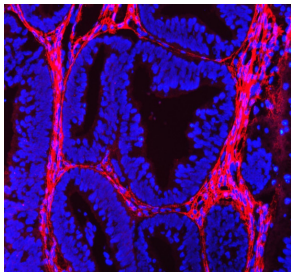
Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody (R31258)

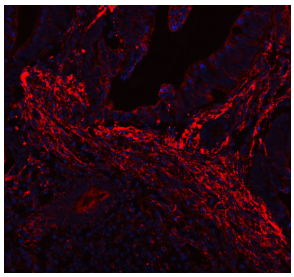
Catalog No.	Formulation	Size
R31258	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

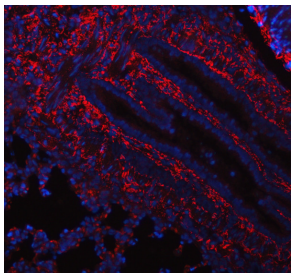
Availability	1-3 business days
Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Antigen affinity
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P02452
Localization	Cytoplasmic
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunocytochemistry (FFPE): 1-2ug/ml Immunofluorescence (FFPE): 5ug/ml
Limitations	This Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody is available for research use only.



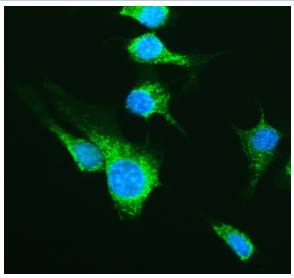
Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody Human Endometrial Cancer IF. Immunofluorescent staining of FFPE human endometrial cancer tissue using Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody. Collagen I is detected predominantly within the extracellular matrix surrounding tumor glands, consistent with its role as a major structural component of the stromal microenvironment. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (5 ug/ml) overnight at 4Â°C, followed by Fluoro550-conjugated goat anti-rabbit IgG. Nuclei were counterstained with DAPI and fluorescence was visualized using appropriate filter sets.



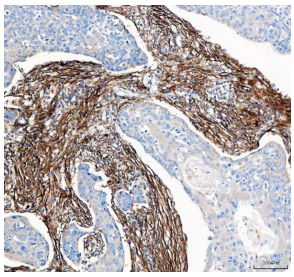
Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody Human Intestinal Cancer IF. Immunofluorescent staining of FFPE human intestinal cancer tissue using Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody. Collagen I is detected predominantly within the desmoplastic stromal extracellular matrix surrounding malignant glands, consistent with its role in maintaining tumor architecture and supporting the tumor microenvironment. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (5 ug/ml) overnight at 4Â°C, followed by Cy3-conjugated goat anti-rabbit IgG. Nuclei were counterstained with DAPI and fluorescence was visualized using appropriate filter sets.



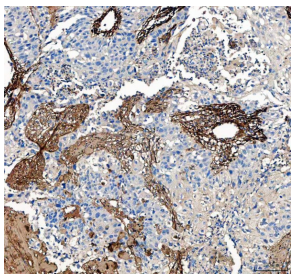
Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody Rat Lung IF. Immunofluorescent staining of FFPE rat lung tissue using Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody. Collagen I is detected predominantly within the extracellular matrix of the pulmonary interstitium, consistent with its role in maintaining lung structural integrity and supporting connective tissue architecture. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (5 ug/ml) overnight at 4Â°C, followed by a Cy3-conjugated goat anti-rabbit IgG secondary antibody. Nuclei were counterstained with DAPI and fluorescence was visualized using appropriate filter sets.



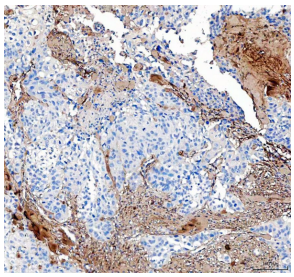
Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody NIH/3T3 Cell IF. Immunofluorescent staining of NIH/3T3 cells using Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody. Collagen I is detected predominantly within the cytoplasm and pericellular extracellular matrix, consistent with its synthesis and secretion by fibroblast-like cells. Enzymatic antigen retrieval was performed for 15 minutes prior to staining. Cells were blocked with 10% goat serum and incubated with the primary antibody (5 ug/ml) overnight at 4Â°C, followed by a Fluoro488-conjugated goat anti-rabbit IgG secondary antibody. Nuclei were counterstained with DAPI and fluorescence was visualized using appropriate filter sets.



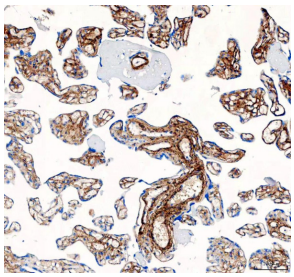
Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody Human Esophageal Squamous Cell Carcinoma IHC. Immunohistochemical staining of FFPE human esophageal squamous cell carcinoma tissue using Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody. Collagen I is detected predominantly within the stromal extracellular matrix surrounding tumor nests, consistent with its role in maintaining tissue architecture and supporting the tumor microenvironment. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (2 ug/ml) overnight at 4Â°C, followed by a peroxidase-conjugated goat anti-rabbit IgG secondary antibody. Immunoreactivity was visualized using an HRP Super Vision detection system with DAB as the chromogen.



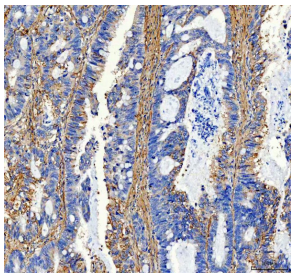
Collagen 1 Antibody Renal Cell Carcinoma IHC. Immunohistochemistry analysis of Collagen I / COL1A1 expression in FFPE human renal cell carcinoma tissue using Collagen 1 antibody. HRP-DAB brown staining highlights extracellular collagen fibers outlining tumor-associated stroma and vascular structures, forming a delicate network surrounding nests of tumor cells, while tumor cells show minimal intracellular staining; nuclei are counterstained blue. Antigen retrieval was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining.



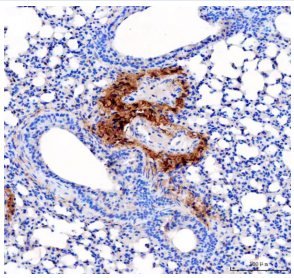
Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody Human Bladder Cancer IHC. Immunohistochemical staining of FFPE human bladder cancer tissue using Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody. Collagen I is detected predominantly within the stromal extracellular matrix surrounding tumor nests, consistent with its role in providing structural support and shaping the tumor microenvironment. Heat-induced epitope retrieval was performed in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (2 ug/ml) overnight at 4Â°C, followed by a peroxidase-conjugated goat anti-rabbit IgG secondary antibody. Immunoreactivity was visualized using an HRP Super Vision detection system with DAB as the chromogen.



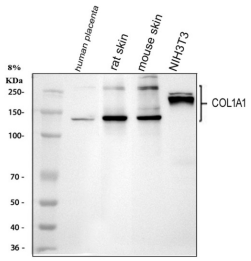
Collagen 1 Antibody Placenta IHC. Immunohistochemistry analysis of Collagen I / COL1A1 expression in FFPE human placental tissue using Collagen 1 antibody. HRP-DAB brown staining highlights extracellular collagen deposition outlining chorionic villi and stromal compartments, forming continuous fibrous structures around placental tissue architecture, while trophoblast cells show minimal intracellular staining; nuclei are counterstained blue. Antigen retrieval was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining.



Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody Human Rectal Adenocarcinoma IHC. Immunohistochemical staining of FFPE human rectal adenocarcinoma tissue using Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody. Collagen I is detected 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 in pH 8.0 EDTA buffer prior to staining. Tissue sections were blocked with 10% goat serum and incubated with the primary antibody (2 ug/ml) overnight at 4Â°C, followed by a peroxidase-conjugated goat anti-rabbit IgG secondary antibody. Immunoreactivity was visualized using an HRP Super Vision detection system with DAB as the chromogen.



Collagen 1 Antibody Mouse Lung IHC. Immunohistochemistry analysis of Collagen I / COL1A1 expression in FFPE mouse lung tissue using Collagen 1 antibody. HRP-DAB brown staining highlights extracellular collagen fibers outlining bronchial and perivascular structures, forming a supportive connective tissue framework within the lung parenchyma, while surrounding alveolar epithelial cells show minimal intracellular staining; nuclei are counterstained blue. Antigen retrieval was performed by boiling sections in pH 8 EDTA buffer for 20 min followed by cooling prior to staining.



Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody Multi-Species WB. Western blot analysis of 1) human placenta tissue, 2) rat skin tissue, 3) mouse skin tissue, and 4) mouse NIH/3T3 cell lysates using Collagen 1 Antibody / COL1A1 Extracellular Matrix Antibody. Specific immunoreactive bands are detected at approximately 130, 220, and 250 kDa, consistent with the expected migration of Collagen I alpha 1 and higher molecular weight collagen species. The predicted molecular weight of the COL1A1 alpha chain is approximately 138 kDa.

Description

Collagen type I (COL1A1) is the predominant fibrillar collagen of the extracellular matrix and a major structural determinant of connective tissue integrity. Collagen type I (COL1A1) is composed of two alpha 1(I) chains and one alpha 2(I) chain that assemble into a triple-helical molecule and subsequently form highly ordered fibrils. Collagen 1 Antibody for

IF / COL1A1 Immunofluorescence Antibody is particularly suited for visualizing extracellular matrix architecture and stromal organization in immunofluorescence-based imaging studies, where its distinct fibrillar pattern can be clearly resolved. COL1A1 is primarily produced by fibroblasts and mesenchymal cells and is widely distributed in dermal, vascular, and interstitial tissues, forming the structural scaffold that supports cellular organization.

Collagen 1 antibody, also known as COL1A1 antibody or type I collagen antibody, detects a secreted protein that undergoes extensive intracellular processing and extracellular assembly. Procollagen molecules are synthesized in the endoplasmic reticulum, modified through hydroxylation and glycosylation, and secreted into the extracellular space, where they are cleaved and assembled into mature fibrils. These fibrils aggregate into fibers and bundles that create a dense and highly organized matrix network. This extracellular localization and fibrillar structure make collagen I particularly well suited for immunofluorescence applications, where staining reveals continuous filamentous or cable-like patterns outlining connective tissue compartments and stromal regions.

In immunofluorescence imaging, Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody provides strong extracellular signal that contrasts sharply with nuclear counterstains such as DAPI, enabling clear visualization of tissue architecture and cell-matrix relationships. Collagen I staining typically appears as elongated fibers surrounding epithelial structures, blood vessels, and stromal cells, allowing detailed assessment of matrix distribution and organization. This is especially valuable in tumor biology, where collagen remodeling is a hallmark of tumor progression, and in fibrosis research, where excessive collagen deposition alters tissue mechanics and function.

COL1A1 plays an active role in regulating cell behavior through interactions with cell surface receptors such as integrins and discoidin domain receptors, influencing cell adhesion, migration, and signaling pathways. Changes in collagen I density, alignment, and crosslinking can affect tissue stiffness and mechanotransduction, contributing to processes such as wound healing, fibrosis, and cancer invasion. In tumor microenvironments, collagen-rich stroma can promote tumor cell migration and modulate immune cell infiltration, making spatial visualization of collagen organization an important component of experimental analysis.

COL1A1 expression is dynamically regulated during development and in response to injury and disease. Elevated collagen I levels are a defining feature of fibrotic disorders and are frequently observed in desmoplastic reactions associated with solid tumors. Immunofluorescence-based detection enables high-resolution mapping of these changes, supporting studies of extracellular matrix remodeling and stromal biology. In addition to IF applications, collagen I can be detected by western blot and immunohistochemistry, where it may appear as high molecular weight bands or extracellular staining patterns, respectively. Given its central role in extracellular matrix structure and its highly characteristic IF staining pattern, a Collagen 1 antibody provides a powerful tool for investigating connective tissue organization, fibrosis, and tumor-associated stromal remodeling.

Explore our Collagen I Antibody / Extracellular Matrix Protein Antibody page to learn more about type I collagen and its roles in connective tissue formation, extracellular matrix organization, and tissue remodeling.

Application Notes

The stated application concentrations are suggested starting amounts. Titration of the Collagen 1 Antibody for IF / COL1A1 Immunofluorescence Antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

An amino acid sequence from the C-terminus of mouse COL1A1 (QPPQEKSQDGGRYYRA) was used as the immunogen for this Collagen 1 antibody (100% rat homology).

Storage

After reconstitution, the Collagen 1 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, COL1A1 immunofluorescence antibody, Collagen 1 IF antibody

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