**Claims**

1. Method for the production of a biopolymer, wherein the biopolymer has a defined average molecular weight, the method comprising
   - lyophilizing a composition comprising the biopolymer,
   - optionally purifying and/or isolating the biopolymer;

   wherein the maximum temperature during the lyophilization process is selected to facilitate a controlled and defined degradation of said biopolymer,

   wherein the temperature during the lyophilization process is selected from a range between 0 °C and 140 °C,

   wherein the composition comprising the biopolymer has a pH value selected from a range between 1.5 and 8.5, and

   wherein the composition is an emulsion comprising:
   (i) the biopolymer,
   (ii) water,
   (iii) a pharmaceutically, dermatologically or cosmetically acceptable oil,
   (iv) an emulsifying agent and
   (v) optionally emollients.

2. The method according to claim 1, wherein the biopolymer has a pH value selected from a range between 2.5 and 6.

3. The method according to claim 1 or claim 2, wherein the pressure during the sublimation process is selected from a range between 50 µbar and 800 µbar.

4. The method according to any of the preceding claims, wherein the biopolymer is selected from the group consisting of hyaluronic acid, collagen, glucosamino glycans, polysaccharides and fucoidanes.

5. The method according to claim 4, wherein the biopolymer is hyaluronic acid.

6. A method for the production of compositions, comprising a biopolymer, wherein the biopolymer has a defined average molecular weight, the method comprising:
   - providing a base composition comprising a biopolymer with native high molecular weight,

– lyophilizing the base composition;

wherein the maximum temperature during the lyophilization process is selected to facilitate a controlled and defined degradation of the biopolymer,

wherein the temperature during the lyophilization process is selected from a range between 0 °C and 140 °C.

7. The method according to claim 6, wherein the base composition is an emulsion or an aqueous solution.

8. The method according to claim 6, wherein the base composition additionally comprises further dermatological, pharmaceutical or cosmetic additions.

9. The method according to any of the claims 6 to 8, wherein the base composition further comprises stabilizers and/or preserving agents.

10. The method according to any of the claims 6 to 9, wherein the base composition is prepared in a lyophilization process container.

11. The method according to claim 10 wherein the container also acts as packaging for the lyophilized base composition.

12. The method according to any of claims 6 to 11, wherein the biopolymer is selected from the group consisting of hyaluronic acid, collagen, glucosamino glycans, polysaccharides and fucoidanes.

13. The method according to claim 12, wherein the biopolymer is hyaluronic acid.

14. Use of a method according to any of the claims 1 to 3 for the production of a pharmaceutically, dermatologically or cosmetically acceptable biopolymer.

15. Use of a method according to any of the claims 6 to 13 for the production of pharmaceutically, dermatologically or cosmetically acceptable compositions comprising a biopolymer.

16. A composition comprising:

(i) a biopolymer having a defined average molecular weight and a pH value selected from a range between 1.5 and 8.5,

(ii) water,

(iii) optionally one or more pharmaceutically, dermatologically, and/or cosmetically acceptable compounds and/or oils,

(iv) optionally an emulsifying agent,

optionally additionally pharmaceutically, dermatologically and/or cosmetically active compounds.

17. A pharmaceutical, dermatological or cosmetic product incorporating a composition according to claim 16.