

## CHO Cell Banking (August 2014 Ca. USA)

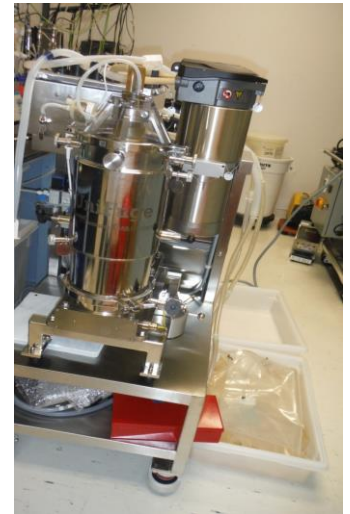
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### Summary:

23 liters of CHO cells were grown in a wave bioreactor, for Cell banking. The cells were sterility harvested and concentrated in the UniFuge single use centrifuge using the GRAC module. The viability of the CHO cells measured 93% at time of harvest. The diameter size of the cells is around 15 -20 micron. The cells reached a final cell density of  $1,96 \cdot 10^6$  C/ml at time of harvest. To harvest the cells, the UniFuge centrifugation parameters were feed rate (LPM) and G force. The CHO cells were collected aseptically. The cells were counted and viability checked.

### UniFuge Description:

The UniFuge is manufactured by Pneumatic Scale Angelus in Clearwater, Florida. The UniFuge is a single use, semi-continuous flow tube bowl centrifuge. All product contact surfaces are clean, sterile by irradiation, and are disposable. The modules are manufactured from USP Class VI and TSE/BSE, GMO certified free materials. The UniFuge is equipped with a PLC controller which offers a programmable batch processing capability with automatic gentle discharge of concentrated cells. The sediment holding space (bowl volume) of the UniFuge is 1,7 liters. The PLC controller allows batch recipe cycles to be entered so that the centrifuge will run automatically. That is, fill the bowl with feed based on a timer, feed a cell suspension at a predetermined rate, and discharge the solids to complete the cycle.



### Objectives of this trial were four-fold:

1. Collect >90% of cells at 750 ml/min feed rate @ 500 x G force
2. Cell viability above 90 %
3. concentrate cells to a min of 10:1
4. No measurable cells in centrate

**Test:** We processed 23 liters of CHO cells. Sanitary connections were made to UniFuge tubing. The cells are grown to  $1,96 \cdot 10^6$  cells/ml. Feed viability 93%. UniFuge process parameters are 0,750 LPM @ 500 X G. We washed the cells with fresh media, displacing the spent media.

### Results:

1. 0.75 Lpm – 23L processed, 1,7L recovered,  $2,2 \cdot 10^7$  C/ml
2. Collected cell viability > 90%
3. Concentration- 13:1
4. No measurable cells on centrate

**Conclusion:** For the Viable collection of CHO cells for banking, the UniFuge Single use centrifuge **met all four objectives**