



財團法人生物技術開發中心
Development Center for Biotechnology

Perfusion culture and continuous purification process development

Development Center for Biotechnology

Contact information:

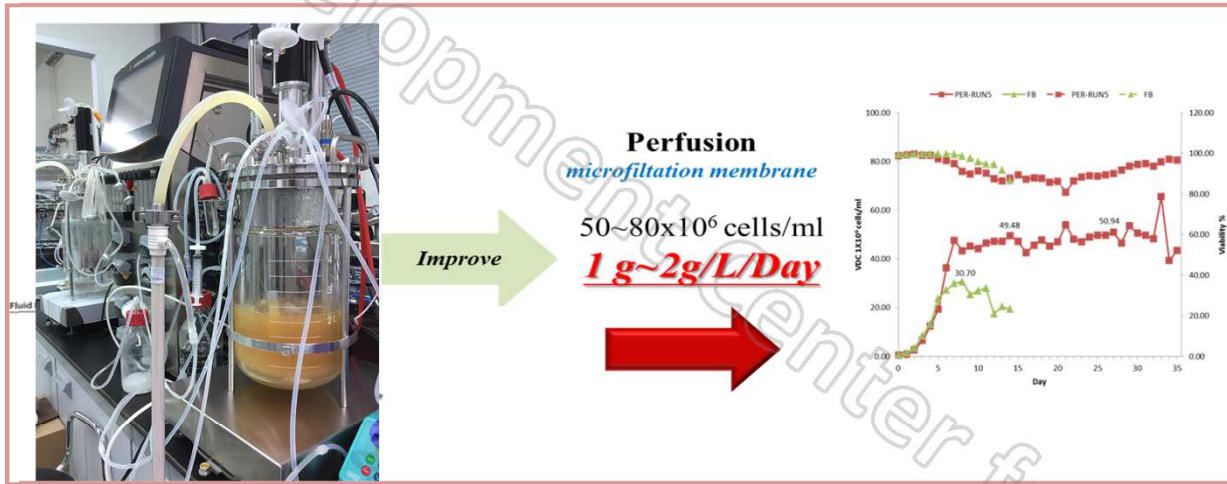
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Continuous Bio-manufacturing and Purification



- Constant product quality
- Higher efficiency
- Saves processing times
- High product titer
- Cost down

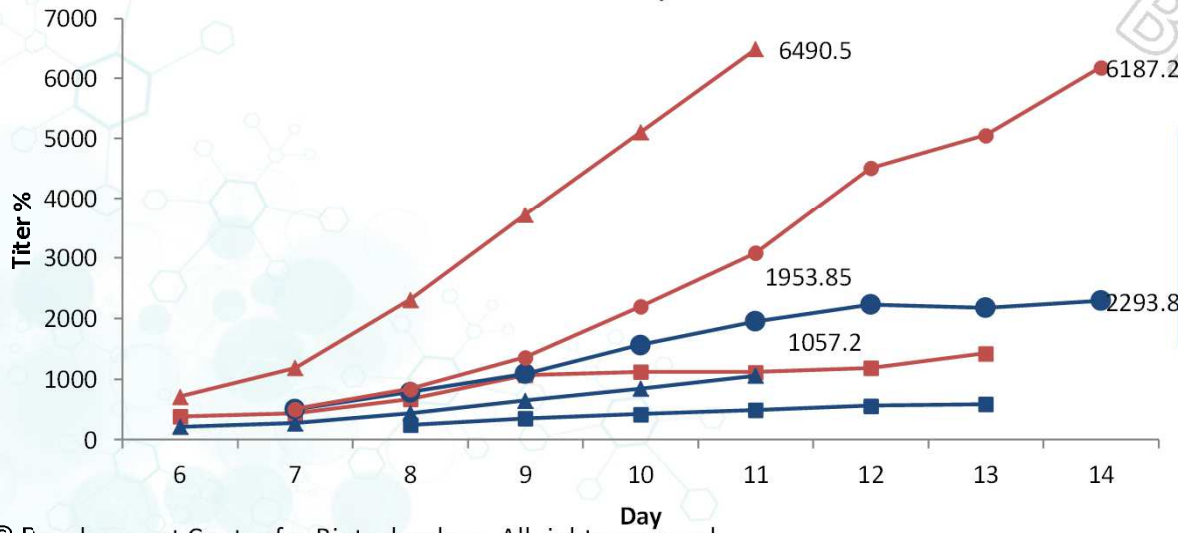
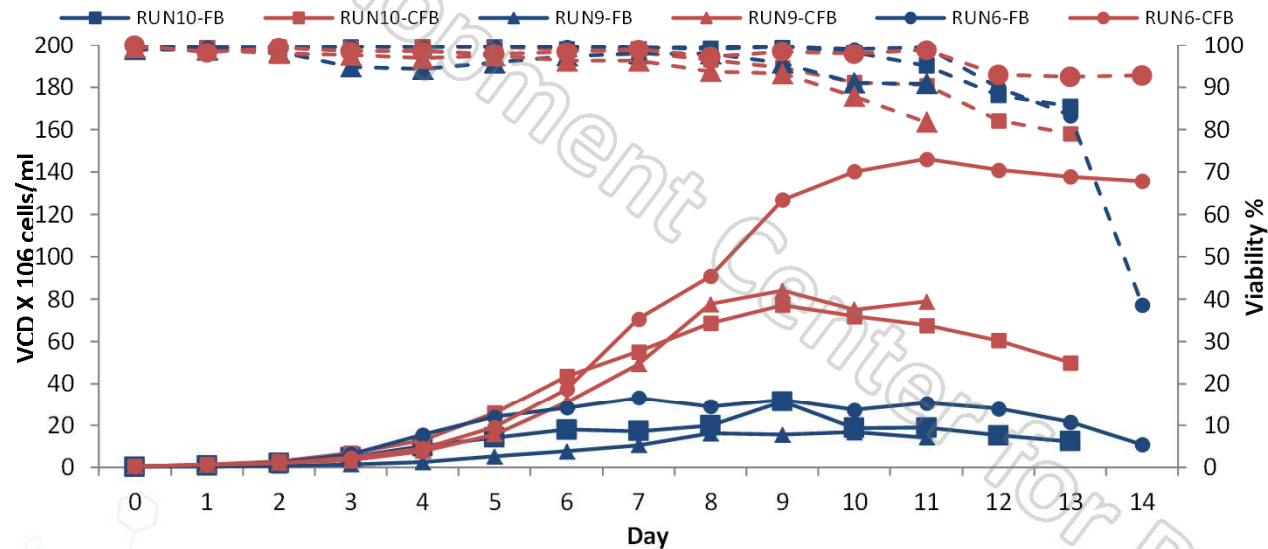


100 kg proteins can be purified in 24 hours

Continuous Bio-manufacturing



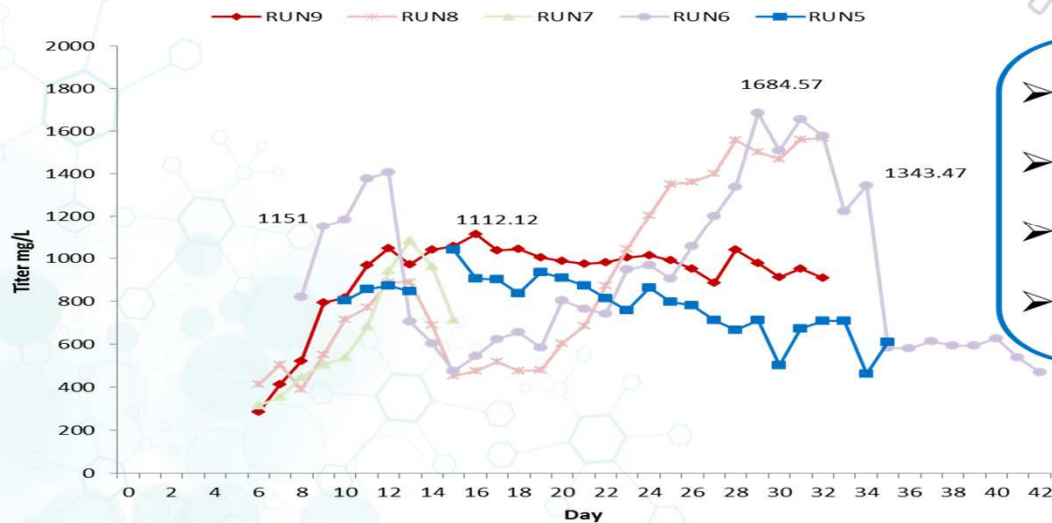
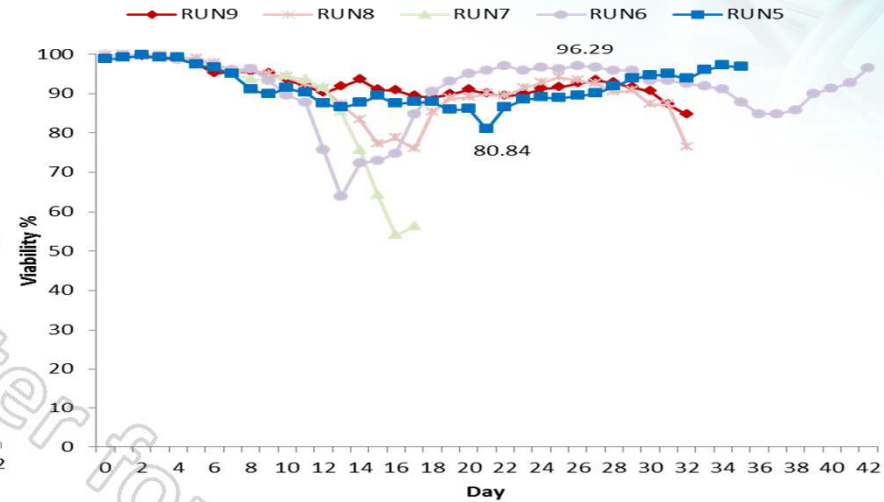
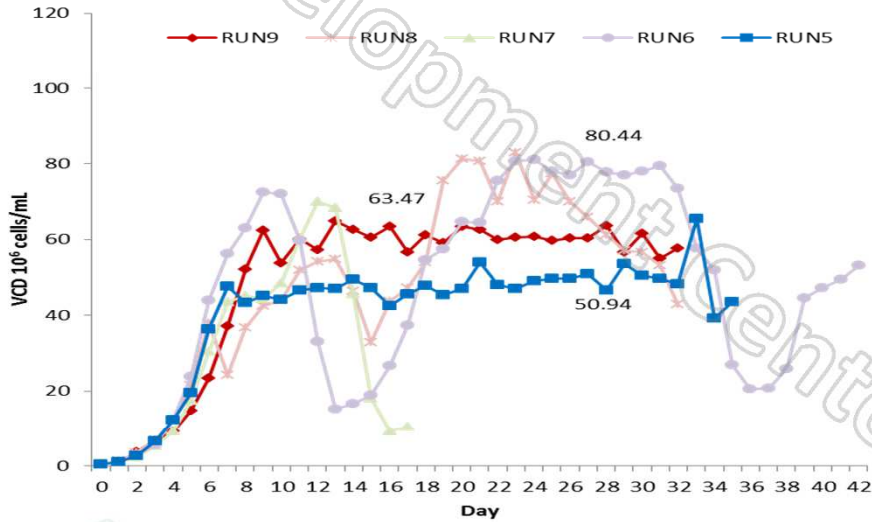
Concentrated Fed-Batch (CFB)



- Perfusion rate: **1VVD**
- Cell density : **140x10⁶ cells/ml**
- CFB titer = **2.4~3.3** (fold of fed-batch)

Continuous Bio-manufacturing

Continuous Perfusion Culture



- Cell density: 50~80 x10⁶ cells/ml
- Viability: 80~99%
- Duration: 28~42 Day
- Titer : **1.0 g~1.6 g/L/Day**

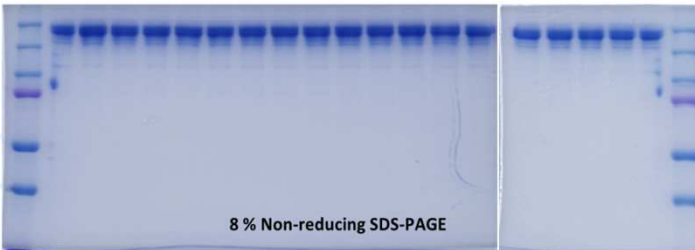
Continuous Bio-manufacturing

Continuous Purification

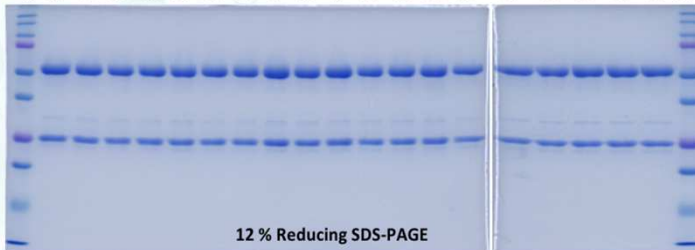
The product quality of continuous system was consistent from d10 to d28

SDS-PAGE

M 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 M

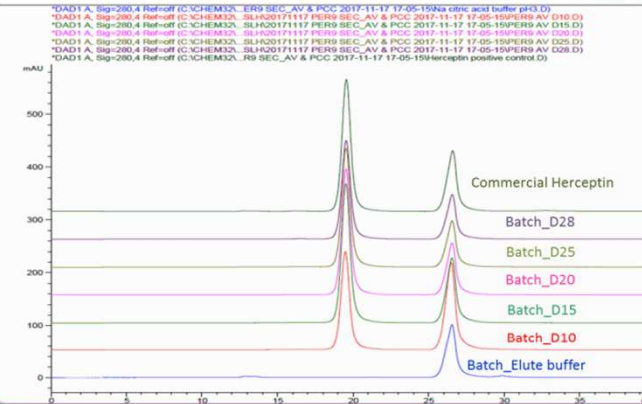


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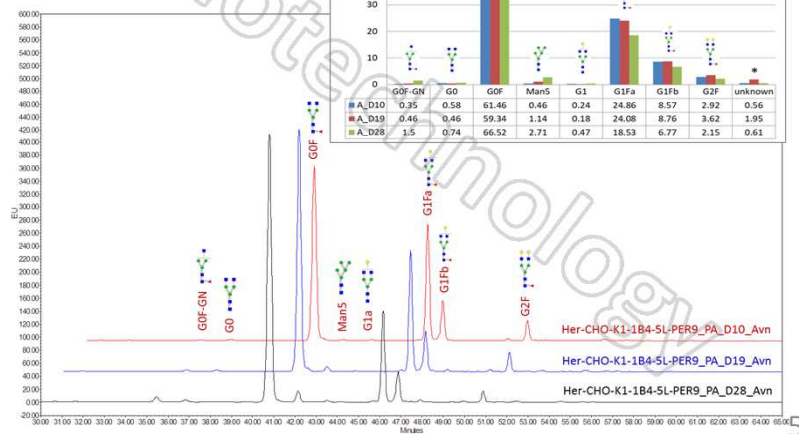


SEC-HPLC

Day	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Purity %	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9

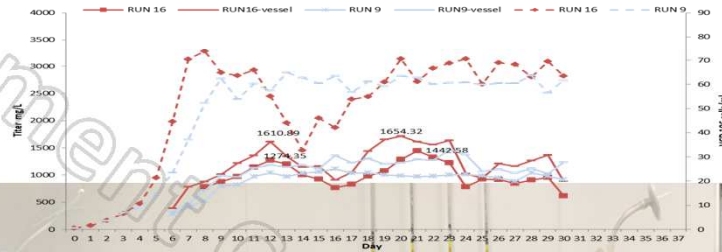


Identification of N-Glycan from



Integrated Continuous Bio-manufacturing and Purification

Continuous purification + continuous perfusion culture for **31** days



PCC

5L +ATF



Culture cell density was maintained $\geq 60 \times 10^6$ cells/ml, and the titer was reached **1.4g/L/Day**.

Integrated Continuous Bio-manufacturing Ensures the Product Quality

The product quality of continuous perfusion culture was consistent from d20 to d31

