What is claimed

1. A method for reducing the viscosity of a liquid composition comprising a protein in a concentration in the range of at least 50 mg/ml up to 300 mg/ml, comprising the step of combining the liquid composition with at least camphorsulfonic acid as an excipient in a concentration with a viscosity-reducing effect.

2. The method of claim 1, comprising the step of combining the liquid composition with camphorsulfonic acid and at least one cationic excipient.

3. The method of claim 2, wherein the at least one cationic excipient is selected from the list comprising arginine, meglumine, ornithine and carnithine.

4. The method of claims 1, 2 or 3, wherein the viscosity is reduced compared to an identical liquid composition not comprising camphorsulfonic acid or compared to an identical liquid composition not comprising camphorsulfonic acid and at least one cationic excipient, preferably selected from a group consisting of arginine, meglumine, ornithine, and carnithine.

5. The method according to any one of the claims 2 to 4, wherein the at least one cationic excipient is arginine.

6. The method according to any one of the claims 1 to 5, wherein the liquid composition is a liquid pharmaceutical formulation and the protein is a pharmaceutically active protein.

7. The method according to any one of the claims 1 to 6, wherein the protein is selected from the group of an antibody, an antibody fragment, a minibody, a nanobody, a modified antibody, an antibody-like molecule, an antibody-drug conjugate and a fusion protein.

8. The method according to any one of the claims 1 to 7, wherein the viscosity of the liquid composition is reduced by at least 12%, preferably by at least 50%.

9. The method according to any one of the claims 1 to 8, wherein the concentration of the protein is between 90 mg/ml to 250 mg/ml.

10. The method according to any one of the claims 1 to 9, wherein the concentration of camphorsulfonic acid is less than about 500 mM, especially less than 200 mM.

11. The method according to any one of the claims 1 to 10, wherein the pH of the liquid composition is in the range between about 3 to about 8 and comprising a buffer.

12. A liquid composition obtainable by the method of any one of the claims 1 to 11 having a reduced viscosity compared to an identical liquid composition without the excipient or without the excipient combinations.

13. Use of the method according to any one of the claims 1 to 11 in a bioprocess.

14. Use of the method according to claim 13, wherein the permeate flux of the liquid composition in a filtration step is increased compared to an identical liquid composition not comprising camphorsulfonic acid or compared to an identical liquid composition not comprising camphorsulfonic acid and at least one cationic excipient, preferably selected from a group consisting of arginine, meglumine, ornithine, and carnithine.

15. Use of the method according to claims 13 or 14, wherein the protein recovery after buffer exchange and volume reduction in a filtration step is increased compared to an identical liquid composition not comprising camphorsulfonic acid or compared to an identical liquid composition not comprising camphorsulfonic acid and at least one cationic excipient, preferably selected from a group consisting of arginine, meglumine, ornithine, and carnithine.