

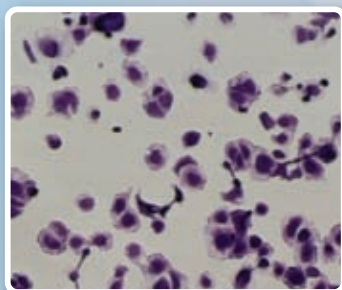
Nutragen®

Solution, 6 mg/mL

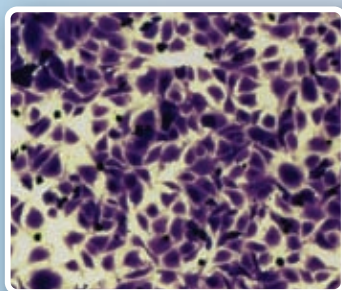
Purified Bovine Collagen

For Tissue Engineering Research,
Cell Culture and Biochemistry

Bioassay Results Using
Human Umbilical Vein Endothelial Cells
HUVEC (10X)



[Without Nutragen®]



[With Nutragen®]

Nutragen® is the Acceptable Standard for:

- ▶ Purity
- ▶ Functionality
- ▶ Reproducibility
- ▶ Lot-to-Lot Consistency



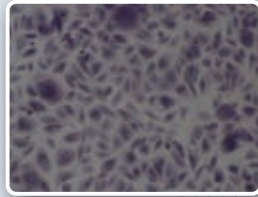
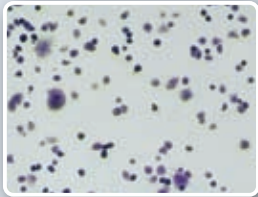
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Solution, 6 mg/mL

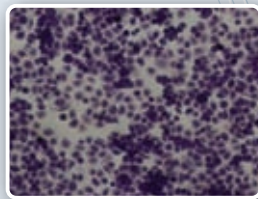
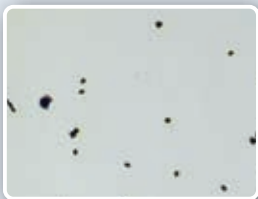
Purified Bovine Collagen

[Without Nutragen®]

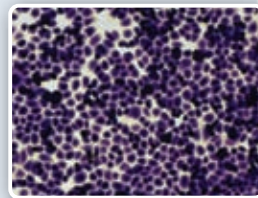
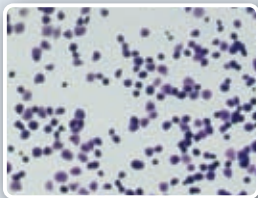
[With Nutragen®]



Human Dermal Fibroblasts (10X)



MDCK Epithelial Cells (10X)



Vero Epithelial Cells (10X)

APPLICATIONS

Collagen has a wide variety of uses. Below are just a few of the many applications for collagen.

- Tissue engineering research
- Wound healing constructs
- Coatings
- Solid free-form fabrications
- Electrospinning
- Oriented fibril surfaces
- 3D porous structures
- Gels
- In vitro research
 - Nerve Repair, Hemostats, Sealants, Coils, Sponges, Spheres/Beads, Ligaments, Strings, Tubes/Cylinders, Films
- Useful with a vast number of cell types

Nutragen® is for research and development uses only, not for human use.

Nutragen® collagen is known as the standard of all collagens for purity (>99.9% collagen content), functionality, and the most native-like collagen available. *Nutragen®* is isolated from bovine hides sourced from the only controlled, closed herd in the United States. *Advanced BioMatrix's* manufacturing processes comply with stringent quality standards that have proven to yield unsurpassed lot-to-lot consistency.

Nutragen® collagen is approximately 97% Type I *atelo*-collagen with the remainder being comprised of Type III collagen. It contains a high monomer content as measured by gel permeation chromatography.

Nutragen® collagen solution, Catalog No. 5010-D, is supplied at approximately a 6 mg/mL concentration to provide an extremely firm gel. The concentration for each specific lot is provided on a Certificate of Analysis and on the product label. This product is supplied as a sterile solution.

Nutragen® collagen is ideal for coating of surfaces, providing preparation of thin layers, or use as a firm and solid gel for culturing cells. *Nutragen®* collagen is provided in a 50 mL volume and is contained in user-friendly packaging for use and storage.

CHARACTERISTICS

Parameter, Testing, and Method	<i>Nutragen®</i> Collagen Solution Catalog Number 5010-D
Sterilization Method	Filtration
Form	Solution
Package Size	50 mL
Storage Temperature	2 - 10 °C
Expiration Date	Listed on product label and Certificate of Analysis
Concentration (Biuret Protein Determination)	5.8 - 6.8 mg/mL
pH	Approximately pH 2
Gel Time (Gel Time Assay)	≤ 40 minutes
Fibrillogenesis (Fibril Formation)	> 0.5 Absorbance Units
Polyacrylamide Gel Electrophoresis (SDS-PAGE)	≥ 85% collagen contained within alpha, beta, and gamma bands ≤ 15% collagen contained with bands traveling faster than alpha
Sterility	No Growth
Endotoxin (LAL)	≤ 1.0 EU/mL
Cell Attachment Assay	Pass
Source	Bovine Hide - Pepsin Extracted

ORDERING INFORMATION

Nutragen®, Solution 6 mg/mL - Catalog No. 5010-D - Package Size 50 mL