

ARTICLE IN REVIEW:

DermACELL[®] demonstrates an improved healing environment compared to other acellular dermal matrices

PUBLICATION: Open Journal of Regenerative Medicine, January 2012

TITLE: Macrophage phenotypes correspond with remodeling outcomes of various acellular dermal matrices.

AUTHORS: Agrawal H, Tholpady SS, Capito AE, Drake DB, Katz AJ.

STUDY DESIGN: Pre-clinical

RESULTS: Four acellular dermal matrices (ADMs) were evaluated in adult Sprague-Dawley rats: DermaMatrix[®], AlloDerm[®], Integra[®], and Dermacell. Each sample was evaluated histologically, and macrophage phenotype was evaluated by immunohistochemistry. By day 7, inflammatory cells had completely infiltrated the entirety of Dermacell grafts. Macrophages were the predominant inflammatory cell population at day 14. The macrophage population was a mixture of both phenotypes, with the M1:M2 ratio increasing from day 7 to 21. The M1 population peaked at day 14 and then decreased until day 42. Based on previous studies, a mixed M1/M2 response, like one seen in Dermacell grafts, may lead to better tissue remodeling outcomes.

Inflammatory cell infiltration:

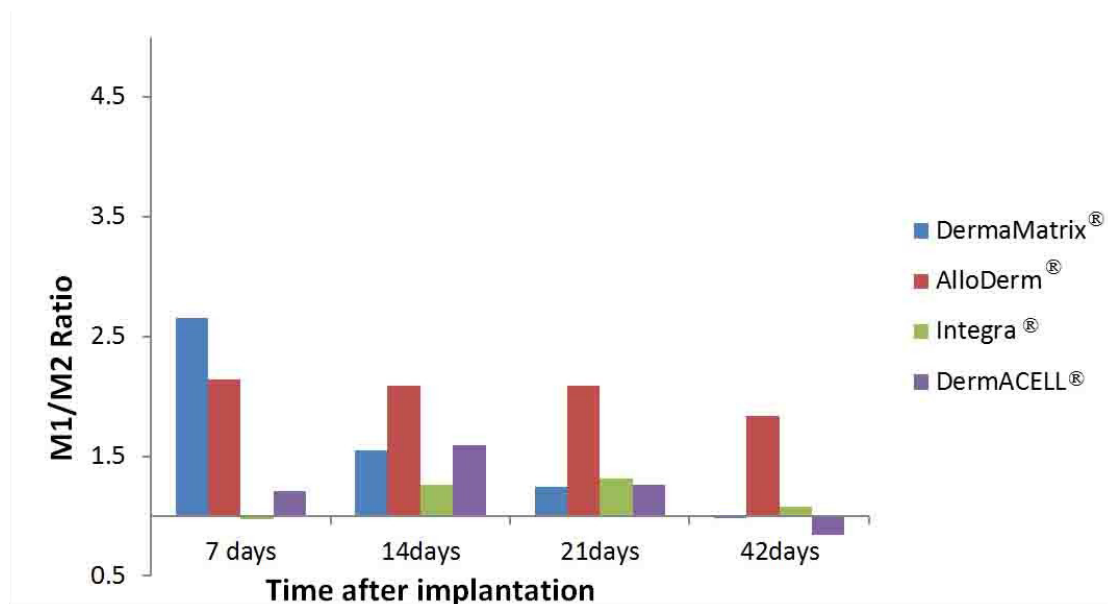
By day 7, monocytes and lymphocytes had completely infiltrated the entirety of Dermacell grafts. Infiltration peaked at day 14, with macrophages as the predominant population. At day 21, fibroblasts were found in the host-graft interface and well-formed granulomas were observed. By day 42, the inflammatory cells were breaking down.

The right mix for healing:

Implanted Dermacell grafts elicited a mixture of M1 and M2 macrophages that changed over time from a pro-inflammatory environment to a healing environment.

Macrophage Phenotype in Acellular Dermal Matrices

The ratios of M1:M2 macrophages are illustrated for each ADM: DermaMatrix, AlloDerm, Integra, and Dermacell for each time point after implantation.



68-20-277.00

LifeNet Health, the LifeNet Health logo, and Dermacell are registered trademarks of LifeNet Health.

Third party trademarks used herein are the trademarks of their respective owners.

©2020 LifeNet Health, Virginia Beach, VA. All rights reserved.

