

Preparation and Release Behaviors of Poly(butylene succinate) and Poly(ϵ -caprolactone) Microcapsules Containing Indomethacin

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A number of microencapsulation techniques have been studied in the various fields concerning the protection and controlled release of active materials from microcapsules or microspheres. In this work, biodegradable poly(butylene succinate)/poly(ϵ -caprolactone) (PBS/PCL) microcapsules containing indomethacin were prepared by emulsified solvent evaporation method. The morphologies, thermal properties, and release behaviors of PBS/PCL microcapsules were investigated. As a result, the microcapsule exhibited the porous and spherical from in the presence of gelatin as a surfactant. From the DSC results, the PBS/PCL microcapsules showed the two exothermic peaks meaning the melting points of PCL and PBS. This proved that PBS and PCL were mixed so that the PBS/PCL microcapsules were composed of two wall-formed materials. And the release rate of indomethacin from the microcapsule was decreased with increasing the PCL content. It was noted that an addition of PCL on the PBS led to the decrease of pore in the microcapsules.