

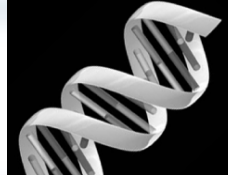
# 3D-CellHOST – Intelligent Cell Culture Automation



The Measure of Excellence

Dr. Daniel Caminada  
Senior Product Manager Cell Biology

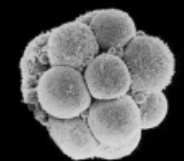
Genomics



Proteomics



Cellomics

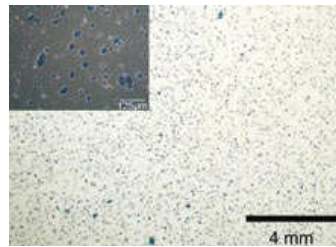


Drug Discovery

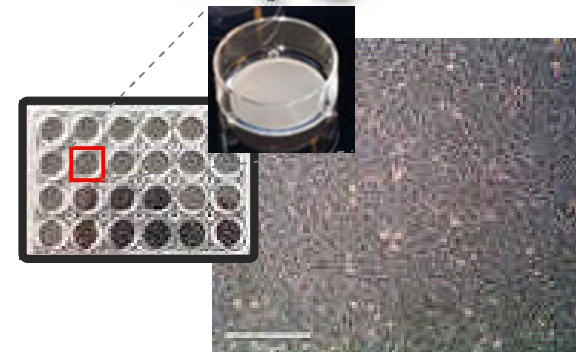


# Hamilton's Cell Culture Automations

## ■ Culture of embryonic stem cells



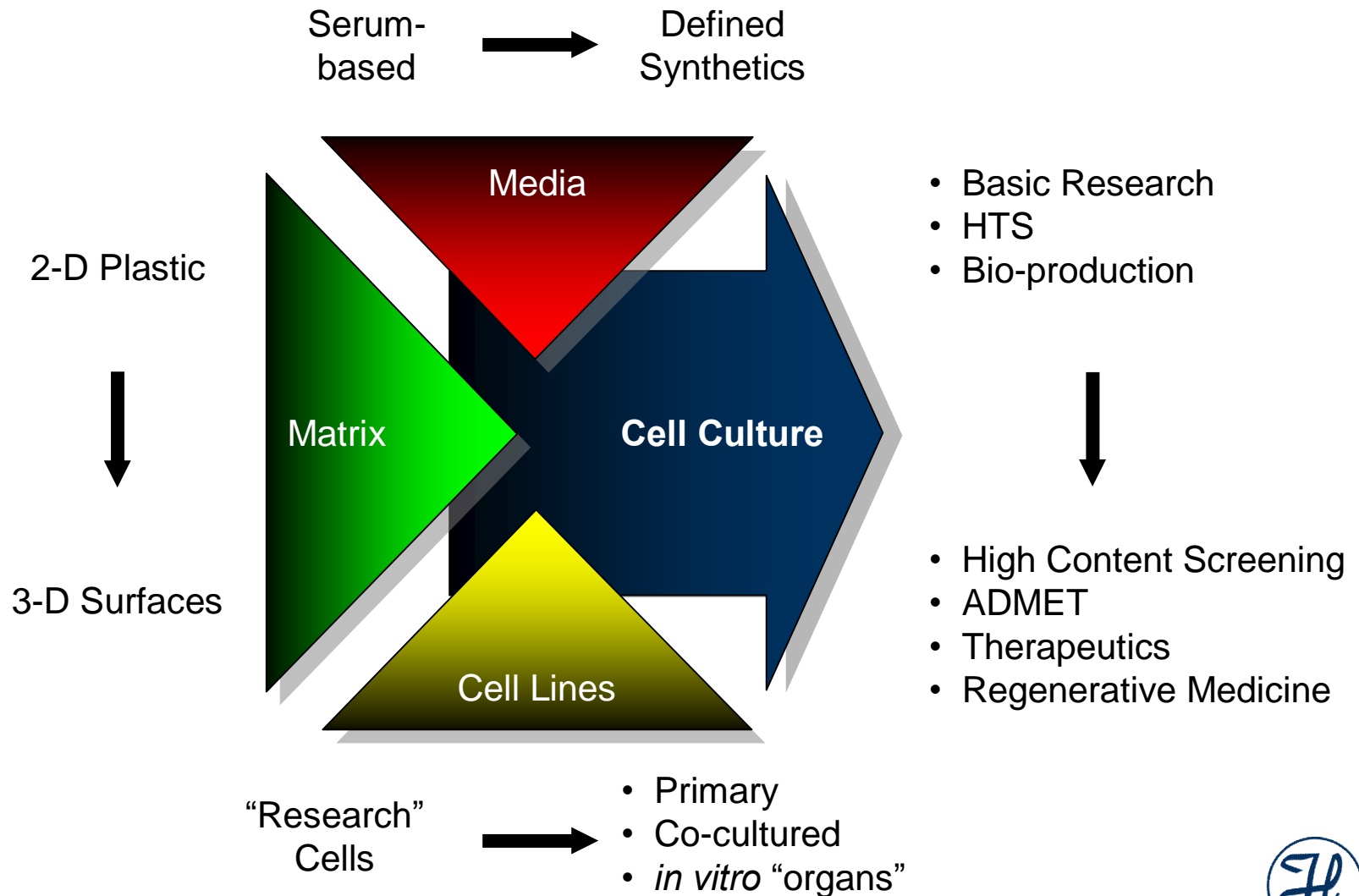
## ■ Automated culture of skin cells



## ■ Clone selection for antibody production



# Cell Culture Trends

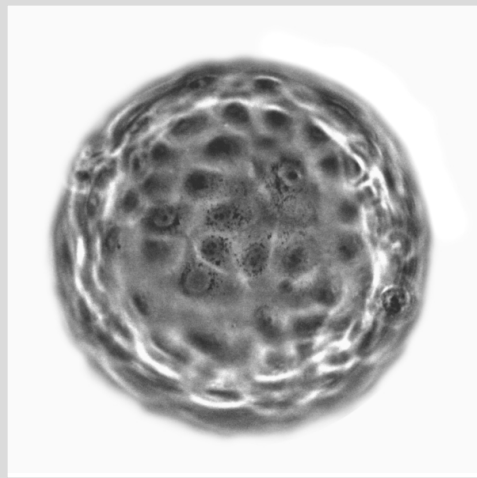


# The Ideal Cell Culture Method

- Provides cell morphology that mimics *in vivo* counterpart
- Emulates *in vivo* physiologic and biochemical responses
- Has high yield
- Is scalable to provide convenience
- Is automatable to provide standardization
- Takes the “art” out of cell culture



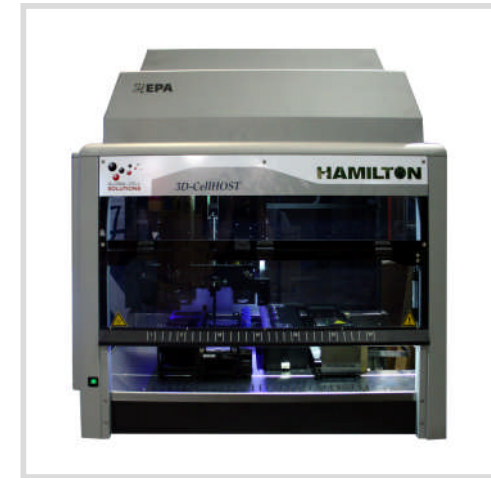
# Automated 3D Cell Culture Solution



GEM™



BioLevigator™



3D-CellHOST™

Note: GEMs = Global Eukaryotic Microcarriers



# 3D-CellHOST – The Complete Solution



## 1. Automated growth

- High yield culture on a small footprint
- Continuous culture
- Hands-free sterile culture

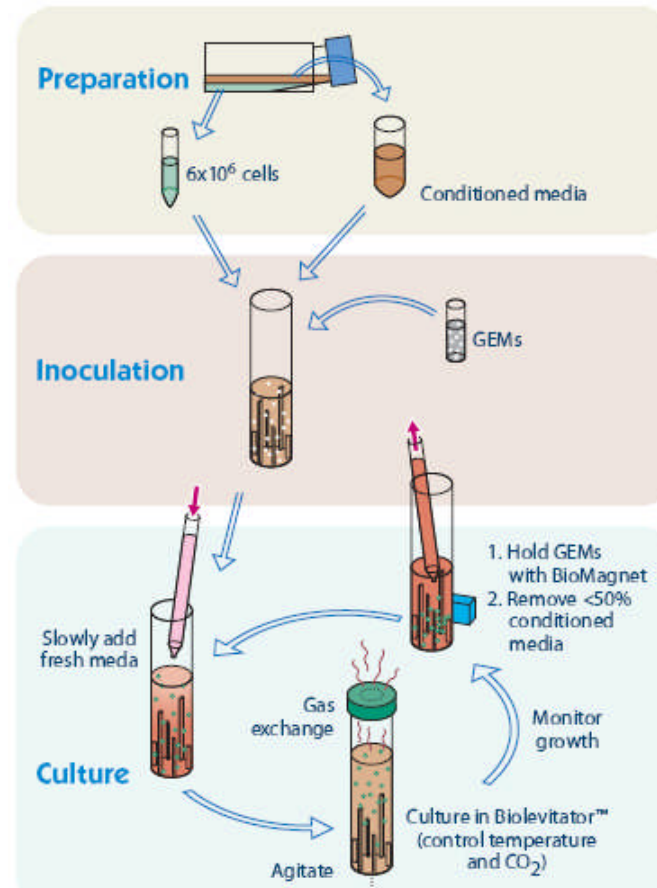
## 2. Scalable process

- From individual researcher to production level requirement

## 3. Consistent results

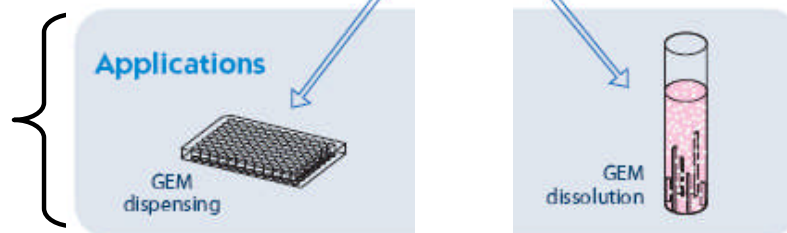
- Automation provides standardization
- Use 'Cells as Reagents'

# Automated Process on 3D-CellHOST

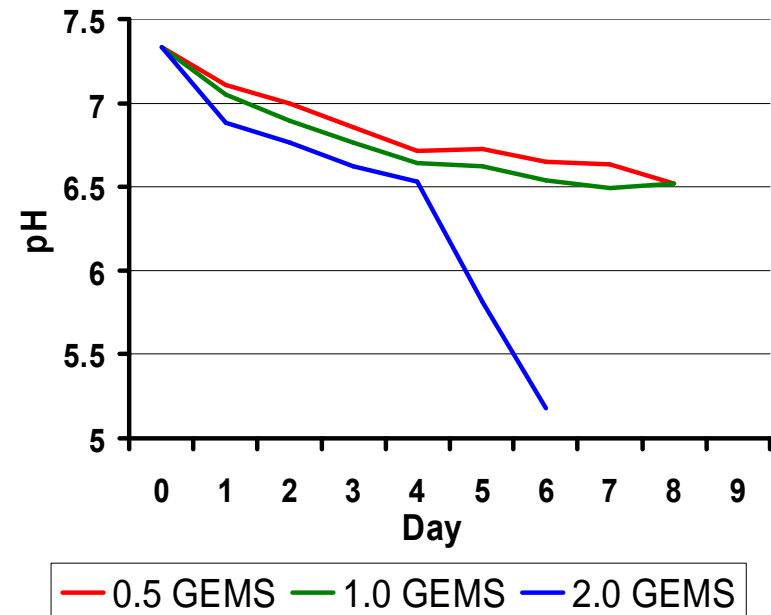
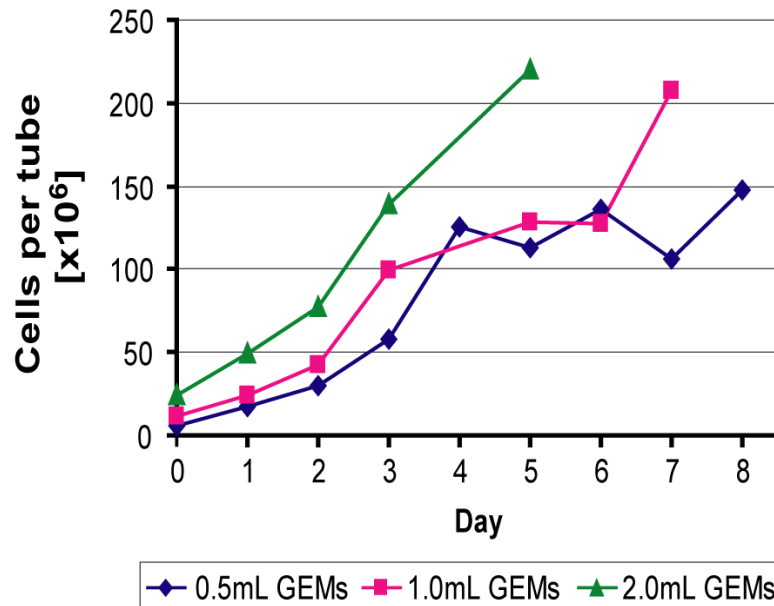


Automated in the 3D-CellHOST

Optional Downstream Process



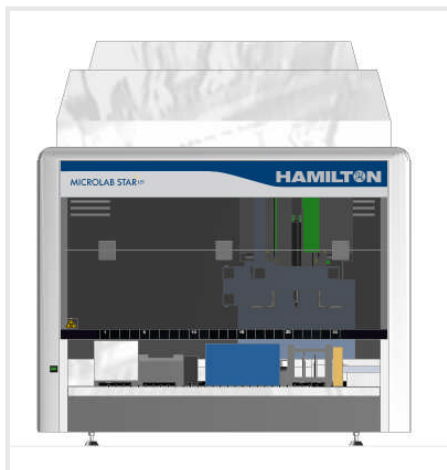
# The Need for Automation



Culture of CHO-K1 cells. Daily medium changes.



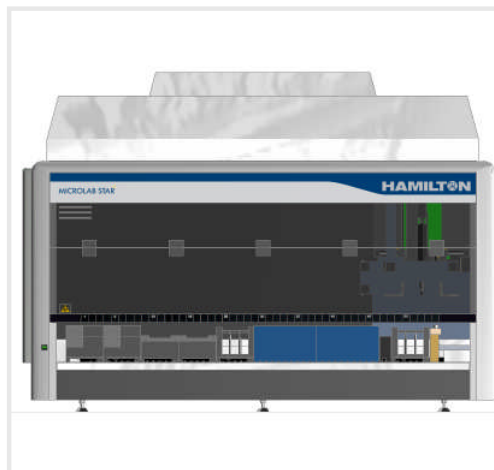
# 3D-CellHOST – Easy Scalable



## 3D CellSTARlet ML

- 1 BioLevitor

4 culture positions  
~ 40 x T75 Flasks  
~ **800 x 10<sup>6</sup> cells**

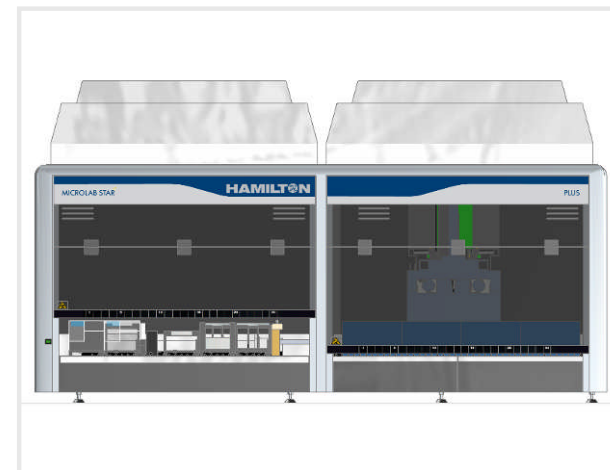


## 3D CellSTAR ML

- 2 BioLevitors

*Production efficiency:*

8 culture positions  
~ 80 x T75 Flasks  
~ **1.600 x 10<sup>6</sup> cells**



## 3D CellSTARplus ML

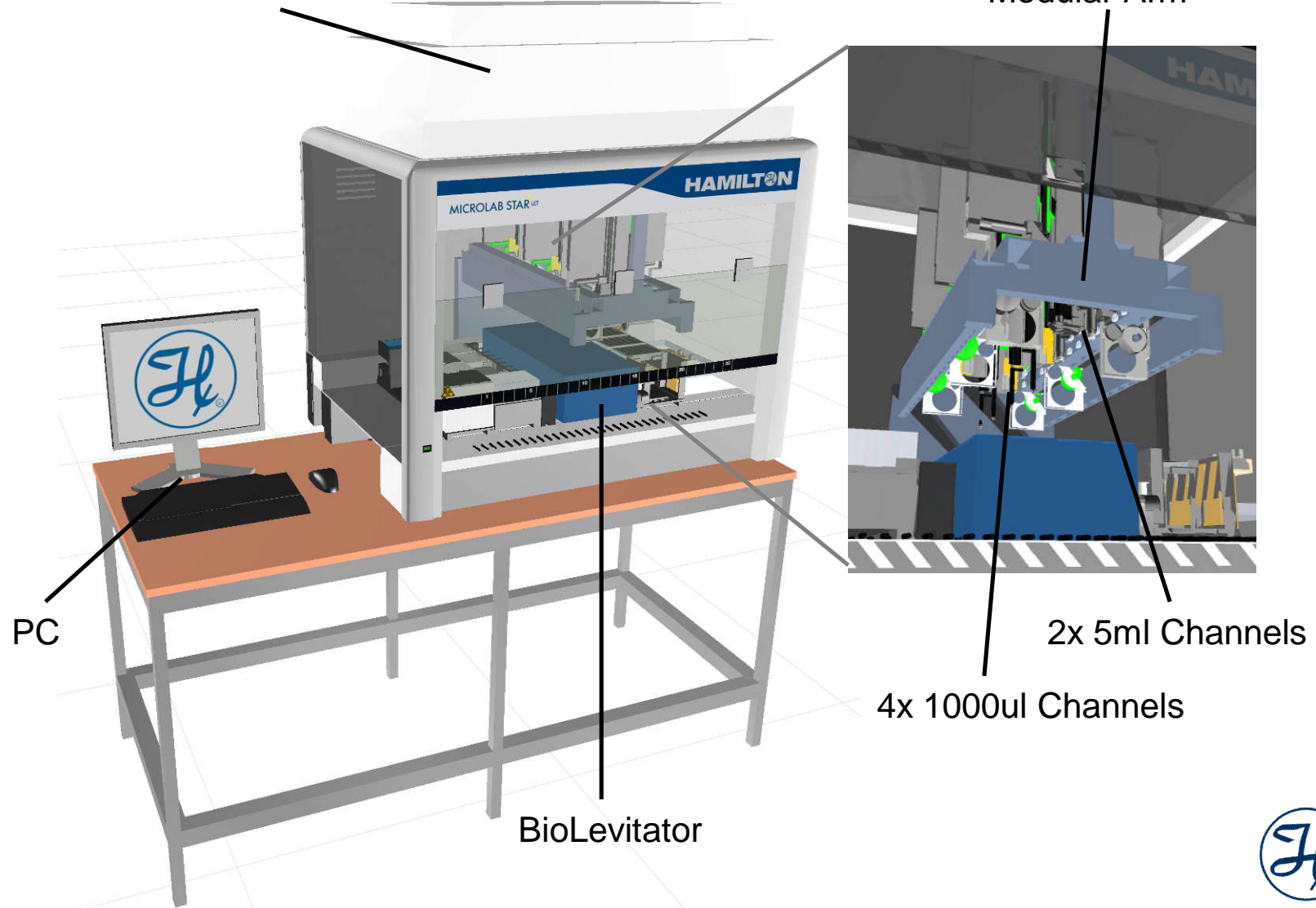
- 4 BioLevitors

16 culture positions  
~ 160 x T75 Flasks  
~ **3.200 x 10<sup>6</sup> cells**

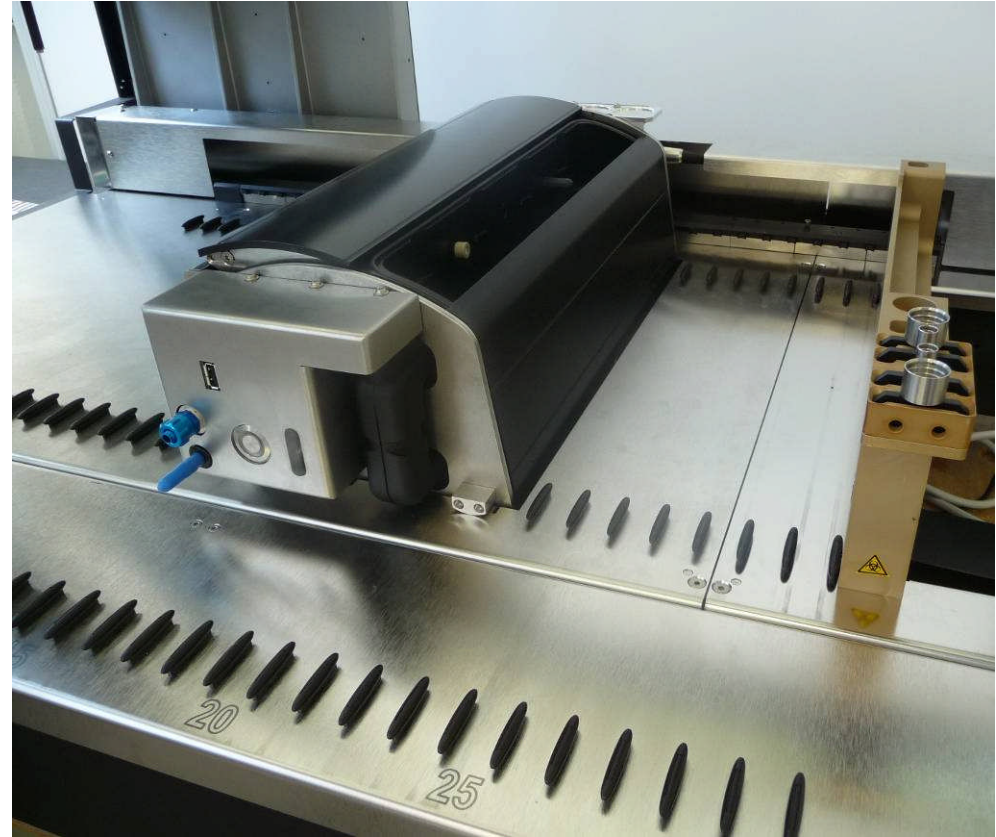
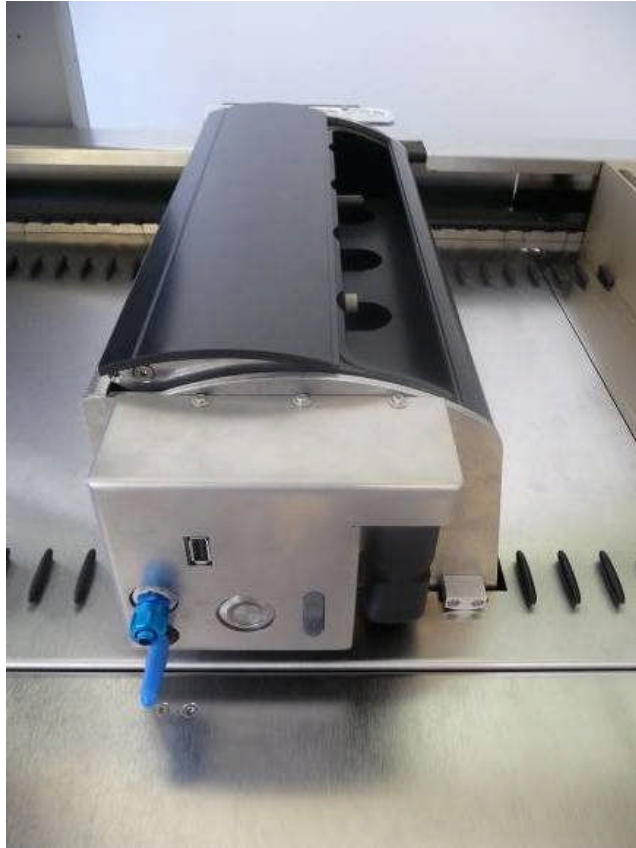
# STARlet/1BL – Overview

Microlab STARlet HEPA Filter Hood

Modular Arm

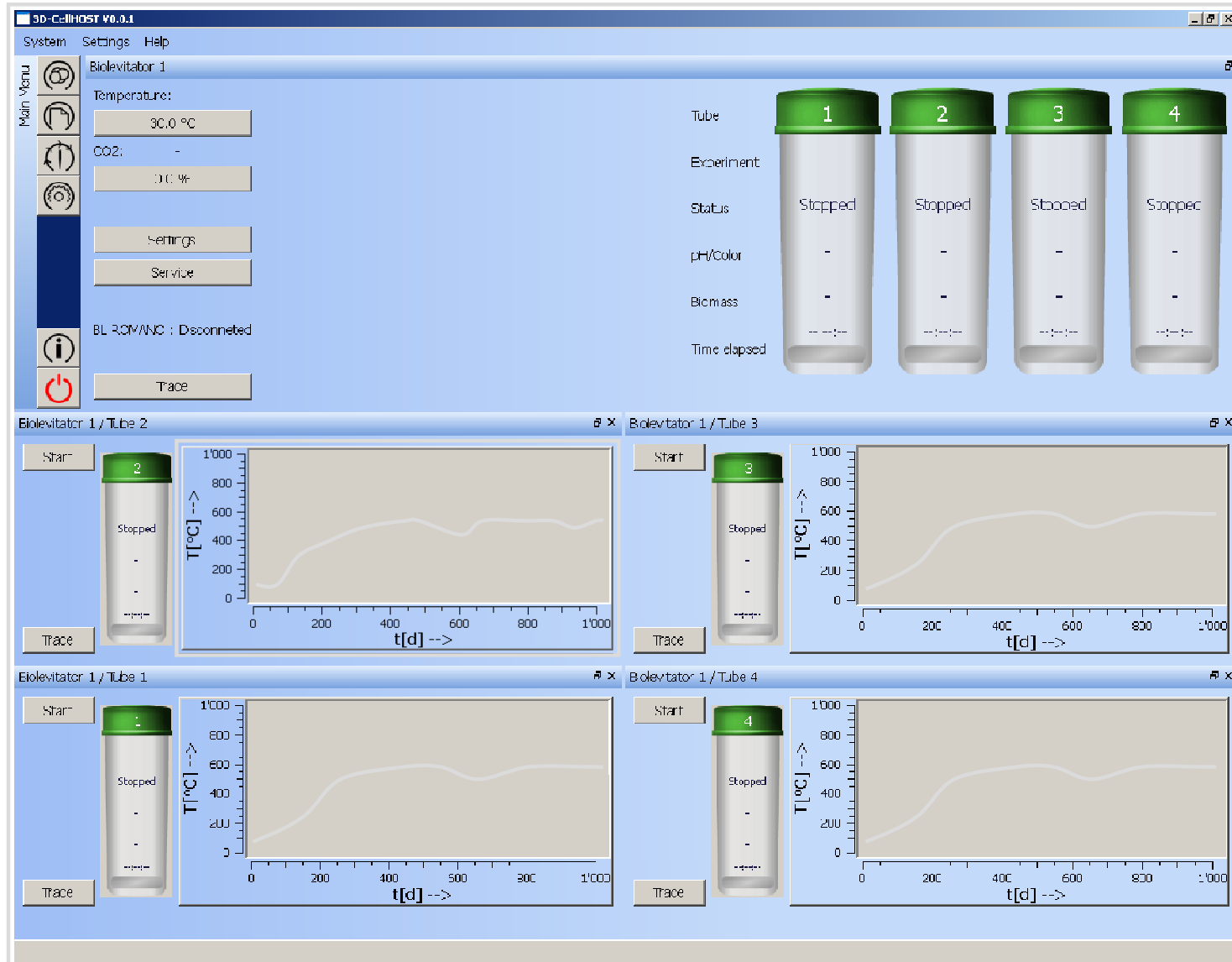


# Integrated BioLevigator R3

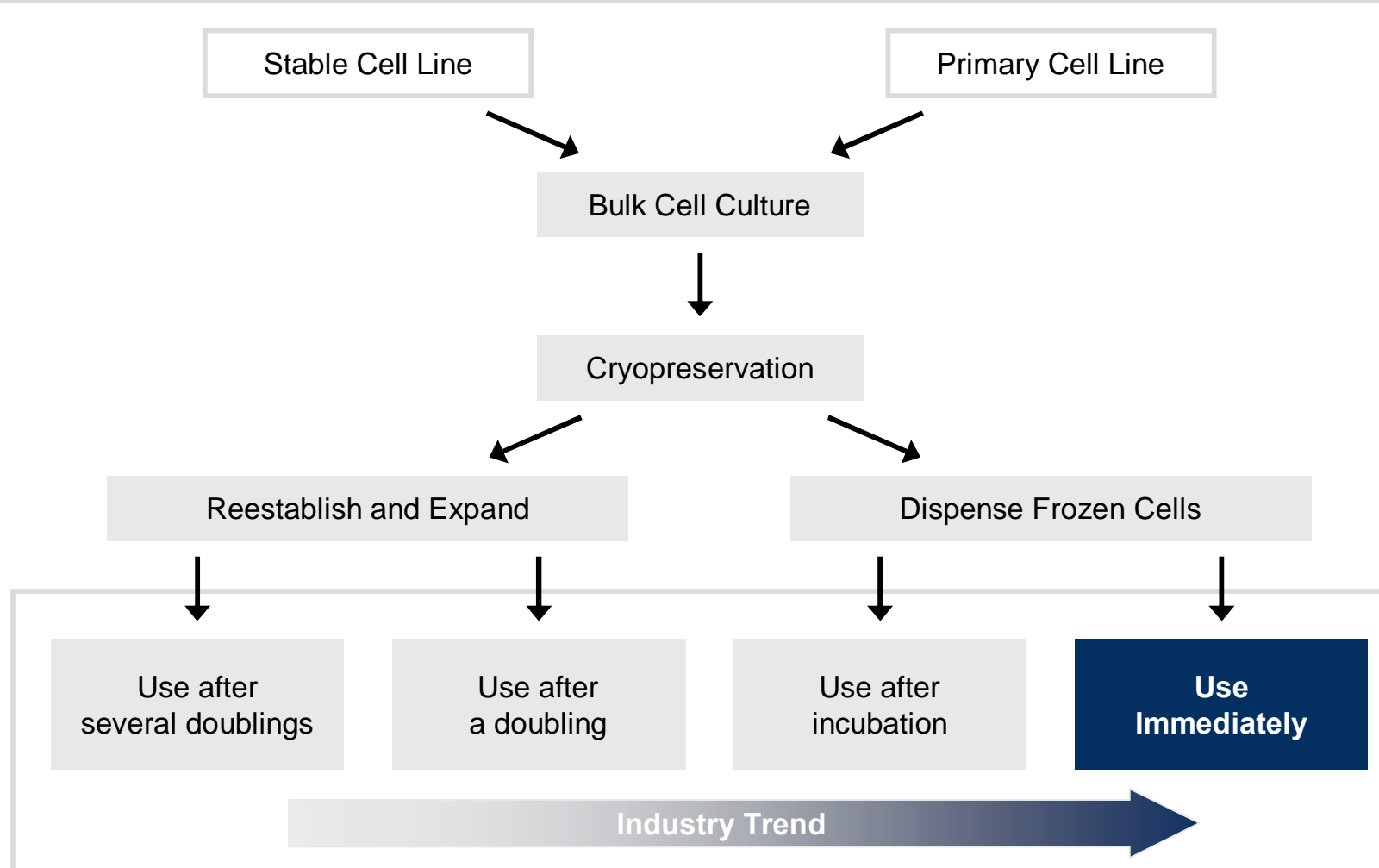


BioLevigator R3 integrated onto a STARlet

# 3D-CellHOST – The Software



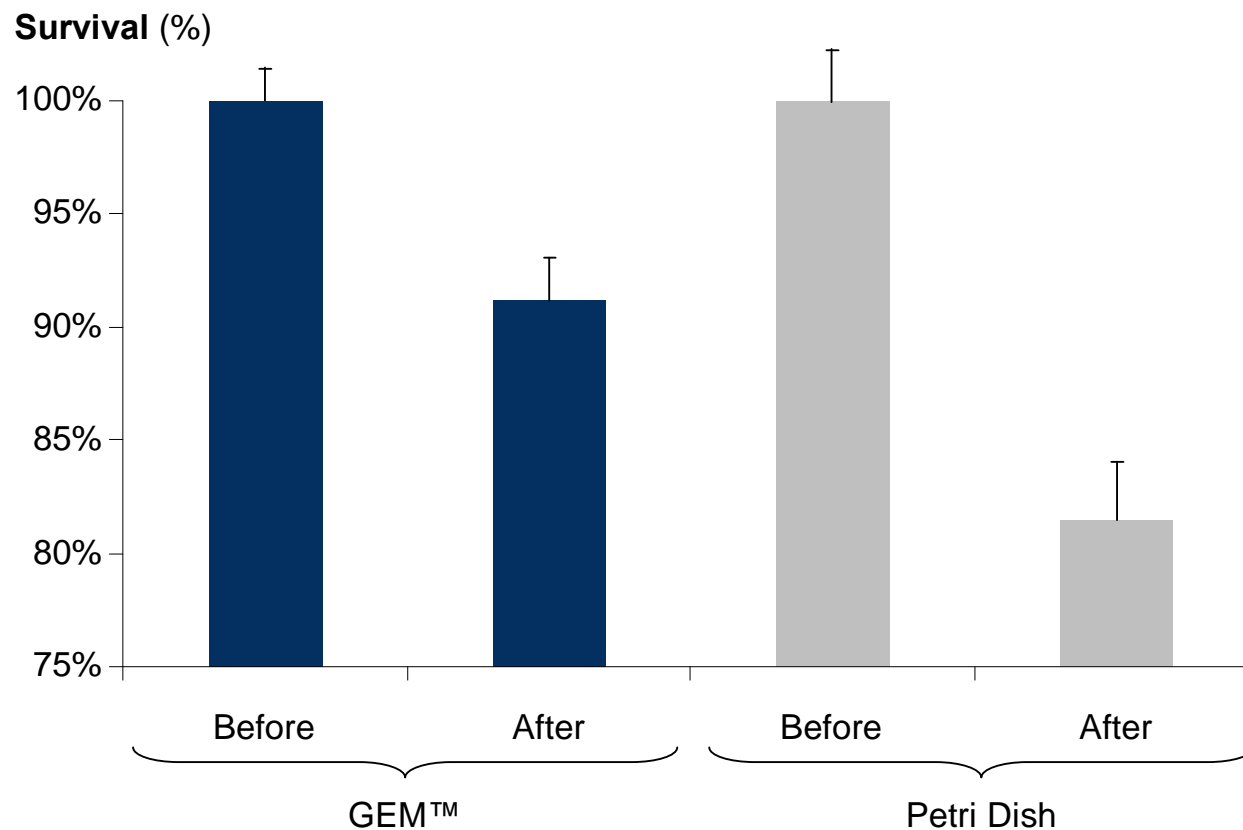
# The Industry Towards Cells as Reagents



Source: Veronica Soloveva, Ph.D., Principal Research Scientist, Group Leader for Cell-Based Assay Development, Screening Sciences, Wyeth Research



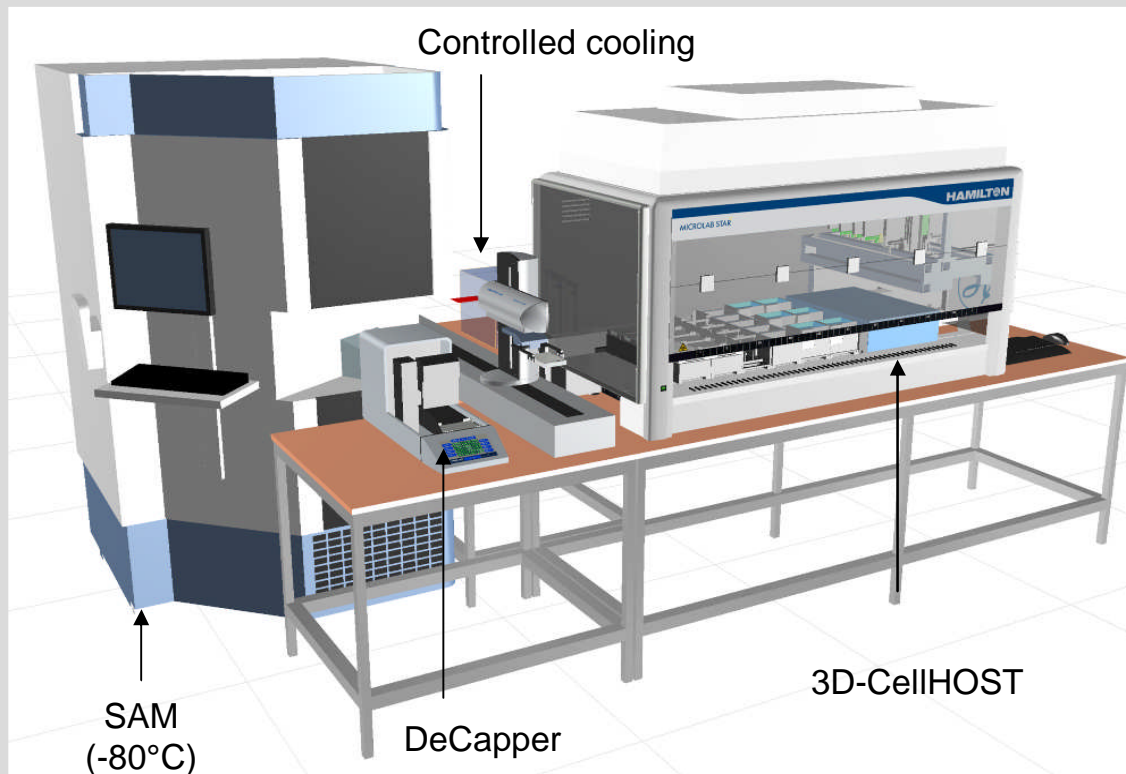
# Survival After Freezing is Enhanced



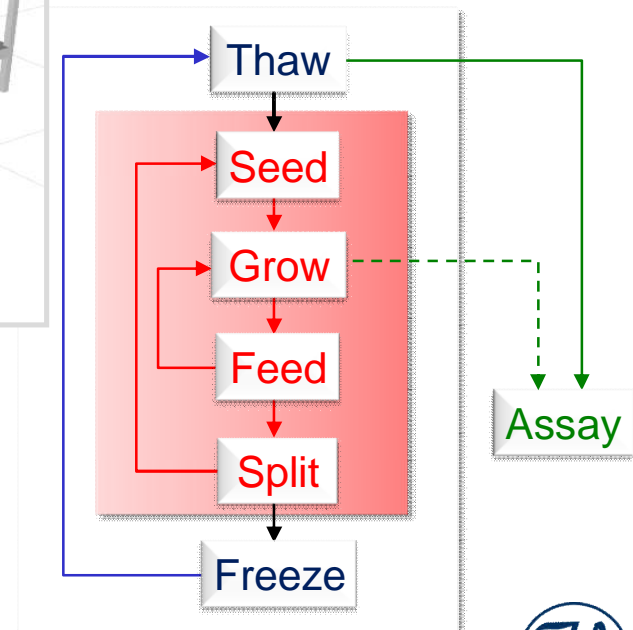
Note: MDCK, n=3, P<0.05 % survival Plastic vs GEMS, ANOVA, Duncans test  
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# Cells as Reagents

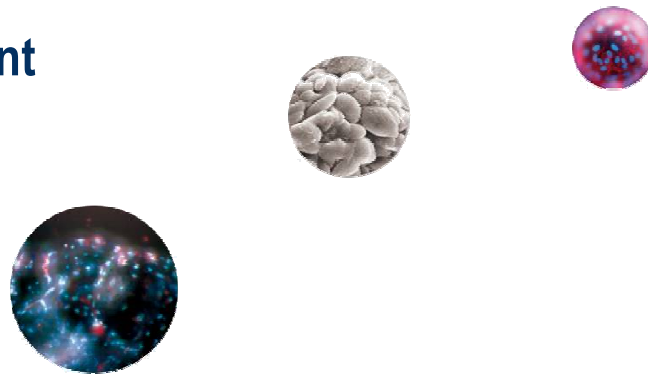


- From freezer to assay in one step
- Uncoupling of cell culture from downstream assays



# 3D-CellHOST

Relevant  
Cells



Convenient  
Process



Consistent  
Results

