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Simple Preparation and Characteristics of Silk Fibroin Microsphere

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We investigated the biomaterial and pharmaceutical utility of pure silk fibroin protein as a possible for separation, using Sephadex G-25 gel filtration chromatography(GFC) and simple preparing silk fibroin microspheres particles(SFMP) by spray dryer. Also, some of it's physicochemical properties and morphology were investigated. Obtaining microspheres and/or submicron-like particles by spray dryer method was accelerated or completed with the transition from the random coil to the β -sheet structure during spray dryer treatment. It was identified by the basic fourier transform infrared spectroscopy of SFMP. The various pH range of SFMP's swelling ratio is dependent on the pH of the solution, not on the occurred gelation. Morphologically, SFMP was spherical in shape, and particles, average $3 \pm 10 \mu\text{m}$ in size, were observed by SEM and particle analyser, respectively. The average molecular weight(MW) of calcium chloride dissolved in pure silk fibroin protein is about 61,500, calculated by GPC measurement.