

# PRODUCT DATA SHEET

## VISCOFAN FIBERCOLL-FLEX-A® BIOINK

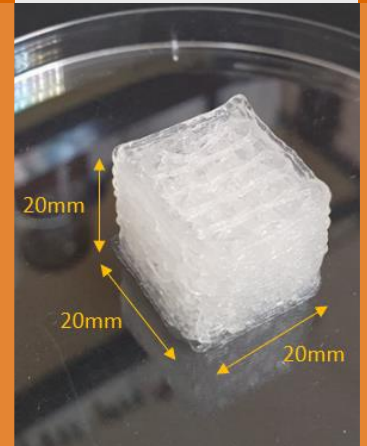
### Product Description

The acidic bioink Fibercoll-Flex-A® is pure, fibrillary collagen type I designed for printing of **strong bio-scaffolds** with high shape fidelity to be used as 3D models for biomedical screening or testing.

The complex, **in vivo-like collagen fibers** feature high mechanical strength without the need for artificial crosslinking or curing steps and thus ensure high **biocompatibility**. The **stiffness** of the printed product can be **easily regulated** by variation of the collagen concentration. Additionally, Fibercoll-Flex-A® allows printing at **ambient temperatures up to 37°C**. Cells are seeded on top of the self-supporting scaffold after printing and neutralization\*.

Fibercoll-Flex-A® is offered sterile in a syringe containing 3 ml.

To ensure best results please follow our User Guide.



Fibercoll-Flex-A® enables easy printing of robust 3D scaffolds

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### PRODUCT SPECIFICATIONS

Parameter	Fibercoll-Flex-A® Bioink
Main component	collagen type I fibers
Collagen fiber dimensions	Average length 200 – 800 µm, diameter 20 µm
Collagen concentration	5 wt%
Source	bovine dermis
Appearance	viscous suspension
Elastic modulus of bioink	2.000 – 10.000 Pa, depending on collagen concentration
Biocompatibility	✓ (culture of fibroblasts)
Sterilization	✓
Sterility testing	No growth (Aerobic bacteria, moulds, yeasts)
pH	3, to be neutralized after printing*

### APPLICATIONS

3D scaffolds for biomedical applications:

- Cell culture in scaffolds with customized shape and stiffness
- Collagen scaffolds with high stiffness but no crosslinking
- Complex tissue models and reconstructions
- Tumor models
- Substitute for animal models
- Tissue engineering & regenerative medicine
- Cell based assays (e.g. drug metabolism)

### BENEFITS

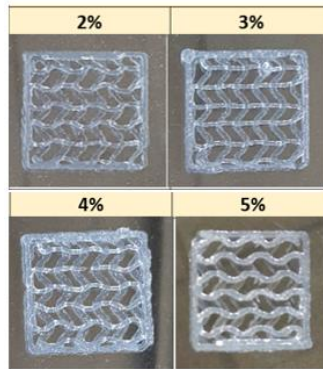
- ✓ Pure, fibrillary collagen type I represents a complex *in vivo* like scaffold for cell adherence & tissue reconstruction
- ✓ Self-supporting, stable 3D structure with customizable shape and extraordinary mechanical properties
- ✓ High mechanical fiber strength abets the need for artificial modification (i.e. methacrylation + UV curing)
- ✓ Highly biocompatible product promotes cell survival
- ✓ Easy stiffness regulation through collagen concentration variation
- ✓ Strong 3D print product with high shape fidelity
- ✓ Easy & efficient printing at room temperature or up to 37°C, no cooling devices for printer required, no time pressure at preparation and printing

## PRODUCT FEATURES

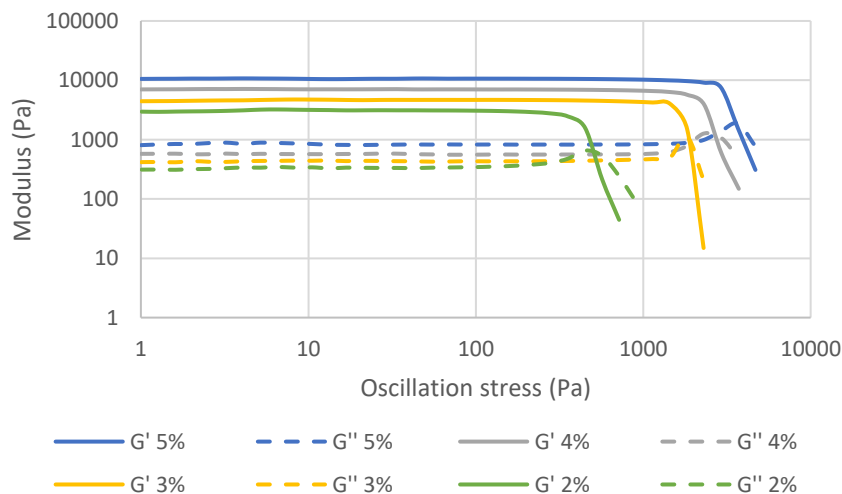
### Robust 3D print with high resolution

The shear thinning behavior of the Fibercoll-Flex-A® bioink provides excellent bioprinting characteristics with good mechanical and shape-maintaining properties of the printed scaffold providing ample freedom for the generation of complex 3D models.

*Images:* high shape fidelity of scaffolds printed with different collagen concentrations



### Easy and reliable stiffness modification by bioink dilution

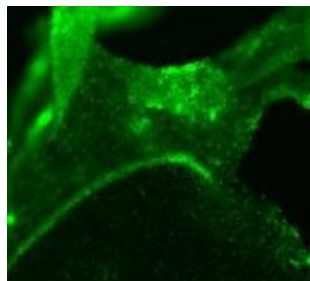


*Graph:* Rheological properties of Fibercoll-Flex-A® Bioink by oscillation stress measurement, demonstrating the high and modifiable elastic and viscous modulus ( $G'$  and  $G''$ ) by using different Fibercoll-Flex-A® concentrations (2%, 3%, 4% and 5% collagen).

### Native collagen type I promotes cell survival

Fibercoll-Flex-A® bioink generates excellent scaffolds for cells seeded on top, featuring high biocompatibility and promoting cell survival.

*Image:* L929 mouse fibroblasts cultured on printed scaffold and stained with calcein AM.



### Intended use

The Fibercoll-Flex-A® bioink is intended for research use only. It is neither intended for human nor animal diagnostic, therapeutic use nor any other clinical uses.

### Quality

Produced under ISO 9001 quality management system.

### Storage

Storage temperature 2 – 8 °C, do not freeze.

### Shelf life

Minimum 12 months.

### Corresponding documents

- User Guide  
Fibercoll-Flex-A® bioprinting protocol

### Technical support & ordering information

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### Disclaimer

All data and recommendations correspond to the present state of our knowledge; they are published without engagement. We reserve the right to make alterations and additions in line with technical developments without prior notice. The customer is obliged to check whether our products meet her/his technical requirements. Please contact us for questions or support.