Dual Syringe with Percutaneous Aspirating Cannula

Ref. Nos. 24-0002

Keywords: **autologous stem cells, transplant, syringe, cannula, catheter, cell pellet**

Summary: **This invention provides a closed sterile system for autologous stem cell transplants by utilization of a dual syringe with percutaneous aspirating cannula.**

Technology:

- Autologous stem cell transplants generally occur in a highly sterile environment such as available in an operating room or ambulatory surgical center. One of the common methods to obtain stem cells is through the use of aspirating cannulas. However, cannulas require a second instrument to access the interior of the body for collection of the stem cells. For example, extraction of bone marrow stem cells generally requires the insertion of a trocar and the cannula after the trocar is in place.

- Similarly, extraction of stem cells from adipose tissues generally requires a scalpel incision into the patient before insertion of the aspirating cannula. Once the desired cells and tissues are harvested by the cannula, the cells or tissues are then transferred to syringes or test tubes. These transfers significantly increase the opportunity for sterile breaks through the introduction of manual transfers.

- **Therefore, a tool or method is desired to simply extract and collect desired cells from a patient in a sterile closed system and then reintroduce the concentrated cells for therapeutic purpose.**

The Advanced Solution

The present set of patents of this invention simplifies the process for autologous stem cell transplant by utilization of a dual syringe with percutaneous aspirating cannula that safely harvests cells and tissues without the need for a surgical procedure and by minimizing the opportunity for a sterile break.

The percutaneous aspirating cannula utilizes a needle and a tapered edge cannula wherein the needle and tapered edge allow for the percutaneous aspirating cannula to be inserted directly into a patient without the need of surgical incision or insertion of a trocar.

The dual syringe is a closed system that allows for the harvesting syringe to harvest the cells/tissue which is then centrifuged to aggregate the cells wherein the isolated cell pellet is then transferred to a second syringe where it can then be reinjected to the patient for a desired therapeutic purpose.

Competitive Advantages:

- Closed System for Autologous Stem Cell Transfers
- No Need for Surgical Procedure or Insertion of a Trocar
- Transplantation without Requirement of Surgical Settings or Ambulatory Care
- Better Sterility
- Time Efficiencies
- Lower Costs

Potential Commercial Applications:

- Autologous Stem Cell Transplants in Human Outpatient Settings
- Autologous Stem Cell Transplants in Veterinary Settings
- Fat Grafting
- Regenerative Medicine
- Other Applications & Research Purposes (where multiple draws or transfers are necessary)

Reference Patents:

- US 10,349,924 (05/2017) Percutaneous Aspirating Cannula
- EP 3166664A1 (05/2017) Dual Syringe with Percutaneous Cannula
- US20220296222A1 (CIP) (07/2015) Dual Syringe for Use with Percutaneous Aspirating Cannula

Developmental Status:

- Proof of concept and pre-clinical development. Further clinical development and testing is needed.

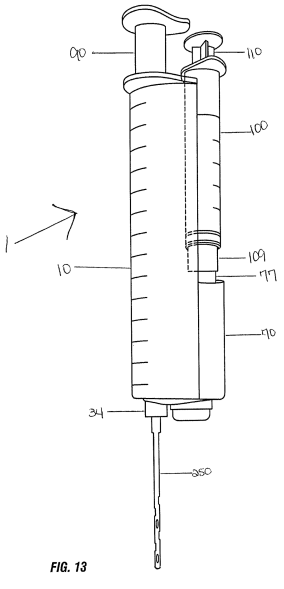

FIG. 13

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