LIPOSOME-METOPROLOL HYBRIDS FOR HYPERTENSION TREATING

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The study of liposomes as efficient systems for transporting drugs is one of the areas of current research [1-3]. The versatility of liposomes is reflected by the fact they are able to incorporate into their structure hydrophilic and hydrophobic molecules [2]. The efficiency of hydrophilic drug encapsulation on liposomes depends on various factors, like its chemical and rheological stability, and its capacity to be recognized by the immune system. The liposomes were prepared using mixtures of PC (phosphatidylcholine), DPPC (1,2 dipalmitoyl-sn glycerol-3-phosphoethanolamine), DSPE (1,2-distereoyl-sn-glycero-3-phosphoethanolamine), derivatives of polyethylene glycol (PEG) and Metoprolol. After a thin layer of the lipid mixture was obtained, this was hydrated with phosphate buffer to obtain Metoprolol encapsulated into liposomes. The nanometric sizes were obtained after the initial liposome solution was extruded through a membrane with 100 nm pore size or under ultrasound. The size of the liposomes in the final solution was obtained using dynamic light scattering. The liposomes have been compared by microscopic and optic methods for evaluation of its capability for drug encapsulation. Also pharmacologic efficiency was studied to evaluate potential application to hypertension treating.

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