WHAT IS CLAIMED IS:

1. A method of inducing an immune response against a viral antigen in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex, wherein the cationic liposome complex comprises:

   (a) a cationic liposome;

   (b) a ligand directly complexed with, but not chemically conjugated to, the cationic liposome;

   (c) one or more nucleic acid molecules encoding one or more viral proteins associated with the cationic liposome; and

   (d) one or more nucleic acid molecules encoding one or more interleukins associated with the cationic liposome.

2. The method of claim 1, wherein said viral antigen is from a virus selected from the group consisting of influenza virus, HIV virus, SARS virus, bird flu virus, Ebola virus, Hepatitis B virus and small pox virus.

3. The method of claim 1, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

4. The method of claim 1, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

5. The method of claim 1, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration, oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration,

intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

6. The method of claim 1, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

7. The method of claim 1, wherein said ligand is a single chain Fv antibody fragment.

8. The method of claim 7, wherein said single chain Fv antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

9. The method of claim 1, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a K[K(H)KKK]$_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

10. A method of inducing an immune response against a viral antigen in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex, wherein the cationic liposome complex comprises:

(a) a cationic liposome;

(b) a ligand chemically conjugated to the cationic liposome;

(c) one or more nucleic acid molecules encoding one or more viral proteins associated with the cationic liposome; and

(d) one or more nucleic acid molecules encoding one or more interleukins associated with the cationic liposome.

11. The method of claim 10, wherein said viral antigen is from a virus selected from the group consisting of influenza virus, HIV virus, SARS virus, bird flu virus, Ebola virus, Hepatitis B virus and small pox virus.

12. The method of claim 10, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

13. The method of claim 10, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

14. The method of claim 10, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration, oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

15. The method of claim 10, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

16. The method of claim 10, wherein said ligand is a single chain Fv antibody fragment.

17. The method of claim 16, wherein said single chain Fv antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

18. The method of claim 10, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

19. A method of treating or preventing a viral disease in a mammal comprising administering to the mammal a cationic liposome complex, wherein the cationic liposome complex comprises:

(a) a cationic liposome;

(b) a ligand directly complexed with, but not chemically conjugated to, the cationic liposome;

(c) one or more nucleic acid molecules encoding one or more viral proteins associated with the cationic liposome; and

(d) one or more nucleic acid molecules encoding one or more interleukins associated with the cationic liposome.

20. The method of claim 19, wherein said viral disease is selected from the group consisting of influenza, HIV, SARS, bird flu, Ebola, Hepatitis B and small pox.

21. The method of claim 19, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

22. The method of claim 19, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

23. The method of claim 19, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration,

oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

24. The method of claim 19, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

25. The method of claim 19, wherein said ligand is a single chain Fv antibody fragment.

26. The method of claim 25, wherein said single chain Fv antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

27. The method of claim 19, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

28. A method of treating or preventing a viral disease in a mammal comprising administering to the mammal a cationic liposome complex, wherein the cationic liposome complex comprises:

(a) a cationic liposome;

(b) a ligand chemically conjugated to the cationic liposome;

(c) one or more nucleic acid molecules encoding one or more viral proteins associated with the cationic liposome; and

(d) one or more nucleic acid molecules encoding one or more interleukins associated with the cationic liposome.

29. The method of claim 28, wherein said viral disease is selected from the group consisting of influenza, HIV, SARS, bird flu, Ebola, Hepatitis B and small pox.

30. The method of claim 28, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

31. The method of claim 28, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

32. The method of claim 28, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration, oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

33. The method of claim 28, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

34. The method of claim 28, wherein said ligand is a single chain Fv antibody fragment.

35. The method of claim 35, wherein said single chain Fv antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

36. The method of claim 28, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a K[K(H)KKK]$_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

37. A method of delivering one or more active agents to antigen presenting cells (APCs) of a mammal comprising administering to the mammal an anti-transferrin receptor single chain Fv (TfRscFv)-targeted cationic immunoliposome complex comprising a cationic liposome, a TfRscFv, and one or more active agents, wherein the TfRscFv is directly complexed with, but is not chemically conjugated to, the cationic liposome.

38. The method of claim 37, wherein said APCs are professional APCs.

39. The method of claim 37, wherein said APCs are non-professional APCs.

40. The method of claim 37, wherein said active agents comprise one or more nucleic acid molecules.

41. The method of claim 40, wherein said nucleic acid molecules encode one or more viral proteins.

42. The method of claim 40, wherein said nucleic acid molecules encode one or more interleukins.

43. The method of claim 40, wherein said nucleic acid molecules encode both one or more viral proteins and one or more interleukins.

44. The method of claim 41 or claim 43, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

45. The method of claim 42 or claim 43, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

46. The method of claim 37, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration, oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

47. The method of claim 37, wherein said APCs are located in the liver, spleen, lymph nodes, gut and/or respiratory tract.

48. A method of delivering one or more active agents to antigen presenting cells (APCs) of a mammal comprising administering to the mammal an anti-transferrin receptor single chain Fv (TfRscFv)-targeted cationic immunoliposome complex comprising a cationic liposome, a TfRscFv, and one or more active agents, wherein the TfRscFv is chemically conjugated to the cationic liposome.

49. The method of claim 48, wherein said APCs are professional APCs.

50. The method of claim 48, wherein said APCs are non-professional APCs.

51. The method of claim 48, wherein said active agents comprise one or more nucleic acid molecules.

52. The method of claim 51, wherein nucleic acid molecules encode one or more viral proteins.

53. The method of claim 51, wherein said nucleic acid molecules encode one or more interleukins.

54. The method of claim 51, wherein said nucleic acid molecules encode both one or more viral proteins and one or more interleukins.

55. The method of claim 52 or claim 54, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

56. The method of claim 53 or claim 54, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

57. The method of claim 48, wherein said complex is administered as a bolus or as an infusion via route selected from the group consisting of intravenous administration, oral administration intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

58. The method of claim 48, wherein said APCs are located in the liver, spleen, lymph nodes, gut and/or respiratory tract.

59. A method of inducing an immune response against a viral antigen in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex prepared by the process of:

(a) preparing a ligand;

(b) mixing the ligand with a cationic liposome to form a ligand-targeted cationic liposome, wherein the ligand is directly complexed with, but is not chemically conjugated to, the cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins, to form the ligand-targeted cationic liposome complex.

60. The method of claim 59, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

61. The method of claim 60, wherein said ligand is a single chain Fv fragment.

62. The method of claim 61, wherein said single chain Fv antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

63. The method of claim 60, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

64. The method of claim 59, said ligand-targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

65. The method of claim 59, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids

66. The method of claim 59, wherein said ligand and said cationic liposome are mixed at a ratio in the range of about 1:1 to about 1:100 (w:w).

67. The method of claim 66, wherein said ligand and said cationic liposome are mixed at a ratio in the range of about 1:10 to about 1:50 (w:w).

68. The method of claim 67, wherein said ligand and said cationic liposome are mixed at a ratio in the range of about 1:20 to about 1:40 (w:w).

69. The method of claim 59, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

70. The method of claim 59, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

71. The method of claim 60, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

72. The method of claim 59, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

73. The method of claim 72, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or

more interleukins, and said cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

74. The method of claim 73, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio is about 1:10 (μg total nucleic acid:μg liposome).

75. The method of claim 59, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

76. The method of claim 59, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

77. A method of treating or preventing a viral disease in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex prepared by the process of:

(a) preparing a ligand;

(b) mixing the ligand with a cationic liposome to form a ligand-targeted cationic liposome, wherein the ligand is directly complexed with, but is not chemically conjugated to, the cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins, to form the ligand-targeted cationic liposome complex.

78. The method of claim 77, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

79. The method of claim 77, wherein said ligand is a single chain Fv fragment.

80. The method of claim 79, wherein said single chain Fv fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

81. The method of claim 78, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

82. The method of claim 77, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a K[K(H)KKK]$_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

83. The method of claim 77, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids

84. The method of claim 77, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

85. The method of claim 84, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

86. The method of claim 85, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

87. The method of claim 77, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

88. The method of claim 77, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

89. The method of claim 88, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

90. The method of claim 77, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid: μg liposome).

91. The method of claim 90, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

92. The method of claim 91, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

93. The method of claim 77, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

94. The method of claim 77, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

95. A method of inducing an immune response against a viral antigen in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex prepared by the process of:

(a) preparing a ligand;

(b) chemically conjugating the ligand to a cationic liposome to form a ligand-targeted cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins, to form the ligand-targeted cationic liposome complex.

96. The method of claim 95, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

97. The method of claim 95, wherein said ligand is a single chain Fv fragment.

98. The method of claim 97, wherein said single chain Fv fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

99. The method of claim 96, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

100. The method of claim 95, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a K[K(H)KKK]$_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

101. The method of claim 95, wherein said ligand is chemically conjugated to said cationic liposome via a sulfur atom which was part of a sulfhydryl group at a carboxy terminus on said ligand prior to said chemical conjugation.

102. The method of claim 95, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

103. The method of claim 95, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

104. The method of claim 103, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

105. The method of claim 104, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

106. The method of claim 95, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

107. The method of claim 95, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

108. The method of claim 107, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral

proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

109. The method of claim 108, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid: μg liposome).

110. The method of claim 109, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

111. The method of claim 110, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

112. The method of claim 95, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

113. The method of claim 95, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

114. A method of treating or preventing a viral disease in a mammal comprising administering to the mammal a ligand-targeted cationic liposome complex prepared by the process of:

(a) preparing a ligand;

(b) chemically conjugating the ligand to a cationic liposome to form a ligand-targeted cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins, to form the ligand-targeted cationic liposome complex.

115. The method of claim 114, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

116. The method of claim 114, wherein said ligand is a single chain Fv fragment.

117. The method of claim 114, wherein said single chain Fv fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

118. The method of claim 115, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

119. The method of claim 114, wherein said ligand-targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

120. The method of claim 114, wherein said ligand is chemically conjugated to the cationic liposome via a sulfur atom which was part of a sulfhydryl group at a carboxy terminus on the ligand prior to said chemical conjugation.

121. The method of claim 114, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

122. The method of claim 114, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

123. The method of claim 122, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

124. The method of claim 123, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

125. The method of claim 114, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

126. The method of claim 114, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

127. The method of claim 126, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

128. The method of claim 114, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules

encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

129. The method of claim 128, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

130. The method of claim 129, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

131. The method of claim 114, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

132. The method of claim 114, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

133. A method of preparing a ligand-targeted cationic immunoliposome complex comprising:

(a) preparing a ligand;

(b) mixing the ligand with a cationic liposome to form a ligand-targeted cationic liposome, wherein the ligand is directly complexed with, but not chemically conjugated to, the cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins,

to form the ligand-targeted-cationic liposome complex.

134. The method of claim 133, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

135. The method of claim 134, wherein said ligand is a single chain Fv fragment.

136. The method of claim 135, wherein said single chain Fv fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

137. The method of claim 134, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

138. The method of claim 133, further comprising mixing a peptide comprising a K[K(H)KKK]5-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

139. The method of claim 133, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

140. The method of claim 133, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

141. The method of claim 140, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

142. The method of claim 141, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

143. The method of claim 133, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

144. The method of claim 133, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

145. The method of claim 144, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

146. The method of claim 133, wherein said the one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

147. The method of claim 146, wherein said the one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

148. The method of claim 147, wherein said the one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said ligand-targeted cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

149. The method of claim 133, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

150. The method of claim 133, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

151. A method of preparing ligand-targeted cationic immunoliposome complex comprising:

(a) preparing a ligand;

(b) chemically conjugating the ligand to a cationic liposome to form a ligand-targeted cationic liposome; and

(c) mixing the ligand-targeted cationic liposome with:

one or more nucleic acid molecules encoding one or more viral proteins; and

one or more nucleic acid molecules encoding one or more interleukins, to form the ligand-targeted cationic liposome complex.

152. The method of claim 151, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

153. The method of claim 151, wherein said ligand is a single chain Fv fragment.

154. The method of claim 153, wherein said single chain Fv fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

155. The method of claim 152, wherein said antibody fragment comprises a cysteine moiety at a carboxy terminus.

156. The method of claim 151, further comprising mixing a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said cationic liposome.

157. The method of claim 151, wherein said ligand is chemically conjugated to the cationic liposome via a sulfur atom which was part of a sulfhydryl group at a carboxy terminus on the ligand prior to the direct conjugation.

158. The method of claim 151, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

159. The method of claim 151, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

160. The method of claim 159, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

161. The method of claim 160, wherein said ligand and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

162. The method of claim 151, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

163. The method of claim 151, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

164. The method of claim 163, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

165. The method of claim 151, wherein said one or more nucleic acid molecules that encode one or more viral proteins, said one or more nucleic acid molecules that one or more interleukins, and said cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

166. The method of claim 165, wherein said one or more nucleic acid molecules that encode one or more viral proteins, said one or more nucleic acid molecules that one or more interleukins, and said cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

167. The method of claim 166 wherein said one or more nucleic acid molecules that encode one or more viral proteins, said one or more nucleic acid molecules that one or more interleukins, and said cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

168. The method of claim 151, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

169. The method of claim 151, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

170. A ligand-targeted cationic liposome complex prepared by the method of claim 129 or claim 151.

171. A ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand, one or more nucleic acid molecules encoding one or more viral proteins, and one or more nucleic acid molecules encoding one or more interleukins, wherein said ligand is directly complexed with, but not chemically conjugated to, said cationic liposome.

172. An ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand, one or more nucleic acid molecules encoding one or more viral proteins, and one or more nucleic acid molecules encoding one or more interleukins, wherein said ligand is chemically conjugated to said cationic liposome.

173. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

174. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said nucleic acid molecules are encapsulated within said cationic liposome.

175. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said nucleic acid molecules are associated with an inner or outer monolayer of said cationic liposome.

176. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said ligand is a single chain Fv fragment.

177. The ligand-targeted cationic liposome complex of claim 176, wherein said antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

178. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

179. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said antibody or antibody fragment and said cationic liposome are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

180. The ligand-targeted cationic liposome complex of claim 179, wherein said antibody or antibody fragment and said cationic liposome are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

181. The ligand-targeted cationic liposome complex of claim 180, wherein said antibody or antibody fragment and said cationic liposome are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

182. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

183. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

184. The ligand-targeted cationic liposome complex of claim 183, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

185. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

186. The ligand-targeted cationic liposome complex of claim 185, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

187. The ligand-targeted cationic liposome complex of claim 186, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

188. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Ebola viral proteins, Hepatitis B viral proteins and small pox viral proteins.

189. The ligand-targeted cationic liposome complex of claim 171 or claim 172, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2,

IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

190. The ligand-targeted cationic liposome complex of claim 171 or claim 172, further comprising a peptide comprising a K[K(H)KKK]$_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said complex.

191. A pharmaceutical composition comprising the ligand-targeted cationic liposome complex of claim 171 or claim 172.

192. The pharmaceutical composition of claim 191, further comprising one or more excipients selected from the group consisting of one or more antibacterials, one or more preservatives, one or more buffers and one or more surfactants.

193. A pharmaceutical composition comprising:

a first ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand and one or more nucleic acid molecules encoding one or more viral proteins, wherein said ligand is directly complexed with, but is not chemically conjugated to, said cationic liposome; and

a second ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand and one or more nucleic acid molecules encoding one or more interleukins, wherein said ligand is directly complexed with, but is not chemically conjugated to, said cationic liposome.

194. A pharmaceutical composition comprising:

a first ligand-targeted cationic liposome complex comprising a cationic liposome, ligand and one or more nucleic acid molecules encoding one or more viral proteins, wherein said ligand is chemically conjugated to said cationic liposome; and

a second ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand and one or more nucleic acid molecules encoding one or more interleukins, wherein said ligand is chemically conjugated to said cationic liposome.

195. The pharmaceutical composition of claim 194 or claim 195, wherein said nucleic acid molecules are encapsulated within said cationic liposomes.

196. The pharmaceutical composition of claim 194 or claim 195, wherein said nucleic acid molecules are associated with an inner or outer monolayer of said cationic liposomes.

197. The pharmaceutical composition of claim 194 or claim 195, wherein said ligand is selected from the group consisting of transferrin, galactose, L-37pA, an antibody and an antibody fragment.

198. The pharmaceutical composition of claim 194 or claim 195, wherein said ligand is a single chain Fv fragment.

199. The pharmaceutical composition of claim 198, wherein said antibody fragment is an anti-transferrin receptor single chain Fv (TfRscFv).

200. The pharmaceutical composition of claim 194 or claim 195, wherein said first and second cationic liposomes comprise a mixture of one or more cationic lipids and one or more neutral or helper lipids.

201. The pharmaceutical composition of claim 194 or claim 195, wherein said antibody or antibody fragments of each of said cationic liposomes are present at a ratio in the range of about 1:1 to about 1:100 (w:w).

202. The pharmaceutical composition of claim 201, wherein said antibody or antibody fragments of each of said cationic liposomes are present at a ratio in the range of about 1:10 to about 1:50 (w:w).

203. The pharmaceutical composition of claim 202, wherein said antibody or antibody fragments of each of said cationic liposomes are present at a ratio in the range of about 1:20 to about 1:40 (w:w).

204. The pharmaceutical composition of claim 194 or claim 195, wherein said first and second cationic liposomes comprise a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and/or cholesterol; or a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and/or cholesterol.

205. The pharmaceutical composition of claim 194 or claim 195, wherein said nucleic acid molecules are present at a molar ratio of about 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

206. The pharmaceutical composition of claim 205, wherein said nucleic acids are present at a molar ratio of about 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to about 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

207. The pharmaceutical composition of claim 194 or claim 195, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present in said first and second cationic liposomes, respectively, at a weight ratio of between about 0.5:1 to about 1:40 (μg total nucleic acid:μg liposome).

208. The pharmaceutical composition of claim 207, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present in said first and second cationic liposomes, respectively, at a weight ratio of between about 1:5 to about 1:20 (μg total nucleic acid:μg liposome).

209. The pharmaceutical composition of claim 208, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of about 1:10 (μg total nucleic acid:μg liposome).

210. The pharmaceutical composition of claim 194 or claim 195, wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins.

211. The pharmaceutical composition of claim 194 or claim 195, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

212. The pharmaceutical composition of claim 194 or claim 195, further comprising a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with each of said complexes.

213. The pharmaceutical composition of claim 194 or claim 195, further comprising one or more excipients selected from the group consisting of one or more antibacterials, one or more preservatives, one or more buffers and one or more surfactants.

CLAIMS:

1. An antigen presenting cell-targeted delivery medicament for treating a mammal having a viral disease, having a ligand-targeted cationic liposome complex comprising a cationic liposome, a ligand which is an anti-transferrin receptor single chain Fv (TfRscFv), one or more nucleic acid molecules encoding one or more viral proteins, and one or more nucleic acid molecules encoding one or more interleukins, wherein said anti-transferrin receptor single chain Fv (TfRscFv) is directly complexed with, but not chemically conjugated to, said cationic liposome.

2. The medicament according to Claim 1, wherein said one or more interleukins are selected from the group consisting of IL-I, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23, and/or wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Ebola viral proteins, Hepatitis B viral proteins and small pox viral protein.

3. The medicament according to Claim 1 or 2, wherein said nucleic acid molecules are encapsulated within said cationic liposome.

4. The medicament according to Claim 1 or 2, wherein the ligand targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said complex.

5. The medicament according Claim 1 or 2, wherein said nucleic acid molecules are associated with an inner or outer monolayer of said cationic liposome.

6. The medicament according to Claim 5, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

7. The medicament according to Claim 6, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with

dioleoylphosphatidylethanolamine and cholesterol, a mixture of dioleoyltrimethylammonium phosphate with cholesterol, a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and cholesterol, a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine, a mixture of dimethyldioctadecylammonium bromide with cholesterol, or a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine.

8. The medicament according to Claim 1, wherein said anti-transferrin receptor single chain Fv (TfRscFv) and said cationic liposome are present at a ratio in the range of 1:10 to 1:50 (w:w).

9. The medicament according to Claim 1 or 2, wherein said nucleic acid molecules are present at a molar ratio of 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

10. The medicament according to Claim 9, wherein said nucleic acids are present at a molar ratio of 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

11. The medicament according to Claim 1 or 2, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between 1:5 to 1:20 (mg total nucleic acid:mg liposome).

12. A ligand-targeted delivery medicament for inducing an immune response against a viral antigen in a mammal and/or for treating or preventing a viral disease in a mammal, having a ligand-targeted cationic liposome complex comprising a cationic

liposome, a ligand which is an anti-transferrin receptor single chain Fv (TfRscFv), one or more nucleic acid molecules encoding one or more viral proteins, and one or more nucleic acid molecules encoding one or more interleukins, wherein said anti-transferrin receptor single chain Fv (TfRscFv) is directly complexed with, but not chemically conjugated to, said cationic liposome.

13. The medicament according to Claim 12, wherein said viral antigen is from a virus selected from the group consisting of influenza virus, HIV virus, SARS virus, bird flu virus, Ebola virus, Hepatitis B virus and small pox virus.

14. The medicament according to any of Claims 1, 12 and 13, wherein said medicament is formulated for administration as a bolus or as an infusion via a route selected from the group consisting of intravenous administration, oral administration, intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration, intranasal administration, intraorgan administration, intracereberal administration, topical administration, subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump.

15. A medicament for an anti-transferrin receptor single chain Fv (TfRscFv)-targeted delivery of nucleic acid molecules to professional or non-professional antigen presenting cells (APCs) of a mammal, having TfRscFv-targeted cationic immunoliposome complex, comprising a cationic liposome, a TfRscFv, and nucleic acid molecules, wherein the TfRscFv is directly complexed with, but not chemically conjugated to, the cationic liposome, wherein said medicament is formulated for administration as a bolus or as an infusion via a route selected from the group consisting of intravenous administration, oral administration, intramuscular administration, intralesional administration, intradermal administration, transdermal administration, intraocular administration, intraperitoneal administration, percutaneous administration, aerosol administration, intranasal administration, intraorgan administration, intracereberal administration, topical administration,

subcutaneous administration, endoscopic administration, slow release implant and administration via an osmotic or mechanical pump, wherein said nucleic acid molecules encode, one or more viral proteins selected from the group consisting of HIV viral proteins, Ebola viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Hepatitis B viral proteins and small pox viral proteins, and wherein said nucleic acid molecules also encode one or more interleukins selected from the group consisting of IL-l, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-I0, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23.

16. The medicament according to Claim 15, wherein the APCs are located in the liver, spleen, lymph nodes, gut and/or respiratory tract.

17. The medicament according to Claim 12, wherein said one or more interleukins are selected from the group consisting of IL-1, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-12, IL-13, IL-15, IL-17, IL-18 and IL-23, and/or wherein said one or more viral proteins are selected from the group consisting of HIV viral proteins, influenza viral proteins, SARS viral proteins, bird flu viral proteins, Ebola viral proteins, Hepatitis B viral proteins and small pox viral protein.

18. The medicament according to Claim 12 or 17, wherein said nucleic acid molecules are encapsulated within said cationic liposome.

19. The medicament according to Claim 12 or 17, wherein the ligand targeted cationic liposome further comprises a peptide comprising a $K[K(H)KKK]_5$-K(H)KKC (HoKC) (SEQ ID NO: 1) peptide associated with said complex.

20. The medicament according to Claim 12 or 17, wherein said nucleic acid molecules are associated with an inner or outer monolayer of said cationic liposome.

21. The medicament according to Claim 20, wherein said cationic liposome comprises a mixture of one or more cationic lipids and one or more neutral or helper lipids.

22. The medicament according to Claim 20, wherein said cationic liposome comprises a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine and cholesterol, a mixture of dioleoyltrimethylammonium phosphate with cholesterol, a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine and cholesterol, a mixture of dimethyldioctadecylammonium bromide with dioleoylphosphatidylethanolamine, a mixture of dimethyldioctadecylammonium bromide with cholesterol, or a mixture of dioleoyltrimethylammonium phosphate with dioleoylphosphatidylethanolamine.

23. The medicament according to Claim 22, wherein said anti-transferrin receptor single chain Fv (TfRscFv) and said cationic liposome are present at a ratio in the range of 1:10 to 1:50 (w:w).

24. The medicament according to Claim 12 or 17, wherein said nucleic acid molecules are present at a molar ratio of 0.1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 10 mole of one or more nucleic acid molecules encoding one or more interleukins; to 10 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 0.1 mole of one or more nucleic acid molecules encoding one or more interleukins.

25. The medicament according to Claim 24, wherein said nucleic acids are present at a molar ratio of 1 mole of one or more nucleic acid molecules encoding one or more viral proteins, to 1 mole of one or more nucleic acid molecules encoding one or more interleukins.

26. The medicament according to Claim 12 or 17, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between 1:1 to 1:40 (mg total nucleic acid:mg liposome).

27. The medicament according to Claim 26, wherein said one or more nucleic acid

molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of between 1:5 to 1:20 (mg total nucleic acid:mg liposome).

28. The medicament according to Claim 1, wherein said anti-transferrin receptor single chain Fv (TfRscFv) and said cationic liposome are present at a ratio in the range of 1:20 to 1:40 (w:w).

29. The medicament according to Claim 1 or 2, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of 1:10 (mg total nucleic acid: mg liposome).

30. The medicament according to Claim 22, wherein said anti-transferrin receptor single chain Fv (TfRscFv) and said cationic liposome are present at a ratio in the range of 1:20 to 1:40 (w:w).

31. The medicament according to Claim 26, wherein said one or more nucleic acid molecules encoding one or more viral proteins, said one or more nucleic acid molecules encoding one or more interleukins, and said cationic liposome are present at a weight ratio of 1:10 (mg total nucleic acid: mg liposome).