

Preparation and Characterization of Calcium Alginate Microcapsules Containing Fragrant Oil

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Biodegradable polymers have become increasingly important in the development of drug delivery systems. These polymers can either function as a matrix to control diffusion of the drug, followed by polymer biodegradation and elimination of the degradation products from the body, or participate in and control the rate of drug release by polymer hydration and degradation. In this work, the calcium alginate microcapsules containing fragrant oil were prepared by oil-in-water (O/W) solvent evaporation method. The fragrant oil encapsulated in the alginate was successfully observed by fourier transform (FT-IR) spectroscopy and differential scanning calorimeter (DSC) measurements. Analysis of the diameters and shapes of microcapsules was conducted by scanning electron microscopy (SEM). The fragrant oil release behaviors of the microcapsules were also examined with UV/Vis. spectroscopy. As a result, the mean diameters were in the range from 5 to 10 μm and encapsulation yield ranging from 60 to 80% were obtained. Also, it was found that the release rate of the microcapsules was increased with increasing the stirring rate.