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INFLUENCE OF NANO-OLIGOSACCHARIDE FACTOR (NOSF) ON SKIN HEALING

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Aim: Epithelialisation – the last phase in the healing process – follows the formation of granulation tissue. Keratinocytes migrate and proliferate before reconstituting the epidermis and the dermal-epidermal junction. Nano-oligosaccharide factor (NOSF) accelerates the healing of chronic wounds, in particular by regulating MMPs during the granulation phase (during which granulation tissue is formed). The aim of this study was to assess the influence of NOSF up until complete healing – i.e. epithelialisation – was finished.

Methods: In order to demonstrate the activity of NOSF on complete healing, NOSF was applied topically to epidermal lesions caused by UVB radiation on skin explants kept alive for 11 days. The healing activity was evaluated by observing the general morphology of epidermis and dermis, and by specific immunolabelling of fibronectin, cytokeratins 10 and 14 and integrin a6b4.

Results: After 11 days of treatment, NOSF shows a very good healing activity, characterised by the presence of a marked epithelial tongue. NOSF induces a clear over-expression of cytokeratins 10 and 14, thereby improving epidermal regeneration. It also stimulates expression of integrin a6b4, an important element for the restructuring of epidermal basal layers and dermis-epidermis junction.

Conclusions: The in-vitro observations performed in this model established that NOSF present a bright healing activity until complete healing is achieved.