

## SKIN MICROBIOTA AND ITS INTERPLAY WITH WOUND AND BURN HEALING: IMPACT OF EPITHELIAL BIOGENERATOR

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**Abstract.** *The skin microbiota is intimately coupled with cutaneous health and disease. Interactions between commensal microbiota and the multiple cell types involved in cutaneous wound healing regulate the immune response and promote barrier restoration. This dialog between host cells and the microbiome is dysregulated in chronic wounds and burns. To investigate whether changes in composition were present in the skin microbiome of individuals at risk of developing these lesions. Colonization of the wound and burn with commensal bacteria may promote wound and burn healing by inducing antimicrobial proteins such as Perforin-2, thus stimulating a protective immune response against pathogenic bacteria. Wound and burn infection with pathogenic bacteria results in Perforin-2 suppression in both hematopoietic and nonhematopoietic cells and inhibition of healing. A new study now shows that, in most cases, the causative agents of these infections are bacteria from the patient's own skin. For this reason, authors investigated the impact of Epithelial Bioregenerator to eliminate microorganisms from the chronic wounds and burns.*

**Keywords:** microbiome, host-pathogen interactions, chronic wounds, burns, infection, Epithelial Bioregenerator

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### MATERIALS AND METHODS

Pathogenic microorganisms are suspected to play a substantial role in delayed wound and burn healing. These studies indicate that functional level differences between microbiota species, or even between specific microbiota strains, may play an important role in determining the clinical outcomes of chronic wounds and burns. Recent advances have enabled better characterization of bacteria in chronic wounds and burns.

### RESULTS

We describe how, in contrast to pathogenic species capable of subverting skin immunity, commensals are essential for the regulation of the cutaneous immune system and provide protection from intracellular pathogens through modulation of the