

Marilena Vlachou, Arch Gen Intern Med 2019, Volume 3 | DOI: 10.4066/2591-7951-C1-023

ELECTROSPUN NANOFIBERS IN SKIN WOUND HEALING AND TOPICAL DRUG DELIVERY

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Although electrospinning is not a contemporary technology, in the recent years it has attracted considerable attention, due to the technique's offering advantages making it ideal for applications in the medical and pharmaceutical areas. In the past few decades, electrospinning techniques have advanced even more and the use of materials, such as natural and synthetic polymers has allowed the generation of ultra-thin fibers with various diameters and morphologies.

Electrospun nanofibers have a potential in many fields, including biomedical, such as regenerative medicine, tissue, engineering and biosensing. They have exhibited a surprising performance for topical drug delivery due to high surface area to volume ratio as well as high porosity and flexibility, and so fiber-based systems, like gels, films, hydrogels and wound dressings, have been produced. The drug release from nanofibers can be adjusted by controlling the nanofiber diameter, its mode of encapsulation or changing the morphology to core-shell type. This research elaborates on the advancement of using nanofibers in topical drug delivery systems and skin wound healing.

BIOGRAPHY

Marilena Vlachou is an assistant professor at the National and Kapodistrian University of Athens (NKUoA), Greece. After obtaining her pharmacy degree from NKUoA, she conducted research related to novel pharmaceutical technology techniques at the University of Rhode Island, USA, as a visiting research scientist. She then moved back to Greece to pursue PhD studies on physical pharmacy/pharmaceutical technology. In her capacity as a member of staff of NKUoA, she teaches two undergraduate courses and one postgraduate, all related to the field of pharmaceutical technology. She has co-authored the textbook entitled "Pharmaceutical Technology I: Principles of Physical Pharmacy and Nanotechnology", 2007, parisianou editions, Athens, Greece, (ISBN: 978-960-394-487-4), and has presented her research work in more than fifty international and national scientific conferences and has published more than thirty five articles in peer-reviewed journals. She is a member of the Greek Pharmaceutical Society, Greek Society of Pharmaceutical Technology and Greek Society of Cosmetology.

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