Collagen, Type I solution
from rat tail
Catalog Number **A1001**
Storage Temperature 2–8 °C

A high-quality rat tail collagen type I solution for cell culture application (e.g., 3D gels, scaffolds, and coating)

Vial contains: ~100 mg of protein
Volume per vial: 20 ml

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 alpha1(I) chains and one alpha2(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. It is supplied as an aqueous solution in 0.02 Normal acetic acid (~100 mg of protein per vial). Protein concentration was estimated by the bradfoard assay.

- Non-pepsinized, native collagen for modelling biological ECM in gel matrices
- Fast polymerization facilitates optimal cell distribution in 3D gels

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.

Procedure
Optimal conditions for attachment must be determined for each cell line and application.
2D culture
A stock solution of collagen type I from Rat Tail (Sivan, A1001) at a concentration of 5 mg/mL was diluted with 10X DMEM at the ratio of 8:1 on ice immediately before use. Each well was coated with 125 µL of the collagen solution, which was polymerized at 37°C for 1 h.

3D Culture

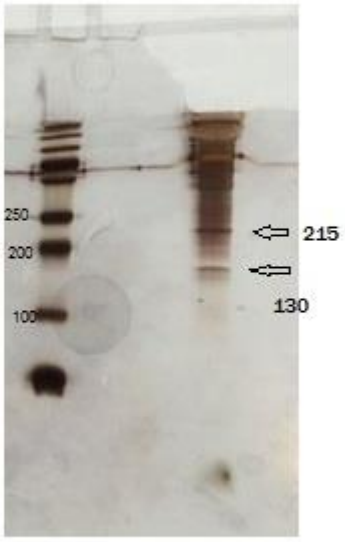
The collagen solution was prepared using the method mentioned above. MSCs were seeded at a density of 7×10^5 cell/mL of collagen. The final concentration of the collagen was 3 mg/mL. The collagen gel was allowed to polymerize for 1 h at 37°C.

Figure 1.
SDS-PAGE of Collagen, Type I, from rat tail
Purity: >90% (SDS-PAGE)
SDS-PAGE shows the typical band pattern for type I collagen, with a doublet at apparent molecular masses of 115 kDa and 130 kDa, and another doublet at 215 kDa and 235 kDa.

Specifications:

Source material	Rat tail tendon
Appearance	Optically clear viscous liquid
Extraction	Acid, non-pepsinized
Purity	> 90% by SDS PAGE
Sterility	Sterile, for cell culture
Quality	Tested and found negative for DNA, bacteria, fungi,
Growth factors	None
	3.8

pH	
Functional control	3D gelling and 2D coating test in cell culture
Storage	2-8 °C



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