Chondrex, Inc.

Cell Culture Grade Porcine Type I Collagen

Catalog # 1203

For Research Use Only - Not Human or Therapeutic Use

Collagen, the most abundant protein in vertebrates, is observed in skin, cartilage, bone, intervertebral discs, blood vessels, tendons, ligaments, corneas, and is the main component of the extracellular matrix (ECM). In identified at least 29 distinct collagen, type I collagen consists of two identical alpha 1 chains and one distinct alpha 2 chain (1), forming a triple helix formation known as tropocollagen. This triple-stranded helical conformation increases structural strength and resistance to enzymatic degradation, and plays a key role in assembly of the ECM.

Collagen is useful for facilitating tissue regeneration and/or site-specific drug delivery (2) because of its additional properties such as, low antigenicity, low toxicity, high water solubility and high biodegradability. In particular, type I collagen binds integrins (3,4) facilitating cell migration (5), attachment (4,6), and proliferation and differentiation (3,6). Although atelocollagen, in which the telopeptides on the N- and C-terminal are removed from tropocollagen by pepsin digestion, is widely used in industrial purposes, tropocollagen may be beneficial as the native collagen scaffold containing cross-linked telopeptides.

Chondrex provides an acid soluble type I tropocollagen solution which can be used for traditional two-dimensional (2D) systems as well as a scaffold in three dimensional (3D) gels for simulatingcell growth in fibroblasts (7,8) and chondrocytes (9). To determine the individual types of collagen, “tips for collagen solubilization protocols” are available, as well as ELISA kits for type I collagen and type II collagen. Please refer to “www. chondrex.com” or contact us for more details.

DESCRIPTION:	Acid soluble porcine type I collagen solution
QUANTITY:	12.5 ml, 4 mg/ml, sterile-filtered
FORM:	Dissolved in 0.01M HCl
PURITY:	> 95% type I collagen
SOURCE:	Porcine
ENDOTOXIN:	Less than 1 EU/ml
STORAGE TEMPERATURE:	4°C
STABILITY:	6 months

PROTOCOL:

A. Plate Coating Procedures.

Note: An optimal coating condition is required for your culture system.

1. Dilute the 4 mg/ml collagen with 0.02M HCl at 50 to 100 µg/ml.
2. Mix the diluted solution gently.
3. Add an appropriate volume of diluted collagen solution into wells or plates.

   Note: Ensure the entire surface is coated.
4. Incubate at room temperature or 37°C for 1-2 hours.
5. Remove all solution.

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PROTOCOL:

6. Rinse coated surfaces carefully with culture media or PBS.

7. The coated well or plates can be stored at 2-8°C or air dried if sterility is maintained.

B. Three-dimensional (3D) Gel Preparation Procedures.

1. Dilute the collagen solution with equal volume of cold sterilized PBS (final 2 mg/ml).

2. Add an appropriate volume of the diluted collagen solution in wells or plates.

3. Incubate at 37°C for 30 to 60 minutes.

4. The gel can be stored at 2-8°C or dried if sterility is maintained.

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