

Preparation and characterization of nanospheres as drug delivery systems

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Nanospheres can be used in controlled delivery of pharmacological agents to the target site, thus reducing the dose, the frequency of drug administration and consequently the side effects. In this study, nanospheres of albumin and phospholipids were produced using a high-pressure homogenizer/lipid film methods and different parameters were optimized in order to obtain particles with a controlled sized that exhibit characteristics compatible with a potential application as drug delivery systems. Different formulations were prepared and their physicochemical properties were extensively characterized. Preliminary tests were performed to evaluate their potential *in vitro*. After several steps of optimization, the drug encapsulation, the introduction of imaging and targeting agents in the samples were performed and more complex nanospheres were obtained. The analysis of these samples indicated that these protein-based nanospheres exhibit suitable characteristics for application on specific drug delivery systems for cancer and inflammatory diseases.

Biography

Artur Cavaco-Paulo has Ph.D from UMinho University and postdoctoral studies De Montfort University - UK. He is a Professor at the University of Minho at the Bioprocess group and he is the coordinator of the EU based project NANOFOL to develop nanobiodevices for inflammatory diseases.

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