CLAIMS

1. Use of hyaluronic acid in the manufacture of a pharmaceutical composition for therapeutic treatment of hair loss in a patient in need thereof, wherein the pharmaceutical composition is to be administered to the skin of the patient, and wherein the pharmaceutical composition comprises hyaluronic acid in a concentration of 1 mcg/mL to 250 mcg/mL, or 0.02 wt. percent to 0.04 wt. percent.

2. The use of claim 1, wherein the hyaluronic acid comprises an average molecular weight in a range of 4,000 Da to 10,000 Da or in a range of 20 KDa to 1350 KDa.

3. The use of claim 1 or 2, wherein the hyaluronic acid is cross-linked and optionally wherein the cross-linked hyaluronic acid density is 20% or greater.

4. The use of any one of claims 1 to 3, wherein the hyaluronic acid is present in a concentration of 50 mcg/mL to 250 mcg/mL.

5. The use of any one of claims 1 to 4, wherein the pharmaceutical composition is to be injected into the skin.

6. The use of claim 5, wherein the pharmaceutical composition is to be injected into a dermal layer of the skin.

7. The use of claim 6, wherein the pharmaceutical composition is to be injected for 400 microns to 2 mm deep into the skin.

8. The use of any one of claims 6 to 7, wherein the pharmaceutical composition is to be administered in a plurality of injections in an amount of 400 injections/cm^2 skin to 650 injections/cm^2 skin.

9. The use of any one of claims 1 to 8, wherein the pharmaceutical composition is to be further applied with iontophoresis to the skin.

10. The use of any one of claims 1 to 9, wherein the pharmaceutical composition is to be further applied with electroporation to the skin.

11. The use of any one of claims 1 to 10, wherein the pharmaceutical composition is to be further applied with laser ablation to the skin.

12. The use of any one of claims 1 to 11, wherein the pharmaceutical composition is to be further applied with radiofrequency thermal ablation to the skin.

13. The use of any one of claims 1 to 12, wherein the pharmaceutical composition is to be further applied with a needle to the skin.

14. The use of claim 13, wherein the needle is a microneedle device.

15. The use of any one of claims 1 to 14, wherein the pharmaceutical composition further comprises a CD44-binding ligand.

16. The use of claim 15, wherein the CD44-binding ligand is osteopontin.

17. A pharmaceutical composition for the therapeutic treatment of hair loss in a patient in need thereof, the pharmaceutical composition comprising: hyaluronic acid in a concentration of 1 mcg/mL to 250 mcg/mL, or 0.02 wt. percent to 0.08 wt. percent, wherein the pharmaceutical composition is formulated for parenteral administration to the skin of the patent.

18. The pharmaceutical composition of claim 17, wherein the hyaluronic acid comprises an average molecular weight in a range of about 4,000 Da to 10,000 Da or in a range of 20 KDa to 1350 KDa.

19. The pharmaceutical composition of claim 17, wherein the hyaluronic acid is cross-linked and optionally wherein the cross-linked hyaluronic acid density is about 20% or greater.

20. The pharmaceutical composition of claim 17, wherein the pharmaceutical composition is formulated for parenteral administration at a depth of 400 microns to 2 mm into the skin.

21. The pharmaceutical composition of claim 17, wherein the pharmaceutical composition is formulated for parenteral administration by a microneedle.

22. The pharmaceutical composition of claim 17, wherein the pharmaceutical composition further comprises a CD44-binding ligand.

23. The pharmaceutical composition of claim 22, wherein the CD44-binding ligand is osteopontin.