Integration of an automated cell culture analyzer with a closed-system hollow-fiber bioreactor for online metabolite detection and cell monitoring

Supplementary File

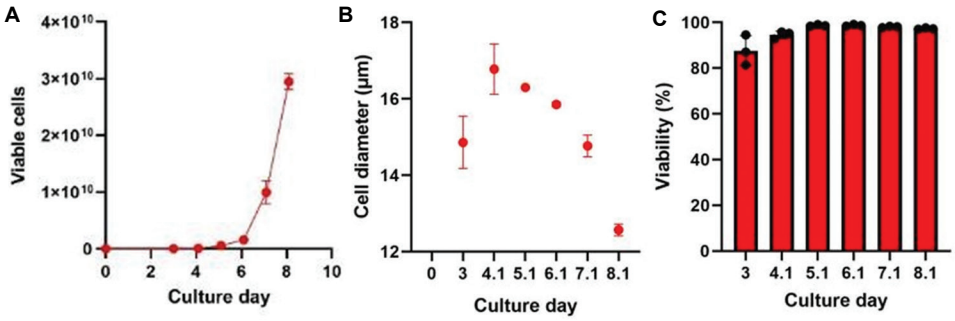

Figure S1. Primary T cell growth data. Cell growth and measurement data were taken off-line using the FLEX2 through the standard method of intracapillary loop excision. The cell density and viability module was used to monitor the cell density (A), diameter (B), and viability (C).

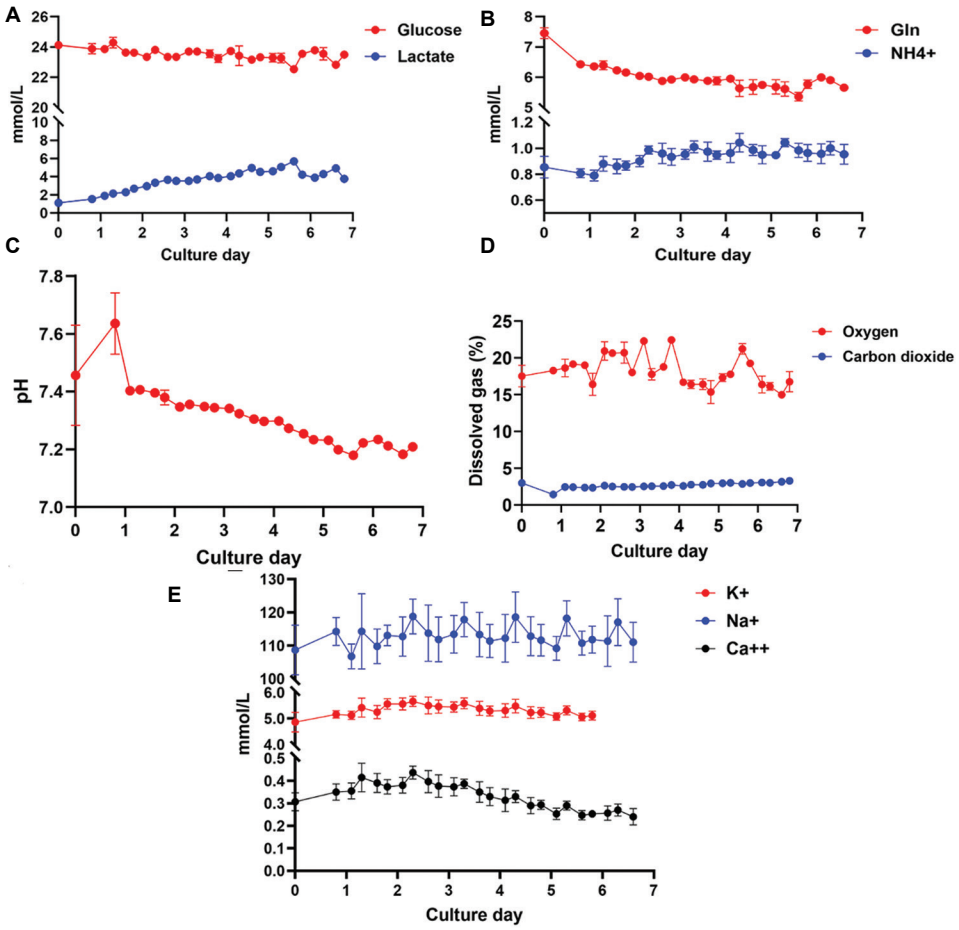

Figure S2. Automated metabolic and physiochemical data. Automated metabolite samples were taken through the extracapillary sample port through a secondary reactor sampling module every 6 h beginning on day 0.8 until harvest on day 6.9. The chemistry module was used to monitor relevant metabolites (A and B) for growth while the pH/GAS module was used to measure the pH and the gasses, carbon dioxide, and oxygen (C and D, respectively). Potassium, sodium, and calcium were also measured (E) but not used to influence feed or circulation rates.