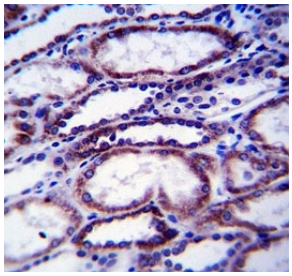
COL1A1 Antibody (F43882)

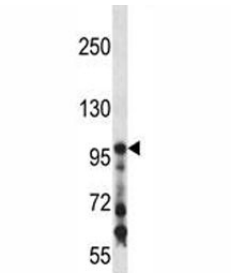
Catalog No.	Formulation	Size
F43882-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F43882-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human, Mouse
Predicted Reactivity	Rat, Bovine, Chicken
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P02452
Localization	Cytoplasmic
Applications	Western blot: 1:1000 IHC (Paraffin): 1:10-1:50
Limitations	This COL1A1 antibody is available for research use only.



COL1A1 antibody immunohistochemistry analysis in formalin fixed and paraffin embedded human kidney tissue.



COL1A1 antibody western blot analysis in mouse kidney tissue lysate. Expected molecular weight: 140-210 kDa (precusor), 70-90 kDa (mature).

Description

COL1A1 Antibody recognizes collagen type I alpha 1 (COL1A1), a major structural component of type I collagen and one of the most abundant proteins in the extracellular matrix. Type I collagen is composed of two COL1A1 chains and one COL1A2 chain that assemble into a characteristic triple-helical fibrillar structure. This highly organized collagen network provides tensile strength, mechanical stability, and structural support to connective tissues including bone, skin, tendon, ligament, dentin, and many internal organs. Because of its widespread distribution and fundamental role in tissue architecture, COL1A1 serves as a key marker of extracellular matrix formation and remodeling.

COL1A1 is primarily synthesized by fibroblasts, osteoblasts, and other mesenchymal cell populations responsible for producing connective tissue matrices. Following synthesis, procollagen molecules undergo extensive post-translational modification before assembling into mature collagen fibrils within the extracellular space. These fibrils form the structural framework that supports tissue integrity and provides anchorage for cells. COL1A1 expression is especially prominent during embryonic development, skeletal formation, wound healing, and tissue repair, where active matrix deposition is required for normal morphogenesis and regeneration.

Abnormal regulation of COL1A1 expression has been implicated in numerous pathological conditions. Excessive collagen deposition is a hallmark of fibrosis affecting the liver, lung, kidney, heart, and other organs, leading to progressive tissue dysfunction. Mutations in COL1A1 can disrupt collagen assembly and are associated with inherited connective tissue disorders including osteogenesis imperfecta and certain forms of Ehlers-Danlos syndrome. In cancer, increased COL1A1 expression often accompanies desmoplastic stromal reactions and extracellular matrix remodeling that can promote tumor progression, invasion, and therapeutic resistance. Consequently, COL1A1 has become an important biomarker in studies of fibrosis, connective tissue disease, and tumor microenvironment biology.

COL1A1 Antibody is a valuable tool for investigations of extracellular matrix organization, connective tissue development, fibrosis, wound healing, skeletal biology, and cancer-associated stromal remodeling. Researchers frequently use COL1A1 Antibody to evaluate collagen deposition, characterize fibroblast activity, and examine mechanisms regulating matrix synthesis and tissue architecture in both normal physiology and disease.

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

Titration of the COL1A1 antibody may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

A portion of amino acids 1077-1106 from the human protein was used as the immunogen for this COL1A1 antibody.

Storage

Aliquot the COL1A1 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

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