SOLID LIPID NANOPARTICLES MADE OF GELUCIRE® 50/13: A SUITABLE DELIVERY SYSTEM FOR HYDROPHOBIC OR HYDROPHILIC ACTIVE SUBSTANCES

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In the last two decades, most attention has been paid to solid lipid nanoparticles (SLN) as colloidal carriers for pharmaceutical purposes due to their low inherent toxicity, their possible production on large scale and delivery of both hydrophobic and hydrophilic active principles following several routes of administration (1). However, SLN based on common solid lipids preferentially incorporate lipophilic drugs, while the hydrophilic ones are loaded only in low amount (2). As an approach to overcome this drawback, it seemed interesting to evaluate SLN based on self-emulsifying (SE) lipids which are mixtures of lipids, organic solvents and surfactants spontaneously forming emulsions on contact with aqueous media (3). Thus, we decided to study the performance of SLN based on Gelucire® 50/13 as lipid forming matrix. This lipid, indeed, is composed of PEG-esters (Stearoyl polyoxyl-32 glycerides), a small glyceride fraction and free PEG and it is a SE lipid example. Such Gelucire® 50/13 based SLN were prepared according to the melt-emulsification method (4,5) and exhibited a mean diameter of 141-335 nm (Fig.1) and a negative zeta-potential. In this communication, it will be presented the results obtained using such lipid nanocarriers in some aspects of fish medicine and lung delivery.

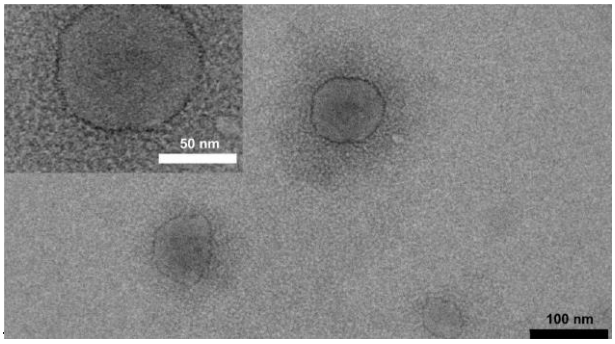

Figure 1. TEM micrograph of COUM SLN. Inset: high magnification images of the same sample.

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