

Product Information

Collagen Solution, Type I from rat tail

Product Number **C3867**
Storage Temperature 2–8 °C

Product Description

Collagen is the major structural component of extracellular matrices found in connective tissues and internal organs, but is most prevalent in the dermis, tendons, and bones. It is classified into a number of structurally and genetically distinct types. Type I collagen is a heterodimer composed of two $\alpha_1(I)$ chains and one $\alpha_2(I)$ chain that spontaneously forms a triple helix scaffold at neutral pH and 37 °C. Collagen type I is an excellent substrate for the culture of hepatocytes, fibroblasts, spinal ganglion, muscle cells, Schwann cells, embryonic lung cells, epithelial cells, and a number of other cell lines. It has also been used in the study of growth, differentiation, migration of cell lines, and tissue morphogenesis during development.

This product is prepared from rat tail tendons by modification of a published procedure.¹ It is supplied as an aqueous solution in 20 mM acetic acid with a protein concentration stated on the bottle (~100 mg of protein per vial). Protein concentration was estimated by the biuret method.²

Vial contains: ~100 mg

Volume per vial: 22–25 ml

Solvent: 20 mM acetic acid

Purity: >95% (SDS-PAGE)

SDS-PAGE shows the typical band pattern for type I collagen with a doublet at apparent molecular weights of 115 and 130 kDa and another doublet at 215 and 235 kDa (see Figure 1).

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

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

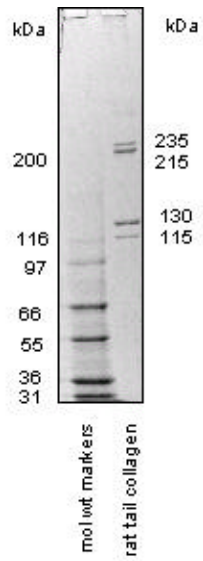
The product ships on wet ice and storage at 2–8 °C is recommended. Aliquots that have been diluted to a working concentration may be stored at 2–8 °C for up to 2 weeks. Do not freeze.

Procedure

Optimal conditions for attachment must be determined for each cell line and application.

1. An appropriate volume of the collagen solution should be diluted to a working concentration of 0.01% using sterile, tissue culture grade water.
2. Coat dishes with 6–10 $\mu\text{g}/\text{cm}^2$. Allow the protein to bind for several hours at room temperature or 37 °C, or overnight at 2–8 °C.
3. Remove excess fluid from the coated surface and allow it to dry overnight. If sterility has been compromised, the dried, coated surface can be sterilized easily by overnight exposure to UV light in a sterile tissue culture hood.
4. Rinse with sterile tissue culture grade water or a balanced salt solution before introducing cells and medium.

Figure 1.
SDS-PAGE of Collagen, Type I, from rat tail



References

1. Bornstein, M. B., Lab. Invest., **7**, 134 (1958).
2. Ohnishi, S.T., and Barr, J.K., Anal. Biochem., **86**, 193-200 (1978).

AE,LCM,MAM 04/06-1