

**PRODUCT DATA
SHEET**

**Rat Tail Collagen - Type I
(STERILE)
Cat No: RTCST 1**

Collagen is the major insoluble fibrous protein in the extracellular matrix. It is a major structural component of skin, bone, tendon and other connective tissues. It is classified into a number of structurally and genetically distinct types with collagen type I (fibrillar forming collagen) being the most abundant in the human body.

Collagen type I differs from other collagens by its low lysine hydroxylation and low carbohydrate composition. It is a heterotrimer consisting of three coiled subunits; two $\alpha 1(I)$ chains and one $\alpha 2(I)$ chain arranged in a right handed triple helix confirmation. The amino acid sequence of the primary structure in general consists of a tripeptide repeating unit with glycine at every third position and proline or 4-hydroxyproline often preceding the glycine residue.

Collagen type I is an excellent substrate for cell culture given that control of cell growth, differentiation and apoptosis is dependent on adhesion of cells to the extracellular membrane of which type I collagen is an abundant component. Cells cultured in three dimensional collagen gels

simulate the *in vivo* cell environment well and it has been used for the culture of fibroblasts, hepatocytes, muscle cells etc. It has also been used in the study of mechanotransduction and cell signalling.

Due to its abundance in tendon-rich tissues rat tails make an ideal source of Collagen type I.

It is supplied as an aqueous solution in 20 mM acetic acid with protein concentration of approximately 100 mg.

PRODUCT SPECIFICATIONS

Presentation: liquid.

Solvent: 20 mM acetic acid.

Concentration: Approx. 5.0 mg/ml as determined by the Biuret method. The actual concentration is stated on the certificate of analysis for each batch.

Volume: Approx. 20 ml per vial. The actual volume is stated on the certificate of analysis for each batch.

Quantity: Approx. 100 mg.

Purity: >95% pure with SDS-PAGE showing typical band pattern with a doublet at apparent molecular weights of 115 and 130 kDa and another doublet at 215 and 235 kDa.

Shipping: Ships on icepacks.

Storage: 2-8°C.

Stability: 12 months from date of manufacture.

Suitability: Suitable for cell culture with 6-10 $\mu\text{g}/\text{cm}^2$ coverage.

Sterilization: Sterilized by membrane filtration sequentially through 0.45 μm and 0.22 μm filters. The product has been tested, and confirmed negative, for bacterial and fungal contamination. The sterility test was carried out according to the current PH. Eur, BP, USP. The sample was also negative with respect to mycoplasma contamination.

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