CLAIMS

1. A pharmaceutical composition comprising:

(a) about 50 IU/ml to about 2500 IU/ml of a chimeric FVIII polypeptide comprising a FVIII polypeptide and an Fc region (rFVIIIFc polypeptide);

(b) about 10 mg/ml to about 25 mg/ml of a stabilizing agent selected from the group consisting of sucrose, trehalose, raffinose, arginine, and any mixture thereof;

(c) about 8.8 mg/ml to about 14.6 mg/ml sodium chloride (NaCl);

(d) about 0.75 mg/ml to about 2.25 mg/ml L-histidine;

(e) about 0.75 mg/ml to about 1.5 mg/ml calcium chloride dihydrate; and

(f) about 0.08 mg/ml to about 0.25 mg/ml polysorbate 20 or polysorbate 80.

2. The pharmaceutical composition of claim 1, wherein mannitol, glycine, alanine, or hydroxyethyl starch is not included.

3. The pharmaceutical composition of claim 1, wherein NaCl is the only bulking agent.

4. The pharmaceutical composition of claim 1, comprising about 13 mg/ml to about 20 mg/ml sucrose.

5. The pharmaceutical composition of claim 1, comprising about 13.3 mg/ml to about 20 mg/ml sucrose.

6. The pharmaceutical composition of claim 1, comprising about 10 mg/ml to about 13 mg/ml NaCl.

7. The pharmaceutical composition of claim 1, comprising about 12.0 mg/ml NaCl.

8. The pharmaceutical composition of claim 1, comprising about 1.03 mg/ml L-histidine.

9. The pharmaceutical composition of claim 1, comprising about 1.55 mg/ml L-histidine.

10. The pharmaceutical composition of claim 1, comprising about 0.8 mg/ml calcium chloride dihydrate.

11. The pharmaceutical composition of claim 1, comprising about 1.18 mg/ml calcium chloride dihydrate.

12. The pharmaceutical composition of claim 1, comprising about 0.13 mg/ml polysorbate 20 or polysorbate 80.

13. The pharmaceutical composition of claim 1, comprising about 0.20 mg/ml polysorbate 20 or polysorbate 80.

14. The pharmaceutical composition of claim 1, wherein the rFVIIIFc polypeptide comprises a first subunit comprising an amino acid sequence at least 90% or 95% identical to amino acids 20 to 1684 of SEQ ID NO:2 or 20 to 2578 of SEQ ID NO:6, and a second subunit comprising an amino acid sequence at least 90% to 95% identical to amino acids 21 to 247of SEQ ID NO:4.

15. The pharmaceutical composition of claim 1, wherein the rFVIIIFc polypeptide is present at a concentration of about 50 IU/ml to about 1500 IU/ml.

16. The pharmaceutical composition of claim 1, wherein the rFVIIIFc polypeptide is present at a concentration of about 100 IU/ml to about 2500 IU/ml.

17. The pharmaceutical composition of claim 1, comprising:

(a) about 50 IU/ml to about 1500 IU/ml of the rFVIIIFc polypeptide;
(b) about 10 mg/ml to about 25 mg/ml of sucrose;
(c) about 8.8 mg/ml to about 14.6 mg/ml NaCl;
(d) about 0.75 mg/ml to about 2.25 mg/ml L-histidine;
(e) about 0.75 mg/ml to about 1.5 mg/ml calcium chloride dihydrate; and
(f) about 0.08 mg/ml to about 0.25 mg/ml of polysorbate 20 or polysorbate 80.

18. The pharmaceutical composition of claim 1, comprising:

(a) about 100 IU/ml to about 2500 IU/ml of the rFVIIIFc polypeptide;
(b) about 10 mg/ml to about 25 mg/ml of sucrose;
(c) about 14.6 mg/ml to about 20.5 mg/ml NaCl;
(d) about 0.75 mg/ml to about 2.25 mg/ml L-histidine;
(e) about 0.75 mg/ml to about 1.5 mg/ml calcium chloride dihydrate; and

(f) about 0.08 mg/ml to about 0.25 mg/ml of polysorbate 20 or polysorbate 80.

19. A pharmaceutical kit comprising:

(a) a first container comprising a lyophilized powder, where the powder comprises

(i) about 250 IU, about 500 IU, about 750 IU, about 1000 IU, about 1500 IU, about 2000 IU, or about 3000 IU of a rFVIIIFc polypeptide,

(ii) about 40 mg of a stabilizing agent selected from the group consisting of sucrose, trehalose, raffinose, arginine, and any mixture thereof;

(iii) about 36 mg of sodium chloride (NaCl);

(iv) about 3.1 mg of L-histidine;

(v) about 2.40 mg calcium chloride dihydrate; and

(vi) about 0.40 mg polysorbate 20 or polysorbate 80; and

(b) a second container comprising sterilized water for injections at a volume sufficient to produce, when combined with the lyophilized powder of the first container, a solution comprising:

(i) about 83 IU/ml, about 167 IU/ml, about 250 IU/ml, about 333 IU/ml, about 500 IU/ml, about 667 IU/ml, or about 1000 IU/ml of the rFVIIIFc polypeptide, respectively;

(ii) about 13.3 mg/ml of the stabilizing agent;

(iii) about 12.0 mg/ml of NaCl;

(iv) about 1.03 mg/ml of L-histidine;

(v) about 0.80 mg/ml of calcium chloride dihydrate; and

(vi) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

20. The pharmaceutical kit of claim 19, wherein mannitol, glycine, alanine, or hydroxyethyl starch is not included.

21. The pharmaceutical kit of claim 19, wherein NaCl is the only bulking agent.

22. The pharmaceutical kit of claim 19, wherein the stabilizing agent comprises sucrose.

23. The pharmaceutical composition of claim 1, wherein the stabilizing agent comprises sucrose.

24. The pharmaceutical kit of claim 19, wherein the first container is a glass vial comprising a rubber stopper.

25. The pharmaceutical kit of claim 19, wherein the second container is a syringe body

26. The pharmaceutical kit of claim 25, and wherein the syringe body is associated with a plunger.

27. The pharmaceutical composition of claim 1, comprising:

(a) about 83 IU/ml, about 167 IU/ml, about 250 IU/ml, about 333 IU/ml, about 500 IU/ml, about 667 IU/ml, or about 1000 IU/ml of the rFVIIIFc polypeptide;

(b) about 10 mg/ml to about 25 mg/ml of sucrose;

(c) about 8.8 mg/ml to about 14.6 mg/ml NaCl;

(d) about 0.75 mg/ml to about 2.25 mg/ml L-histidine;

(e) about 0.75 mg/ml to about 1.5 mg/ml calcium chloride dihydrate; and

(f) about 0.08 mg/ml to about 0.25 mg/ml of polysorbate 20 or polysorbate 80.

28. The pharmaceutical composition of claim 1, comprising:

(a) about 83 IU/ml, about 167 IU/ml, about 250 IU/ml, about 333 IU/ml, about 500 IU/ml, about 667 IU/ml, or about 1000 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

29. The pharmaceutical composition of claim 1, comprising:

(a) about 83 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

30. The pharmaceutical composition of claim 1, comprising:

(a) about 167 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

31. The pharmaceutical composition of claim 1, comprising:

(a) about 250 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

32. The pharmaceutical composition of claim 1, comprising:

(a) about 333 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

33. The pharmaceutical composition of claim 1, comprising:

(a) about 500 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

34. The pharmaceutical composition of claim 1, comprising:

(a) about 667 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.

35. The pharmaceutical composition of claim 1, comprising:

(a) about 1000 IU/ml of the rFVIIIFc polypeptide;

(b) about 13.3 mg/ml of sucrose;

(c) about 12.0 mg/ml NaCl;

(d) about 1.03 mg/ml L-histidine;

(e) about 0.8 mg/ml calcium chloride dihydrate; and

(f) about 0.13 mg/ml of polysorbate 20 or polysorbate 80.