

**United States Patent** [19][11] **Patent Number:** **5,753,613****Ansell et al.**[45] **Date of Patent:** **May 19, 1998**[54] **COMPOSITIONS FOR THE INTRODUCTION OF POLYANIONIC MATERIALS INTO CELLS**[75] Inventors: **Steven Michial Ansell; Barbara Mui; Michael Hope**, all of Vancouver, Canada[73] Assignee: **Inex Pharmaceuticals Corporation**, Vancouver, Canada[21] Appl. No.: **442,267**[22] Filed: **May 16, 1995****Related U.S. Application Data**

[62] Division of Ser. No. 316,399, Sep. 30, 1994, abandoned.  
 [51] **Int. Cl.**<sup>6</sup> ..... **A61K 37/22**; C07H 21/02; C07H 21/04  
 [52] **U.S. Cl.** ..... **514/2**; 514/21; 514/43; 514/44; 424/450  
 [58] **Field of Search** ..... 514/2, 21, 43, 514/44; 424/450

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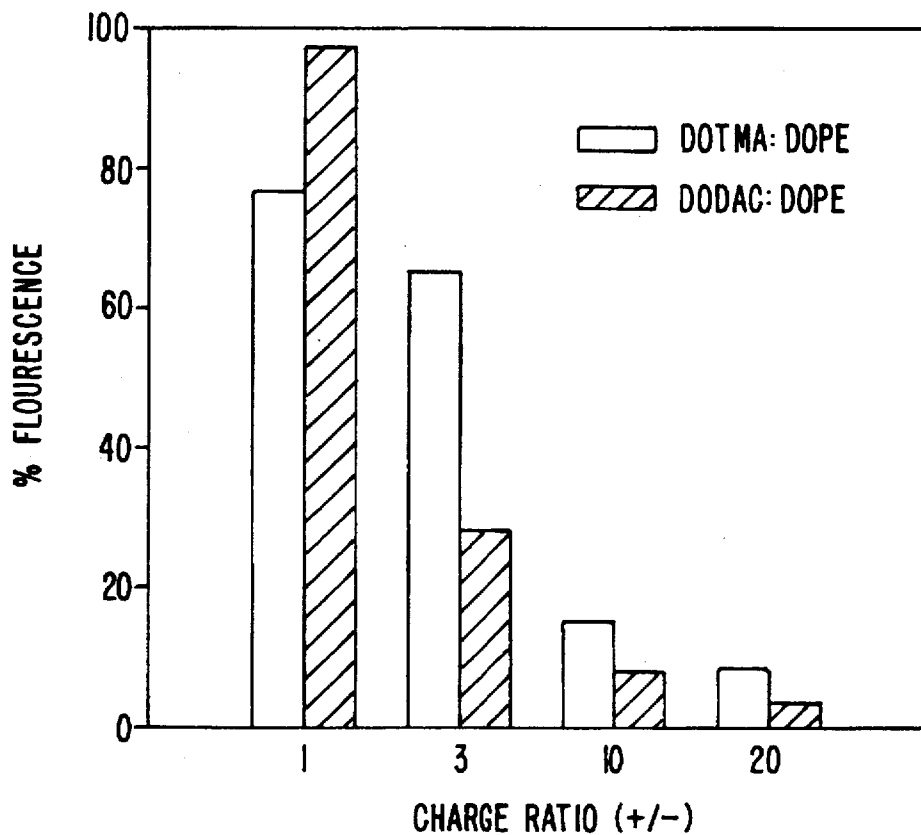
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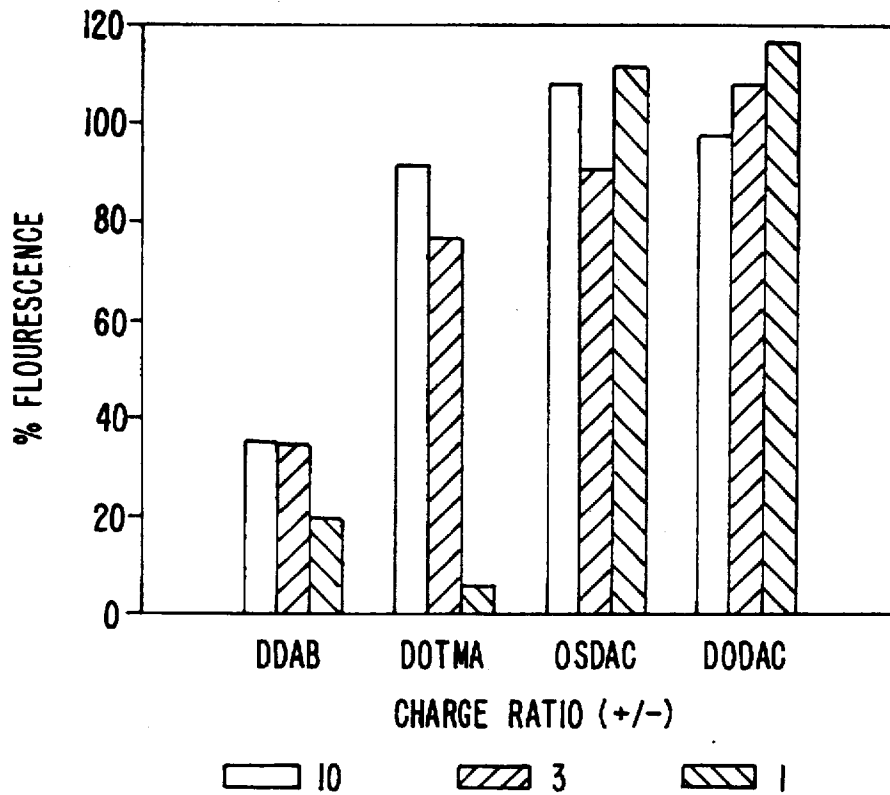
**Primary Examiner**—Nathan M. Nutter**Attorney, Agent, or Firm**—Townsend and Townsend and Crew[57] **ABSTRACT**

The present invention provides compositions and methods which are useful for the introduction of polyanionic materials into cells. The compositions are mixtures of cationic compounds and neutral lipids which are typically formulated as liposomes. The cationic compounds are quaternary ammonium compounds wherein the nitrogen has two attached long chain alkyl groups, at least one of which is unsaturated. The methods for transfecting cells involve (a) contacting the polyanionic materials with the compositions above to form a polyanionic material-liposome complex, and (b) contacting the complex with the cells to be transfected.

**4 Claims, 4 Drawing Sheets**



**FIG. 1.**



**FIG. 2.**

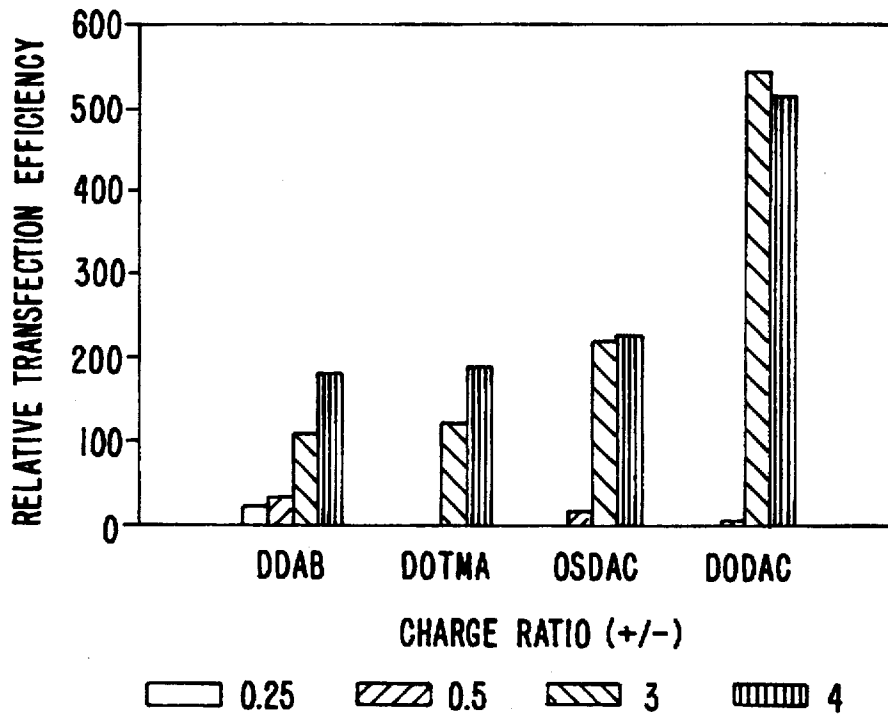
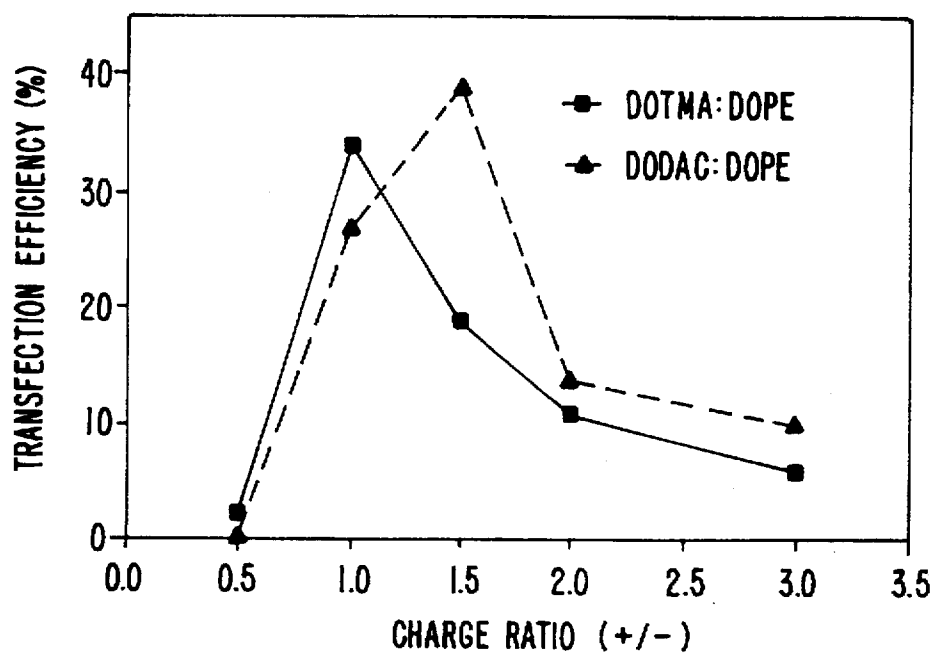


FIG. 3.



**FIG. 4.**

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