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Ketoprofen Loaded Poly(D,L-lactic acid) Nanospheres for Potential Transdermal/Dermal Application: Preparation and Physical Characterization

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Ketoprofen is a potent non-steroidal anti-inflammatory drug and an excellent candidate for transdermal/dermal delivery because of its adverse side effects and short elimination half-time after oral administration [1, 2]. It is previously reported that drug loaded nanoparticles may provide a number of advantages compared to free drug such as increasing of bioavailability and drug skin penetration, ensuring controlled drug delivery, delayed and prolonged drug action in the application site [3, 4]. Therefore, the aim of our work was to prepare poly-D,L-lactide nanospheres of ketoprofen by modified precipitation method and to characterize them [5, 6]. The size and morphology of the obtained particles have been determined by field-emission scanning electron microscopy (FESEM) and laser light diffraction. Span value and mean diameter were about 1,3 and 65 nm, respectively. The encapsulation of ketoprofen into the PDLLA nanospheres was confirmed by X-ray diffraction (XRD) and infrared spectroscopy (FT-IR). Nanoparticles of ketoprofen were obtained with high encapsulation efficiency.

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