anti-proliferative effect. However the tri-**organotin(IV) complexes, differently from the relevant di-organotin(IV) derivatives,** did not exerted a time-dependent effect, suggesting a different cytotoxic mechanism. HGalA at 100 μM did not affect the cell viability at any time of treatment. By calculated IC_{50} values, the cytotoxicity of the complexes followed the order $Bu_3SnGalA$ (0.52±0.04 μM) > $Ph_3SnGalA$ (0.91±0.07 μM) > $Ph_2SnGalA$ (2.54±0.20 μM) > $Bu_2SnGalA$ (4.8±0.34 μM). The cell death induced by these organotin(IV)complexes, was considered to be apoptotic by measuring the exposure of phosphadytilserine to the outer membrane.

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Nanotecnologie (NT)

NT1

Effect of composition of Solid Lipid Nanoparticles on their chemical-physical properties and potential for gene therapy

C. Botto[1], E. Amore[1], E.F Craparo[1], G. Cavallaro[1], M. L. Bondì[2]

1. Laboratory of Biocompatible Polymers-Dipartimento di Scienze e Tecnologie Biologiche, Chimiche e Farmaceutiche (STEBICEF) - Università degli Studi di Palermo -via Archirafi, 32-90123 Palermo – Italy; 2. Istituto per lo Studio dei Materiali Nanostrutturati, U.O.S. di Palermo, Consiglio Nazionale delle Ricerche, via Ugo La Malfa, 153 90146 Palermo, Italy.

In the last years, increasing attention has been paid on gene therapy as promising approach to treat different inherited or acquired diseases. To achieve their therapeutic effects, nucleic acids need to cross several biological barriers, reach the cells and their intracellular targets, being protected from degradation by nucleases present in plasma and intracellular compartments. In addition, high molecular weight and negative charges of nucleic acids make them impermeable to the cellular membranes. Therefore, an efficient delivery system is an essential requirement for successful gene therapy. Cationic solid lipid nanoparticles (SLN) have been recently proposed as non viral carriers for gene therapy, due to their widespread technological advantages, including large scale production, use of biocompatible materials and good storage stability [1, 2]. In this study, different SLNs dispersions have been produced by ethanolic precipitation technique using Precirol ATO 5 as lipid matrix and Brij 76 as non-ionic surfactant. Three distinct cationic lipids were chosen (dimethyldioctadecylammonium bromide (DDAB), cetyltrimethylammonium bromide (CTAB) and cetylpyridinium chloride (CPC)), in order to evaluate their effects on the chemical-physical properties (size, zeta potential, crystallinity) and storage stability of the SLNs. The best nanosystems were further complexed with the EGFP plasmid and their different ability to bind the DNA was evaluated by agarose gel electrophoresis. Finally, in order to have preliminary information about biocompatibility of the cationic SLN, haemolytic tests were carried out incubating each formulations with human erythrocytes.

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