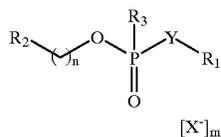


35

N or O, and (g) m is an integer from 0 to a number equivalent to the positive charge(s) present on the lipid.

32. A phosphonic acid-based lipid having the structure;



or a salt, or solvate, or enantiomers thereof wherein; (a) R₁ is selected from the group consisting of (i) a symmetrical branched alkyl or alkenyl of 25 to 40 carbon atoms; (ii) a steroidyl moiety; and (iii) a glycerol derivative; (b) n is 0 to 4; (c) R₂ is a positively charged moiety selected from the group consisting of (i) an alkylamine moiety; and (ii) a substituted alkyl moiety 1 to about 6 carbon atoms substituted with a substituent selected from the group consisting of NH₂, C(=O)NH₂, NHR₆, C(=O)NHR₆, NHR₆R₇, or C(=O)NHR₆R₇, wherein R₆ and R₇ are independently selected from an alkyl moiety of 1 to about 24 carbon atoms, an alkenyl moiety of 2 to about 24 carbon atoms, an aryl moiety of about 5 to about 20 carbon atoms, or an aralkyl

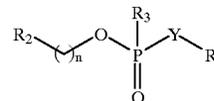
36

moiety of about 6 to about 25 carbon atoms; (d) X is an anion or polyanion; (e) m is an integer 0 to a number equivalent to the positive charges present in the lipid and (f) R₃ is a lipophilic moiety, of 1 to about 24 carbon atoms, a positively charged moiety, or a negatively charged moiety.

33. A composition according to claim 1 wherein the polyanionic macromolecule comprises an expression vector, capable of expressing a polypeptide in a cell.

34. A composition according to claim 1 wherein the polyanionic macromolecule is an oligonucleotide or an oligomer.

35. A composition according to claim 1 wherein the polyanionic



macromolecule is DNA.

* * * * *