

Collagen Type I solution, bovine

Product Description

Collagen is the major structural protein of the extracellular matrix (ECM) mostly found in connective tissues such as dermis, tendon, bone and cartilage.

Collagen is classified into a number of structurally types. Collagen type I is a heterotrimer composed of two $\alpha 1(I)$ chains and one $\alpha 2(I)$ chain which together form a triple helix with a molecular weight of approximately 300 kDa. In acid solubilized type I collagen solutions the triple helices are not aggregated to fibrils. Collagen fibre formation can be initiated by a shift to pH 7 or by the increase of the ionic strength of the solution.

Collagen type I is an excellent substrate for the culture of adherent primary cells as well as embryonic and adult stem cells. It can also be used in the study of growth, differentiation and migration of cells, as well as for tissue morphogenesis during development.

This product is prepared from the dermal layer of bovine skin. It is supplied as an aqueous solution (0.5%) in 0.1 M acetic acid with a protein concentration of approximately 5.0 mg/ml. Collagen Type I solution is sterile filtered and is supplied as a ready to use solution, providing the flexibility to dilute to lower concentrations.

Product:	Collagen Type I solution
Source:	bovine calf dermis, age of calves \leq 6 months
Appearance:	clear, slightly viscous solution
Form:	acid solubilized
Collagen type I concentration (Sircol-Assay)*:	5.0 mg/ml
Solvent:	0.1 M acetic acid
pH:	3.5
Subunit composition (SDS-PAGE):	typical collagen type I banding pattern

*: Protein concentration for Collagen varies from lot to lot. The exact concentration for each specific lot is provided in the Certificate of Analysis supplied with the purchase of each product.

Applications

Collagen type I solution is highly standardized due to industrial production methods and can be used alone or in combination with additional matrix molecules and growth factors. It is best suited for cultivation of adherent primary cells, stem cells and cell lines.

The collagen type I solution can be used to coat the surface of cell culture plastic ware. It promotes cell adhesion for numerous cell types in a two-dimensional (2D) culture. Furthermore, the collagen type I solution is a medium to create a soft, sterile and three-dimensional (3D) collagen hydrogel for the growth, proliferation and differentiation of various cell types, representing a close-to-natural extracellular soft matrix analogue. Additionally, the high softness of the collagen gel permits the easy penetration of cells into the sterile gel e.g. for migration experiments or the formation of 3D cell seeded gels. Cells may be cultured on top of the gel, within the gel, or between gel layers.

There are many procedures to use this product as a gel or as a thin coating on cell culture plastic ware. We recommend optimizing the collagen concentration for your experimental needs.

Product Data Sheet

Sterilization

This product is sterilized by membrane filtration and has been tested, and confirmed negative for bacterial and fungal contamination.

We recommend to use this product in an aseptic environment using aseptic techniques and agents to prevent any contamination.

Storage

Storage at 2 - 8 °C is recommended. Do not freeze.

Storage life

12 months from the date of manufacture.

Intended use

Collagen type I solution is intended for research use only. It is neither intended for human or animal diagnostic, therapeutic use nor any other clinical uses.

Corresponding documents:

- Certificate of Analysis – Soluble Collagen

All data and recommendations correspond to the present state of our knowledge; they are published without engagement. We reserve the right to make alterations and additions in line with technical developments without prior notice. The customer is obliged to check whether our products meet with his own technical requirements. We shall be glad to answer any queries.

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