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Polymeric particulated carriers in drug delivery: Obtention, study and characterization

Merari Tumin Chevalier[1], **Mónica Cristina Garcia**[2], **Nicoletta Rescignano**[3], **Daniela Gonzalez**[4], **Alvaro Jimenez-Kairuz**[2], **Jose Maria Kenny**[3] and **Vera Alvarez**[1]

[1]Universidad Nacional de Mar del Plata, Argentina

[2]Universidad Nacional de Cordoba, Argentina

[3]Institute of Polymer Science and Technology, Spain

[4]University of Nebraska-Lincoln, USA

Over the past decade, significant progress has been made in the development of new pharmaceutical technology platforms based on different kind of systems. Therapeutically effective and patient-compliant drug delivery systems continuously lead researchers to design novel tools and strategies. In particular, polymeric micro and nanoparticles are micron and submicron size entities which can be made from a wide variety of natural and synthetic polymers. Due to particle's ability to improve the efficiency of current therapeutic treatments, this type of devices are being extensively studied and used as drug carriers and controlled release systems in the field of biomaterials, medicine and pharmacy. Different polymeric particulate drug delivery systems have been obtained and studied. Paricularly, considering biopolymers capability for high loading drugs and to modulate drug release, this work attempts to study the physicochemical and biopharmaceutical properties of PLA/PEG-b-PLA, PLGA and PLLA particulated systems that could carry active ingredients of interest. The obtained systems were fully characterized by scanning electron microscopy (SEM), thermo gravimetric analysis (TGA), differential scanning calorimetry (DSC), and Fourier transform infrared spectroscopy (FTIR). Encapsulation efficiency and *in-vitro* release profiles of each system was also determined by HPLC technique showing that there are potential applications of these polymeric carriers to solve problems and improve existing therapies in the field of health.

Biography

Merari Tumin Chevalier has completed a 5 years' degree in Chemistry from National University of Mar del Plata. Currently, she is working on her PhD thesis at the Research Institute in Materials Science and Technology (INTEMA)- CONICET (Argentina), particularly in the Group of Polymer Matrix Composite Materials led by Dra. Vera Alvarez. The goal of her work is to develop and study effective biopolymeric drug carriers. At present, she is doing a six month residence in the Polymer Science and Technology Institute (ICTP)-CSIC (Madrid) in order to acquire new knowledge regarding the preparation and characterization of polymeric nanoparticles.

merari.tumin.chevalier@gmail.com

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