

Abstract

Maslinic Acid Nanoparticles: A Drug to Carry Others [†]

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Abstract: Maslinic acid (MA), a triterpene widely found in natural sources, is a compound which is gaining interest due to its multiple therapeutic activities and its lack of harmful effects. However, MA is practically insoluble in water, which limits its clinical application. Here, we present a solvent displacement method to produce MA Solid Lipid Nanoparticles (SLNs) as a nanoplatform to carry hydrophobic drugs. A systematic study of the experimental parameters that may have some influence on the colloidal characteristics of MA SLNs was carried out. The effect of the aqueous/organic phase volume ratio and the organic phase composition on the size of SLNs evidence the role of the solvent diffusivity on the colloidal characteristic of the SLNs. On the other hand, the effect of surfactant/MA ratio proved the relevance of the surfactant on stabilizing the SLNs interface, owing to the changes on the interfacial tension that it promotes. MA SLNs have proved to be highly stable over time and in a wide range of pH and salinity conditions, as well as having a high curcumin encapsulation efficiency. The MA SLNs prepared in this work provide a starting point to develop functionalized active nanocarriers which allow establishing a synergistic relation with the loaded drug.

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