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A decade focusing on liposomes to improve therapy

Uma década focada em lipossomas para melhorar a terapia

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Abstract

Liposomes are spherical vesicles made of a lipid bilayer surrounding an aqueous vacuole, which were first described in the 60's. These systems have been extensively used for two main applications: i) as membrane model systems and ii) as drug delivery systems. In this sense, this presentation aims at showing the versatility of liposomes to improve therapy. On the one hand, liposomes as membrane model systems are valuable tools to clarify the membrane-related mechanisms of action and toxicity of drugs and to predict the pharmacokinetics and pharmacodynamics of novel molecules. On the other hand, liposomes among nanocarriers are the most successful system so far reaching the market to improve the bioavailability, efficacy and/or to reduce the toxicity of pharmaceuticals. Thus, liposomes are still a prominent option when designing a novel nanocarrier to improve the therapy of life-threatening conditions.

Lecturer's resumé

Catarina Pereira Leite received her PhD Degree in Pharmaceutical Sciences/Biological Sciences (Biochemistry) in December 2017 from Faculty of Pharmacy, University of Porto (FFUP) and Chemistry Institute, University of São Paulo (IQ-USP), under a cotutelle agreement. Previously, she completed the Integrated Master in Pharmaceutical Sciences from FFUP in May 2012.

Her research has been focused on membrane biophysics and drug-membrane interactions from 2008 to clarify the role of membrane lipids on the pharmacological actions of anti-inflammatory drugs. As a post-doctoral fellow, her research interests broadened towards the nanotechnology field particularly by joining the research team of the FCT funded project entitled: "Circumventing surgical removal of biofilms infected implants: a nano-based, selective and targeted approach".

The main outcomes of her research comprise publications in international peer-reviewed journals, a book chapter and several communications in national and international conferences.