

Chitosan-Whey Protein Isolate Core-Shell Nanoparticles as Delivery Systems

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Abstract : Chitosan (CS)-whey protein isolate (WPI) core-shell nanoparticles were synthesized through self-assembly of whey protein isolated polyanions and chitosan polycations in the presence of tripolyphosphate (TPP) as a crosslinker. The formation of this type of nanostructures with narrow particle size distribution is crucial for developing delivery systems since the functional characteristics highly depend on their sizes. To achieve this goal, the nanostructure was optimized by varying the concentrations of WPI, CS, and TPP in the reaction mixture. The chemical characteristics, surface morphology, and particle size of the nanoparticles were evaluated.

Keywords : whey protein isolated, chitosan, nanoparticles, delivery system

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