ABSTRACT

Jurkat T-cell culture optimization in shake flasks help provide insight for a smooth and effective scale-up process into larger scale T-cell cultures. A series of shake flask experiments were conducted to determine the appropriate feeding strategy, media and growing conditions for maximized cell lifespan, proliferation, viability and density. The process to efficiently culture and scale-up human T-Cells plays an increasingly important role in the biotechnology field due to the rise of cell therapeutics [1]. CAR-T Cell therapy, specifically, is still in its infancy and remain an autologous treatment at the moment; however, an allogenic future with added functionalities and specificity will require reliable and large-scale production of T-cells to meet global demands [2]. In this regard, understanding the basic growing conditions and determining the ideal environment for T-cells in shake flasks and, eventually, wave bags and bioreactors will allow the cells to reach maximized density and viability in the shortest time possible.

Citations:

[1] Pagliarulo, N. (2018, December 6) In CAR-T, manufacturing a hurdle Novartis has yet to clear. *BioPharma Dive*.

[2] Bennett, C. (2018, November 16) Cell Therapy Manufacturing: The Supply Chain. *GEN: Genetic Engineering & Biotechnology news*. General Electric.