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hypothesized the neutrophil-depleted PRP composition may convert the osteoarthritic cartilage cells to a more functional cell line that is reinjected into a diseased or injured joint. Alternatively, the neutrophil-depleted PRP composition is directly introduced into an osteoarthritic joint to reverse the course of the disease. This is done under local anesthesia in a sterile manner.

Finally, the neutrophil-depleted PRP composition may be used to help grow and differentiate any tissue or cell line in vivo or in vitro.

Although the Examples above are described with regards to separation of neutrophils from platelet rich plasma, the separation device described above is not limited to this embodiment and may be used for separation of any kind of cell, protein or particle from an aqueous sample. While the described embodiment represents the preferred embodiment of the present invention, it is to be understood that modifications will occur to those skilled in the art without departing from the spirit of the invention. The scope of the invention is therefore to be determined solely by the appended claims.

What is claimed is:

1. A method of preparing neutrophil-depleted platelet rich plasma comprising:

obtaining a blood sample from a patient,  
preparing platelet-rich plasma comprising at least  $0.5 \times 10^6$  platelets per ml of plasma from the blood sample,  
passing the platelet-rich plasma through a cell separation device to remove neutrophils, and

collecting the neutrophil-depleted platelet-rich plasma comprising at least  $0.5 \times 10^6$  platelets per ml;

wherein the cell separation device comprises:

an inlet end portion comprising an inlet port for receiving a sample of platelet rich plasma;

an outlet end portion comprising at least one collection port for removing neutrophil-depleted platelet rich plasma; and

a flow path placed within an electric field comprising a tubular material in fluid communication with the inlet port and the outlet port;

wherein the tubular material is latticed or coiled and has a diameter of 10-100 microns; and wherein the outlet end has a positive electrical charge and the inlet end has a negative electrical charge.

2. The method according to claim 1, wherein the tubing is packed into a unit.

3. The method according to claim 2, wherein the unit is part of a system for concentrating platelets or processing blood.

4. The method according to claim 3, wherein the system includes a centrifuge.

5. The method according to claim 1, further comprising adjusting the pH of the neutrophil-depleted platelet-rich plasma to a pH of about 7.3 to 7.5, wherein the neutrophil-depleted platelet-rich plasma composition does not contain an activator of the neutrophil-depleted platelet-rich plasma.

6. The method according to claim 1, wherein the blood is from an autologous source.

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7. The method according to claim 1, wherein the neutrophil content of the neutrophil-depleted platelet-rich plasma has been reduced by 50-75% compared to the blood or platelet-rich plasma sample.

8. The method according to claim 1, wherein the neutrophil content of the neutrophil-depleted platelet-rich plasma has been reduced by more than 75% compared to the blood or platelet-rich plasma fraction.

9. A method of preparing neutrophil-depleted platelet rich plasma comprising:

obtaining a blood sample from a patient, passing the blood sample through a cell separation device to remove neutrophils,

preparing platelet-rich plasma comprising at least  $0.5 \times 10^6$  platelets per ml of plasma from the neutrophil-depleted blood sample, and

collecting the neutrophil-depleted platelet-rich plasma comprising at least  $0.5 \times 10^6$  platelets per ml;

wherein the cell separation device comprises:

an inlet end portion comprising an inlet port for receiving a sample of platelet rich plasma;

an outlet end portion comprising at least one collection port for removing neutrophil-depleted platelet rich plasma; and

a flow path placed within an electric field comprising a tubular material in fluid communication with the inlet port and the outlet port;

wherein the tubular material is latticed or coiled and has a diameter of 10-100 microns; and wherein the outlet end has a positive electrical charge and the inlet end has a negative electrical charge.

10. The method according to claim 9, wherein the tubing is packed into a unit.

11. The method according to claim 10, wherein the unit is part of a system for concentrating platelets or processing blood.

12. The method according to claim 11, wherein the system includes a centrifuge.

13. The method according to claim 9, further comprising adjusting the pH of the neutrophil-depleted platelet-rich plasma to a pH of about 7.3 to 7.5, wherein the neutrophil-depleted platelet-rich plasma composition does not contain an activator of the neutrophil-depleted platelet-rich plasma.

14. The method according to claim 9, wherein the blood is from an autologous source.

15. The method according to claim 9, wherein the neutrophil content of the neutrophil-depleted platelet-rich plasma has been reduced by 50-75% compared to the blood or platelet-rich plasma sample.

16. The method according to claim 9, wherein the neutrophil content of the neutrophil-depleted platelet-rich plasma has been reduced by more than 75% compared to the blood or platelet-rich plasma fraction.

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