WHAT IS CLAIMED IS:

1. A method for preparing a composition of concentrated IgG from plasma, the method comprising the steps of:

(A) concentrating a nanofiltrate comprising IgG by using a first ultra-/diafiltration system comprising a first ultra-/diafiltration membrane, thereby forming a first concentrate;

(B) diafiltration of the first concentrate using the first ultra-/diafiltration system, thereby forming a solution;

(C) concentrating the solution to a bulk solution having a protein concentration of greater than 20% (w/v) using the first ultra-/diafiltration system;

(D) collecting the bulk solution from the first ultra-/diafiltration system;

(E) post-washing the first ultra-/diafiltration system by re-circulating a post-wash buffer through the first ultra-/diafiltration system, wherein the first ultra-/diafiltration system is washed with a volume of post-wash buffer of at least two times the dead volume of the first ultra-/diafiltration system, thereby forming a first IgG post-wash solution;

(F) transferring the first IgG post-wash solution from the first ultra-/diafiltration system into a second ultra-/diafiltration system comprising a second ultra-/diafiltration membrane of the same type as the first ultra-/diafiltration membrane, wherein the second ultra-/diafiltration system is smaller than the first ultra-/diafiltration system;

(G) concentrating the first IgG post-wash solution to a protein concentration of greater than 20% (w/v) using the second ultra-/diafiltration system, thereby forming a first post-wash concentrate; and

(H) combining the first post-wash concentrate from step (G) with the bulk solution from step (D), thereby forming a concentrated IgG composition.

2. The method of claim 1, further comprising the steps of:

(I) post-washing the second ultra-/diafiltration system by re-circulating a post-wash buffer through the second ultra-/diafiltration system, thereby forming a second post-wash solution, and

(J) adjusting the final protein concentration of the concentrated IgG composition formed in step (H) with the second post-wash solution.

3. The method of claim 2, wherein in step (J), the final protein concentration of

the concentrated IgG composition is adjusted to 20.4 ± 0.4 % (w/v).

4. The method of any one of claims 1 to 3, wherein in step (B), the first concentrate is diafiltered against a 0.25 M glycine solution having a low pH, preferably 4.2 ± 0.2.

5. The method of any one of claims 1 to 4, wherein in step (A), the nanofiltrate comprising IgG is concentrated by ultrafiltration to a first concentrate having a protein concentration of between 2% and 10% (w/v), preferably having a protein concentration of 6% ± 2% (w/v).

6. The method of any one of claims 1 to 5, wherein in step (A), the concentrating is carried out by ultrafiltration in a cassette with an open channel screen, and wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 100 kDa.

7. The method of claim 6, wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 90 kDa.

8. The method of claim 6, wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 80 kDa.

9. The method of claim 6, wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 70 kDa.

10. The method of claim 6, wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 60 kDa.

11. The method of claim 6, wherein the first ultra-/diafiltration membrane has a nominal molecular weight cut off (NMWCO) of less than 50 kDa.

12. The method of claim 2, further comprising adjusting the pH of the concentrated IgG composition to 4.4 to 4.9.

13. The method of any one of claims 1 to 12, wherein the second ultra-/diafiltration membrane is dimensioned one-tenth or less of the first ultra-/diafiltration membrane.

WHAT IS CLAIMED IS:

1. In a method for preparing a composition of concentrated IgG from plasma, the improvement comprising the steps of: (1) concentrating protein in a plasma preparation to about 5% (w/v) by ultrafiltration; (2) further concentrating the protein in the preparation to about 20% (w/v) by diafiltration, wherein at least 95% of the protein is IgG.

2. The method of claim 1, wherein step (1) is performed using an ultrafiltration membrane with a nominal molecular weight cut off (NMWCO) of 100 kDa or less.

3. The method of claim 1, wherein step (2) is performed against a diafiltration buffer of glycine with a pH of 4.2 ± 0.1.

4. The method of claim 3, wherein the diafiltration buffer has 0.25 M glycine and a pH of 4.0.

5. The method of claim 1, wherein the protein concentration after step (2) is higher than 20% (w/v) and is subsequently adjusted to about 20% (w/v) with a diafiltration buffer.

6. The method of claim 1, wherein the IgG is human IgG.

7. A method for preparing a composition of concentrated IgG from plasma, comprising the steps of:

(1) separating liquid and precipitate from plasma by centrifugation;

(2) mixing pre-cooled ethanol with the liquid from (1) to form a mixture, which has an ethanol concentration of about 8% (v/v);

(3) separating liquid and precipitate from the mixture of (2) by centrifugation;

(4) adjusting pH and ethanol concentration of the liquid from (3) to about 7.0 and 20-25% (v/v), respectively, thereby forming a mixture;

(5) separating liquid and precipitate from the mixture of (4) by centrifugation;

(6) resuspending the precipitate of (5) with a buffer at a ratio of about 1 to 15 in weight to form a suspension;

(7) mixing silicon dioxide (SiO2) with the suspension from (6) and obtaining a filtrate by filtration;

(8) mixing a detergent and cold alcohol with the filtrate of (7) and obtaining a precipitate by centrifugation;

(9) dissolving the precipitate in an aqueous solution comprising a solvent or detergent and maintaining the solution for at least 60 minutes;

(10) passing the solution after (9) through a cation exchange chromatography column and eluting proteins absorbed on the column in an eluate;

(11) passing the eluate from (10) through an anion exchange chromatography column to generate an effluent;

(12) passing the effluent through a nanofilter to generate a nanofiltrate;

(13) passing the nanofiltrate through an ultrafiltration membrane to generate an ultrafiltrate;

(14) diafiltrating the ultrafiltrate against a diafiltration buffer to generate a solution having a protein concentration of about 20% (w/v); and

(15) sterilizing the solution from (14) by filtering the solution through a filter of 0.2 μm or less, thereby obtaining a composition of concentrated IgG.

8. The method of claim 7, further comprising a step of storing the sealed containers at about 30 to 32°C for about 21 to 22 days.

9. The method of claim 7, further comprising a formulation step to render the 20% IgG product as stable as the 10% state of the art intravenous formulation.

10. An aqueous composition produced by the method of any one of claims 7-8, comprising at least 18% (w/v) immunoglobulin.

11. The composition of claim 10, comprising at least 20% (w/v) immunoglobulin.

12. An aqueous composition comprising more than 180 grams of protein per liter of the composition, wherein at least 95% of the protein I human IgG, the composition further comprising from 0.1 Mto 0.3 M glycerine and having a pH of from 4 to 6.

13. The aqueous composition of claim 12, wherein the protein concentration is about 200 grams of protein per liter of the composition.

14. Use of an effective amount of the composition of any one of claims 12-13 and 10-11 in the preparation of a medicament for treating an immunodeficiency, an autoimmune disease, or an acute infection.