WHAT IS CLAIMED IS:

1. A method for purification of a recombinant protein, comprising:

(a) adding aminoguanidine and a medium-long chain fatty acid to a sample containing the recombinant protein; and

(b) chromatographing the obtained sample, wherein the chromatography is performed with a chromatographic buffer solution containing aminoguanidine,

wherein the chromatography comprises cation exchange chromatography and hydrophobic chromatography,

wherein aminoguanidine in a chromatographic balanced solution, a wash solution or an elution buffer solution for the cation exchange chromatography has a concentration of 1-200 mmol/L, and

wherein the recombinant protein is a recombinant human albumin.

2. The method according to claim 1, wherein the aminoguanidine in the step (a) has a concentration of 2-100 mmol/g recombinant protein.

3. The method according to claim 1, wherein the medium-long chain fatty acid is selected from one or more of octanoic acid, capric acid, myristic acid (C14:0), palmitic acid (C16:0), stearic acid (C18:0), oleic acid (C18:1), linoleic acid (C18:2), linolenic acid (C18:3), arachidonic acid (C20:4) and a salt thereof.

4. The method according to claim 1, wherein a concentration of the medium-long chain fatty acid is 2-300 mmol/g recombinant protein.

5. The method according to claim 1, wherein the chromatographic balanced solution and the wash solution for the cation exchange chromatography have a pH value of 4.0-6.0; the elution buffer solution has a pH value of 7.0-9.5.

6. The method according to claim 1, wherein the chromatographic balanced solution and the wash solution for the cation exchange chromatography have a conductivity not greater than 15 ms/cm; the elution buffer solution has a conductivity not greater than 30 ms/cm.

7. The method according to claim 1, wherein the chromatographic balanced solution and the wash solution for the cation exchange chromatography are phosphoric acid, acetic acid or a Tris buffer solution.

8. The method according to claim 1, wherein a medium substrate for the cation exchange chromatography is selected from a polyacrylate substrate, a polystyrene-divinyl benzene substrate, an agarose substrate, and a modified cellulose substrate.

9. The method according to claim 1, wherein a medium for the cation exchange chromatography is coupled with a hydrophobic cationic ligand.

10. The method according to claim 1, wherein a medium for the hydrophobic chromatography is hydrophilically modified agarose, polyacrylate, polystyrene-divinyl benzene substrate microspheres coupled with a hydrophobic ligand of Phenyl or Butyl series; or a medium for the hydrophobic chromatography is a hydrophilic polymethacrylate matrix coupled with a hydrophobic ligand of Phenyl or Butyl series.

11. The method according to claim 1, wherein the hydrophobic chromatography has a pH value of 6.0-8.5.

12. The method according to claim 1, wherein the hydrophobic chromatography has a conductivity not greater than 30 ms/cm.

13. The method according to claim 1, wherein aminoguanidine in a loading solution for the hydrophobic chromatography has a concentration of 1-100 mmol/g recombinant protein.

14. The method according to any one of claims 1 to 13, wherein the aminoguanidine is in a form of salt thereof.

15. The method according to any one of claims 1 to 13, wherein the sample containing the recombinant protein is a fermentation supernatant.