1:1250 for 4°C for 24hr.Secondary antibody: Peroxidase biotin-streptavidin rabbit secondary antibody at 1:10,000 for 45 min at RT.Localization: Anti-collagen type I is intra and extracellular.Staining: 3.3'-diaminobenzidine tetrahydrochloride was used as the chromogen. Nuclei were counterstained purple with hematoxylin. |

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