

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 ± 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 1 or 2, wherein the antibody/histidine buffer concentration is 2 mg/ml $\pm$ 0.2 mg/ml from 5 mM $\pm$ 1 mM to 15 mM $\pm$ 3 mM.
- ~~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 mg/ml $\pm$ 16 mg/ml.~~

~~8. The pharmaceutical formulation of claim 2, wherein the antibody concentration is from about 2 mg/ml to about 100 mg/ml.~~

~~9.4. The pharmaceutical formulation of any one of claims 1 to 8, wherein the histidine buffer concentration is from 5 mM $\pm$ 1 mM to 15 mM $\pm$ 3 mM.~~

~~10. The pharmaceutical formulation of claim 9, wherein the histidine buffer concentration is 10 mM $\pm$ 1 mM.~~

~~11. The pharmaceutical formulation of claim 10, wherein the histidine buffer comprises L-histidine and L-histidine monohydrochloride monohydrate.~~

~~125. The pharmaceutical formulation of claim 11, wherein the histidine buffer comprises 0.57 $\pm$ 0.05 mg/ml L-histidine and 1.33 $\pm$ 0.13 mg/ml L-histidine monohydrochloride monohydrate.~~

~~13. The pharmaceutical formulation of any one of claims 1 to 12-4, wherein the polysorbate concentration is from 0.01% $\pm$ 0.005% to 0.5% $\pm$ 0.25% w/v.~~

~~14. The pharmaceutical formulation of claim 13, wherein the polysorbate concentration is 0.1% $\pm$ 0.05% w/v.~~

~~15. The pharmaceutical formulation of claim 13, wherein the polysorbate concentration is 0.1% $\pm$ 0.01% w/v.~~

~~166. The pharmaceutical formulation of any one of claims 1 to 15-5, wherein the polysorbate is polysorbate 80.~~

~~177. The pharmaceutical formulation of any one of claims 1 to 16-6, wherein the sugar is sucrose.~~

~~18-8. The pharmaceutical formulation of claim 177, wherein the sucrose concentration is from 5% $\pm$ 1% to 20% $\pm$ 4% w/v.~~

~~19.~~ The pharmaceutical formulation of claim ~~18~~, wherein the sucrose concentration is from ~~8% ± 0.5% to 128%~~ ± 0.5% to 12% ± 0.5% w/v.

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

~~219.~~ The pharmaceutical formulation of claim 1 comprising:

- (a) 2 mg/ml ± 0.2 mg/ml antibody,
 - (b) ~~from 510 mM ± 1 mM to 15 mM ± 3 mM~~ histidine buffer,
 - (c) ~~from 0.011% ± 0.005% to 0.5% ± 0.2505%~~ w/v polysorbate, and
 - (d) ~~from 510% ± 1% to 20% ± 4%~~ w/v sucrose,
- at pH 5.8 ± 0.3.

~~2210.~~ The pharmaceutical formulation of claim ~~211~~ comprising:

- (a) ~~220~~ mg/ml ± ~~0.2~~ mg/ml antibody,
 - (b) 10 mM ± 1 mM histidine buffer,
 - (c) 0.1% ± 0.05% w/v polysorbate, and
 - (d) 10% ± 1% w/v sucrose,
- at pH 5.8 ± 0.3.

~~2311.~~ The pharmaceutical formulation of claim ~~221~~ comprising:

- (a) ~~280~~ mg/ml ± ~~0.28~~ mg/ml antibody,
 - (b) ~~0.57 mg/ml ± 0.05 mg/ml L~~ 10 mM ± 1 mM histidine buffer,
 - (c) ~~1.33 mg/ml ± 0.13 mg/ml L~~ histidine monohydrochloride monohydrate,
 - ~~(d)~~ 0.1% ± 0.05% w/v polysorbate, and
 - ~~(ed)~~ 10% ± 1% w/v sucrose,
- at pH 5.8 ± 0.3.

~~2412.~~ The pharmaceutical formulation of claim 1 comprising:

- (a) ~~20100~~ mg/ml ± 210 mg/ml antibody,
 - (b) ~~from 510 mM ± 1 mM to 15 mM ± 3 mM~~ histidine buffer,
 - (c) ~~from 0.011% ± 0.005% to 0.5% ± 0.2505%~~ w/v polysorbate, and
 - (d) ~~from 510% ± 1% to 20% ± 4%~~ w/v sucrose,
- at pH 5.8 ± 0.3.

~~25~~13. The pharmaceutical formulation of claim ~~24~~1 comprising:

- (a) ~~20~~160 mg/ml $\pm$ ~~2~~16 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~~14. 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 mg/ml $\pm$ 10 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.~~

~~31. — The pharmaceutical formulation of claim 30 comprising:~~

~~(a) 100 mg/ml $\pm$ 10 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.~~

~~32. — The pharmaceutical formulation of claim 31 comprising:~~

~~(a) 100 mg/ml $\pm$ 10 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.~~

~~33. — The pharmaceutical formulation of claim 1 comprising:~~

~~(a) 160 mg/ml $\pm$ 16 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.~~

~~34. — The pharmaceutical formulation of claim 33 comprising:~~

~~(a) 160 mg/ml $\pm$ 16 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 361-13, 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).~~

~~3815.~~ The pharmaceutical formulation of claim ~~3714~~, wherein at least 93% of the antibody has native conformation after 1 month of storage at 45°C, as determined by SE-UPLC.

~~3916.~~ The pharmaceutical formulation of claim ~~3815~~, wherein at least 95% of the antibody has native conformation after 1 month of storage at 45°C, as determined by SE-UPLC.

~~4017.~~ The pharmaceutical formulation of any one of claims 1 ~~to 39-13~~, 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.

~~4118.~~ The pharmaceutical formulation of claim ~~4017~~, 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.

4219. The pharmaceutical formulation of any one of claims ~~1 to 41-13~~, wherein at least 95% of the antibody has native conformation after 3 months of storage at 5°C, as determined by SE-UPLC.

4320. The pharmaceutical formulation of claim 4219, wherein at least 98% of the antibody has native conformation after 3 months of storage at 5°C, as determined by SE-UPLC.

4421. The pharmaceutical formulation of any one of claims ~~1 to 43-13~~, 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.

4522. The pharmaceutical formulation of claim 4421, wherein the formulation contains no more than 5.6% HMW species after 1 month of storage at 45°C, as determined by SE-UPLC.

4623. The pharmaceutical formulation of any one of claims ~~1 to 45-13~~, 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.

4724. The pharmaceutical formulation of claim 4623, 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.

4825. The pharmaceutical formulation of any one of claims ~~1 to 47-13~~, wherein the formulation contains no more than 1.5% HMW species after 3 months of storage at 5°C, as determined by SE-UPLC.

4926. The pharmaceutical formulation of claim 4825, 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~~27. The pharmaceutical formulation of any one of claims 1-13, 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~~28. The pharmaceutical formulation of claim ~~54~~27, wherein the heavy chain constant region is of isotype IgG1.

~~56~~29. The pharmaceutical formulation of claim ~~54~~27, 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.~~

~~5830.~~ 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 5727,~~ wherein the modification comprises a H435R substitution and a Y436F substitution (EU numbering) in a heavy chain of isotype IgG1 or IgG4.

~~6031.~~ The pharmaceutical formulation of ~~any one of claims 54 to 56~~claim 27, 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.

~~6132.~~ The pharmaceutical formulation of claim ~~6031,~~ 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.

~~6233.~~ The pharmaceutical formulation of claim ~~6031,~~ 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.

~~6334.~~ The pharmaceutical formulation of ~~claim 53~~any one of claims 1-13, 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.

~~6435.~~ The pharmaceutical formulation of claim ~~6334,~~ 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.

~~6536.~~ 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) $10 \text{ mM} \pm 1 \text{ mM}$ histidine buffer, $\text{pH } 5.8 \pm 0.2$,
- (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) $2 \text{ mg/ml} \pm 0.2 \text{ mg/ml}$ of the antibody, (b) $3.65 \text{ mM} \pm 0.2 \text{ mM}$ L-histidine (c) $6.35 \text{ mM} \pm 0.2 \text{ mM}$ 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 $\text{pH } 5.8 \pm 0.2$.~~

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

6837. A pharmaceutical formulation comprising:

(a) $20 \text{ mg/ml} \pm 2 \text{ mg/ml}$ 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) $10 \text{ mM} \pm 1 \text{ mM}$ histidine buffer, $\text{pH } 5.8 \pm 0.2$,
- (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) $20 \text{ mg/ml} \pm 2 \text{ mg/ml}$ of the antibody, (b) $3.65 \text{ mM} \pm 0.2 \text{ mM}$ L-histidine (c) $6.35 \text{ mM} \pm 0.2 \text{ mM}$ 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 $\text{pH } 5.8 \pm 0.2$.~~

~~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~~38. 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~~39. 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~~36-38, 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~~40. A pharmaceutical composition, wherein the composition comprises the pharmaceutical formulation of any one of claims ~~1 to 85~~39, and the composition is contained in a container.

~~87. 41.~~ 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 9240, wherein the container comprises a headspace comprising a gas, wherein the gas comprises less than 5% oxygen by volume.~~

~~9442.~~ The pharmaceutical composition of claim ~~9341~~, wherein the gas comprises less than 1% oxygen by volume, or no more than 0.1% oxygen by volume.

~~9543.~~ A kit comprising (i) a container containing a composition comprising the pharmaceutical formulation of any one of claims ~~1 to 8539~~, 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.~~

~~10344.~~ A unit dosage form comprising the pharmaceutical formulation of any one of claims ~~1 to 8539~~, 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~~45. 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.~~

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