

Título del Proyecto	Antimicrobial Nanostructured Biomaterials for Complex Wound Healing (NABIHEAL)
Nº de expediente asignado	101092269
Abstract	<p>Complex wounds impact the quality of life of more than 2% of total population in developed countries being a global health problem with significantly impacts on health care economy. Complex wounds, including chronic wounds or major burns, are highly susceptible to microbial infection and biofilm formation, difficult to treat. Silver is a metal widely used in antimicrobial products to treat wound infections. However, silver-based products are expensive, and show several drawbacks due to costs, and environmental and safety concerns. NABIHEAL project will develop, from PoC (TRL3) to preclinical regulatory (TRL5), multifunctional biomaterials to solve, at least, two unmet medical needs in wound management: (i) Affordable treatments of wound infections or prevention of complications during all phases of wound healing (i.e., WH) process. (ii) Rational strategy to control the distribution of WH-molecules in wound dressings, since this strongly impacts on cells involved in the WH process. NABIHEAL biomaterials will use quatsomes nanovesicles (QS), with demonstrated inherent antimicrobial properties, as alternative to silver. QS will be also loaded with WH-molecules, to control their precise structuration in liquid and gelled formulations. QS will be incorporated into several WH matrices and hydrogels (MTX) of different composition and structure to provide antimicrobial and anti-biofilm functions. At short and medium term, NABIHEAL will end up with at least two innovative multifunctional WH-biomaterials, with antimicrobial, anti-biofilm, anti-inflammatory, re-epithelization, and controlled release properties, using affordable EU-based manufacturing technologies. At long term, NABIHEAL could become a game-change alternative to silver in WH-dressings. A consortium composed by 5 SME and 9 academic institutions, with expertise in WH product development, evaluation and</p>

	commercialization, nanotechnology, safety, and regulatory will join forces to address this ambitious objectives.
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