

What is claimed is:

1. An siRNA molecule for silencing Ebola virus L-polymerase (L-pol) expression comprising a double-stranded sequence consisting of SEQ ID NO:23 and SEQ ID NO:24.

2. The siRNA molecule in accordance with claim 1, wherein said double-stranded sequence comprises a hairpin loop structure.

3. A pharmaceutical composition comprising an siRNA molecule in accordance with claim 1 and a pharmaceutically acceptable carrier.

4. A nucleic acid-lipid particle comprising: an siRNA molecule in accordance with claim 1; a cationic lipid; and a non-cationic lipid.

5. The nucleic acid-lipid particle in accordance with claim 4, wherein said cationic lipid is a member selected from the group consisting of N,N-dioleoyl-N,N-dimethylammonium chloride (DODAC), N,N-distearyl-N,N-dimethylammonium bromide (DDAB), N-(1-(2,3-dioleoyloxy)propyl)-N,N,N-trimethylammonium chloride (DOTAP), N-(1-(2,3-dioleoyloxy)propyl)-N,N,N-trimethylammonium chloride (DOTMA), N,N-dimethyl-2,3-dioleoyloxypropylamine (DODMA), 1,2-DiLinoleoyloxy-N,N-dimethylaminopropane (DLinDMA), 1,2-Dilinolenyloxy-N,N-dimethylaminopropane (DLendMA), and a mixture thereof.

6. The nucleic acid-lipid particle in accordance with claim 4, wherein said cationic lipid is DLinDMA.

7. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid is an anionic lipid.

8. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid is a neutral lipid.

9. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid is a member selected from the group consisting of distearoylphosphatidylcholine (DSPC), dioleoylphosphatidylethanolamine (DOPE), palmitoyloleoyl-phosphatidylcholine (POPC), palmitoyloleoyl-phosphatidylethanolamine (POPE), palmitoyloleoyl-phosphatidylglycerol (POPG), dipalmitoyl-phosphatidylethanolamine (DPPE), dimyristoyl-phosphatidylethanolamine (DMPE), distearoyl-phosphatidylethanolamine (DSPE), monomethyl-phosphatidylethanolamine, dimethyl-diethylphosphatidylethanolamine, diethylphosphatidylethanolamine (DEPE), stearylloleoyl-phosphatidylethanolamine (SOPE), egg phosphatidylcholine (EPC), cholesterol, and a mixture thereof.

10. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid is DSPC.

11. The nucleic acid-lipid particle in accordance with claim 4, further comprising a conjugated lipid that inhibits aggregation of particles.

12. The nucleic acid-lipid particle in accordance with claim 11, wherein said conjugated lipid that inhibits aggregation of particles is a member selected from the group consisting of a polyethyleneglycol (PEG)-lipid conjugate, a polyamide (ATTA)-lipid conjugate, and a mixture thereof.

13. The nucleic acid-lipid particle in accordance with claim 12, wherein said PEG-lipid is a member selected from the group consisting of a PEG-dialkylglycerol, a PEG dialkylloxypropyl, a PEG-phospholipid, a PEG-ceramide, and a mixture thereof.

14. The nucleic acid-lipid particle in accordance with claim 12, wherein said conjugated lipid that inhibits aggregation of particles comprises a polyethyleneglycol (PEG)-dialkylloxypropyl (PEG-DAA) conjugate.

15. The nucleic acid-lipid particle in accordance with claim 14, wherein said PEG-DAA conjugate is a member selected from the group consisting of a PEG-dilauryloxypropyl (C<sub>12</sub>),

a PEG-dimyristyloxypropyl (C<sub>14</sub>), a PEG-dipalmitoyloxypropyl (C<sub>16</sub>), and a PEG-distearoyloxypropyl (C<sub>18</sub>).

16. The nucleic acid-lipid particle in accordance with claim 14, wherein said PEG-DAA conjugate is a PEG-dimyristyloxypropyl (C<sub>14</sub>).

17. The nucleic acid-lipid particle in accordance with claim 4, wherein said cationic lipid comprises from about 20 mol % to about 50 mol % of the total lipid present in said particle.

18. The nucleic acid-lipid particle in accordance with claim 4, wherein said cationic lipid comprises about 40 mol % of the total lipid present in said particle.

19. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid comprises from about 5 mol % to about 90 mol % of the total lipid present in said particle.

20. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid comprises about 20 mol % of the total lipid present in said particle.

21. The nucleic acid-lipid particle in accordance with claim 14, wherein said PEG-DAA conjugate comprises from 0 mol % to about 20 mol % of the total lipid present in said particle.

22. The nucleic acid-lipid particle in accordance with claim 14, wherein said PEG-DAA conjugate comprises about 2 mol % of the total lipid present in said particle.

23. The nucleic acid-lipid particle in accordance with claim 4, further comprising cholesterol.

24. The nucleic acid-lipid particle in accordance with claim 23, wherein the cholesterol comprises from about 10 mol % to about 60 mol % of the total lipid present in said particle.

25. The nucleic acid-lipid particle in accordance with claim 23, wherein the cholesterol comprises about 48 mol % of the total lipid present in said particle.

26. The nucleic acid-lipid particle in accordance with claim 4, wherein said siRNA molecule in said nucleic acid-lipid particle is not substantially degraded after exposure of said particle to a nuclease at 37° C. for 20 minutes.

27. The nucleic acid-lipid particle in accordance with claim 4, wherein said siRNA molecule in said nucleic acid-lipid particle is not substantially degraded after incubation of said particle in serum at 37° C. for 30 minutes.

28. The nucleic acid-lipid particle in accordance with claim 4, wherein said siRNA molecule is fully encapsulated in said nucleic acid-lipid particle.

29. The nucleic acid-lipid particle in accordance with claim 4, wherein said particle has a siRNA:lipid ratio of from about 0.01 to about 0.2.

30. The nucleic acid-lipid particle in accordance with claim 4, wherein said particle has a siRNA:lipid ratio of from about 0.02 to about 0.1.

31. The nucleic acid-lipid particle in accordance with claim 4, wherein said particle has a siRNA:lipid ratio of about 0.04.

32. The nucleic acid-lipid particle in accordance with claim 4, wherein said particle has a median diameter of from about 50 nm to about 150 nm.

33. The nucleic acid-lipid particle in accordance with claim 4, wherein said particle has a median diameter of from about 70 nm to about 90 nm.

34. A pharmaceutical composition comprising a nucleic acid-lipid particle in accordance with claim 4 and a pharmaceutically acceptable carrier.

35. The nucleic acid-lipid particle in accordance with claim 4, wherein said non-cationic lipid comprises DSPC and cholesterol.