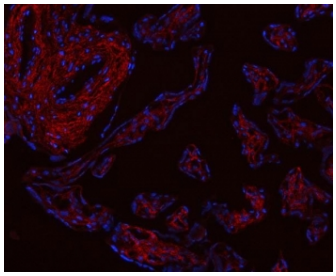
Collagen I Antibody / Extracellular Matrix Protein (R32379)

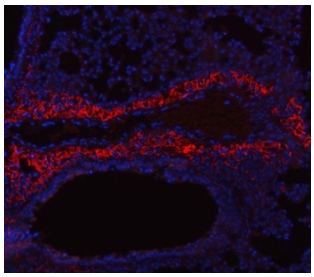
Catalog No.	Formulation	Size
R32379	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

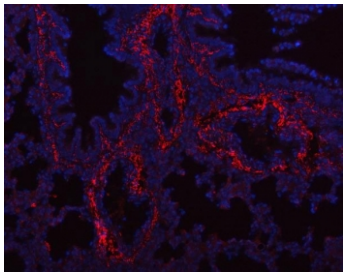
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P02452
Localization	Cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This Collagen I Antibody / Extracellular Matrix Protein is available for research use only.



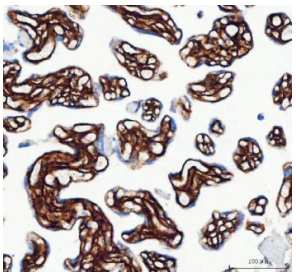
Collagen I Antibody Human Placenta IF. Immunofluorescent staining of FFPE human placental tissue with Collagen I antibody revealed strong extracellular and stromal staining consistent with the distribution of type I collagen within connective tissue compartments. Collagen I, composed primarily of COL1A1 and COL1A2 chains, is the most abundant fibrillar collagen in the extracellular matrix and provides structural support, tensile strength, and tissue integrity. Red fluorescence indicates Collagen I expression, while nuclei are counterstained with DAPI (blue). The prominent extracellular staining pattern observed in placental connective tissues is consistent with the essential role of collagen I in matrix organization, tissue architecture, and cell-matrix interactions. Heat-induced epitope retrieval was performed by steaming sections in pH 8 EDTA buffer for 20 minutes prior to immunostaining. These results support the utility of Collagen I Antibody for studies of extracellular matrix biology, tissue remodeling, fibrosis, and connective tissue development.



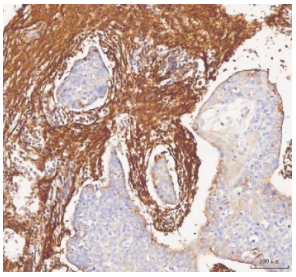
Collagen I Antibody Mouse Lung IF. Immunofluorescent staining of FFPE mouse lung tissue with Collagen I antibody revealed strong extracellular staining associated with connective tissue structures and alveolar septal regions, consistent with the distribution of type I collagen within the pulmonary extracellular matrix. Collagen I, composed primarily of COL1A1 and COL1A2 chains, is a major fibrillar collagen that provides structural support and mechanical stability to connective tissues. Red fluorescence indicates Collagen I expression, while nuclei are counterstained with DAPI (blue). The prominent staining pattern along stromal and matrix-rich regions is consistent with the role of collagen I in maintaining lung architecture and regulating tissue remodeling. Heat-induced epitope retrieval was performed by steaming sections in pH 8 EDTA buffer for 20 minutes prior to immunostaining. These results support the utility of Collagen I Antibody for studies of extracellular matrix biology, pulmonary fibrosis, tissue remodeling, and connective tissue development.



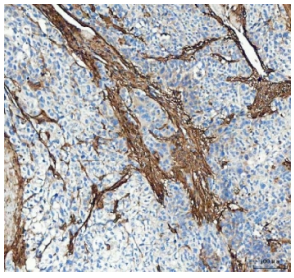
Collagen I Antibody Rat Lung IF. Immunofluorescent staining of FFPE rat lung tissue with Collagen I antibody revealed strong extracellular staining associated with peribronchial, perivascular, and interstitial connective tissue structures, consistent with the distribution of type I collagen within the pulmonary extracellular matrix. Collagen I, composed primarily of COL1A1 and COL1A2 chains, is the most abundant fibrillar collagen in vertebrate tissues and provides structural support, tensile strength, and matrix integrity. Red fluorescence indicates Collagen I expression, while nuclei are counterstained with DAPI (blue). The prominent staining observed within matrix-rich regions of the lung is consistent with the role of collagen I in maintaining tissue architecture and regulating extracellular matrix remodeling. Heat-induced epitope retrieval was performed by steaming sections in pH 8 EDTA buffer for 20 minutes prior to immunostaining. These results support the utility of Collagen I Antibody for studies of extracellular matrix biology, pulmonary fibrosis, tissue remodeling, and connective tissue development.



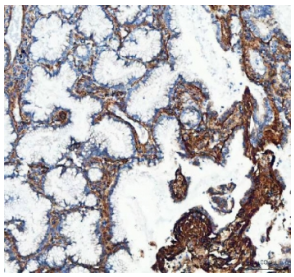
Collagen I Antibody / Extracellular Matrix Protein Human Placenta IHC. Immunohistochemical staining of FFPE human placental tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the placental stromal extracellular matrix, consistent with its role in providing structural support and maintaining tissue integrity during placental development. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



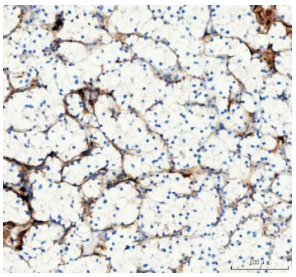
Collagen I Antibody / Extracellular Matrix Protein Human Liver Cancer IHC. Immunohistochemical staining of FFPE human liver cancer tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the stromal extracellular matrix surrounding tumor nests, consistent with its role in maintaining tissue architecture and supporting the desmoplastic tumor microenvironment. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



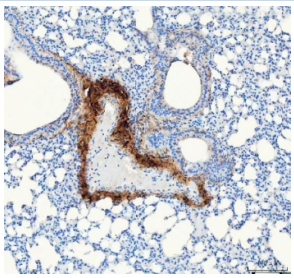
Collagen I Antibody / Extracellular Matrix Protein Human Bladder Urothelial Carcinoma IHC. Immunohistochemical staining of FFPE human bladder urothelial carcinoma tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the stromal extracellular matrix surrounding invasive tumor nests, consistent with its role in maintaining connective tissue architecture and contributing to the desmoplastic tumor microenvironment. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



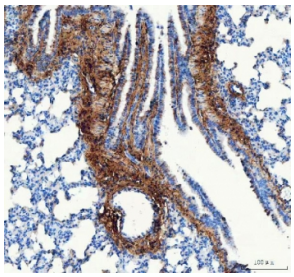
Collagen I Antibody / Extracellular Matrix Protein Human Lung Adenocarcinoma IHC. Immunohistochemical staining of FFPE human lung adenocarcinoma tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the stromal extracellular matrix surrounding malignant glands, consistent with its role in maintaining tissue architecture and contributing to the desmoplastic tumor microenvironment. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



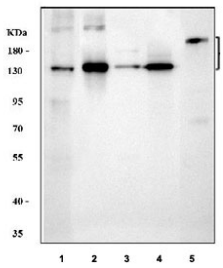
Collagen I Antibody / Extracellular Matrix Protein Human Renal Cell Carcinoma IHC. Immunohistochemical staining of FFPE human renal cell carcinoma tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the stromal extracellular matrix surrounding tumor nests and fibrous septa, consistent with its role in maintaining connective tissue architecture and contributing to the renal tumor microenvironment. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



Collagen I Antibody / Extracellular Matrix Protein Mouse Lung IHC. Immunohistochemical staining of FFPE mouse lung tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the connective tissue surrounding bronchioles and blood vessels, consistent with its role in maintaining pulmonary extracellular matrix architecture and providing structural support to the lung. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



Collagen I Antibody / Extracellular Matrix Protein Rat Lung IHC. Immunohistochemical staining of FFPE rat lung tissue using Collagen I Antibody / Extracellular Matrix Protein. Collagen I expression is observed predominantly within the connective tissue surrounding bronchioles and blood vessels, consistent with its role in maintaining pulmonary extracellular matrix architecture and providing structural support to the respiratory tract. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA for 20 minutes followed by cooling prior to immunostaining.



Collagen I Antibody / Extracellular Matrix Protein Human, Mouse and Rat WB. Western blot analysis of 1) human placenta, 2) rat skin, 3) rat lung, 4) mouse skin, and 5) mouse NIH/3T3 cell lysates using Collagen I Antibody / Extracellular Matrix Protein. Specific immunoreactive bands are detected corresponding to both the Collagen I precursor (approximately 140-210 kDa) and the mature processed form (approximately 70-90 kDa), demonstrating detection of COL1A1 across multiple human, rat, and mouse tissues and cell lysates.

Description

Collagen I Antibody / Extracellular Matrix Protein Antibody recognizes type I collagen, the most abundant structural protein in the vertebrate extracellular matrix. Type I collagen is composed primarily of two COL1A1 chains and one COL1A2 chain that assemble into a characteristic triple-helical fibrillar structure. This highly organized protein network provides tensile strength and mechanical stability to connective tissues including bone, skin, tendon, ligament, dentin, and many internal organs. Because type I collagen is a major determinant of tissue architecture and extracellular matrix composition, Collagen I Antibody / Extracellular Matrix Protein Antibody is widely used for studies of connective tissue biology and tissue remodeling.

Collagen I Antibody / Extracellular Matrix Protein Antibody is particularly valuable for investigating skeletal development, osteogenesis, and wound healing. Type I collagen is synthesized primarily by fibroblasts, osteoblasts, and other mesenchymal cell populations, where it serves as a scaffold for tissue formation and repair. During bone development, collagen I provides the structural framework upon which mineralization occurs. In soft tissues, collagen fibers contribute to elasticity, strength, and resistance to mechanical stress. Continuous synthesis and remodeling of collagen I are essential for maintaining tissue integrity throughout life.

Abnormal regulation of collagen I expression has been implicated in numerous diseases. Excessive collagen deposition contributes to fibrosis of the liver, lung, kidney, heart, and other organs, resulting in impaired tissue function and progressive disease. Conversely, mutations affecting COL1A1 or COL1A2 can disrupt collagen assembly and cause inherited connective tissue disorders such as osteogenesis imperfecta and Ehlers-Danlos syndrome. Altered collagen I organization is also frequently observed in the tumor microenvironment, where extracellular matrix remodeling can influence cancer cell invasion, migration, and therapeutic response. Collagen I Antibody / Extracellular Matrix Protein Antibody is therefore useful for studies of both normal physiology and pathological tissue remodeling.

Collagen I Antibody / Extracellular Matrix Protein Antibody supports investigations of extracellular matrix biology, connective tissue development, fibrosis, wound repair, skeletal formation, and cancer progression. Its broad expression in structural tissues makes it an important marker for evaluating matrix deposition and tissue organization. Researchers frequently employ Collagen I Antibody / Extracellular Matrix Protein Antibody to examine collagen synthesis, extracellular matrix remodeling, and mechanisms that regulate tissue homeostasis and disease progression.

Learn more about proteins involved in extracellular matrix organization, tissue remodeling, and cell-matrix interactions on our Cell Biology Antibodies page.

Application Notes

Optimal dilution of the Collagen I Antibody / Extracellular Matrix Protein should be determined by the researcher.

Immunogen

Amino acids AGFDFSFLPQPPQEKAHDGGRYYRA were used as the immunogen for the Collagen I antibody.

Storage

After reconstitution, the Collagen I antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Collagen I antibody, COL1A1 antibody, Type I Collagen antibody, Collagen Alpha-1(I) Chain antibody, Fibrillar Collagen antibody, Bone Matrix Protein antibody, Connective Tissue Collagen antibody

References (1)

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