Development of Artificial Dermis for Skin Wound

Young-Kwon Seo[1], Su-Yeon Lee[1], Kye-Yong Song[2], Young-Jin Kim[3], Jung-Keug Park[1]

[1]Department of Chemical and Biochemical Engineering, Dongguk University 3-26, Choong-gu, Seoul, Korea

[2]Department of Pathology, Chung-Ang University, 221, Dongjak-gu, Seoul, Korea

[3]Biomedical Research Center, Lifecord Inc., 5, Paldal-gu, Suwon, Korea

TEL: 82-2-2260-3365, FAX: 82-2-2271-3489

Abstract

Many skin substitutes, including cultured epithelial autograft (CEA) have been reported for basic and clinical applications. When CEA has been applied to a wound surface in poor condition which without dermis, the graft has fail to take and there is a risk of poor epithelization. Another problem with cultured epidermal autografts is blister formation and weak attachment of the regenerated epidermis, results in a low graft take. And in the absence of dermis, mature fibroblasts secrete collagen in the altered pattern of scar. To overcome this problem bioartificial dermis is required.

So, we have development artificial dermis composed of a human collagen and glycosaminoglycan secreted by human fibroblast with bovine collagen sponge by modifying the material reported Yannas and Burke[1,2)]. This substitute provides a dermal replacemente with a hige 'take' percentage and promotes host cell infiltration and neovascularization. This approach has focused on the matrix rather than the viable cell components of skin as the major dermal deficit in full-thickness skin loss.

As a result, we can obtained in our study suggested that the developmented artificial dermal substitute is able to provide an effective therapy for full-thickness skin defects.

References

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