Claims

1. A method of generating an aerosol comprising the steps:
   (a) providing a liquid aqueous composition comprising a polyclonal immunoglobulin (Ig), wherein the concentration of the Ig is in the range of 40 to 200 mg per mL;
   (b) providing a membrane nebulizer having a reservoir into which the composition is filled; and
   (c) nebulizing the composition using the nebulizer to obtain an aerosol
   wherein the reservoir is isolated from the atmosphere so that the pressure inside the reservoir decreases before or during step (c).

2. The method of claim 1, wherein the concentration of the Ig in the composition is in the range of 50 to 120 mg per mL.

3. The method of claim 1 or 2, wherein the composition further comprises a stabilizer.

4. The method of claim 3, wherein the stabilizer is proline.

5. The method of any one of claims 1 to 4, wherein the composition further comprises a surfactant.

6. The method of claim 1, wherein the reservoir is isolated from the atmosphere by a sealing element (16) arranged on an opening in the reservoir (10) to provide a gas-tight seal for the opening, and a slidable element (21) connected to the sealing element (16) in such a way that a movement of the slidable element (21) effects a movement of at least one section (18) of the sealing element (16) whereby a negative pressure is generated in the reservoir (10).

7. The method of any one of claims 1 to 6, wherein the membrane nebulizer is a vibrating membrane nebulizer.

8. The method of any one of claims 1 to 7, wherein the membrane nebulizer comprises a vibratable membrane (122) having a first side (124) for being in contact with the fluid and an opposite second side (125), the membrane having a plurality of through holes (126) penetrating the membrane in an extension direction (E) from the first side to the second side, the fluid passing the through holes from the first side to the second side when the membrane is vibrated for generating the aerosol at the second side, each through hole (126) having along its extension direction (E) a smallest diameter (D_S), a larger diameter (D_L) that is up to three times larger than the smallest diameter, each through hole having a nozzle portion (132) defined by that continuous portion of the through hole in the extension direction comprising the smallest diameter of the through hole and bordered by the larger diameter of the through hole, characterized in that the ratio of the total length of each through hole (126) in the extension direction to the length of a respective one of said nozzle portions (132) in the extension direction is at least 4.

9. The method of any one of claims 1 to 8, wherein the nebulizer is adapted for generating an aerosol targeting the lower respiratory tract of a patient.

10. The method of any one of claims 1 to 8, wherein the nebulizer is adapted for generating an aerosol targeting the upper respiratory tract of a patient.

11. The method of any one of the claims 1 to 10, wherein the nebulizer is an active membrane nebulizer.

12. The method of any one of claims 1 to 11, wherein the immunoglobulin (Ig) is polyclonal immunoglobulin G (IgG), polyclonal immunoglobulin A (IgA), and/or polyclonal immunoglobulin M (IgM).

13. The method of any one of claims 1 to 12, wherein the delivered aerosol contains at least 50% of the dose of the Ig in the composition filled into the nebulizer reservoir.

14. The method of any one of claims 1 to 13, wherein the activity of the Ig in the aerosol is at least 80% of the Ig in the composition filled into the nebulizer reservoir.

15. The method of any one of claims 1 to 14, wherein the polyclonal immunoglobulin is obtained from the plasma of human donors.