

**HUMAN COLLAGEN, TYPE III SOLUTION**  
10 MG, ~1 MG/ML, STERILIZE FILTERED  
Catalog Number 5021

**Product Description**

Type III Collagen provides structure and strength to connective tissue, is found many places in the body, especially skin, lung, intestinal walls and the walls of blood vessels. Collagen III is initially produced as procollagen, a protein consisting of three pro-alpha1 (III) chains that form the triple-stranded, rope-like molecule. After being synthesized, the procollagen molecule is modified by the cell. Enzymes modify the amino acids lysine and proline in the protein strands by adding chemical groups that are necessary for the strands to form a stable molecule and then later to crosslink to other molecules outside the cell. The Type III procollagen molecules are released from the cell and are processed by enzymes that clip small segments off either end of the molecules to form mature collagen. The mature collagen molecules assemble into fibrils. Cross-linking between molecules produces a very stable fibril, contributing to collagen's tissue strengthening function.

This Type III Collagen product is isolated from human placenta and is purified using a multi-step process with approximately 85% Type III collagen with the remainder being comprised of Type I collagen. The product is supplied as a sterile solution with 10 mg at approximately 1 mg/ml in 0.01 N HCl, pH 2. A Certificate of Analysis is available with the purchase of each product. Type III collagen product is provided in a user-friendly packaging for use and storage. This Type III collagen product is sterile filtered and is supplied as a ready to use solution.

Type III Collagen is typically used as a thin coating on tissue culture surfaces or as a control. Specific instructions are found in the Directions for Use. This product is generally used in vitro as a substrate scaffold to enhance cell attachment, adherence and proliferation. Type III collagen may be used to culture a variety of cell types.

**Characterization**

**Identity/Purity:** The identity and purity of Type III Human Collagen is qualitatively evaluated using electrophoresis (SDS-PAGE) which shows the typical banding pattern for Type III collagen (approximately 85% Type III Collagen with the remainder comprising of Type I Collagen).

**Storage:** This product is stored at 2 to 10°C and is shipped on frozen gel packs.

**Stability:** The product shelf life is 24 months when stored at 2 to 10°C.

**pH:** Supplied in 0.01M HCl (pH ~2.0).

**Concentration:** This product contains 10 mg of Human collagen at an approximately concentration of 1 mg/ml . The actual concentration is printed on the product label and certificate of analysis for each specific lot.

**Sterility:** No growth

**Endotoxin:** ≤10.0 EU/ml

**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.

The raw material source for this product is human placenta. The raw material has been tested for the presence of infectious viruses (HIV 1, HBV, HCV) and found nonreactive. However, no known test method can offer complete assurance of safety. Appropriate safety and personal protective practices should be followed when handling this product.

**Preparation Procedure**

**Coating Procedure**

Note: use these recommendations as guidelines to determine the optimal coating conditions for your culture system.

1. Remove required quantity of Type III collagen from the bottle and dispense into a dilution vessel.
2. Dilute the product with a 0.01 M HCl solution with water to ~50 to 100 µg (~1:10)
3. Swirl contents gently until thoroughly mixed.
4. Add approximate amount of diluted Type III Collagen to the culture surface ensuring the entire surface is coated.
5. Incubate at room temperature, covered for 1-2 hours.
6. After incubation, aspirate any excess remaining material.
7. Rinse coated surface carefully with a sterile balanced salt solution. Avoid scratching surfaces.
8. Aspirate remaining material from coated surface.
9. Coated culture vessels are now ready to use. The coated culture vessels may be stored at 2 to 10°C.

### 3-D Gel Preparation Procedure

1. Slowly add 1 part of chilled 10X PBS or 10X culture media to 8 parts of chilled collagen solution with gentle swirling.
2. Adjust pH of mixture to 7.2–7.6 using sterile 0.1 M NaOH. Monitor pH adjustment carefully (pH meter, phenol red, or pH paper).
3. Adjust final volume to a total of 10 parts with sterile water.
4. To prevent gelation, maintain temperature of mixture at 2–10°C.
5. To form gel, warm to 37°C. Allow approximately 90 to 120 minutes for gel formation.