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Rapid communication

Tocosome: novel drug delivery system containing phospholipids and tocopheryl phosphates

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Abstract

The potential of two derivatives of vitamin E, i.e. α-tocopheryl phosphate (TP) and di-α-tocopheryl phosphate (T_2P), for the protection and delivery of therapeutics is being investigated in our laboratory and some promising results have been obtained so far. Novel nanocarrier systems containing TP, T_2P and different lipids/phospholipids (phosphatidylcholine, stearyl amine, Phospholipon 90H, Phospholipon 100H) with and without cholesterol were prepared using Mozafari method. The preparation method did not require utilization of potentially toxic solvents, detergents or employment of harsh treatments such as sonication or high-shear force homogenization. Tocosomes, containing 5-fluorouracil (as a model drug), were shown to possess narrow size distribution, acceptable encapsulation efficiency and long-term stability (more than two years).

Keywords: Drug delivery, Encapsulation, Mozafari method, Phospholipid, Tocopherol phosphate

Chemical compounds studied in this article:

α-Tocopheryl phosphate (PubChem CID: 94493); Phosphatidylcholine (PubChem CID: 5287971); Stearyl amine (PubChem CID: 15793); Cholesterol (PubChem CID: 5997); 5-Fluorouracil (PubChem CID: 3385)
