CLAIMS

1. A medical device or kit for the preparation of Bone Marrow Concentrate (BMC) and/or Plasma Concentrate (PC), the medical device or kit comprising:
a first container wherein said first container comprises or is pre-filled with:
i) at least one anticoagulant,
ii) a cell selector gel (CSG),
iii) a first biomaterial, and
iv) optionally at least one blood, bone marrow, cells and/or platelet preservation solution;
wherein a collection device, is also provided that is affixable to said first container for collection of blood and/or bone marrow into said first container; a second container is also provided for the collection of PC and/or BMC from said first container wherein said second container comprises or is pre-filled with a second biomaterial; and optionally a collection device is also provided for being affixed to said second container for the collection of PC and/or BMC from said first container into said second container; and wherein at least one of said first and second biomaterials is selected from hyaluronic acid, chitosan, silk protein or fibroin or any combination thereof.

2. A medical device or kit according to claim 1, wherein said first and/or said second container is a tube under vacuum.

3. A medical device or kit for the preparation of Bone Marrow Concentrate (BMC) and/or Plasma Concentrate (PC), the medical device or kit comprising:
a first container wherein said first container comprises or is pre-filled with:
i) at least one anticoagulant,
ii) a cell selector gel (CSG), and
iii) at least one biomaterial.

wherein a collection device is affixable to said first container for collection of blood and/or bone marrow into said first container, and
a syringe for the collection of PC and/or BMC from said first container, wherein said syringe comprises or is pre-filled with a biomaterial; and wherein at least one of said biomaterials is selected from hyaluronic acid, chitosan, silk protein or fibroin or any combination thereof.

4. A medical device or kit according to claim 3, wherein said syringe contains two or more chambers wherein each chamber contains a composition selected from said biomaterial, or cell extract, PC or BMC and/or coagulation activator, wherein said compositions are isolated from each other in their respective chambers.

5. A medical device or kit according to claim 3 or claim 4, wherein said first or second container or syringe further comprises or is pre-filled with a cell extract.

6. A medical device or kit according to claim 5, wherein said cell extract is selected from an extract of keratinocytes, bone marrow, fibroblasts, periosteum or corneal cells, melanocytes and Langerhans cells, fat cells, muscle cells such as myoblasts and satellite cells, osteoblasts, chondrocytes, umbilical cord cells, stem cells, mesenchymal stem cells (MSCs), pre-adipocytes, adipocytes, pre-endhotelial cells, Schwann cells or Achilles tendon cells.

7. A medical device or kit according to any one of claims 3 to 6, wherein said first or second container or syringe is further pre-filled with a coagulation activator.

8. A medical device or kit according to any one of claims 3 to 7, wherein said first or second container or syringe is further pre-filled with or comprises: at least one anticoagulant; and/or
at least one PC or BMC preservation solution; and/or
thrombin serum, tricalcium phosphate (TCP), a bone substitute, hyaluronic acid composition, calcium gluconate, calcium saccharate, chitosan, fibroin, fibroin-silk protein or fibroin proteins, growth factors, mannitol, collagen, albumin, ascorbic acid, cream, fat cells, fat tissue, bone marrow concentrate, lubricin, cd-gelatin, or botulinum toxin.

9. A medical device or kit according to any preceding claim, further characterised in that:
a) said medical device or kit comprises a tube or syringe; and/or
b) said medical device or kit comprises a container or syringe under vacuum; and/or
c) said medical device or kit comprises a tube or syringe which allows the withdrawal of 1 ml to 20 ml of whole blood, bone marrow, PC or BMC; and/or

d) said medical device or kit comprises a container and/or syringe which is sterile and/or non-pyrogenic; and/or

e) said medical device or kit comprises a container suitable for the preparation of PRP, autologous PRP, PC, autologous PC and/or autologous BMC; and/or

f) said medical device or kit comprises a container suitable for the preparation of 2ml to 10 ml, of PRP, autologous PRP, autologous PC and/or autologous BMC; and/or

g) said medical device or kit comprises a syringe pre-filled with or comprises from 0.5 ml to 5 ml of biomaterial; and/or

h) said medical device or kit comprises a container pre-filled with or comprising from 1 ml to 4 ml of cell-selector gel; and/or

i) said medical device or kit comprises a container comprising or pre-filled with 0.2 ml to 1 ml of anticoagulant; and/or

j) said medical device or kit comprises a container or syringe containing from 1 ml to 5 ml of hyaluronic acid; and/or

k) said hyaluronic acid is in the form of a gel; and/or

l) said hyaluronic acid resides in a buffer; and/or

m) said hyaluronic acid is suitable for injection, mesotherapy, and/or application; and/or

n) said hyaluronic acid is present from 40 mg to 200 mg per container preferably or optionally 80 mg per container; and/or

o) said hyaluronic acid has a molecular weight of 1000 KDa to 2000 KDa; and/or

p) said hyaluronic acid is at 0.1% to 3%; and/or

q) said hyaluronic acid is obtained by fermentation.

10. A medical device or kit according to claim 1 or claim 3, consisting or comprising,

a) at least one container of claim 1 for the preparation of Platelet Concentrate and at the least one container of claim 1 for the preparation of BMC,

b) at the least one container of claim 1 for the preparation of Platelet Concentrate and/or at the least one container of claim 1 for the preparation of BMC, and at least one container of claim 1 comprising or pre-filled with a cell extract and at least one container of claim 1 comprising or pre-filled with hyaluronic acid, chitosan, silk protein or fibroin or any combination thereof,

c) at least one container of claim 1 for the preparation of Platelet Concentrate and/or at the least one container of claim 1 for the preparation of BMC, and at the least one container of claim 1 comprising or pre-filled with a cell extract and at the

least one syringe of claim 3 comprising or prefilled with hyaluronic acid, chitosan, silk protein or fibroin or any combination thereof,

d) at least one container of claim 1 for the preparation of Platelet Concentrate and/or at the least one container of claim 1 for the preparation of BMC, and at the least one syringe of claim 3 comprising or pre-filled with a cell extract and at the least one container of claim 1 comprising or pre-filled with hyaluronic acid, chitosan, silk protein or fibroin or any combination thereof, wherein said medical device or kit optionally further comprises:

e) at the least one container for the preparation of thrombin serum, preferably autologous thrombin serum, and/or

f) a connecting device enabling transfer of any substance, material, Platelet Concentrate, BMC, cell extract or composition from one container or syringe to another container or syringe.

11. A medical device or kit according to any one claims 1, 3 and 4, comprising:

a) a collection device for collecting blood or bone marrow and/or

b) a collection device comprising or consisting of a collection holder and transfer device for collecting Platelet Concentrate and/or BMC into said container of claim 1, and/or said syringe of claim 3, and

c) optionally accessories and/or single use phlebotomy material.

12. A medical device or kit according to claim 2, comprising:

a) a tube for the preparation of Platelet Rich Plasma (PRP) or BMC under vacuum allowing the withdrawal of about 4ml of blood or bone marrow which contains:

i. about 2.5 mL of inert cell-selector gel

ii. about 0.6 mL of anticoagulant,

b) a tube under vacuum allowing the withdrawal of about 4 ml of PRP or BMC from said tube a), which contains about 2 ml of hyaluronic acid gel in phosphate buffer, preferably or optionally sodium chloride, dipotassium hydrogenphosphate, potassium dihydrogenphospate, potassium chloride and water for injection,

c) a collection device for collecting blood and/or bone marrow consisting of a collection holder with a safety lock and butterfly needle,

d) a collection device preferably or optionally consisting of a collection holder and transfer device for collecting PC and/or BMC from said tube a) into said tube b).

13. A medical device or kit according to claim 3, comprising:

a) a tube for the preparation of PRP or BMC under vacuum allowing the withdrawal of about 4ml of blood or bone marrow which contains:

i. about 2.5 ml of inert cell-selector gel

ii. about 0.6 ml of anticoagulant,

b) a syringe allowing the withdrawal of about 4 ml of PRP or BMC from said tube a), which contains about 2 ml of hyaluronic acid gel in phosphate buffer, a collection device for collecting blood and/or bone marrow consisting of a collection holder with a safety lock and butterfly needle,

c) a collection device for collecting blood and/or bone marrow consisting of a collection holder with a safety lock and butterfly needle,

d) a collection device consisting of a collection holder and transfer device for collecting PC and/or BMC from said tube a) into said syringe b).

14. A medical device or kit according to any preceding claim, further comprising: a tissue harvesting cannula, a cannula for injection, a piston stopper, at least one self-adhesive disc, a Luer connector, anesthetic solution, injection accessories such as needles and/or syringes, syringes for tissue harvesting and mixing at least one transfer cannula, a clip device, a container with dispenser for dispensing Platelet Concentrate and/or BMC, a trocar, ampoule of coagulation activator, a paper mask, a device for the simultaneous release of Platelet Concentrate and thrombin serum or any other combination of Platelet Concentrate, BMC, substance, biomaterial or coagulation activator, wherein such device comprises at least one syringe, a nozzle for spray application, a double piston stopper, an applicator syringe holder and/or a connector, or any combination thereof.

15. A medical device or kit according to any preceding claim, wherein at least one of said first and second biomaterials is hyaluronic acid.