

# 2022 Abstracts

ORAL & POSTER



The wound care meeting made for **Difference Makers**



have to be limited or restricted in clinical usage. From the Biomaterial Science perspective, the main focus of this publication is to reveal the biological safety of allogeneic cell incorporated biomaterials.

**Method:** A considerable amount of literature study was accomplished to fulfill the required methodology for this review article. Accordingly, we have focused on varied scientific publications about the rejection phenomenon of allogeneic cells in the host tissue. We also foresee the impact of our observation towards the FDA regulations to assess the safety and efficacy of such devices containing allogeneic cells and molecules. Additionally, this would help to seek the eligibility of reimbursement valuation by Medicare or other insurance entities.

**Results & Conclusion:** The cellular and molecular pathways of the immune response are recently being better understood. From the clinical perspective, the presence of allogeneic somatic stem cells in a skin substitute is quite objectionable due to possible immunogenicity to the host tissue. Several evidences<sup>4,5,6</sup> have clearly documented the rejection of allogeneic cells in the host body. Adding fuel to fire, the additional drawback that many fail to focus on is the presence of elastin molecules in such constructs like amnion/placenta/umbilical cord, etc.

Recently, more light has been thrown on the potential carcinogenicity of elastin due to its biodegraded byproduct peptides<sup>7</sup>. It is well-known that fibroblast is responsible for the secretion of elastin<sup>8</sup>. In the case of allogeneic stem cell implantation, it is evident that the stem cell-derived fibroblast in the host tissue will secrete elastin molecules native to the donor fibroblasts. Naturally, the recipient body degrades the donor's elastin releasing the carcinogenic byproduct, elastokines.

**References:**

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3. <https://pubmed.ncbi.nlm.nih.gov/30651054/>
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**Cell-Cell and Cell-ECM Interactions in Wound Healing**

**An Investigation of Fibroblasts, Matrix Macrophages & An In Vitro Model of New Formation and Wound Healing**  
Journal: *Journal of Cellular Biochemistry*, Volume 123, Issue 1, Pages 1-15, 2019. DOI: 10.1002/jcb.24567

**Background:** Wound healing is a complex process involving multiple cell types and extracellular matrix components. Fibroblasts and macrophages are key players in this process, with fibroblasts responsible for collagen synthesis and macrophages for immune response and tissue remodeling. This study aims to investigate the interactions between these cell types and the extracellular matrix in a wound healing model.

**Methods:** We established an in vitro model of wound healing using primary fibroblasts and macrophages. The cells were cultured on a collagen matrix, and their interactions were monitored using fluorescence microscopy and Western blotting. The expression of various markers related to cell migration, proliferation, and matrix synthesis was analyzed.

**Results:** Our findings show that fibroblasts and macrophages interact significantly in the wound healing process. Fibroblasts express high levels of collagen and fibronectin, while macrophages express markers of inflammation and tissue remodeling. The interaction between these cells is essential for the formation of a functional extracellular matrix.

**Conclusion:** This study provides a detailed look at the cellular and molecular events occurring during wound healing. The interactions between fibroblasts and macrophages are critical for the successful repair of tissue. Our findings may have implications for the development of novel wound healing therapies.