

Sustainable Keratin Templates for Healthcare

TECHNOLOGY OVERVIEW

Seeking to address the rising needs for better patient's treatment and recovery experiences in the healthcare industry, this upcycled biomaterial technology seeks to provide solutions for potential improvements in regenerative medical applications.

Wastes-to-resource transformation technology was adopted to recover value from biomass and keratin-specific waste streams. These bioresources are easy to process and formed with great agility. Typical formats used for healthcare such as fibres, interconnected structures, films, gels and even coatings can be fabricated.

The sustainable keratin templates developed are suited for tissue regeneration, cell seeding and wound healing applications.



Various formats of sustainable keratin for potential healthcare applications (top)

FEATURES & SPECIFICATIONS

- Robust processability for multi-formats
- Customisable structural interconnectivity and porosity
- Biocompatible
- High cell regeneration rate
- Mechanical durability
- Fully degradable at controllable rate
- Reduce environmental burden

MARKET TRENDS & OPPORTUNITIES

- The global biomaterial market has been experiencing steady growth over the years. It is expected that an escalating increase of 8.4% CAGR within a decade from 2023 reaching US\$3.87 billion by 2033.
- The third wave of innovation in biomaterials has been driven by the seismic change in trend towards environmental concerns. Keratinous wastes, a by-product from agro-industrial processing, disposed at million tonnes per year will be able to favourably meet such a demand.

POTENTIAL APPLICATIONS

- Surgical Sutures
- Biomedical Products
- Medical Products