Method for Clinical T-Cell Expansion

A biologically-inspired strategy to enhance the expansion of therapeutic T cells by mimicking the environment and conditions of lymph nodes

Georgia Tech inventors have developed a biologically-inspired strategy, simulating the environment and conditions of lymph nodes where T cells are normally produced in a body. This approach would vastly enhance the expansion potential of T cells, which in turn lowers production cost and raises quality. The internal surfaces can also protect T-Cells from high-shear environments like stirred tank reactors.

Summary Bullets

- Higher cell densities
- Protection from high shear production environments
- Reduced initial and operating cost

Solution Advantages

- Higher cell densities
- Protection from high shear production environments
- Reduced initial and operating cost

Potential Commercial Applications

- Cell based therapies for cancer and other diseases

Background and More Information

Cancer is one of the largest diseases impacting the world and resulting in high mortality rates worldwide. Research and development in cancer treatment has turned to cell immunotherapy, where a patientâ??s own T-cells are rewired to fight cancer cells. Manipulating and expanding T-cells is done in a laboratory until the T-cells have the special receptor for binding to cancer cells in a large enough quantity to be infused in patients. One of the drawbacks of current expansion methods is that aged T-cells cannot expand in culture, therefore failing to yield sufficient or high-quality cancer-fighting T-cells.

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