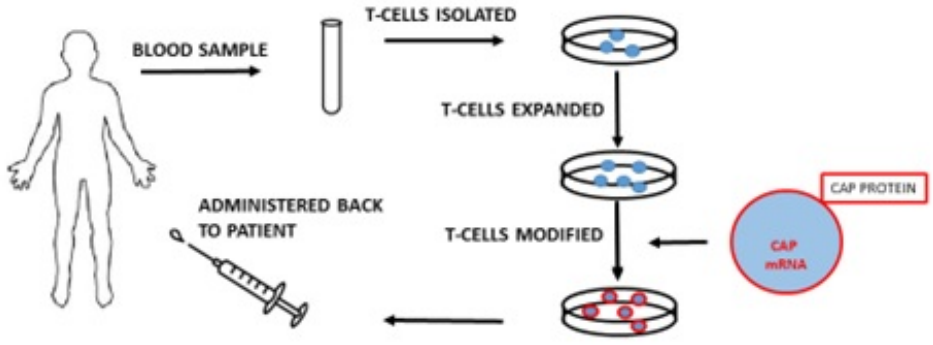
Low-Cost, Disposable Device for Manufacture Car T-Cells for Cancer Therapy (RFT-538)

Invention Summary



Scientists at NDSU have developed a new device for a scalable, biomanufacturing platform for the production of CAR-modified T-cells while eliminating on-target/off-tumor toxicity and decreasing the current production cost by 500 times (per treatment). The technology relates to a device to produce modified T-cells comprising a first chamber for proliferating a population of T-cells and a second chamber for modifying the T-cells to express a desired T-cell receptor antigen. The modified CAR T-cells can be used to treat cancer.

Benefits

- Expands cells by localizing them with electrical traps
- Transfects the cells with desired mRNA using channels, aligning the cells with an electrical field and inserting the mRNA using electrical pulses that produce temporary pores in the cells
- Disposable device can be used at the location where the T-cells are drawn, thus avoiding transportation costs and time for production
- Significantly reduces costs per treatment for cancer patients
- Can be automated to allow simultaneous preparation of T-cells for multiple patients

Patents

This technology is patent pending with fully preserved PCT patent rights and is available for licensing/partnering opportunities.

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