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MEETING ABSTRACTS

NEW ADVANCED BIOPOLYMER MATERIALS IN THE TREATMENT OF ACUTE SKIN WOUNDS

Alžběta Kružicová [1], Marta Chalupová [1], Jarmila Klusáková [1], Gabriela Kuzmínová [1], Tomáš Parák [1], Tomáš Sopuch [2], Pavel Suchý [1]
Presenting author: Alžběta Kružicová (kruzicovaa@pharm.muni.cz)

[1] Masaryk University, Faculty of Pharmacy, Department of Pharmacology and Toxicology, Palackého třída 1946/1, 612 00 Brno, The Czech Republic
[2] Holzbecher, spol. s r.o., Zlíč 104, 552 03 Česká Skalice, The Czech Republic

A cascade of events, including platelet aggregation, cytokine release, inflammation, fibroblast proliferation, angiogenesis and re-epithelialization, occurs in a healing wound. These processes are necessary for the proper course of healing, scar formation and remodeling.

To accelerate healing of skin wounds, novel advanced, porcine and equine collagen/tencel based dressings, were fabricated. Collagen plays a pivotal role in each phase of healing due to its chemotactic role. It attracts different types of cells such as fibroblasts and keratinocytes to the wound. This supports angiogenesis and re-epithelialization. To monitor biological efficacy, dressings were tested on an acute excision wound model in a laboratory rat. The wound size was recorded at 2, 7 and 14 days after surgery. Selected biomarkers were measured in the tissue - levels of proinflammatory cytokine IL-6, growth factors TGF beta and VEGF. Presence of inflammatory infiltrate, granulomatous reaction and re-epithelialized area were evaluated histologically.

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Keywords: biopolymers; wound healing; cytokines