

What is claimed is:

1. A stable liquid pharmaceutical formulation comprising:
 - (a) a stabilizer;
 - (b) a buffer comprising histidine;
 - (c) an organic cosolvent comprising polysorbate; and
 - (d) at least one antibody which binds specifically to Ebola virus (EBOV) and comprises three heavy chain complementarity determining regions (CDRs) (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair selected from the group consisting of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46;
wherein the formulation comprises the following: (i), (ii), (iii), (i)+(ii), (i)+(iii), (ii)+(iii), or (i)+(ii)+(iii); and
wherein the formulation has a pH of 6.0 ± 0.3 .
2. The pharmaceutical formulation of claim 1, wherein the total antibody concentration is from 5 mg/mL $\pm$ 0.75 mg/mL to 250 mg/mL $\pm$ 37.5 mg/mL.
3. The pharmaceutical formulation of claim 2, wherein the total antibody concentration is 25 mg/mL $\pm$ 3.75 mg/mL.
4. The pharmaceutical formulation of claim 2, wherein the total antibody concentration is 50 mg/mL $\pm$ 7.5 mg/mL.
5. The pharmaceutical formulation of claim 2, wherein the total antibody concentration is 100 mg/mL $\pm$ 15.0 mg/mL.
6. The pharmaceutical formulation of claim 2, wherein the total antibody concentration is 150 mg/mL $\pm$ 22.5 mg/mL.
7. The pharmaceutical formulation of any one of claims 1 – 6, wherein the histidine buffer concentration is from 5 mM $\pm$ 1 mM to 20 mM $\pm$ 4 mM.
8. The pharmaceutical formulation of claim 7, wherein the histidine buffer concentration is 10 mM $\pm$ 2 mM.
9. The pharmaceutical formulation of any one of claims 1 – 8, wherein the polysorbate concentration is from 0.01% $\pm$ 0.005% to 0.5% $\pm$ 0.25% w/v.

10. The pharmaceutical formulation of claim 9, wherein the polysorbate concentration is $0.1\% \pm 0.05\%$ w/v.
11. The pharmaceutical formulation of claim 9, wherein the polysorbate concentration is $0.2\% \pm 0.1\%$ w/v.
12. The pharmaceutical formulation of any one of claims 9 – 11, wherein the polysorbate is polysorbate 80.
13. The pharmaceutical formulation of any one of claims 1 – 12, wherein the stabilizer is sucrose and the sucrose concentration is from 0% to $20\% \pm 4\%$ w/v.
14. The pharmaceutical formulation of claim 13, wherein the sucrose concentration is from $5\% \pm 1\%$ to $15\% \pm 3\%$ w/v.
15. The pharmaceutical formulation of claim 14, wherein the sucrose concentration is $10\% \pm 2\%$ w/v.
16. The pharmaceutical formulation of claim 1, comprising (i) + (ii).
17. The pharmaceutical formulation of claim 1, comprising (i) + (iii).
18. The pharmaceutical formulation of claim 1, comprising (ii) + (iii).
19. The pharmaceutical formulation of claim 1, comprising (i) + (ii) + (iii).
20. The pharmaceutical formulation of any one of claims 16-19 comprising:
 - (a) from $5\% \pm 1\%$ to $15\% \pm 3\%$ w/v sucrose,
 - (b) from $5\text{ mM} \pm 1\text{ mM}$ to $20\text{ mM} \pm 4\text{ mM}$ histidine buffer,
 - (c) from $0.01\% \pm 0.005\%$ to $0.5\% \pm 0.25\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,
at pH 6.0 ± 0.3 .
21. The pharmaceutical formulation of any one of claims 16-19 comprising:
 - (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,

at pH 6.0 ± 0.3 .

22. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10.

23. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28.

24. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

25. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
- (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,

- (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
- (d) $50 \text{ mg/mL} \pm 7.5 \text{ mg/mL}$ total antibody,
at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10, and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28.

26. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
- (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
- (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
- (d) $50 \text{ mg/mL} \pm 7.5 \text{ mg/mL}$ total antibody,
at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10, and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

27. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
- (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
- (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
- (d) $50 \text{ mg/mL} \pm 7.5 \text{ mg/mL}$ total antibody,
at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28, and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

28. The pharmaceutical formulation of claim 1 comprising:
- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $50\text{ mg/mL} \pm 7.5\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;
- wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10, a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28, and a third antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.
29. The pharmaceutical formulation of any one of claims 16-19 comprising:
- (a) from $5\% \pm 1\%$ to $15\% \pm 3\%$ w/v sucrose,
 - (b) from $5\text{ mM} \pm 1\text{ mM}$ to $20\text{ mM} \pm 4\text{ mM}$ histidine buffer,
 - (c) from $0.01\% \pm 0.005\%$ to $0.5\% \pm 0.25\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 .
30. The pharmaceutical formulation of any one of claims 16-19 comprising:
- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 .
31. The pharmaceutical formulation of claim 1 comprising:
- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,

at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10.

32. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28.

33. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein the antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

34. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at pH 6.0 ± 0.3 ;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10, and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain

CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28.

35. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10 and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

36. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28, and a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

37. The pharmaceutical formulation of claim 1 comprising:

- (a) $10\% \pm 2\%$ w/v sucrose,
 - (b) $10\text{mM} \pm 2\text{mM}$ histidine buffer,
 - (c) $0.1\% \pm 0.05\%$ w/v polysorbate, and
 - (d) $100\text{ mg/mL} \pm 15\text{ mg/mL}$ total antibody,
- at $\text{pH } 6.0 \pm 0.3$;

wherein a first antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (i) SEQ ID NOs: 2/10, a second antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (ii) SEQ ID NOs: 20/28, and a third antibody comprises three heavy chain CDRs (HCDR1, HCDR2 and HCDR3) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in the HCVR/LCVR amino acid sequence pair of (iii) SEQ ID NOs: 38/46.

38. The pharmaceutical formulation of any one of claims 1 – 37, wherein the formulation has viscosity of less than 10 cP.

39. The pharmaceutical formulation of any one of claims 29 – 37, wherein the formulation has a viscosity of less than 5 cP.

40. The pharmaceutical formulation of any one of claims 20 – 28, wherein the formulation has a viscosity of less than about 2.5.

41. The pharmaceutical formulation of any one of claims 1 – 40, wherein at least 90% of the antibody is the native species after 28 days at 45°C.

42. The pharmaceutical formulation of any one of claims 1 – 41, wherein at least 18% of the antibody is the main charge variant of the antibody after 28 days at 45°C.

43. The pharmaceutical formulation of any one of claims 1 – 42, wherein at least 96% of the antibody is the native species after three months at 25°C.

44. The pharmaceutical formulation of any one of claims 1 – 43, wherein at least 30% of the antibody is the main charge variant of the antibody after three months at 25°C.

45. The pharmaceutical formulation of any one of claims 1 – 44, wherein at least 96% of the antibody is the native species after 12 months at 5°C.

46. The pharmaceutical formulation of any one of claims 1 – 45, wherein at least 34% of the antibody is the main charge variant of the antibody after 12 months at 5°C.

47. The pharmaceutical formulation of any one of claims 1 – 46, wherein at least 97% of the antibody is the native species after 120 minutes agitation.

48. The pharmaceutical formulation of any one of claims 1 – 47, wherein at least 35% of the antibody is the main charge variant of the antibody after 120 minutes agitation.

49. The pharmaceutical formulation of any one of claims 1 – 48, wherein at least 97% of the antibody is the native species after 8 freeze thaw cycles.

50. The pharmaceutical formulation of any one of claims 1 – 49, wherein at least 35% of the antibody is the main charge variant of the antibody after 8 freeze thaw cycles.

51. The pharmaceutical formulation of any one of claims 1, 5, and 29 – 37, wherein the formulation maintains ADCC potency of at least about 90%, or at least about 95%, in an ADCC bioassay after storage at 5°C for 6 months, relative to the same formulation prior to storage at 5°C for 6 months.

52. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 51, wherein the formulation maintains pseudovirus neutralization activity of at least about 95% after storage at 5°C for 6 months, relative to the same formulation prior to storage at 5°C for 6 months.

53. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 52, wherein the formulation maintains ADCC potency of at least about 80%, or at least about 85%, in an ADCC bioassay after storage at 25°C/60% RH for 6 months, relative to the same formulation prior to storage at 25°C/60% RH for 6 months.

54. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 53, wherein the formulation maintains pseudovirus neutralization activity of at least about 95% after storage at 25°C/60% RH for 6 months, relative to the same formulation prior to storage at 25°C/60% RH for 6 months.

55. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 54, wherein the formulation maintains pseudovirus neutralization activity of at least about 95% after storage at 40°C/75% RH for 6 months, relative to the same formulation prior to storage at 40°C/75% RH for 6 months.

56. The pharmaceutical composition of any one of claims 1, 5, 29 – 37, and 55, wherein the formulation maintains ADCC potency of at least about 95% in an ADCC bioassay after agitation for 120 minutes, relative to the same formulation prior to agitation for 120 minutes.

57. The pharmaceutical composition of any one of claims 1, 5, 29 – 37, and 56, wherein the formulation maintains ADCC potency of at least about 85% in an ADCC bioassay after 8 freeze/thaw cycles, relative to the same formulation prior to 8 freeze/thaw cycles.

58. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 57, wherein the formulation maintains pseudovirus neutralization activity of at least about 95% after agitation for 120 minutes, relative to the same formulation prior to agitation for 120 minutes.

59. The pharmaceutical formulation of any one of claims 1, 5, 29 – 37, and 58, wherein the formulation maintains pseudovirus neutralization activity of at least about 95% after 8 freeze/thaw cycles, relative to the same formulation prior 8 freeze thaw cycles.

60. The pharmaceutical formulation of any one of claims 1 – 59, wherein an antibody within the formulation has an attribute selected from the group consisting of:

(i) the antibody retains ADCC activity of at least about 90% after storage at -80°C for 12 months relative to the activity of the same antibody prior to storage;

(ii) the antibody retains ADCC activity of at least about 80%, or at least about 90%, after storage at -30°C for 12 months relative to the activity of the same antibody prior to storage;

(iii) the antibody retains ADCC activity of at least about 90%, or at least about 95%, after storage at -20°C for 3 months relative to the activity of the same antibody prior to storage;

(iv) the antibody retains ADCC activity of at least about 90%, or at least about 95%, after storage at 5°C for 56 days relative to the activity of the same antibody prior to storage;

(v) the antibody retains ADCC activity of at least about 90%, or at least about 95%, after storage at 25°C/60% relative humidity (RH) for 28 days relative to the activity of the same antibody prior to storage;

(vi) the antibody retains ADCC activity of at least about 90%, or at least about 95%, after storage at 40°C/75%RH for 28 days relative to the activity of the same antibody prior to storage; and

(vii) the antibody retains ADCC activity of at least about 90%, or at least about 95%, after agitation for 120 minutes, or 8 freeze/thaw cycles, relative to the activity of the same antibody prior to agitation or freeze/thaw, respectively.

61. The pharmaceutical formulation of any one of claims 1 – 60, wherein an antibody within the formulation has an attribute selected from the group consisting of:

(i) the antibody retains pseudovirus neutralization activity of at least about 90%, or at least about 95%, after storage at -80°C for 12 months relative to the activity of the same antibody prior to storage;

(ii) the antibody retains pseudovirus neutralization activity of at least about 90%, or at least about 95%, after storage at -30°C for 12 months relative to the activity of the same antibody prior to storage;

(iii) the antibody retains pseudovirus neutralization activity of at least about 90%, or at least about 95%, after storage at -20°C for 3 months relative to the activity of the same antibody prior to storage;

(iv) the antibody retains pseudovirus neutralization activity of at least about 80%, or at least about 85%, or at least about 90%, or at least about 95%, after storage at 5°C for 56 days relative to the activity of the same antibody prior to storage;

(v) the antibody retains pseudovirus neutralization activity of at least about 80%, or at least about 85%, or at least about 90%, or at least about 95%, after storage at 25°C/60% relative humidity (RH) for 28 days relative to the activity of the same antibody prior to storage;

(vi) the antibody retains pseudovirus neutralization activity of at least about 80%, or at least about 85%, or at least about 90%, or at least about 95%, after storage at 40°C/75%RH for 28 days relative to the activity of the same antibody prior to storage; and

(vii) the antibody retains pseudovirus neutralization activity of at least about 90%, or at least about 95%, after agitation for 120 minutes, or 8 freeze/thaw cycles, relative to the activity of the same antibody prior to agitation or freeze/thaw, respectively.

62. A stable liquid pharmaceutical formulation comprising:

(a) at least one antibody that binds specifically to EBOV, wherein the at least one antibody comprises a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair selected from the group consisting of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, and wherein the total antibody comprises 50 mg/mL $\pm$ 7.5 mg/mL,

(b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,

(c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and

(d) 10% $\pm$ 2% w/v sucrose; wherein:

(i) at least 96% of the antibody is the native species after 12 months at 5°C;

(ii) at least 97% of the antibody is the native species after 120 minutes agitation; or

(iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.

63. The pharmaceutical formulation of claim 62 consisting of: (a) 50 mg/mL $\pm$ 7.5 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.

64. A stable liquid pharmaceutical formulation comprising:

- (a) at least two antibodies that bind specifically to EBOV, wherein the at least two antibodies comprise a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair selected from the group consisting of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, and wherein the total antibody comprises 50 mg/mL $\pm$ 7.5 mg/mL,
- (b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,
- (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and
- (d) 10% $\pm$ 2% w/v sucrose; wherein:
 - (i) at least 96% of the antibody is the native species after 12 months at 5°C;
 - (ii) at least 97% of the antibody is the native species after 120 minutes agitation; and
 - (iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.

65. The pharmaceutical formulation of claim 64 consisting of: (a) 50 mg/mL $\pm$ 7.5 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.

66. A stable liquid pharmaceutical formulation comprising:

- (a) a combination of three antibodies that bind specifically to EBOV, wherein the three antibodies comprise a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, respectively, and wherein the total antibody comprises 50 mg/mL $\pm$ 7.5 mg/mL,
- (b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,
- (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and
- (d) 10% $\pm$ 2% w/v sucrose; wherein:
 - (i) at least 96% of the antibody is the native species after 12 months at 5°C;
 - (ii) at least 97% of the antibody is the native species after 120 minutes agitation; and
 - (iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.

67. The pharmaceutical formulation of claim 66 consisting of: (a) 50 mg/mL $\pm$ 7.5 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.

68. A stable liquid pharmaceutical formulation comprising:

- (a) at least one antibody that binds specifically to EBOV, wherein the at least one antibody comprises a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair selected from the group consisting of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, and wherein the total antibody comprises 100 mg/mL $\pm$ 15 mg/mL,
- (b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,
- (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and
- (d) 10% $\pm$ 2% w/v sucrose; wherein:
- (i) at least 96% of the antibody is the native species after 12 months at 5°C;
- (ii) at least 97% of the antibody is the native species after 120 minutes agitation; and
- (iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.

69. The pharmaceutical formulation of claim 68 consisting of: (a) 100 mg/mL $\pm$ 15 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.

70. A stable liquid pharmaceutical formulation comprising:

- (a) at least two antibodies that bind specifically to EBOV, wherein the at least two antibodies comprise a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair selected from the group consisting of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, and wherein the total antibody comprises 100 mg/mL $\pm$ 15 mg/mL,
- (b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,
- (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and
- (d) 10% $\pm$ 2% w/v sucrose; wherein:
- (i) at least 96% of the antibody is the native species after 12 months at 5°C;
- (ii) at least 97% of the antibody is the native species after 120 minutes agitation; and
- (iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.

71. The pharmaceutical formulation of claim 70 consisting of: (a) 100 mg/mL $\pm$ 15 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.

72. A stable liquid pharmaceutical formulation comprising:

- (a) a combination of three antibodies that bind specifically to EBOV, wherein the three antibodies comprise a heavy chain variable region/light chain variable region (HCVR/LCVR) amino acid sequence pair of (i) SEQ ID NOs: 2/10, (ii) SEQ ID NOs: 20/28, and (iii) SEQ ID NOs: 38/46, respectively, and wherein the total antibody comprises 100 mg/mL $\pm$ 15 mg/mL,
- (b) 10 mM $\pm$ 2 mM histidine buffer, pH 6.0 $\pm$ 0.3,
- (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and
- (d) 10% $\pm$ 2% w/v sucrose; wherein:
- (i) at least 96% of the antibody is the native species after 12 months at 5°C;
- (ii) at least 97% of the antibody is the native species after 120 minutes agitation; and
- (iii) at least 97% of the antibody is the native species after 8 freeze thaw cycles.
73. The pharmaceutical formulation of claim 72 consisting of: (a) 100 mg/mL $\pm$ 15 mg/mL total antibody, (b) 10 mM $\pm$ 2 mM histidine buffer, (c) 0.1% $\pm$ 0.05% w/v polysorbate 80, and (d) 10% $\pm$ 2% w/v sucrose, in water at pH 6.0 $\pm$ 0.3.
74. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCDR1 of SEQ ID NO: 4, a HCDR2 of SEQ ID NO: 6, a HCDR3 of SEQ ID NO: 8, a LCDR1 of SEQ ID NO: 12, a LCDR2 of SEQ ID NO: 14, and a LCDR3 of SEQ ID NO: 16.
75. The pharmaceutical formulation of claim 74, wherein the antibody comprises a HCVR of SEQ ID NO: 2 and a LCVR of SEQ ID NO: 10.
76. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 2.
77. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a LCVR having 90% sequence identity to SEQ ID NO: 10.
78. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 2 and a LCVR having 90% sequence identity to SEQ ID NO: 10.
79. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the heavy chain comprises an amino acid sequence of SEQ ID NO: 17.

80. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the light chain comprises the amino acid sequence of SEQ ID NO: 18.

81. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain/light chain comprising amino acid sequences of SEQ ID NOs: 17/18.

82. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCDR1 of SEQ ID NO: 22, a HCDR2 of SEQ ID NO: 24, a HCDR3 of SEQ ID NO: 26, a LCDR1 of SEQ ID NO: 30, a LCDR2 of SEQ ID NO: 32, and a LCDR3 of SEQ ID NO: 34.

83. The pharmaceutical formulation of claim 82, wherein the antibody comprises a HCVR of SEQ ID NO: 20 and a LCVR of SEQ ID NO: 28.

84. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 20.

85. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a LCVR having 90% sequence identity to SEQ ID NO: 28.

86. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 20 and a LCVR having 90% sequence identity to SEQ ID NO: 28.

87. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the heavy chain comprises an amino acid sequence of SEQ ID NO: 35.

88. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the light chain comprises the amino acid sequence of SEQ ID NO: 36.

89. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain/light chain comprising amino acid sequences of SEQ ID NOs: 35/36.

90. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCDR1 of SEQ ID NO: 40, a HCDR2 of SEQ ID NO: 42, a HCDR3 of SEQ ID NO: 44, a LCDR1 of SEQ ID NO: 48, a LCDR2 of SEQ ID NO: 50, and a LCDR3 of SEQ ID NO: 52.

91. The pharmaceutical formulation of claim 90, wherein the antibody comprises a HCVR of SEQ ID NO: 38 and a LCVR of SEQ ID NO: 46.

92. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 38.

93. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a LCVR having 90% sequence identity to SEQ ID NO: 46.

94. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a HCVR having 90% sequence identity to SEQ ID NO: 38 and a LCVR having 90% sequence identity to SEQ ID NO: 46.

95. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the heavy chain comprises an amino acid sequence of SEQ ID NO: 53.

96. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain and light chain, wherein the light chain comprises the amino acid sequence of SEQ ID NO: 54.

97. The pharmaceutical formulation of any one of claims 1 – 15, wherein the antibody comprises a heavy chain/light chain comprising amino acid sequences of SEQ ID NOs: 53/54.

98. A pharmaceutical formulation of any one of claims 1 – 86, wherein said formulation is contained in a container.

99. The pharmaceutical formulation of claim 98, wherein the container is a vial.

100. The pharmaceutical formulation of claim 99, wherein the vial is 10 mL Type 1 clear glass vial.

101. The pharmaceutical formulation of claim 98, wherein the container is a syringe.

102. The pharmaceutical formulation of claim 101, wherein the syringe is low-tungsten glass.

103. The pharmaceutical formulation of claim 98, wherein the container is a prefilled syringe.

104. The pharmaceutical formulation of claim 103, contained in an autoinjector.

105. A kit comprising a pharmaceutical formulation of any one of claims 1 – 97, a container, and instructions.

106. The kit of claim 105, wherein the container is a glass vial.

107. The kit of claim 105, wherein the container is a prefilled syringe.

108. The kit of claim 105, wherein the container is an autoinjector.

109. The pharmaceutical formulation of claim 19, in a ratio of 1:1:1.

110. The pharmaceutical formulation of any one of claims 1 to 97, formulated for intravenous administration, intramuscular administration, subcutaneous administration, intraperitoneal administration, percutaneous administration, mucosal administration, nasal administration, pulmonary administration, or oral administration.