CLAIMS

1. A peptide for stimulating hair growth, comprising a sequence having at least 80%, at least 85%, at least 90%, at least 95, or at least 99%, sequence identity with a sequence selected from the group consisting of SEQ ID NOs: 1 to 96.

2. The peptide of claim 1, wherein the peptide comprises a sequence having at least 80%, at least 85%, at least 90%, at least 95, or at least 99%, sequence identity with SEQ ID NO: 96.

3. The peptide of any of claims 1 to 2, wherein the peptide comprises SEQ ID NO: 97 or a variant thereof.

4. The peptide of any of claims 1 to 2, wherein the peptide comprises SEQ ID NO: 98 or a variant thereof.

5. The peptide of any of claims 1 to 2, wherein the peptide comprises SEQ ID NO: 97 or a variant thereof and SEQ ID NO: 98 or a variant thereof.

6. The peptide of any preceding claims, wherein the peptide has a length of no more than 295 amino acids, no more than 250 amino acids, no more than 200 amino acids, no more than 150 amino acids, no more than 100 amino acids, or no more than 60 amino acids.

7. A composition for stimulating hair growth, comprising the peptide of any of claims 1 to 6.

8. The composition of claim 7, wherein the composition comprises about 0.01 wt % or greater of the peptide.

9. The composition of claim 7 or 8, wherein the composition further comprises one or more additional ligands that bind to CD44 that are selected from the group consisting of serglycin,

chondroitin or a salt thereof, fibrin, collagen, fibronectin, insulindike growth factorbinding protein (IGFBP), green fluorescent protein (GFP), and any combinations thereof.

10. The composition of any of claims 7 to 9, wherein the composition further comprises hyaluronic acid.

11. The composition of claim 10, wherein the hyaluronic acid has a molecular weight in a range of about 20 kDa to 1350 kDa, about 4 kDa to about 10 kDa, about 10 kDa to about 100 kDa, about 15 kDa to about 50 kDa, or about 75 kDa to about 350 kDa.

12. The composition of claim 10 or 11, wherein the hyaluronic acid is cross-linked.

13. The composition of any of claims 7 to 12, wherein the composition comprises a hyaluronidase inhibitor.

14. The composition of any of claims 7 to 13, wherein the composition comprises a carrier medium, optionally wherein the carrier medium comprises a saline solution.

15. A method of stimulating hair growth in a skin of a patient in need thereof, comprising administering to the skin of the patient the composition of any of claims 7 to 14.

16. The method of claim 15, wherein the administering comprises applying the composition to a surface of the skin, or wherein the administering comprises injecting the composition into a dermal layer or a hypodermal layer of the skin.

17. The method of any of claims 15 to 16, wherein the composition is encased in a liposome.

18. The method of any of claims 15 to 17, wherein the method further comprises applying at least one of: electroporation to the skin, sonophoresis to the skin, laser ablation to the skin, magnetophoresis to the skin, radiofrequency thermal ablation to the skin, or a microneedle device to the skin.

19. A peptide for stimulating hair growth, comprising a sequence having at least 80%, at least 85%, at least 90%, at least 95, or at least 99%, sequence identity with a sequence selected from the group consisting of SEQ ID NOs: 97 or 98.

20. A nucleotide encoding any of the peptides of claims 1 to 19.