細菌纖維素複合膜製備與應用

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一、前言
二、細菌纖維素經由 NaOH 純化後結構差異
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摘要

隨著科技進步人類品質提升，環境意識的問題逐漸顯出檯面，而國際間也發表著有關於綠色包裝與智能包材相關之議題。本次研究以具備廣泛應用的細菌纖維素(bacteria cellulose，BC)與具有許多優異生理活性的薑黃素(Curcumin，Cur)與幾丁質奈米纖維(Chitin Nanofiber，CNF)，以不同方式製作成 BC/CNF/Cur 並進行其物性測定，期望期可應於食品包裝上。在 BC 培養過程中會有許多雜質堆積在 BC 中的三維網狀結構，以 0.1N NaOH 得到純化之 BC 為最佳後，經由複合得到 BC / Cur 與 BC/CNF/Cur 複合膜，經由各項物性測試得到的結果說明，BC 在結合 Cur 時其本身具備的三維網狀結構與含水量會影響其 Cur 形成微球的密集度及大小，而在 FTIR 圖譜中更能證明 BC 與 Cur 之結合，使用 ELIES 也確定了 BC 與 CNF 之結合，機械性質方面室溫乾燥的 BC 膜結構，可能在複合膜製備時被 CNF 與 Cur 撐開使得其拉伸強度具有明顯之變化，而在應用方面薑黃素複合膜具備了抑制微生物生長與抗氧化活性等特性。

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