Claims:

1. Skin care composition comprising low molecular weight acetylated hyaluronic acid or its sodium salt, characterized in that the low molecular weight acetylated hyaluronic acid or its sodium salt has a weight average molecular weight of 50 kDa or less and an average degree of acetylation in the range of greater than 3.6 to 4.0.

2. The skin care composition according to claim 1, characterized in that the low molecular weight acetylated hyaluronic acid or its sodium salt has an average degree of acetylation in the range of 3.7 to 4.0, more particularly in the range of 3.8 to 4.0, more particularly in the range of 3.9 to 4.0, and more particularly still of 4.0.

3. The skin care composition according to claim 1 or claim 2, characterized in that the low molecular weight acetylated hyaluronic acid or its sodium salt has a weight average molecular weight of 35 kDa or less, more particularly of about 30 kDa or less.

4. The skin care composition according to any of the preceding claims, characterized in that the low molecular weight acetylated hyaluronic acid or its sodium salt has a polydispersity index that is less than 2.0, more particularly less than 1.8, more particularly less than 1.7, more particularly less than 1.6 or less, more particularly less than 1.5, and still more particularly about 1.4 or less.

5. The skin care composition according to any one of the preceding claims, characterized in that the degree of acetylation is determined by quantitative 2D NMR.

6. A method of preparing low molecular weight acetylated hyaluronic acid having a weight average molecular weight of 50 kDa or less and an average degree of acetylation in the range of greater than 3.6 to 4.0, comprising the steps of

   (i) selecting low molecular weight hyaluronic acid having a molecular weight of 50 kDa or less, more particularly 35 kDa or less, or still more particularly 30 kDa or less;

   (ii) subjecting it to acetylation conditions, wherein the acetylation conditions preferably comprise the step of reacting the low molecular weight hyaluronic acid with an acetic acid/acetic anhydride mixture in the presence of a strong acid; and

   (iii) isolating the low molecular weight acetylated hyaluronic acid by precipitation using additive water.

7. A method of preparing the sodium salt of low molecular weight acetylated hyaluronic acid having a weight average molecular weight of 50 kDa or less and an average degree of acetylation in the range of greater than 3.6 to 4.0, comprising the steps of

(i) selecting low molecular weight hyaluronic acid having a molecular weight of 50 kDa or less, more particularly 35 kDa or less, or still more particularly 30 kDa or less;

(ii) subjecting it to acetylation conditions, wherein the acetylation conditions preferably comprise the step of reacting the low molecular weight hyaluronic acid with an acetic acid/acetic anhydride mixture in the presence of a strong acid;

(iii) isolating the low molecular weight acetylated hyaluronic acid by precipitation using additive water; and

(iv) reacting the low molecular weight acetylated hyaluronic acid with a base that provides a source of sodium ions to obtain a solution of sodium acetyl hyaluronate.

8. The method according to claim 7, wherein the conversion of low molecular weight acetylated hyaluronic acid to sodium acetyl hyaluronate is carried out at a pH that does not exceed 9, more particularly that does not exceed 8, more particularly that does not exceed 7, and still more particularly that does not exceed 6.5.

9. The method according to claim 7 or claim 8, further comprising the step of

(v) dehydrating the solution by lyophilization or spray-drying.

10. Low molecular weight acetylated hyaluronic acid or its sodium salt having a weight average molecular weight of 50 kDa or less and an average degree of acetylation in the range of greater than 3.6 to 4.0, characterized in that it is in the form of a white powder having an L* value of about 90 or more, and a b* value of less than about 8.

11. A method of inhibiting the degradation of the skin's extracellular matrix associated with elevated levels of matrix-degrading enzymes, said method comprising the step of applying to the skin an effective amount of the skin care composition according to any one of claims 1 to 5 or the low molecular weight acetylated hyaluronic acid or its sodium salt according to claim 10.

12. The method according to claim 11, which is a method of reducing the visible signs of aging on the skin.

13. The method according to claim 11 or claim 12, wherein the matrix-degrading enzymes are metalloproteinases, in particular MMP-1 or MMP-3.

14. The method according to any one of the claims 11 to 13, wherein the acetylated hyaluronic acid or its sodium salt inhibits the degradation of collagen in the extra-cellular matrix.