

CLOSED SYSTEM APPROACH TO CELL EXPANSION

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This poster describes the development of a novel closed system approach to cell culture expansion in shaker flasks. An insert with microporous membranes was created and combined with a cap closure with integral tubing attached to the cap for the aseptic input of media and inoculate and for the aseptic output of samples and finished product. The pH of the solution was measured as a function of carbon dioxide concentration and compared with traditional shaker flasks. Cell culture doubling times, cell viability, and total cell counts were measured for 500 mL, 1,000 mL, and 3,000 mL systems. Additive manufacturing was also used to speed up the evaluation of the technology. Sample caps were 3D printed for end user evaluations of the early prototypes. Closed system processing is now a viable option for cell culture expansions.