



**Seallagen**

(Biomedical Grade Echinoderm Collagen)

## Technical Data Sheet

<b>Product Name:</b>	<b>Seallagen (Biomedical Grade Echinoderm Type- I Collagen)</b>
<b>CAS No.:</b>	9007-34-5 / 9007-28-7
<b>Presentations:</b>	Lyophilized Powder / Acid Solution
<b>Catalog No.:</b>	MEB-SEA-L-10 to 100 / MEB-SEA-S-50 to 1000

### General Information:

Collagen is an essential component of cell-matrix adhesion and therefore an ideal substrate for cell and tissue culture. Our Seallagen (Biomedical Grade Echinoderm Type-I Collagen) products are suited for a variety of applications for multiple cell types and regenerative medicine and offers collagen characteristics that are Type I like, Type II like, and Type V like.

### Specifications\*:

Parameter	Specification	Method
Color	White to Off White/ Clear to Slightly Opaque	Organoleptic
Appearance	Fibrillar Powder/ Liquid Solution	Organoleptic
Coliforms	< 100 cfu/g	USP Chapter <61>
Microbial Count	< 1000 cfu/g	USP Chapter <61>
Molds and Yeast	< 100 cfu/g	USP Chapter <61>
Heavy Metals	< 2.4 ppm	AOAC 993.14 Mod.
Collagen Purity	> 95% (**)	SDS-Page Electrophoresis
Collagen Identity	> 98% (^)	FTIR Spectrometry
Collagen Microstructure	Fibrillar	Optical Microscopy (40x)
Collagen Concentration	> 950 mg/g	Hydroxyproline Assay
Cytotoxicity	Non-Cytotoxic	ANSI/AAMI/ISO 10993-5:2009/(R)2014
Acute Systemic Toxicity	Non-Toxic	ANSI/AAMI/ISO 10993-11:2017(E)
Irritation and Skin Sensitization	Non-Irritant	ANSI/AAMI/ISO 10993-10:2010/(R)2014

(\*) Typical specifications table for Seallagen Biomedical Grade. For specification details for your lot number, please refer to the COA provided with your order.

(\*\*) >95% collagen contained with alpha ( $\alpha_1$ ,  $\alpha_2$ ), beta ( $\beta$ ) and gamma ( $\gamma$ ) bands

(^)>98% FTIR spectra matching the intensity bands corresponding type-I collagen (Riaz et al. 2018)

## Applications:

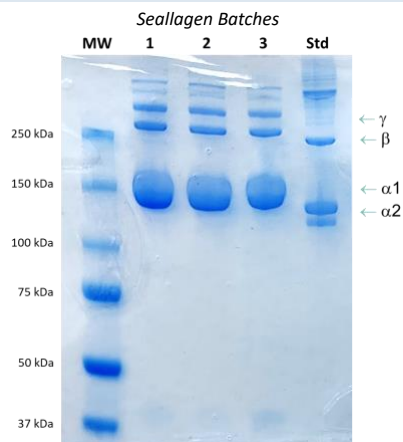
Seallagen (Biomedical Grade Echinoderm Type-I Collagen) constitutes an ideal standard for collagen purity (> 98% collagen content), functionality, and one of the most native-like collagens available as of today. Our soluble collagen provides *in-vivo*-like conditions to support the adherence, growth and differentiation of your cells. Seallagen can be applied as a thin coating to any cell culture dish. For use in 3D cell culture, hydrogels can be generated using standard protocols. This flexible matrix may be mixed with other ECM components, antibiotics or growth factors. Supplemental cross-linking by the customer is also feasible if desired. Seallagen matrix enables growth and differentiation of multiple cell types, representing an excellent scaffold for adherent cells and complex tissues in a broad variety of clinical applications, such as membranes for wound management, dental membranes, cell therapy or tissue engineering.

**Properties**

- Non-mammalian, BSE, and disease vector free
- Non-cytotoxic
- Cleaner at miRNA levels when compared to mammalian alternatives giving customers a cleaner cell culture with less off-target effects
- Bioresorbable and biocompatible
- Increased surface area : media ratio – allows for improved nutrients and waste exchange, lowering the risk of cell necrosis.
- Translatability – *in vitro* to *in vivo* applications
- Batch-to-batch consistency
- 2D and 3D cell culture

**Benefits**

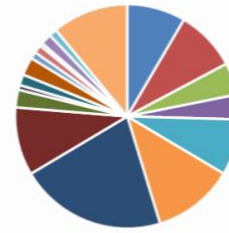
- Improvement of cell adherence
- Natural signals for cell growth, migration and differentiation
- High concentration for flexible use
- Environment provides natural signal for cells
- Proven biocompatibility and biodegradability *in vivo*
- Long shelf life



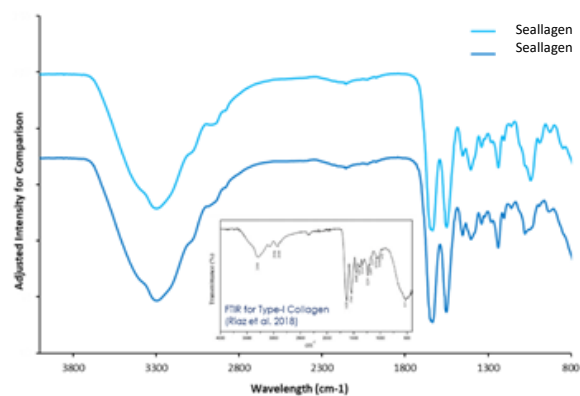
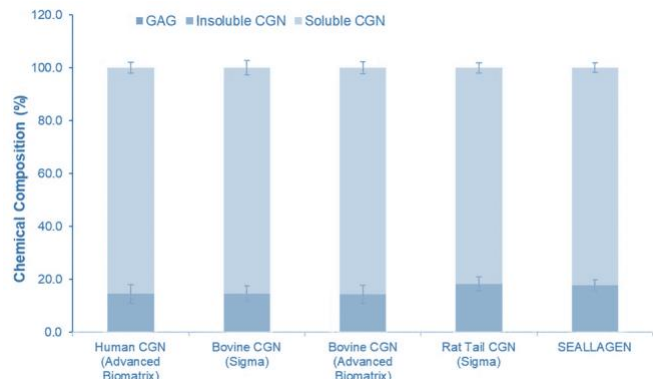
### SDS-PAGE

- Seallagen's electrophoretic pattern is homologous to that of collagen type I, II, III, V and IX, showing an  $\alpha(I)_3$  triple helix structure around 150 kDa, together with the bands associated to polymerized collagen ( $\beta$  and  $\gamma$  chains at higher MW).
- Consistency and reproducibility batch-to-batch ensures ME-bio's extracting quality.
- Reveals high purity of each Seallagen batch sample: 98%

## Seallagen Amino Acid Profile



■ HYP ■ ASP ■ THR ■ SER ■ GLU ■ PRO ■ GLY ■ ALA ■ VAL  
■ MET ■ ILE ■ LEU ■ TYR ■ PHE ■ HIS ■ Hlys ■ LYS ■ ARG



### Amino Acid Profile, Sircol Collagen Assay, and FT-IR Spectra

- Functional group peaks reveal similarities between Seallagen and Type-I Collagen from different animal sources.

**Storage:** Seallagen (Biomedical Grade Echinoderm Type-I Collagen) comes sterile, as lyophilized fibrillar powder or acid solution, and with a long shelf-life.

### Seallagen (Lyophilized Powder)

- Prior to reconstitution store at -20°C.
- After reconstitution store at 2 to 8°C.
- Avoid freezing.
- Storage in frost-free freezers is not recommended.
- Avoid repeated freezing and thawing as this may denature the protein.

### Seallagen (Acid Solution 3 mg/mL)

- Storage at 2 to 8°C.
- Storage in frost-free freezers is not recommended. This product should be stored undiluted.
- Avoid repeated freezing and thawing as this may denature the protein.
- Should this product contain a precipitate we recommend microcentrifugation before use.

### Third Party Testing



Marine Essence Biosciences Corporation of USA (ME-Bio) is a high-tech company specializing in research and development of marine biotechnology. Through cutting-edge scientific innovations, ME Bio harvests from unaltered marine ecosystems providing more advanced, safer and higher quality biotech products.

