



Review

# Delivery of Therapeutics from Layer-by-Layer Electrospun Nanofiber Matrix for Wound Healing: An Update

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## Abstract

Increasing incidences of chronic wounds urge the development of effective therapeutic wound treatment. As the conventional wound dressings are found not to comply with all the requirements of an ideal wound dressing, the development of alternative and effective dressings is demanded. Over the past few years, electrospun nanofiber has been recognized as a better system for wound dressing and hence has been studied extensively. Most of the electrospun nanofiber dressings were fabricated as single-layer structure mats. However, this design is less favorable for the effective healing of wounds mainly due to its burst release effect. To address this problem and to simulate the organized skin layer's structure and function, a multilayer structure of wound dressing had been proposed. This design enables a sustained release of the therapeutic agent(s), and more resembles the natural skin extracellular matrix. Multilayer structure is also referred to layer-by-layer (LbL), which has been established as an innovative method of drug incorporation and delivery, combines a high surface area of electrospun nanofibers with the multilayer structure mat. This review focuses on LbL multilayer electrospun nanofiber as a superior strategy in designing an optimal wound dressing.