




Elisabeth Engel

nAngioDerm

Ion-release materials to promote Angiogenesis on DERMal regeneration

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nAngioDerm will develop nanostructured ion-release platforms and devices that promote the in situ regeneration of damaged skin without the need of cells or growth factors. Depending on the type of skin injury, the ion-releasing nanocarriers will be: 1) combined with 3D printed collagen-based scaffolds as filling and guiding biomaterials for chronic wounds such as diabetic or pressure ulcers; or 2) dispersed in a spray or microgels based on a thermo-responsive collagen gel for acute wounds related to burns. nAngioDerm's innovative approach is based on the controlled release of bioactive ions (Zn^{2+} , Ag^+ , Ca^{2+}) from biodegradable polymeric nanocarriers. These bioactive ions will promote cell recruitment and colonisation and provide an antibacterial effect, as well as triggering the synthesis of angiogenic factors and extracellular matrix components that will facilitate reepithelisation, and therefore, wound healing.

