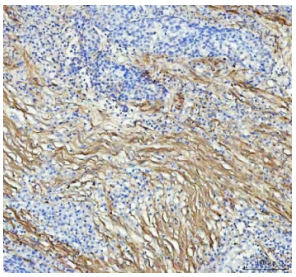
Collagen I Antibody / COL1A1 [clone AFD-3] (RQ5202)

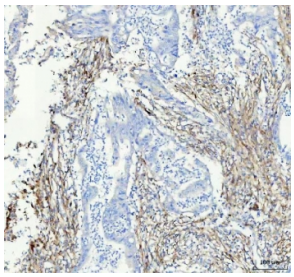
Catalog No.	Formulation	Size
RQ5202	Antibody in PBS with 0.02% sodium azide, 50% glycerol and 0.4-0.5mg/ml BSA	100 ul

Bulk quote request

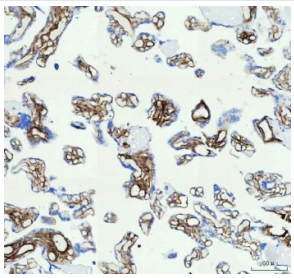
Availability	1-2 weeks
Species Reactivity	Human
Format	Purified
Host	Rabbit
Clonality	Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	AFD-3
Purity	Affinity purified
UniProt	P02452
Applications	Western blot: 1:500-1:2000 Immunohistochemistry (FFPE): 1:50-1:200
Limitations	This Collagen I antibody is available for research use only.



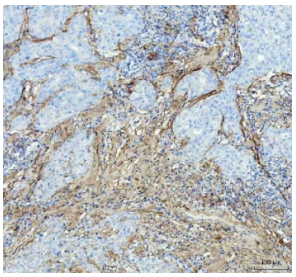
Collagen I Antibody Human Lung Squamous Cell Carcinoma IHC. IHC staining of FFPE human lung squamous cell carcinoma tissue with Collagen I antibody demonstrated strong extracellular staining within the tumor-associated stroma and desmoplastic connective tissue surrounding malignant cell nests. Collagen I is the principal fibrillar collagen of the extracellular matrix and provides structural support while influencing cell adhesion, migration, and tissue remodeling. The prominent stromal staining observed is consistent with the extensive extracellular matrix deposition and remodeling commonly associated with squamous cell carcinoma progression. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 10-20 minutes and allowing them to cool before testing. These results support the utility of Collagen I Antibody for studies of extracellular matrix biology, tumor stroma formation, fibrosis, and cancer-associated tissue remodeling.



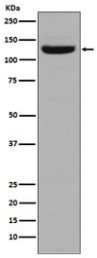
Collagen I Antibody Human Colorectal Adenocarcinoma IHC. IHC staining of FFPE human colorectal adenocarcinoma tissue with Collagen I antibody demonstrated strong extracellular staining within the tumor-associated stroma and fibrotic connective tissue surrounding malignant glandular structures. Collagen I is the major fibrillar collagen of the extracellular matrix and plays critical roles in tissue architecture, mechanical support, and cell-matrix interactions. The prominent stromal staining observed is consistent with desmoplastic extracellular matrix remodeling frequently associated with colorectal adenocarcinoma progression and tumor microenvironment formation. Heat-induced epitope retrieval was performed by boiling tissue sections in pH 8 EDTA buffer for 10-20 minutes and allowing them to cool before testing. These results support the utility of Collagen I Antibody for studies of extracellular matrix biology, tumor stroma development, fibrosis, and cancer-associated tissue remodeling.



IHC staining of FFPE human placental tissue with Collagen I antibody. HIER: boil tissue sections in pH8 EDTA buffer, for 10-20 min and allow to cool before testing.



IHC staining of FFPE human breast cancer tissue with Collagen I antibody. HIER: boil tissue sections in pH8 EDTA buffer, for 10-20 min and allow to cool before testing.



Western blot testing of human stomach lysate with Collagen I antibody. Expected molecular weight: 100-140 kDa.

Description

Collagen I Antibody recognizes type I collagen, the most abundant structural protein in the extracellular matrix and a principal component of connective tissues throughout the body. Type I collagen is composed of two alpha-1 chains encoded by COL1A1 and one alpha-2 chain encoded by COL1A2, which assemble into a characteristic triple-helical fibrillar structure. This highly organized protein network provides tensile strength, mechanical stability, and structural support to tissues including bone, skin, tendon, ligament, dentin, and numerous internal organs. Because of its abundance and critical role in tissue architecture, collagen I is widely used as a marker of extracellular matrix formation and connective tissue integrity.

Collagen I is synthesized primarily by fibroblasts, osteoblasts, and other mesenchymal cell populations. Newly synthesized procollagen undergoes extensive post-translational modification and extracellular processing before being incorporated into mature collagen fibrils. These fibrils form the structural scaffold that supports cell attachment, tissue organization, and mechanical resilience. During embryonic development, collagen I plays essential roles in skeletal

formation and connective tissue maturation. In adult tissues, continuous collagen synthesis and remodeling are required for maintenance of tissue integrity, wound healing, and repair following injury.

Alterations in collagen I expression and organization are associated with a wide range of pathological conditions. Excessive collagen deposition is a hallmark of fibrosis affecting organs such as the lung, liver, kidney, and heart, where progressive extracellular matrix accumulation can impair normal tissue function. Mutations in collagen I genes are responsible for inherited connective tissue disorders including osteogenesis imperfecta and certain forms of Ehlers-Danlos syndrome. In cancer, collagen I-rich stromal environments can influence tumor growth, invasion, metastasis, and therapeutic response by modifying cellular behavior and tissue mechanics.

Collagen I Antibody is a valuable tool for investigations of extracellular matrix biology, fibrosis, wound healing, skeletal development, tissue remodeling, and cancer-associated stromal responses. Researchers frequently use Collagen I Antibody to evaluate collagen deposition, characterize fibroblast activity, and examine mechanisms regulating extracellular matrix organization. Collagen I Antibody is widely applicable to studies of normal tissue homeostasis, regenerative processes, and diseases characterized by abnormal connective tissue 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

Optimal dilution of the Collagen I antibody should be determined by the researcher.

Immunogen

A synthetic peptide specific to human Collagen I / COL1A1 was used as the immunogen for the Collagen I antibody.

Storage

Store the Collagen I antibody at -20oC.

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