



PhosphoSolutions®
Antibodies that work™

Colorado Biosciences Park
12635 East Montview Boulevard, #213
Aurora, CO 80045-7337
Tel: (888) 442-7100

Anti-Collagen I $\alpha 1$ Telopeptide Sequence

Catalog Number: 322-COLT **Size:** 100 μ l

Product Description: Rabbit polyclonal antibody

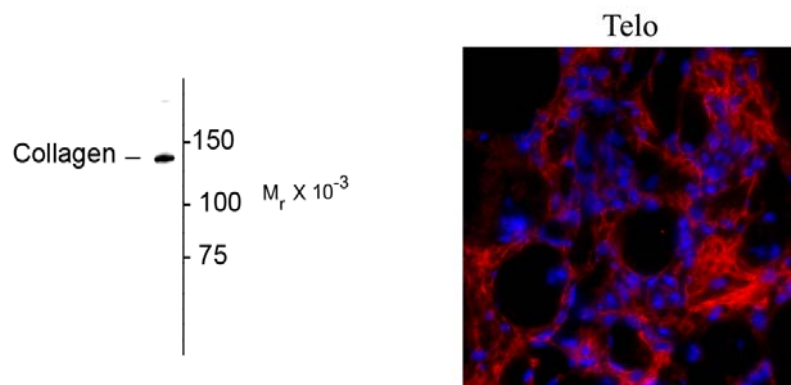
Applications: **WB:** 1:1000 **IHC:** 1:100

Antigen: Peptide from the human collagen I $\alpha 1$ telopeptide sequence.

Species reactivity: The antibody has been directly tested for reactivity in human, mouse, rat and sheep. Based on the homology of the immunogen this antibody is expected to recognize the collagen I $\alpha 1$ polypeptide in all mammals, birds, and amphibians.

Biological Significance: Collagen is an extracellular matrix protein that serves as a scaffold defining the shape and mechanical properties of many tissues and organs including skin, tendon, artery walls, fibrocartilage, bone and teeth. Type 1 collagen is the most abundant protein in mammals. Collagens are synthesized with N-terminal and C-terminal propeptides that are cleaved during maturation and secretion. After cleavage of the propeptides, the most N-terminal and C-terminal remaining sequences are known as telopeptides. Mutations in the collagen 1, alpha 1 gene (COL1A1) are known to cause osteogenesis imperfecta (aka brittle bone disease) (Byers 1989). Furthermore, mutations found in the first 90 residues of the helical region of alpha 1 collagen have been implicated in the prevention or delayed removal of the procollagen N-propeptide leading to a combined osteogenesis imperfecta and Ehlers-Danlos syndrome (EDS) phenotype (Cabral et al., 2005).

Anti-Collagen I $\alpha 1$, telopeptide



Left: Western blot of rat lung lysate showing specific immunolabeling of the ~ 140k collagen protein. **Right: Immunostaining** of formaldehyde-fixed fibrotic mouse lung tissue. The antibody recognizes mature collagen I (red) that has formed fibrils in the extracellular matrix.

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WB = Western Blot **IF** = Immunofluorescence **IHC** = Immunohistochemistry **IP** = Immunoprecipitation

Packaging: 100 μ l in 10 mM HEPES (pH 7.5), 150 mM NaCl, 100 μ g per ml BSA and 50% glycerol. Adequate amount of material to conduct 10-mini Western Blots.

Storage and Stability: Store at -20°C ; stable for at least one year.

Shipment: Domestic - Blue Ice; International - Blue Ice or Dry Ice.

Purification Method: Affinity purified

Antibody Specificity: Specific for the ~ 140 kDa telopeptide portion of the collagen I α 1 polypeptide. The antibody works well for immunohistochemistry on paraformaldehyde-fixed sections with a simple antigen-retrieval protocol (incubate slides for 20 minutes at 90° C in 10 mM sodium citrate (pH 6.0)/ 0.1 % Tween-20). Note that in paraffin sections of formaldehyde-fixed fibrotic mouse lung tissue, the antibody recognizes mature collagen I that has formed fibrils in the extracellular matrix.

Quality Control Tests: Western blots performed on each lot.

References:

Byers PH (1989) Inherited disorders of collagen gene structure and expression. Am J Med Genet. 34(1):72-80.

Cabral WA, Makareeva E, Colige A, Letocha AD, Ty JM, Yeowell HN, Pals G, Leikin S, Marini JC. (2005) Mutations near amino end of alpha1(I) collagen cause combined osteogenesis imperfecta/Ehlers-Danlos syndrome by interference with N-propeptide processing. J Biol Chem. 2005 May 13;280(19):19259-69.

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