

# Biosynthetic Cellulose

The new biomaterial for medical applications

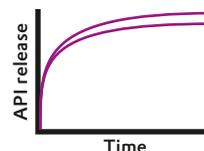
**biocellic+**



## FROM WOUND CARE PRODUCTS TO IMPLANTABLE DEVICES

**biocellic+** is a natural, fermentation-based renewable biopolymer of highly pure cellulose. It is well-suited for different medical and pharmaceutical applications, and due to its very fine and strong fiber network, it has unique material properties. **biocellic+** can be produced in many different forms including membranes, films, fiber suspensions and more. Furthermore, the properties of biosynthetic cellulose can be adjusted during biosynthesis, allowing tailormade product design.

## BIOSYNTHETIC CELLULOSE APPLICATIONS IN THE FIELD OF MEDICAL AND PHARMACEUTICAL DEVICES



### Advanced Wound Care

### Implantables

### Carrier and Delivery Systems

### BIOSYNTHETIC CELLULOSE – THE NEW BIOMATERIAL

- Natural hydropolymer with high potential in various biomedical applications
- Non-animal-derived
- Chemically pure cellulose (without residues)
- 3D-structured network of connected fibers with diameters in nanometer scale
- High water content > 90% (adjustable)
- Proprietary biotechnological production process at commercial scale
- Carrier for a broad range of active ingredients

### ADVANTAGES

- Nature identical material
- Fiber structure comparable to collagen
- Flexible material with high tensile strength
- Well-suited carrier for cells, drugs, dyes and more
- Long-term biostability, non-biodegradable
- Permeable to gases and liquids
- Cell attachment adjustable by modification
- Sterilizable
- Can be cultured to grow into the final application form (e.g. membrane, net, fiber, cartilage-like)

### PERFECT SOLUTION FOR MEDICAL APPLICATIONS

- No cytotoxic effects (tested according to ISO 10993-5)
- Non-irritant (intracutaneous reactivity tested according to ISO 10993-10)
- Non-sensitizing (tested according to ISO 10993-10)
- Non-GMO
- ISO 13485:2016 certified production
- Endotoxine content < 20 I.U./device

### Literature studies confirm

- Mild acute and no chronic inflammation after surgery
- No genotoxicity
- No induction of DNA damage
- No immune response
- Excellent hemocompatibility

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