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Physicochemical properties of cationic nanoemulsions and liposomes obtained by microfluidization complexed with a single plasmid or along with an oligonucleotide: implications for CRISPR/Cas technology

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Abstract

In this study, we investigated the effects of the association of a single plasmid or its co-complexation along with an oligonucleotide on the physicochemical properties of cationic nanoemulsions and liposomes intended for gene editing. Formulations composed of DOPE, DOTAP, DSPE-PEG (liposomes), and MCT (nanoemulsions) were obtained by microfluidization. DSPE-PEG was found to play a crucial role on the size and polydispersity index of nanocarriers. Nucleic acids were complexed by adsorption at different charge ratios. No significant differences were noticed in the physicochemical properties of nanocarriers (i.e.

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