

What is claimed is:

1. A stable liquid pharmaceutical formulation comprising:
  - (a) a bispecific antibody comprising a first antigen-binding domain that binds specifically to human CD20 and a second antigen-binding domain that binds specifically to human CD3, wherein the first antigen-binding domain comprises three heavy chain complementarity determining regions (CDRs) (A1-HCDR1, A1-HCDR2 and A1-HCDR3) contained in a heavy chain variable region (HCVR) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in a light chain variable region (LCVR), and the second antigen-binding domain comprises three heavy chain CDRs (A2-HCDR1, A2-HCDR2 and A2-HCDR3) contained in a heavy chain variable region (HCVR) and three light chain CDRs (LCDR1, LCDR2 and LCDR3) contained in a light chain variable region (LCVR), wherein A1-HCDR1, A1-HCDR2 and A1-HCDR3 comprise the amino acid sequences, respectively, of SEQ ID NOs: 7, 8 and 9, A2-HCDR1, A2-HCDR2 and A2-HCDR3 comprise the amino acid sequences, respectively, of SEQ ID NOs: 10, 11 and 12, and LCDR1, LCDR2 and LCDR3 comprise the amino acid sequences, respectively, of SEQ ID NOs: 13, 14 and 15;
  - (b) a buffer comprising histidine;
  - (c) an organic co-solvent comprising polysorbate; and
  - (d) a stabilizer comprising a sugar;wherein the formulation has a pH of  $5.8 \pm 0.3$ .
2. The pharmaceutical formulation of claim 1, wherein the antibody concentration is from 1 mg/ml  $\pm$  0.1 mg/ml to 200 mg/ml  $\pm$  20 mg/ml.
3. The pharmaceutical formulation of claim 2, wherein the antibody concentration is 2 mg/ml  $\pm$  0.2 mg/ml.
4. The pharmaceutical formulation of claim 2, wherein the antibody concentration is 20 mg/ml  $\pm$  2 mg/ml.
5. The pharmaceutical formulation of claim 2, wherein the antibody concentration is 80 mg/ml  $\pm$  8 mg/ml.
6. The pharmaceutical formulation of claim 2, wherein the antibody concentration is 100 mg/ml  $\pm$  10 mg/ml.

7. The pharmaceutical formulation of claim 2, wherein the antibody concentration is  $160 \text{ mg/ml} \pm 16 \text{ mg/ml}$ .
8. The pharmaceutical formulation of claim 2, wherein the antibody concentration is from about  $2 \text{ mg/ml}$  to about  $100 \text{ mg/ml}$ .
9. The pharmaceutical formulation of any one of claims 1 to 8, wherein the histidine buffer concentration is from  $5 \text{ mM} \pm 1 \text{ mM}$  to  $15 \text{ mM} \pm 3 \text{ mM}$ .
10. The pharmaceutical formulation of claim 9, wherein the histidine buffer concentration is  $10 \text{ mM} \pm 1 \text{ mM}$ .
11. The pharmaceutical formulation of claim 10, wherein the histidine buffer comprises L-histidine and L-histidine monohydrochloride monohydrate.
12. The pharmaceutical formulation of claim 11, wherein the histidine buffer comprises  $0.57 \pm 0.05 \text{ mg/ml}$  L-histidine and  $1.33 \pm 0.13 \text{ mg/ml}$  L-histidine monohydrochloride monohydrate.
13. The pharmaceutical formulation of any one of claims 1 to 12, wherein the polysorbate concentration is from  $0.01\% \pm 0.005\%$  to  $0.5\% \pm 0.25\% \text{ w/v}$ .
14. The pharmaceutical formulation of claim 13, wherein the polysorbate concentration is  $0.1\% \pm 0.05\% \text{ w/v}$ .
15. The pharmaceutical formulation of claim 13, wherein the polysorbate concentration is  $0.1\% \pm 0.01\% \text{ w/v}$ .
16. The pharmaceutical formulation of any one of claims 1 to 15, wherein the polysorbate is polysorbate 80.
17. The pharmaceutical formulation of any one of claims 1 to 16, wherein the sugar is sucrose.
18. The pharmaceutical formulation of claim 17, wherein the sucrose concentration is from  $5\% \pm 1\%$  to  $20\% \pm 4\% \text{ w/v}$ .

19. The pharmaceutical formulation of claim 18, wherein the sucrose concentration is from  $8\% \pm 0.5\%$  to  $12\% \pm 0.5\%$  w/v.

20. The pharmaceutical formulation of claim 19, wherein the sucrose concentration is  $10\% \pm 1\%$  w/v.

21. The pharmaceutical formulation of claim 1 comprising:

- (a)  $2 \text{ mg/ml} \pm 0.2 \text{ mg/ml}$  antibody,
  - (b) from  $5 \text{ mM} \pm 1 \text{ mM}$  to  $15 \text{ mM} \pm 3 \text{ mM}$  histidine buffer,
  - (c) from  $0.01\% \pm 0.005\%$  to  $0.5\% \pm 0.25\%$  w/v polysorbate, and
  - (d) from  $5\% \pm 1\%$  to  $20\% \pm 4\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

22. The pharmaceutical formulation of claim 21 comprising:

- (a)  $2 \text{ mg/ml} \pm 0.2 \text{ mg/ml}$  antibody,
  - (b)  $10 \text{ mM} \pm 1 \text{ mM}$  histidine buffer,
  - (c)  $0.1\% \pm 0.05\%$  w/v polysorbate, and
  - (d)  $10\% \pm 1\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

23. The pharmaceutical formulation of claim 22 comprising:

- (a)  $2 \text{ mg/ml} \pm 0.2 \text{ mg/ml}$  antibody,
  - (b)  $0.57 \text{ mg/ml} \pm 0.05 \text{ mg/ml}$  L-histidine,
  - (c)  $1.33 \text{ mg/ml} \pm 0.13 \text{ mg/ml}$  L-histidine monohydrochloride monohydrate,
  - (d)  $0.1\% \pm 0.05\%$  w/v polysorbate, and
  - (e)  $10\% \pm 1\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

24. The pharmaceutical formulation of claim 1 comprising:

- (a)  $20 \text{ mg/ml} \pm 2 \text{ mg/ml}$  antibody,
  - (b) from  $5 \text{ mM} \pm 1 \text{ mM}$  to  $15 \text{ mM} \pm 3 \text{ mM}$  histidine buffer,
  - (c) from  $0.01\% \pm 0.005\%$  to  $0.5\% \pm 0.25\%$  w/v polysorbate, and
  - (d) from  $5\% \pm 1\%$  to  $20\% \pm 4\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

25. The pharmaceutical formulation of claim 24 comprising:

- (a) 20 mg/ml  $\pm$  2 mg/ml antibody,
  - (b) 10 mM  $\pm$  1 mM histidine buffer,
  - (c) 0.1%  $\pm$  0.05% w/v polysorbate, and
  - (d) 10%  $\pm$  1% w/v sucrose,
- at pH 5.8  $\pm$  0.3.

26. The pharmaceutical formulation of claim 25 comprising:

- (a) 20 mg/ml  $\pm$  2 mg/ml antibody,
  - (b) 0.57 mg/ml  $\pm$  0.05 mg/ml L-histidine,
  - (c) 1.33 mg/ml  $\pm$  0.13 mg/ml L-histidine monohydrochloride monohydrate,
  - (d) 0.1%  $\pm$  0.05% w/v polysorbate, and
  - (e) 10%  $\pm$  1% w/v sucrose,
- at pH 5.8  $\pm$  0.3.

27. The pharmaceutical formulation of claim 1 comprising:

- (a) 80 mg/ml  $\pm$  8 mg/ml antibody,
  - (b) from 5 mM  $\pm$  1 mM to 15 mM  $\pm$  3 mM histidine buffer,
  - (c) from 0.01%  $\pm$  0.005% to 0.5%  $\pm$  0.25% w/v polysorbate, and
  - (d) from 5%  $\pm$  1% to 20%  $\pm$  4% w/v sucrose,
- at pH 5.8  $\pm$  0.3.

28. The pharmaceutical formulation of claim 27 comprising:

- (a) 80 mg/ml  $\pm$  8 mg/ml antibody,
  - (b) 10 mM  $\pm$  1 mM histidine buffer,
  - (c) 0.1%  $\pm$  0.05% w/v polysorbate, and
  - (d) 10%  $\pm$  1% w/v sucrose,
- at pH 5.8  $\pm$  0.3.

29. The pharmaceutical formulation of claim 28 comprising:

- (a) 80 mg/ml  $\pm$  8 mg/ml antibody,
- (b) 0.57 mg/ml  $\pm$  0.05 mg/ml L-histidine,
- (c) 1.33 mg/ml  $\pm$  0.13 mg/ml L-histidine monohydrochloride monohydrate,
- (d) 0.1%  $\pm$  0.05% w/v polysorbate, and

(e)  $10\% \pm 1\%$  w/v sucrose,  
at pH  $5.8 \pm 0.3$ .

30. The pharmaceutical formulation of claim 1 comprising:

- (a)  $100 \text{ mg/ml} \pm 10 \text{ mg/ml}$  antibody,
  - (b) from  $5 \text{ mM} \pm 1 \text{ mM}$  to  $15 \text{ mM} \pm 3 \text{ mM}$  histidine buffer,
  - (c) from  $0.01\% \pm 0.005\%$  to  $0.5\% \pm 0.25\%$  w/v polysorbate, and
  - (d) from  $5\% \pm 1\%$  to  $20\% \pm 4\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

31. The pharmaceutical formulation of claim 30 comprising:

- (a)  $100 \text{ mg/ml} \pm 10 \text{ mg/ml}$  antibody,
  - (b)  $10 \text{ mM} \pm 1 \text{ mM}$  histidine buffer,
  - (c)  $0.1\% \pm 0.05\%$  w/v polysorbate, and
  - (d)  $10\% \pm 1\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

32. The pharmaceutical formulation of claim 31 comprising:

- (a)  $100 \text{ mg/ml} \pm 10 \text{ mg/ml}$  antibody,
  - (b)  $0.57 \text{ mg/ml} \pm 0.05 \text{ mg/ml}$  L-histidine,
  - (c)  $1.33 \text{ mg/ml} \pm 0.13 \text{ mg/ml}$  L-histidine monohydrochloride monohydrate,
  - (d)  $0.1\% \pm 0.05\%$  w/v polysorbate, and
  - (e)  $10\% \pm 1\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

33. The pharmaceutical formulation of claim 1 comprising:

- (a)  $160 \text{ mg/ml} \pm 16 \text{ mg/ml}$  antibody,
  - (b) from  $5 \text{ mM} \pm 1 \text{ mM}$  to  $15 \text{ mM} \pm 3 \text{ mM}$  histidine buffer,
  - (c) from  $0.01\% \pm 0.005\%$  to  $0.5\% \pm 0.25\%$  w/v polysorbate, and
  - (d) from  $5\% \pm 1\%$  to  $20\% \pm 4\%$  w/v sucrose,
- at pH  $5.8 \pm 0.3$ .

34. The pharmaceutical formulation of claim 33 comprising:

- (a)  $160 \text{ mg/ml} \pm 16 \text{ mg/ml}$  antibody,

- (b) 10 mM  $\pm$  1 mM histidine buffer,
  - (c) 0.1%  $\pm$  0.05% w/v polysorbate, and
  - (d) 10%  $\pm$  1% w/v sucrose,
- at pH 5.8  $\pm$  0.3.

35. The pharmaceutical formulation of claim 34 comprising:

- (a) 160 mg/ml  $\pm$  16 mg/ml antibody,
  - (b) 0.57 mg/ml  $\pm$  0.05 mg/ml L-histidine,
  - (c) 1.33 mg/ml  $\pm$  0.13 mg/ml L-histidine monohydrochloride monohydrate,
  - (d) 0.1%  $\pm$  0.05% w/v polysorbate, and
  - (e) 10%  $\pm$  1% w/v sucrose,
- at pH 5.8  $\pm$  0.3

36. The pharmaceutical formulation of any one of claims 21 to 35, wherein the polysorbate is polysorbate 80.

37. The pharmaceutical formulation of any one of claims 1 to 36, wherein at least 90% of the antibody has native conformation after 1 month of storage at 45°C, as determined by size exclusion-ultra performance liquid chromatography (SE-UPLC).

38. The pharmaceutical formulation of claim 37, wherein at least 93% of the antibody has native conformation after 1 month of storage at 45°C, as determined by SE-UPLC.

39. The pharmaceutical formulation of claim 38, wherein at least 95% of the antibody has native conformation after 1 month of storage at 45°C, as determined by SE-UPLC.

40. The pharmaceutical formulation of any one of claims 1 to 39, wherein at least 95% of the antibody has native conformation after 3 months of storage at 25°C and 60% relative humidity, as determined by SE-UPLC.

41. The pharmaceutical formulation of claim 40, wherein at least 97% of the antibody has native conformation after 3 months of storage at 25°C and 60% relative humidity, as determined by SE-UPLC.

42. The pharmaceutical formulation of any one of claims 1 to 41, wherein at least 95% of the antibody has native conformation after 3 months of storage at 5°C, as determined by SE-UPLC.

43. The pharmaceutical formulation of claim 42, wherein at least 98% of the antibody has native conformation after 3 months of storage at 5°C, as determined by SE-UPLC.

44. The pharmaceutical formulation of any one of claims 1 to 43, wherein the formulation contains no more than 6% high molecular weight (HMW) species after 1 month of storage at 45°C, as determined by SE-UPLC.

45. The pharmaceutical formulation of claim 44, wherein the formulation contains no more than 5.6% HMW species after 1 month of storage at 45°C, as determined by SE-UPLC.

46. The pharmaceutical formulation of any one of claims 1 to 45, wherein the formulation contains no more than 2% HMW species after 3 months of storage at 25°C and 60% relative humidity, as determined by SE-UPLC.

47. The pharmaceutical formulation of claim 46, wherein the formulation contains no more than 1% HMW species after 3 months of storage at 25°C and 60% relative humidity, as determined by SE-UPLC.

48. The pharmaceutical formulation of any one of claims 1 to 47, wherein the formulation contains no more than 1.5% HMW species after 3 months of storage at 5°C, as determined by SE-UPLC.

49. The pharmaceutical formulation of claim 48, wherein the formulation contains no more than 1% HMW species after 9 months of storage at 5°C, as determined by SE-UPLC.

50. The pharmaceutical formulation of any one of claims 1-49, wherein the first antigen-binding domain comprises a HCVR with at least 90% identity to the amino acid sequence of SEQ ID NO: 4 and a LCVR with at least 90% identity to the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR with

at least 90% identity to the amino acid sequence of SEQ ID NO: 5 and a LCVR with at least 90% identity to the amino acid sequence of SEQ ID NO: 6.

51. The pharmaceutical formulation of claim 50, wherein the first antigen-binding domain comprises a HCVR with at least 95% identity to the amino acid sequence of SEQ ID NO: 4 and a LCVR with at least 95% identity to the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR with at least 95% identity to the amino acid sequence of SEQ ID NO: 5 and a LCVR with at least 95% identity to the amino acid sequence of SEQ ID NO: 6.

52. The pharmaceutical formulation of claim 51, wherein the first antigen-binding domain comprises a HCVR with at least 99% identity to the amino acid sequence of SEQ ID NO: 4 and a LCVR with at least 99% identity to the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR with at least 99% identity to the amino acid sequence of SEQ ID NO: 5 and a LCVR with at least 99% identity to the amino acid sequence of SEQ ID NO: 6.

53. The pharmaceutical formulation of any one of claims 1 to 52, wherein the first antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 4 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 5 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6.

54. The pharmaceutical formulation of claim 53, wherein the antibody comprises a human IgG heavy chain constant region attached, respectively, to the HCVR of each of the first antigen-binding domain and the second antigen-binding domain.

55. The pharmaceutical formulation of claim 54, wherein the heavy chain constant region is of isotype IgG1.

56. The pharmaceutical formulation of claim 54, wherein the heavy chain constant region is of isotype IgG4.

57. The pharmaceutical formulation of any one of claims 54 to 56, wherein the heavy chain constant region attached to the HCVR of the first antigen-binding domain or the heavy chain constant region attached to the HCVR of the second antigen-binding domain,

but not both, contains an amino acid modification that reduces Protein A binding relative to a heavy chain of the same isotype without the modification.

58. The pharmaceutical formulation of claim 57, wherein the modification comprises a H435R substitution (EU numbering) in a heavy chain of isotype IgG1 or IgG4.

59. The pharmaceutical formulation of claim 57, wherein the modification comprises a H435R substitution and a Y436F substitution (EU numbering) in a heavy chain of isotype IgG1 or IgG4.

60. The pharmaceutical formulation of any one of claims 54 to 56, wherein the antibody comprises a heavy chain constant region comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, and SEQ ID NO: 19.

61. The pharmaceutical formulation of claim 60, wherein the antibody comprises a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 16 and a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 17.

62. The pharmaceutical formulation of claim 60, wherein the antibody comprises a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 18 and a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 19.

63. The pharmaceutical formulation of claim 53, wherein the antibody comprises a first heavy chain containing the HCVR of the first antigen-binding domain and a second heavy chain containing the HCVR of the second antigen-binding domain, wherein the first heavy chain comprises residues 1-452 of the amino acid sequence of SEQ ID NO: 1 and the second heavy chain comprises residues 1-448 of the amino acid sequence of SEQ ID NO: 2.

64. The pharmaceutical formulation of claim 63, wherein the antibody comprises a common light chain containing the LCVR of the first and second antigen-binding domains, wherein the common light chain comprises the amino acid sequence of SEQ ID NO: 3.

65. A pharmaceutical formulation comprising:

- (a) 2 mg/ml  $\pm$  0.2 mg/ml of a bispecific antibody comprising a first antigen-binding domain that binds specifically to human CD20 and a second antigen-binding domain that binds specifically to human CD3, wherein the first antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 4 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 5 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6;
- (b) 10 mM  $\pm$  1 mM histidine buffer, pH 5.8  $\pm$  0.2,
- (c) 0.1%  $\pm$  0.01% w/v polysorbate 80, and
- (d) 10%  $\pm$  1% w/v sucrose.

66. The pharmaceutical formulation of claim 65 consisting of: (a) 2 mg/ml  $\pm$  0.2 mg/ml of the antibody, (b) 3.65 mM  $\pm$  0.2 mM L-histidine (c) 6.35 mM  $\pm$  0.2 mM L-histidine monohydrochloride monohydrate, (d) 0.1%  $\pm$  0.01% w/v polysorbate 80, and (e) 10%  $\pm$  1% w/v sucrose, in water at pH 5.8  $\pm$  0.2.

67. The pharmaceutical formulation of claim 65 consisting of: (a) 2 mg/ml  $\pm$  0.2 mg/ml of the antibody, (b) 0.57 mg/ml  $\pm$  0.1 mg/ml L-histidine (c) 1.33 mg/ml  $\pm$  0.1 mg/ml L-histidine monohydrochloride monohydrate, (d) 1 mg/ml  $\pm$  0.1 mg/ml polysorbate 80, and (e) 100 mg/ml  $\pm$  10 mg/ml sucrose, in water at pH 5.8  $\pm$  0.2.

68. A pharmaceutical formulation comprising:

- (a) 20 mg/ml  $\pm$  2 mg/ml of a bispecific antibody comprising a first antigen-binding domain that binds specifically to human CD20 and a second antigen-binding domain that binds specifically to human CD3, wherein the first antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 4 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 5 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6;
- (b) 10 mM  $\pm$  1 mM histidine buffer, pH 5.8  $\pm$  0.2,
- (c) 0.1%  $\pm$  0.01% w/v polysorbate 80, and
- (d) 10%  $\pm$  1% w/v sucrose.

69. The pharmaceutical formulation of claim 68 consisting of: (a) 20 mg/ml  $\pm$  2 mg/ml of the antibody, (b) 3.65 mM  $\pm$  0.2 mM L-histidine (c) 6.35 mM  $\pm$  0.2 mM L-histidine monohydrochloride monohydrate, (d) 0.1%  $\pm$  0.01% w/v polysorbate 80, and (e) 10%  $\pm$  1% w/v sucrose, in water at pH 5.8  $\pm$  0.2.

70. The pharmaceutical formulation of claim 68 consisting of: (a) 20 mg/ml  $\pm$  2 mg/ml of the antibody, (b) 0.57 mg/ml  $\pm$  0.1 mg/ml L-histidine (c) 1.33 mg/ml  $\pm$  0.1 mg/ml L-histidine monohydrochloride monohydrate, (d) 1 mg/ml  $\pm$  0.1 mg/ml polysorbate 80, and (e) 100 mg/ml  $\pm$  10 mg/ml sucrose, in water at pH 5.8  $\pm$  0.2.

71. A pharmaceutical formulation comprising:

(a) 100 mg/ml  $\pm$  10 mg/ml of a bispecific antibody comprising a first antigen-binding domain that binds specifically to human CD20 and a second antigen-binding domain that binds specifically to human CD3, wherein the first antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 4 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6, and the second antigen-binding domain comprises a HCVR comprising the amino acid sequence of SEQ ID NO: 5 and a LCVR comprising the amino acid sequence of SEQ ID NO: 6;

(b) 10 mM  $\pm$  1 mM histidine buffer, pH 5.8  $\pm$  0.2,

(c) 0.1%  $\pm$  0.01% w/v polysorbate 80, and

(d) 10%  $\pm$  1% w/v sucrose.

72. The pharmaceutical formulation of claim 71 consisting of: (a) 100 mg/ml  $\pm$  10 mg/ml of the antibody, (b) 3.65 mM  $\pm$  0.2 mM L-histidine (c) 6.35 mM  $\pm$  0.2 mM L-histidine monohydrochloride monohydrate, (d) 0.1%  $\pm$  0.01% w/v polysorbate 80, and (e) 10%  $\pm$  1% w/v sucrose, in water at pH 5.8  $\pm$  0.2.

73. The pharmaceutical formulation of claim 71 consisting of: (a) 100 mg/ml  $\pm$  10 mg/ml of the antibody, (b) 0.57 mg/ml  $\pm$  0.1 mg/ml L-histidine (c) 1.33 mg/ml  $\pm$  0.1 mg/ml L-histidine monohydrochloride monohydrate, (d) 1 mg/ml  $\pm$  0.1 mg/ml polysorbate 80, and (e) 100 mg/ml  $\pm$  10 mg/ml sucrose, in water at pH 5.8  $\pm$  0.2.

74. The pharmaceutical formulation of any one of claims 65 to 73, wherein the antibody comprises a human IgG heavy chain constant region attached, respectively, to the HCVR of each of the first antigen-binding domain and the second antigen-binding domain.

75. The pharmaceutical formulation of claim 74, wherein the heavy chain constant region is of isotype IgG1.

76. The pharmaceutical formulation of claim 74, wherein the heavy chain constant region is of isotype IgG4.

77. The pharmaceutical formulation of any one of claims 74 to 76, wherein the heavy chain constant region attached to the HCVR of the first antigen-binding domain or the heavy chain constant region attached to the HCVR of the second antigen-binding domain, but not both, contains an amino acid modification that reduces Protein A binding relative to a heavy chain of the same isotype without the modification.

78. The pharmaceutical formulation of claim 77, wherein the modification comprises a H435R substitution (EU numbering) in a heavy chain of isotype IgG1 or IgG4.

79. The pharmaceutical formulation of claim 77, wherein the modification comprises a H435R substitution and a Y436F substitution (EU numbering) in a heavy chain of isotype IgG1 or IgG4.

80. The pharmaceutical formulation of any one of claims 74 to 76, wherein the antibody comprises a heavy chain constant region comprising an amino acid sequence selected from the group consisting of SEQ ID NO: 16, SEQ ID NO: 17, SEQ ID NO: 18, and SEQ ID NO: 19.

81. The pharmaceutical formulation of claim 80, wherein the antibody comprises a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 16 and a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 17.

82. The pharmaceutical formulation of claim 80, wherein the antibody comprises a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 18 and a heavy chain constant region comprising the amino acid sequence of SEQ ID NO: 19.

83. The pharmaceutical formulation of any one of claims 65 to 73, wherein the antibody comprises a first heavy chain containing the HCVR of the first antigen-binding domain and a second heavy chain containing the HCVR of the second antigen-binding

domain, wherein the first heavy chain comprises residues 1-452 of the amino acid sequence of SEQ ID NO: 1 and the second heavy chain comprises residues 1-448 of the amino acid sequence of SEQ ID NO: 2.

84. The pharmaceutical formulation of claim 83, wherein the antibody comprises a common light chain containing the LCVR of the first and second antigen-binding domains, wherein the common light chain comprises the amino acid sequence of SEQ ID NO: 3.

85. The pharmaceutical formulation of any one of claims 65 to 84, wherein: (a) at least 90% of the antibody has native conformation after 1 month of storage at 45°C; (b) at least 93% of the antibody has native conformation after 1 month of storage at 45°C; (c) at least 95% of the antibody has native conformation after 1 month of storage at 45°C; (d) at least 95% of the antibody has native conformation after 3 months of storage at 25°C and 60% relative humidity; (e) at least 97% of the antibody has native conformation after 3 months of storage at 25°C and 60% relative humidity; (f) at least 95% of the antibody has native conformation after 3 months of storage at 5°C; (g) at least 98% of the antibody has native conformation after 3 months of storage at 5°C; (h) the formulation contains no more than 6% high molecular weight (HMW) species after 1 month of storage at 45°C; (i) the formulation contains no more than 5.6% HMW species after 1 month of storage at 45°C; (j) the formulation contains no more than 2% HMW species after 3 months of storage at 25°C and 60% relative humidity; (k) the formulation contains no more than 1% HMW species after 3 months of storage at 25°C and 60% relative humidity; (l) the formulation contains no more than 1.5% HMW species after 3 months of storage at 5°C; and/or (m) the formulation contains no more than 1% HMW species after 9 months of storage at 5°C;

as determined by SE-UPLC

86. A pharmaceutical composition, wherein the composition comprises the pharmaceutical formulation of any one of claims 1 to 85, and the composition is contained in a container.

87. The pharmaceutical composition of claim 86, wherein the container is a vial.

88. The pharmaceutical composition of claim 87, wherein the vial is a 2 ml, 5 ml, 10 ml or 20 ml Type 1 clear glass vial.

89. The pharmaceutical composition of claim 86, wherein the container is a syringe.
90. The pharmaceutical composition of claim 89, wherein the syringe is low-tungsten glass.
91. The pharmaceutical composition of claim 86, wherein the container is a prefilled syringe.
92. The pharmaceutical composition of claim 86 contained in an autoinjector.
93. The pharmaceutical composition of any one of claims 87 to 92, wherein the container comprises a headspace comprising a gas, wherein the gas comprises less than 5% oxygen by volume.
94. The pharmaceutical composition of claim 93, wherein the gas comprises less than 1% oxygen by volume, or no more than 0.1% oxygen by volume.
95. A kit comprising (i) a container containing a composition comprising the pharmaceutical formulation of any one of claims 1 to 85, and instructions for use of the composition.
96. The kit of claim 95, wherein the container is a glass vial.
97. The kit of claim 95, wherein the container is a prefilled syringe.
98. The kit of claim 95, wherein the container is an autoinjector.
99. The kit of claim 95, wherein the instructions recite subcutaneous administration of the composition.
100. The kit of claim 95, wherein the instructions recite intravenous administration of the composition.
101. The kit of any one of claims 95 to 100, wherein the container comprises a headspace comprising a gas, wherein the gas comprises less than 5% oxygen by volume.
102. The kit of claim 101, wherein the gas comprises less than 1% oxygen by volume, or no more than 0.1% oxygen by volume.

103. A unit dosage form comprising the pharmaceutical formulation of any one of claims 1 to 85, wherein the antibody is present in an amount of from 0.1 mg to 500 mg.

104. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 2 to 2.5 mg.

105. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 10 to 11 mg.

106. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 20 to 25 mg.

107. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 80 to 90 mg.

108. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 100 to 125 mg.

109. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 160 to 180 mg.

110. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 190 to 210 mg.

111. The unit dosage form of claim 103, wherein the antibody is present in an amount of from 320 to 360 mg.

112. The unit dosage form of claim 103 that is a glass vial.

113. The unit dosage form of claim 103 that is a prefilled syringe.

114. The unit dosage form of claim 103 that is an autoinjector.

115. The unit dosage form of claim 112, wherein the glass vial comprises a headspace comprising a gas, wherein the gas comprises less than 5% oxygen by volume.

116. The unit dosage form of claim 115, wherein the gas comprises less than 1% oxygen by volume, or no more than 0.1% oxygen by volume.

117. A container containing a pharmaceutical composition, wherein the composition comprises the pharmaceutical formulation of any one of claims 1 to 85.

118. The container of claim 117 that is a syringe.

119. The container of claim 117 that is a prefilled syringe.

120. The container of claim 117 that is an autoinjector.

121. The container of claim 117 that is a glass vial.