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LIVRO DE RESUMOS
BOOK OF ABSTRACTS
INTEGRATION OF 2-STYRYLCHROMONES IN LIPOSOMES: PRELIMINARIES STUDIES


1iMed.UL, 2iMed-UL Research Institute for Medicines and Pharmaceutical Sciences, Faculdade de Farmácia, Universidade de Lisboa, Portugal
2REQUIMTE, Departamento de Química-Física, Faculdade de Farmácia, Universidade do Porto, Portugal
3Departamento de Química, Universidade do Porto, 3810-193 Aveiro, Portugal
4UNFAB-INETI Lisboa, Portugal
§ miscarlos@ff.ul.pt

Abstract

Several compounds with a 2-styrylchromone chemical structure have been shown to hold a high antioxidant activity in vitro, at low concentrations, which indicates a potential therapeutic value that needs to be confirmed in vivo [1-2]. The evaluation of the antioxidant potential of 2-styrylchromones, in vivo, is expected to benefit from a formulation that delivers the compound to specific target sites. Due to the structural analogies of 2-styrylchromones with flavonoids, a controlled delivery system - liposomes - was chosen to take advantage of the well known pharmacokinetic behaviour of liposome-incorporated flavonoids. Liposomes are lamellar lipidic structures which form almost spontaneously when certain lipids are hydrated in aqueous media [3,4].

This work presents, for the first time, the results of the incorporation of 2-styrylchromones in liposomes. The characterization of the obtained formulations was based in the study of the encapsulation efficiency of the compound in liposomes, the knowledge of the primary concentration of compound in the incorporation process and the effect of the addition of freeze-drying protector, trehalose, to the formulation.

The obtained results showed that 2-styrylchromones could be encapsulated in liposomes with high incorporation efficiency. The highest encapsulation efficiency was achieved with a concentration of drug of 1 μmol per 10 μmol of total lipid. The results concerning the addition of trehalose to the formulation indicated that the use of the freeze-drying protector reduces the effects caused by freeze-drying, such as the growth of the vesicles.

This liposomal formulation is expected to allow the diffusion of these compounds to the target site in therapeutic concentrations.

References