

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

LYOPHILIZED FIBROUS POWDER, 1 GRAM

Catalog Number **5162**

### **Product Description**

Type I bovine collagen, insoluble lyophilized fibrous powder, Catalog Number 5162, 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 powder in a 1 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

### **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 Powder Catalog # 5162</b>
Form	Lyophilized Fibrous Powder
Package Size	1 gram
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 the 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 powder.
2. Reconstitute 1 gram of collagen with 50 ml of cold purified water (50% of the final volume).
3. Stir the collagen with the water continuously mixing for a minimum of 15 minutes until the collagen is fully wetted and the solution appears to be a semi-solution.

4. 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.
5. Measure the pH – the mixture should have a pH of 2 to 3.
6. 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.
7. To remove air bubbles, stir the suspension on a stir plate and pull a vacuum on the suspension. This will remove the air bubbles.
8. 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.