

Figure 1. Time course of cell growth, protease and chitinase activity during *S. marascens* B742 fermentation of shrimp shell powders. Data were mean of three replications.

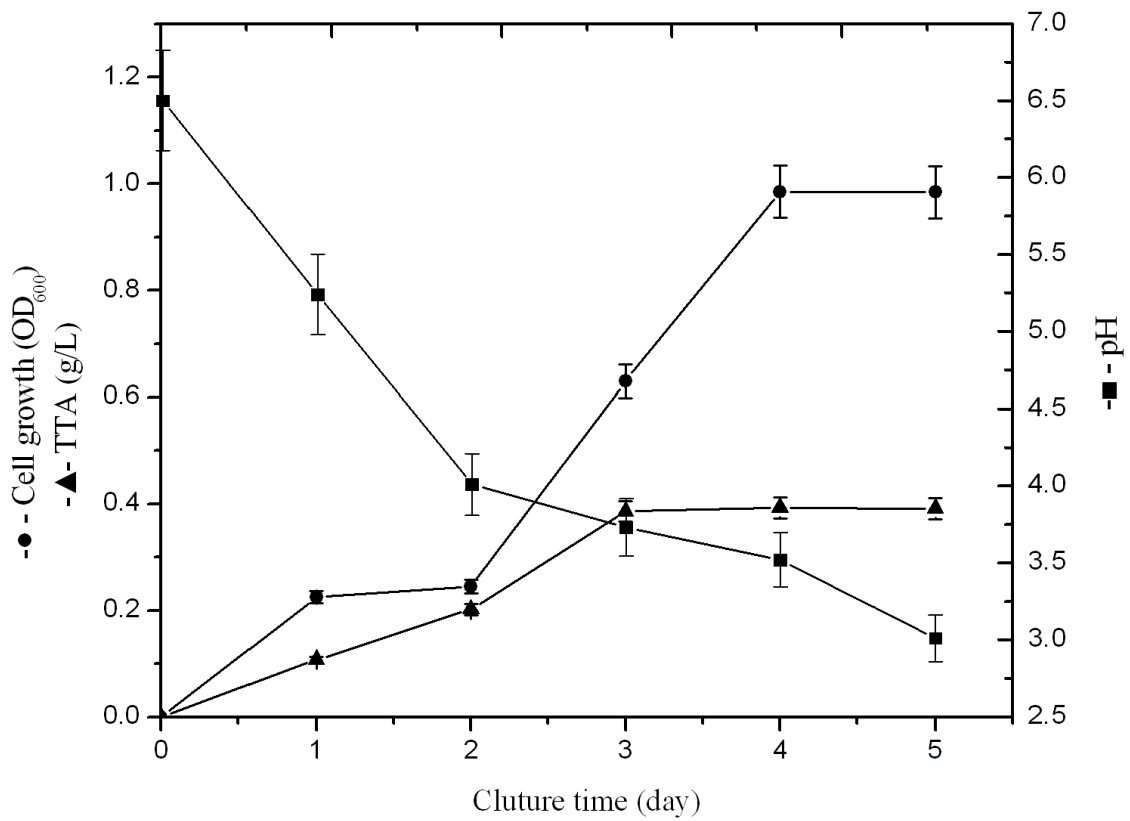


Figure 2. Time course of cell growth, pH and total titratable acidity (TTA) during *Lactobacillus plantarum* ATCC 8014 fermentation of shrimp shell powders. Data were mean of three replications.

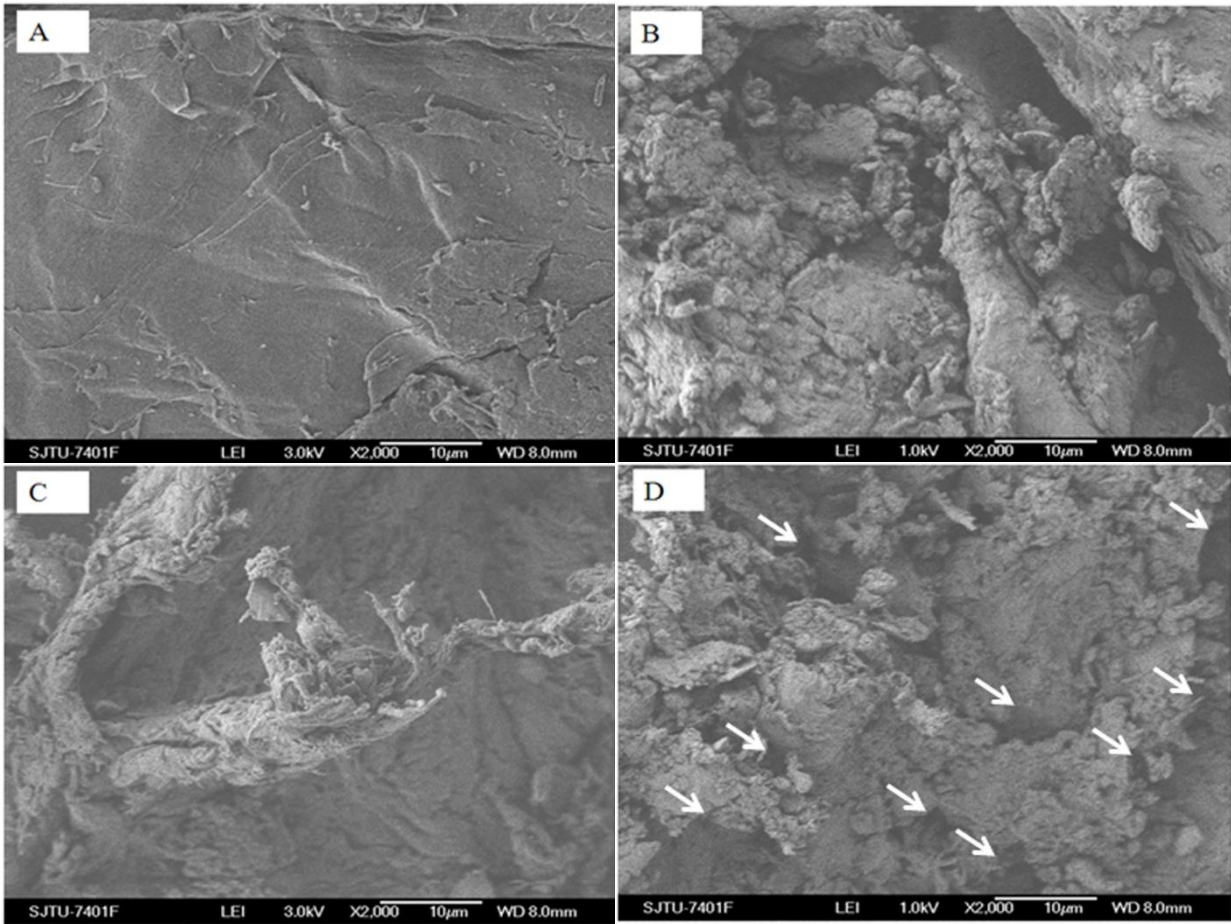


Figure 4. SEM micrographs of [shrimp shell powders](#) (SSP) (A), SSP after *L. plantarum* ATCC 8014 fermentation (B), SSP after *S. marascens* B742 fermentation (C), and SSP after successive two-step fermentation (D) at 2000 × magnification. (“→” shows where the perforation occurred).

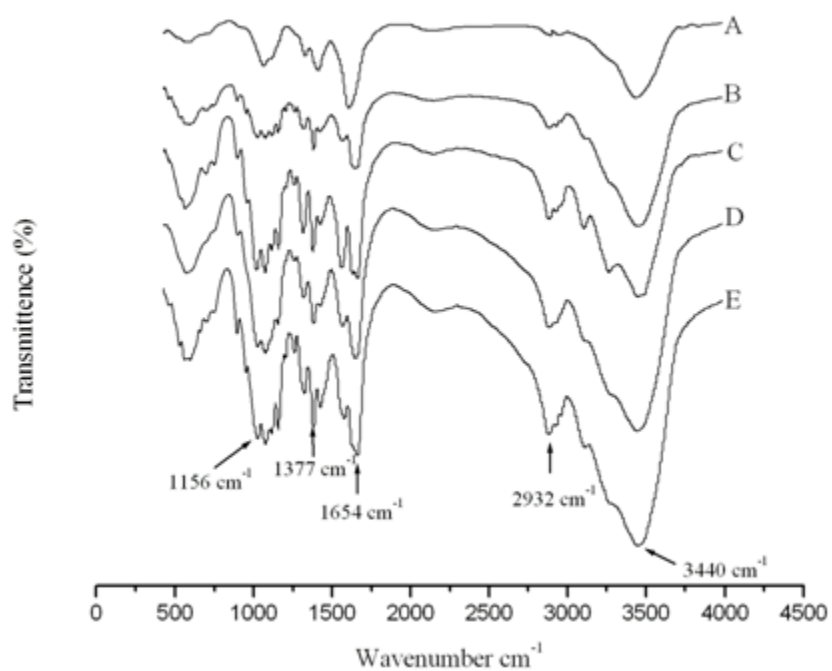


Figure 5. FT-IR spectra of commercial chitosan (A), commercial chitin (B), chitin from successive two-step fermentation (C), from *L. plantarum* ATCC 8014 fermentation (D), and from *S. marascens* B742 fermentation (E) in this study.

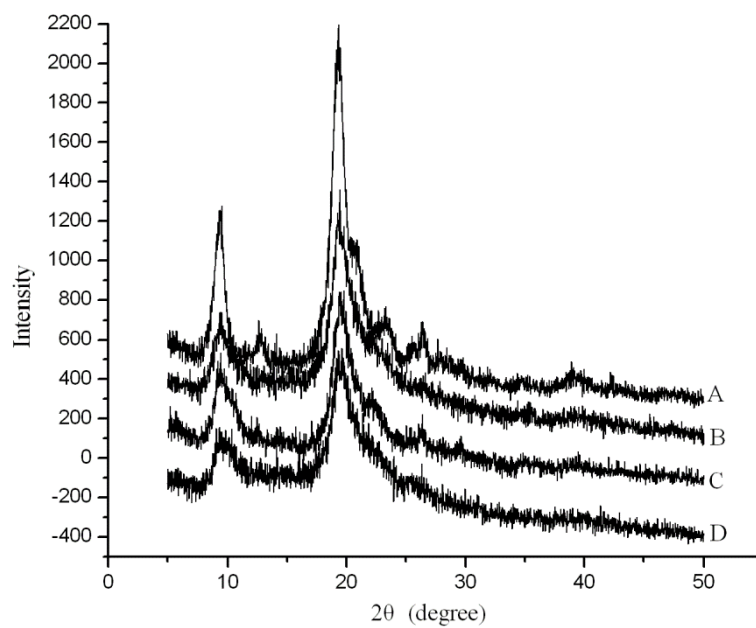


Figure 6. X-ray diffraction graphs of commercial chitin (A), chitin from *L. plantarum* ATCC 8014 fermentation (B), from *S. marascens* B742 fermentation (C), and from successive two-step fermentation (D) in this study.