CLAIMS

1. A method for purifying a recombinant polypeptide comprising the steps of: i) providing a solution comprising the recombinant polypeptide; ii) adding an alkyl glycoside to the solution; and iii) purifying the recombinant polypeptide by carrying out a step of chromatography on the solution.

2. The method of claim 1, wherein the alkyl glycoside is additionally included in the wash buffer of the chromatography step

3. The method of claim 1, wherein step (iii) results in separation of the recombinant polypeptide from host cell DNA and/or host cell protein in the solution and/or from other protein impurities in the solution.

4. The method of claim 3, wherein step (iii) results in improved separation of the recombinant polypeptide from host cell DNA and/or host cell protein in the solution compared to the same process without adding the alkyl glycoside to the solution.

5. The method of claim 1, wherein the chromatography is immunoaffinity chromatography, affinity chromatography, hydrophobic interaction chromatography, ion exchange chromatography, multimodal chromatography, size exclusion chromatography, or metal chelate chromatography.

6. The method of claim 5, wherein the chromatography is immunoaffinity chromatography.

7. The method of claim 1, wherein an ion exchange chromatography step is carried out on the solution before the step of adding the alkyl glycoside to the solution.

8. The method of claim 1, wherein a hydrophobic interaction chromatography step is carried out on the solution after step (iii), and/or wherein a multimodal chromatography step is carried out on the solution after step (iii).

9. The method of claim 8, wherein an ion exchange chromatography step is carried out on the solution after the hydrophobic interaction or multimodal chromatography step.

10. The method of claim 1, wherein the method is for separating the recombinant polypeptide from host cell DNA and/or host cell protein and comprises the steps of: a) providing the solution comprising the recombinant polypeptide; b) purifying the recombinant polypeptide by carrying out a step of ion exchange chromatography on the solution; c) adding an alkyl glycoside to the solution; d) purifying the recombinant polypeptide by carrying out a step of immunoaffinity chromatography on the solution; e) purifying the recombinant polypeptide by carrying out a step of hydrophobic interaction or multimodal chromatography on the solution; and f) purifying the recombinant polypeptide by carrying out a further step of ion exchange chromatography on the solution.

11. The method of claim 5, wherein the ion exchange chromatography is anion exchange chromatography.

12. The method of claim 1, wherein the method provides a solution comprising a level of host cell DNA contamination that is less than 5000 pg/ml; and/or wherein the method provides a solution of the recombinant polypeptide comprising a level of host cell DNA contamination that is reduced by a factor of at least 1.5, when compared to a reference method in which no alkyl glycoside is used or a conventional S/D treatment is used.

13. The method of claim 1, wherein the method provides a solution comprising a level of host cell protein contamination that is less than 5000 ng/ml; and/or wherein the method provides a solution of the recombinant polypeptide comprising a level of host cell protein (HCP) contamination that is reduced by a factor of at least 1.5, when compared to a reference method in which no alkyl glycoside is used or a conventional S/D treatment is used.

14. The method of claim 1, wherein step ii) further comprises incubating the solution.

15. A method for inactivating one or more viruses in a solution comprising a step of adding an alkyl glycoside to the solution and incubating the solution.

16. The method of claim 15, wherein the solution is i) a solution comprising a recombinant polypeptide, or ii) plasma-derived material.

17. The method of claim 15, wherein the incubation is carried out for between 20 minutes and 5 hours.

18. The method of claim 15, wherein the incubation is carried out at room temperature or between 4 °C and 10 °C.

19. The method of claim 15, wherein the final concentration of the alkyl glycoside before the incubation is above the critical micelle concentration (CMC) of the alkyl glycoside.

20. The method of claim 15, wherein the incubation is carried without agitation.

21. The method of claim 1, wherein the recombinant polypeptide is from a cell line recombinantly producing the polypeptide.

22. The method of claim 1, wherein the recombinant polypeptide is a blood coagulation protein, albumin, an immunoglobulin, or a fusion protein.

23. The method of claim 1, wherein the solution in step (i) has between 0.1 µg/ml and 50 µg/ml of host cell DNA and/or between 50 µg/ml and 1000 µg/ml of host cell protein.

24. The method of claim 1, wherein the alkyl glycoside is n-octyl-beta-D-glucopyranoside, or is selected from the group consisting of n-decyl-beta-D-glucopyranoside, n-octyl-beta-D-maltoside, n-dodecyl-beta-D-maltoside, n-dodecyl-beta-D-glucopyranoside, and n-decyl-beta-D-maltoside.

25. The method of claim 1, wherein the solution is further treated after step (iii) and any additional purification steps by a step of viral filtration.

26. The method of claim 1, wherein the solution is further treated after step (iii) and any additional purification steps by one or more steps of ultrafiltration and/or diafiltration.

27. The method of claim 1, further comprising mixing the purified recombinant polypeptide with a pharmaceutically-acceptable carrier to make a pharmaceutical composition.

28. The method of claim 1, wherein the alkyl glycoside is added without any organic solvent and/or the alkyl glycoside is added without any prior mixing with an organic solvent.

29. A solution comprising a recombinant polypeptide and an alkyl glycoside, wherein the solution is obtained from step ii) of the method of claim 1.

30. A solution comprising a purified recombinant polypeptide, wherein the solution is obtained by the method of claim 1.

31. A method for purifying a recombinant polypeptide comprising the steps of: i) providing a solution comprising the recombinant polypeptide, and ii) purifying the recombinant polypeptide by carrying out a step of chromatography on the solution, wherein an alkyl glycoside is included in the wash buffer of the chromatography step.

32. The method of claim 31, wherein step ii) results in separation of the recombinant polypeptide from host cell DNA, host cell protein, and/or other protein impurities in the solution.

33. The method of claim 32, wherein step ii) results in improved separation of the recombinant polypeptide from host cell DNA, host cell protein, and/or other protein impurities in the solution, as compared to a reference method in which the alkyl glycoside is not included in the wash buffer.