



Product Data Sheet

□ Cat # RP-920

Recombinant (P. Pastoris) Human Collagen-III

Size: 5 mg

Collagen is the main structural protein of the various connective tissues in animals. As the main component of connective tissue, it is the most abundant protein in mammals making up from 25% to 35% of the whole-body protein content. It is a major component of the extracellular matrix, is a fibrous protein that provides tensile strength to tissues giving them structural integrity. Collagen, in the form of elongated fibrils, is mostly found in fibrous tissues such as tendons, ligaments and skin. It is also abundant in corneas, cartilage, bones, blood vessels, the gut, intervertebral discs and the dentin in teeth. In muscle tissue, it serves as a major component of the endomysium. Collagen constitutes one to two percent of muscle tissue, and accounts for 6% of the weight of strong, tendinous muscles. The fibroblast is the most common cell that creates collagen.

Collagen and its derivative, gelatin, have been widely used in medical, pharmaceutical and consumer products for more than 100 years. Collagen also has many medical uses in treating complications of the bones and skin. The supply of these materials, created from animal remains, is both abundant and inexpensive. However, most formulations are not highly purified and have the potential to cause an inflammatory reaction in some product users. Animal collagens are subject to extensive modifications that continue over the life of the molecule in the extracellular space. Products that contain animal-derived collagen can induce potentially harmful inflammatory or immune responses in humans and pose risk of contamination with viruses or prions, potentially life-threatening pathogens. Recombinant collagens are essentially identical to the native collagen protein thereby reducing the risk of inflammation, immune response, and disease as compared to animal-sourced collagen.

Collagen alpha-1(III) chain is a fibrillar collagen that is found in extensible connective tissues such as skin, lung, and the vascular system, frequently in association with type I collagen. In humans it is encoded by the COL3A1 gene which is located on chromosome 2. Type-III collagen is a fibrous scleroprotein in bone, cartilage, dentin, tendon, bone marrow stroma and other connective tissue; yields gelatin on boiling. Although alternate transcripts have been detected for this gene, they are the result of mutations; these mutations alter splicing, often leading to the exclusion of multiple exons. Mutations in this gene are associated with type III and IV Ehlers-Danlos syndrome and with aortic and arterial aneurysms.

Synonyms: Collagen alpha-1(III) chain, COL3A1, EDS4A, FLJ34534

Source:

Recombinant human collagen-3 (encoding the human proalpha1 (III), alpha and beta subunits of prolyl hydroxylase) was expressed in *Pichia pastoris*. Procollagen III was converted into mature collagen by a controlled proteinase digestion.

Purified protein is produced in 10mM HCl. (see lot sp. Conc on the vial) in liquid or lyophilized in the same buffer. It is recommended to reconstitute the lyophilized protein in sterile water.

Applications:

ELISA and inhibition Assays, positive control for Western blot, Protein assay. Users must optimize the appropriate concentration and conditions for each assay.

Storage and Stability:

Collagen-III should be stored at 4°C for 2-4 weeks in suitable aliquots

* For research use only*

Reference: Kuivaniemi H (1991) J. Clin. Invest. 88 (5): 1441-4; Di Lullo (2002) J. Biol. Chem. 277 (6): 4223-4231.

Related items:

Catalog#	ProdDescription
RP-919	Recombinant (E.Coli) Human Collagen-I
RP-920	Recombinant (P. Pastoris) Human Collagen-III
RP-921	Recombinant (yeast) Human Gelatin
RP-932	Recombinant Human Collagen-VI
RP-817	Recombinant Human Like Collagen

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