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Microfluidic Device for Forming Monodisperse Lipoplexes

Tech ID: 18776 / UC Case 2006-644-0

BACKGROUND

The determinant factor for the successful applications of delivering drugs is to develop a non-viral and efficient carrier. Cationic lipid based liposomal carriers are the most attractive non-viral solution. Advantages of liposomal vectors include safety, lack of immunogenicity, ability to package large DNA molecules and ease of preparation. However, the conventional processes for cationic lipids and DNA complex formulation are normally irreproducible.

TECHNOLOGY DESCRIPTION

A microfluidic device using a picoliter micro-reactor and incubator (PMRI) system has been developed to improve the generation of cationic lipids and DNA. This system decreases the range of size distributions and improves the gene transformation rate. The device may be used for in vitro and in vivo gene therapy and these lipid-gene complexes may be used in gene therapy applications.

APPLICATIONS

Gene therapy, gene transfection, drug delivery, plasmid DNA and shRNA for pharmaceutical and therapeutic applications

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	7,811,603	10/12/2010	2006-644

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OTHER INFORMATION

CATEGORIZED AS

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