

NATIVE COLLAGEN BIOMATERIALS FOR WOUND CARE INNOVATIONS

Viscofan BioEngineering collagen raw materials set the stage for innovative wound healing & tissue regeneration products

APPLICATION NOTE

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THE NEED

Raw biomaterials that support & accelerate wound healing

Wound healing starts with the right biological environment. Advanced wound care products need biocompatible, close-to-nature, versatile scaffolding materials that promote and accelerate regenerative processes.

THE SOLUTION

Native fibrillary bovine collagen type I biomaterials

The intact fiber structure and excellent biocompatibility of our native collagen products provide a natural matrix and stimulating environment for cell growth, tissue regeneration and wound closure. Viscolma® Collagen Suspension, Collagen Gel™ and Collagen Medical Reel are universal starter biomaterials for wound care solutions.

THE IMPACT

More freedom for wound care & tissue regeneration innovations

Our collagen biomaterials open new possibilities for product design and differentiation. They can be processed into new formats or shapes and combined with other components (e.g. anti-microbials) to create granules, pads, dressings, and implantable scaffolds tailored to individual specifications.



BENEFITS OF OUR COLLAGEN BIOMATERIALS

- ✓ Intact, native bovine type I collagen fibrils
- ✓ Optimal biocompatibility, high regenerative potential
- ✓ Traceable bovine raw material with negligible BSE risk
- ✓ Industrial manufacturing under ISO 9001 or 13485 for medical developments
- ✓ High purity, low endotoxin count
- ✓ Established products, evaluated in pre-clinical studies

TALK TO A SCIENTIST

to discuss your next wound care product development!

info.health@viscofan.com



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The Medical Reel Membrane – established collagen type I platform for wound care and tissue engineering

The Medical Reel Membrane (formerly known as Collagen Cell Carrier or CCC) is an ultra-thin (20 µm), chemically non-crosslinked, planar scaffold derived from highly purified bovine collagen type I fibers^{3,5}. Manufactured under strict ISO 13485 standards, the membrane combines exceptional physiological biocompatibility with outstanding mechanical handling, including complete translucency when wet, high deformability, and excellent suturability or glueability^{1,3,5}.

Pre-clinical studies¹⁻⁶ have investigated the efficacy of the Medical Reel Membrane in the treatment of skin defects in animal models. The studies analyzed how the collagen matrix influences microcirculation, tissue quality, and biomechanical properties during healing.

Compared to conventional synthetic or biosynthetic wound dressings, the membrane demonstrated higher epidermal cell density and improved skin elasticity following a split-thickness skin graft. Quantitative measurements using O2C devices and cutometers also confirmed optimized blood flow and, in the long term, improved viscoelastic properties of the regenerated skin.

Overall, the results underscore the potential of the Medical Reel Membrane as a biocompatible underlayment to reduce scarring and improve functional outcomes, e.g., in plastic surgery.

Proven benefits of the Medical Reel Membrane

- High biocompatibility & controlled biodegradation^{1,3}
- Rapid epidermal regeneration^{1,5}
- Enhanced clinical graft quality as underlying split-thickness skin graft¹
- Restored biomechanical elasticity & microcirculation^{2,6}
- High mechanical strength for advanced tissue-sealing & suture-line reinforcement^{1,3}
- Impermeable tissue barrier⁴

CONCLUSION

The Medical Reel Membrane serves as a versatile high-performance biomaterial platform for manufacturers seeking to develop next-generation wound dressings, dermal templates, tissue-sealing systems, or suture reinforcements.

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Viscolma® Collagen Suspension – the premium foundation for any scaffold in regenerative medicine

Viscolma® is an ultra-pure, homogenous suspension of native, intact bovine type I collagen fibers. The high collagen concentration of 10-15% enables broad processing and mixing options. Manufactured under strict ISO 13485 certified quality management system and maintaining a Master File, the putty-like suspension streamlines regulatory approval processes in medical product developments.

Easily dilutable in acidic aqueous solutions, Viscolma® features extreme formulation versatility: It is universally adaptable for freeze-drying into membranes, pads, dressings or coating of implantable medical devices.

The exceptional adaptability of Viscolma® has been validated in a landmark study⁷. The research demonstrates that fine-tuning Viscolma's synthesis (via simple, chemical-free neutralization) and physical dehydrothermal treatment (DHT at 75°C for 24 hours) preserves collagen fiber integrity while creating highly porous, interconnected scaffolds.

Proven benefits of Viscolma®⁷:

- Superior Swelling & Fluid Uptake: Excellent liquid absorption capacity, which is critical for managing wound exudate and facilitating nutrient transport.
- Tailored Degradation Profiles: Balanced structural stability over time, ensuring the scaffold supports cells throughout the tissue formation window.
- High Biological Activity: Proven to support high viability, proliferation, and accelerated differentiation of human mesenchymal stem cells (hMSCs).

CONCLUSION

By starting with Viscolma®, manufacturers can seamlessly fine-tune scaffold architecture, absorption capacity, and mechanical properties to design chemical-free, high-performance wound care and regenerative products tailored to precise clinical specifications.

REFERENCE

7. Pacheco D, et al. Engineering medical-grade collagen scaffolds for bone tissue regeneration. *Materials & Design.* 2026;261:115282: 1-16.

Collagen Gel™ – the cost-effective alternative for large scale manufacturing

Collagen Gel™ is a 5% solid, native bovine type I collagen blend designed as a universal, versatile and economic raw material for the large scale production of collagen based wound care products, such as powders, granules, or sheets. The established Collagen Gel™ has been validated in 510(k) trials and is available in bulk.