CLAIMS

1. Adipose tissue lipoaspirated or removed from the body containing mesenchymal stem cells (MSCs), wherein the tissue has improved anti-inflammatory properties and improved repair ability, since in said tissue:

- the expression of inflammatory cytokines is eliminated such as tumor necrosis factor-alpha (TNF-alpha);

- the expression of its natural inhibitor TSG-6 and of interleukin 15 is considerably enhanced;

- the expression of leptin is considerably improved;

and the parameters that define the sternness are increased such as the expression of pluripotency-related genes (SOX2, OCT4, Nanog), of beta-tubulin III and TSG6 mRNA, which tissue is for being used as a medicine.

2. Tissue according to claim 1 for being used in the treatment of motor and coordination dysfunctions.

3. Tissue according to claim 1 for being used in the treatment of Parkinson's disease.

4. Tissue according to claim 1 for being used in the treatment of spinal cord injuries.

5. Mesenchymal stem cells contained in adipose tissue lipoaspirated or removed from the body, wherein the cells have improved anti-inflammatory properties and improved repair ability, since in said cells:

- the expression of inflammatory cytokines is eliminated such as tumor necrosis factor-alpha (TNF-alpha);

- the expression of its natural inhibitor TSG-6 and of interleukin 15 is considerably enhanced;

- the expression of leptin is considerably improved;

and the parameters that define the sternness are increased such as the expression of pluripotency-related genes (SOX2, OCT4, Nanog), of beta-tubulin III and TSG6 mRNA, which cells are for being used as a medicine.

6. Mesenchymal stem cells according to claim 5 for being used in the treatment of motor and coordination dysfunctions.

7. Mesenchymal stem cells according to claim 5 for being used in the treatment of Parkinson's disease.

8. Mesenchymal stem cells according to claim 5 for being used in the treatment of spinal cord injuries.

9. Adipose tissue lipoaspirated or removed from the body containing mesenchymal stem cells (MSCs), wherein the tissue has improved anti-inflammatory properties and improved repair ability, since in said tissue:

- the expression of inflammatory cytokines is eliminated such as tumor necrosis factor-alpha (TNF-alpha);

- the expression of its natural inhibitor TSG-6 and of interleukin 15 is considerably enhanced;

- the expression of leptin is considerably improved;

and the parameters that define the sternness are increased such as the expression of pluripotency-related genes (SOX2, OCT4, Nanog), of beta-tubulin III and TSG6 mRNA.

10. Tissue according to any one of claims 1 to 4, and 9 whereby the tissue is obtained by a method comprising at least one step of mechanical activation performed by applying a orbital shaking force on a adipose tissue lipoaspirated or removed from the body, characterized in that the applied force has an intensity ranging from 40 to 120 x g and characterized in that said force is applied for a time ranging from 3 to 20 minutes.

11. Stem cells according to any one of claims 5 to 8 whereby the tissue is obtained by a method comprising at least one step of mechanical activation performed by applying a orbital shaking force on a adipose tissue lipoaspirated or removed from the body, characterized in that the applied force has an intensity ranging from 40 to 120 x g and characterized in that said force is applied for a time ranging from 3 to 20 minutes.

12. Tissue according to any one of claims 1 to 4 whereby the tissue is obtained by a method comprising:

- at least one step of mechanical activation performed by applying a orbital shaking force on a adipose tissue lipoaspirated or removed from the body, characterized in that the applied force has an intensity ranging from 40 to 120 x g and characterized in that said force is applied for a time ranging from 3 to 20 minutes,

- a step isolating and expanding the mesenchymal stem cells contained in said adipose tissue lipoaspirated or removed from the body (ADSCs) comprising the steps of:

- inoculation of 2 ml of mechanically activated adipose tissue in 25 cm^2 flask completely filled with culture medium "Dulbecco's modified Eagle's Medium" (DMEM) supplemented with 20% fetal bovine serum;

- incubation at 37°C in 5% C02;

- turning upside-down the flask such that cells float up and adhere to the top inner ceiling surface of the flask;

- removing the culture medium and tissue after 15 days and turning upside-down the flask so that the cells are on the bottom;

- replacing the culture medium every 4 days until reaching cell confluence of 90-95%.