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Influence of the release medium on the *in vitro* release of Cannabidiol from polymeric biodegradable microparticles

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Cannabidiol (CBD) is the main no-psychoactive component of Cannabis sativa, and the second most prevalent active component of this plant. Numerous studies have demonstrated the utility of CBD to treat many diseases such as cancer. Biodegradable microparticles are very interesting systems to get controlled and/or targeted drug release. Several polymers have being used to elaborate these delivery systems, such as poly-ε- caprolactone (PCL). The aim of this work was to evaluate the influence of the release medium composition on the CBD release from PCL microparticles for intramuscular administration. CBD-PCL microparticles were prepared by the emulsion-solvent evaporation method and were characterized in terms of size, by laser diffraction; shape and aggregation, by scanning electron microscopy; and loading and encapsulation efficiency of CBD, by HPLC. To evaluate the *in vitro* release of CBD from microparticles two different media were used: Phosphate buffer, commonly used for these *in vitro* assays, and fluid simulated body (SBF), trying to represent the similar conditions that occur *in vivo*. The assay was carried out in a shaking water bath at 100 rpm and 37 ºC during 20 days. Non-aggregated spherical microparticles were obtained with average size of 40 µm and encapsulation efficiency near 100%. In the release assay, an increase the size of the microparticles in SBF was observed, while the size of microparticles in phosphate buffer decreased with time due to the release of CBD. However the release of CBD in phosphate buffer (87 %) was faster than the release in SBF (82 %) at 13 days.

Biography

Maria Isabel Morales Calero has completed Pharmacy degree in 2014 at Sevilla University. In 2015, she has studied master degree of Pharmacy and Pharmaceutical Technology at the University Complutense of Madrid. The title of her experimental project is *"In vitro release assays of controlled delivery systems"*, supervised by Prof. Dr. Ana Isabel Torres Suarez.

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