

Fabrication and characterization of levan-based core-shell nanofiber

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Levan is found in various plants and microorganisms, mainly composed of sucrose linked by  $\beta$ -(2 $\rightarrow$ 6) glycosidic bonds and has characteristics such as biocompatibility and adhesion. Furthermore, levan is a substance known to have anti-inflammatory, antioxidant, and anti-cancer properties. Coaxial electrospinning is an effective, fast and controlled technique to construct core-shell nanostructures into nanofibers. In this study, the core-shell type nanofibers with increased flexibility and durability were manufactured using cellulose acetate (CA). Levan with adhesive and bioactive properties was used as sheath fluid and the CA was used as a core fluid for flexibility and fiber stabilization to manufacture nanofiber matrix. The levan based core-shell nanofiber matrix composed of non-crosslinked and crosslinked by citric acid treatment was confirmed morphology analysis, mechanical properties and adhesion ability. In present work, the levan-based core-shell type nanofiber showed uniform morphology, excellent adhesion and mechanical properties. It has shown the possibility of functional materials required in fields such as bioengineering and tissue engineering.