



Combination Product of Cell Sheets and Cellulose Membrane

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Experience:

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Market Needs:

This invention is a combination product designed as a wound care dressing product. It can be used in the treatment of acute and chronic wounds, burns, plastic surgery, and tissue engineering within regenerative medicine, aiming to shorten healing time, reduce scarring, and improve patient outcomes.

Our Technology:

This combination product combines adipose-derived stem cell (ASC) sheets with a bacterial cellulose (BC) membrane, significantly enhancing wound healing effects. The ASC sheets promote angiogenesis, cell proliferation, and anti-inflammatory effects through the secretion of growth factors, accelerating tissue repair and regeneration. The BC membrane provides the necessary mechanical support for the ASC sheets, with its high tensile strength and flexibility allowing it to conform closely to wounds. Its excellent water retention maintains a moist wound environment, facilitating cell migration and proliferation. The high biocompatibility ensures that the ASC sheets grow smoothly without adverse effects on the wound.

Strength:

- **High Biocompatibility:** Utilizes materials that do not cause cytotoxicity, with BC being FDA-approved, ensuring safety in use.
- **Enhanced Clinical Application:** Combines the advantages of cell therapy with the mechanical strength provided by the material, improving clinical applicability.
- **Cost-Effective:** Compared to existing cell sheet processes, this composite material avoids damage and spontaneous folding of cell sheets, significantly reducing costs.
- **Wider Application Range:** Uses allogeneic cells as part of the dressing for wound repair, expanding the range of usable cells while ensuring that adipose-derived stem cells do not provoke unnecessary immune responses.

Competing Products:

Commercially available wound dressings.

Intellectual Properties:

Our research team has decades of experience in the field of cell sheets and has produced numerous academic publications. We have previously achieved results in co-culturing materials with adipose-derived stem cells, which have been published as a patent (Republic of China Patent Application No: I597064).

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