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(12) **United States Patent**  
**Schwartz et al.**(10) **Patent No.:** **US 6,251,939 B1**  
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(75) Inventors: **David Aaron Schwartz; Bob Dale Brown**, both of Encinitas; **Brian Patrick Dwyer**, San Diego, all of CA (US)

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94/27627 \* 12/1994 (WO) .(73) Assignee: **Promega Biosciences, Inc.**, Madison, WI (US)

(\*) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

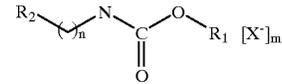
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*Primary Examiner*—Barbara P. Badio(74) *Attorney, Agent, or Firm*—Michael Best & Friedrich LLP; Grady J. Frenchick

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(57) **ABSTRACT**

The present invention provides novel carbamate-based cationic lipids of the general structure:

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(63) Continuation-in-part of application No. 08/483,465, filed on Jun. 7, 1995, now abandoned.

(51) **Int. Cl.**<sup>7</sup> ..... **A61K 31/215; C07C 271/00**(52) **U.S. Cl.** ..... **514/506; 560/159**(58) **Field of Search** ..... 560/159; 514/506(56) **References Cited**

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or a salt, or solvate, or enantiomers thereof, wherein (a) R<sub>1</sub> is a lipophilic moiety; (b) R<sub>2</sub> is a positively charged moiety; (c) n is an integer from 1 to 8; (d) X is an anion or polyanion; and (e) m is an integer from 0 to a number equivalent to the positive charge(s) present on the lipid. The present invention further provides compositions of these lipids with polyanionic macromolecules, methods for interfering with protein expression in a cell utilizing these compositions, and a kit for preparing the same.**13 Claims, 7 Drawing Sheets**