CLAIMS

1. Use of an exosome derived from a mesenchymal stem cell (MSC) in the preparation of a pharmaceutical composition for the treatment or prevention of alopecia.

2. Use according to Claim 1 for the preparation of a pharmaceutical composition for treating or preventing hair loss, sparse hair growth, short hair growth, thin hair growth, partial or complete hair loss on the scalp, alopecia, androgenic alopecia, alopecia androgenetica, male pattern baldness, female pattern baldness, non-androgenic alopecia, alopecia areata, alopecia totalis, alopecia universalis, radiation induced alopecia, alopecia due to radiotherapy, drug induced alopecia, alopecia due to chemotherapy, traumatic alopecia, scarring alopecia, psychogenic alopecia, stress related alopecia or anagen effluvium or in promoting or enhancing hair growth or regrowth, or preventing hair loss.

3. A cosmetic use of an exosome derived from a mesenchymal stem cell (MSC) for promoting or enhancing hair growth or regrowth or preventing hair loss, or both.

4. A cosmetic use according to Claim 3 for treating or preventing loss of hair, absence of hair growth or balding.

5. Use according to any preceding claim, in which the exosome is formulated for administration to a human.

6. Use according to any preceding claim, in which the exosome is formulated for subcutaneous injection or topical application .

7. Use according to any preceding claim, in which the exosome is comprised in a composition comprising a pharmaceutically acceptable carrier or a cosmetically acceptable carrier.

8. Use according to Claim 7, in which the composition further comprises a hair stimulating agent.

9. Use according to any preceding claim, in which the exosome is formulated for application to the skin, scalp, eyebrow or eyelashes.

10. Use according to any preceding claim, which improves the appearance of hairs to which the exosome is applied, for example by thickening the hair and improving the lustre, condition and manageability of the hair.

11. Use according to Claim 7 or 8, in which the composition comprises 40 μg/ml or less, 20 μg/ml or less, 8 μg/ml or less, 4 μg/ml or less, 2 μg/ml or less or 1.2 μg/ml or less of exosome.

12. Use according to Claim 7, 8 or 11, in which the composition comprises 0.01 to 10 w/w % of exosome in a dermatological composition comprising a dermatologically acceptable carrier applied to the area to be treated from 1 to 4 times daily or 1 to 3 w/w% of exosome applied once or twice daily.

13. Use according to any preceding claim, in which the exosome:

(a) has a size of between 50 nm and 100 nm as determined by electron microscopy;

(b) comprises a complex of molecular weight >100 kDa, for example comprising proteins of <100 kDa;

(c) comprises a complex of molecular weight > 300 kDa, for example comprising proteins of < 300 kDa;

(d) comprises a complex of molecular weight > 1000 kDa;

(e) has a size of between 2 nm and 200 nm, such as a size of between 50 nm and 150 nm or a size of between 50 nm and 100 nm, for example as determined by filtration against a 0.2μM filter and concentration against a membrane with a molecular weight cut-off of 10 kDa; or

(f) a hydrodynamic radius of below 100 nm, such as between about 30 nm and about 70 nm, between about 40 nm and about 60 nm, such as between about 45 nm and about 55 nm, such as about 50 nm, for example as determined by laser diffraction or dynamic light scattering.