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Mesoglycan induces keratinocyte differentiation through syndecan-4 and annexin A1/S100A11 complex: A new drug-induced side road to stimulate re-epithelialization

Wound healing is a dynamic process comprising multiple events as inflammation, re-epithelialization and tissue remodelling. Re-epithelialization phase is characterized by the engagement of several cell populations, mainly of keratinocytes that sequentially go through cycles of migration, proliferation and differentiation to restore skin functions. Troubles can arise during the re-epithelialization phase of skin wound healing particularly in keratinocyte migration, resulting in chronic non-healing lesions which represent a serious clinical problem. Over the last decades efforts aimed to find new pharmacological approaches for wound care were made, yet almost all current therapeutic strategies employed remain inadequate or even ineffective. As such, it is crucial to identify new drugs that can enable a proper regeneration of the epithelium in a wounded skin. Here, we have investigated the effects of the fibrinolytic drug mesoglycan, a glycosaminoglycans mixture derived from porcine intestinal mucosa on HaCaT human keratinocytes that were used as *in vitro* experimental model of skin re-epithelialization. We found that mesoglycan induces keratinocyte migration and early differentiation by triggering syndecan-4/PKCα pathway and that this effect was at least in part, due to the formation of the annexin A1/S100A11 complex. Our data suggest that mesoglycan may be useful as new pro-healing drug for skin wound care.

Speaker Biography

Antonello Petrella is professor of Pharmacology at University of Salerno-Department of Pharmacology, Italy. Antonello Petrella has over 60 publications that have been cited over 1300 times and his publication h-index is 23 and has been serving as an editorial board member of reputed Journals.

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