CLAIMS

1. Processes to prepare stem cells fractions of lipid tissue origin, comprising the steps of:

(a) collecting or receiving a sample of lipid tissue containing the stem cells;

(b) washing the sample of step (a) with a suitable aqueous buffer;

(c) incubating the sample of step (b) with an enzyme capable to digest the lipid tissue and extract therefrom the stem cells;

(d) recovering the aqueous phase from the product of step (c);

(e) purifying the aqueous phase obtained in step (d);

(f) titrating the aqueous phase obtained in step (e) and, if necessary, diluting it to obtain a final stem cell fraction with desired concentration and volume

wherein the stem cells-containing material is treated within a single collecting device syringe (SCD) throughout at least the steps: (a), (b), and (c), said SCD syringe performing the functions of collecting means, phase separator and process reactor.

2. Process according to claim 1, wherein the SCD syringe has a filling volume comprised between 20 and 100 mL).

3. Process according to claims 1-2, wherein the SCD is a syringe is , provided with one or more marks to indicate the optimal filling volume(s), and/or with areas for writing or labelling.

4. Process according to claims 1-3, wherein the lipid material is a lipoaspirate.

5. Process according to claims 1-4, wherein the step (a) and (b-d) respectively, are performed by two different operators at locations remote from each other.

6. Process according to claims 1-5, wherein in step (b) the buffer is a PBS buffer supplemented with enzyme nutrients.

7. Process according to claims 1-6~~, using a syringe as SCD,~~ in which the steps (b) and/or (c) include orienting the syringe downwards (needle down) or upwards (needle up), followed by ejecting the phase proximal to the needle.

8. Process according to claims 1-7, wherein in step (c) the enzyme is a liberase, and the incubation is performed for 20 to 80 minutes, at a temperature from 30 to 45°C.

9. Process according to claims 1-8, wherein in step (d), the incubated mixture is mixed with an albumin-containing solution, then the lipid phase is discarded and the aqueous phase is recovered for the subsequent process steps.

10. Process according to claims 1-9, where the stem cells-containing material is further maintained within the said ~~SCD~~ syringe during one or more of the steps (d)-(e).

11. Process according to claims 1-10, wherein purification in step (e) is performed by centrifugation(s) and/or filtration(s).

12. Process according to claims 1-11, wherein the final stem cell fraction is formulated as one or more units of 1-5 mL~~l~~, with a total nucleated cell concentration comprised between 10^8 to 10^4 cells/mL.

~~13. A stem cell fraction obtained by the process of claims 1-12.~~

~~14. A stem cell fraction of claim 13, for use as an ingredient for tissue filling, wound healing, tissue or organ reconstruction.~~