

## **Bovine Collagen, Type I Polymeric (Insoluble)**

LYOPHILIZED FIBROUS SHEET, 5 GRAMS

Catalog Number **5164**

### **Product Description**

Type I bovine collagen, insoluble lyophilized fibrous sheet, Catalog Number 5164, is extracted from bovine flexor tendon with the raw material sourced from closed/controlled herds of animals. The manufacturing processes comply with stringent quality standards that have proven to yield a high quality product with lot-to-lot consistency. This product has a purity of >96% with Type II and Type III collagens not detectable.

This product is supplied as a lyophilized fibrous sheet(s) in a 5 gram package size. Bioburden and endotoxin levels are tested – this product is not considered sterile.

This collagen product is naturally cross-linked yielding a robust material for applications which require structure and strength. This product can be readily prepared into such forms as tissue scaffolds, foams, sponges, suspensions, coatings, putties, films and sheets but **does not form hydrogels**. Using typical cross-linking methods, this material can be tuned for optimal *in vivo* resorption. This collagen product is ideal for tissue engineering applications and uses with inorganic and biomaterials.

The product is provided in user-friendly packaging for use and storage. Avoid extended exposure to ambient environment

### **Precautions and Disclaimer**

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

### **Characterization**

<b>Parameter, Testing, and Method</b>	<b>Type I Collagen, Lyophilized Insoluble Sheet Catalog # 5164</b>
Form	Lyophilized Fibrous Sheet
Package Size	5 grams
Shelf Life	2 years when stored in original container at specified temperatures
Purity	> 96%
Amino Acid Analysis	Characteristic
pH upon Reconstitution at a concentration 5 mg/ml in water	5 to 7
Storage Temperature	Room Temperature
Bioburden	≤ 200 cfu/gram
Endotoxin	< 20 EU/gram
Source	Bovine Flexor Tendon

### **Preparation and Usage**

#### **Preparation Procedure for Collagen Suspension (Does not form a fully solubilized solution)**

Note: The following procedure is based on preparation of 1 gram of collagen in 100 ml to initially prepare a 10 mg/ml collagen suspension. Smaller quantities and volumes may be used but the same ratios of collagen and solutions should be used.

1. Weigh out 1 gram of collagen fibrous sheet.
2. Cut the collagen sheet into approximately 0.5 cm<sup>2</sup> pieces.
3. Reconstitute 1 gram of collagen pieces with 50 ml of cold purified water (50% of the final volume).
4. Stir the collagen with the water continuously mixing for a minimum of 15 minutes until the collagen is fully wetted and the suspension appears to be a semi-solution with some lumps.
5. Add 50 ml of cold 0.02 M HCl to the collagen mixture and stir for a minimum of 10 minutes. This will yield a collagen concentration of 10 mg/ml with the suspension continuing to appear as a semi-solution with lumps.
6. Measure the pH – the mixture should have a pH of 2 to 3.
7. Using Waring stick blender or equivalent, homogenize the collagen mixture for a minimum of 15 minute at a high speed ensuring that the collagen is fully homogenized. Ensure that the temperature of mixture does exceed 24°C. Upon completion, there should be few to no visual solids in the viscous suspension. Air bubbles will be prevalent.
8. To remove air bubbles, stir the suspension on a stir plate and pull a vacuum on the suspension. This will remove the air bubbles.
9. At this point if a collagen concentration of less than 10 mg/ml is desired, the collagen can be diluted with 0.01 M HCl.