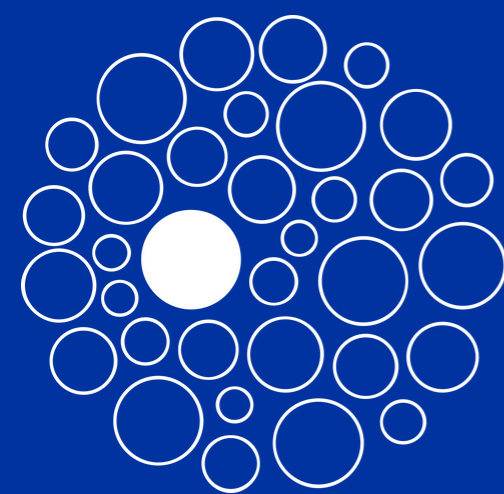




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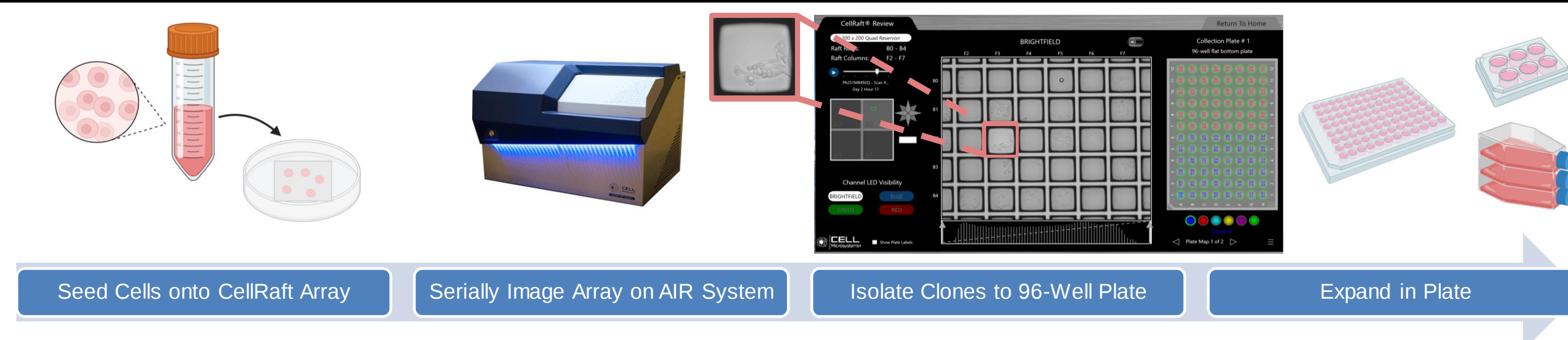
CellRaft Technology vs Limiting Dilution

Cell Microsystems, Inc., Durham, NC USA

Overview

CellRaft® Technology allows for streamlined and efficient cell line development by leveraging the combined power of flask-like cell culture conditions of the CellRaft Array cell culture consumable with our automated isolation and imaging instrument, the CellRaft AIR® System. The CellRaft AIR System offers an automated solution to an otherwise labor-intensive workflow and supports cell health, time-course imaging for clonal verification, and automated isolation for downstream propagation, altogether providing an alternative that is more time, labor, and cost-efficient for cell line development.

CellRaft Technology Workflow



Easily Track-and-Trace Monoclonal Colony Growth on the CellRaft Array

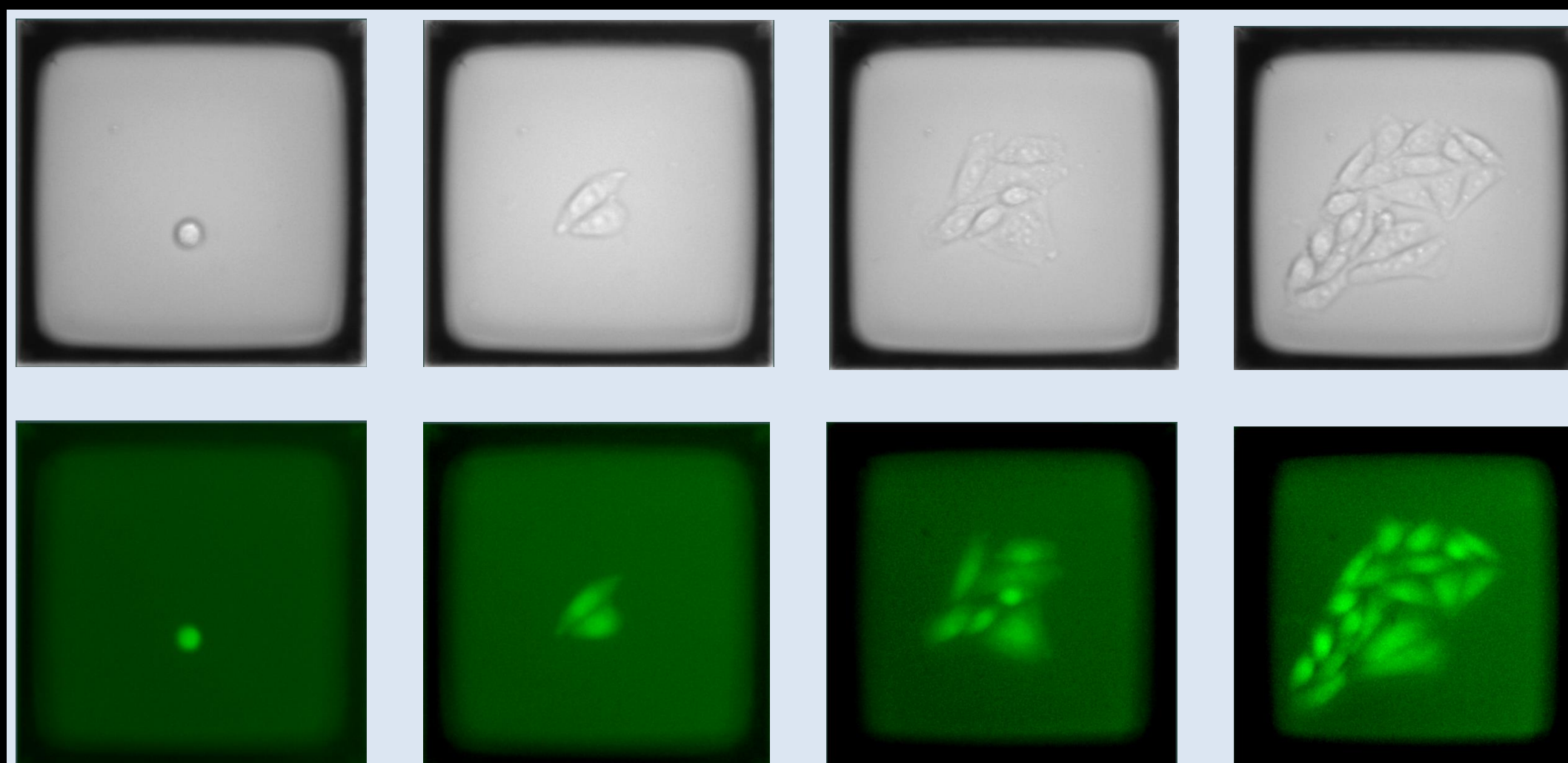


Figure 1: Monoclonal Expansion of a Single Cell on a CellRaft. Single cells were serially imaged on the CellRaft AIR System daily. Monoclonal colonies were identified using CellRaft Cytometry until ready for isolation into a 96-well collection plate.

The CellRaft Array Improves Formation of Colonies from Single Cells

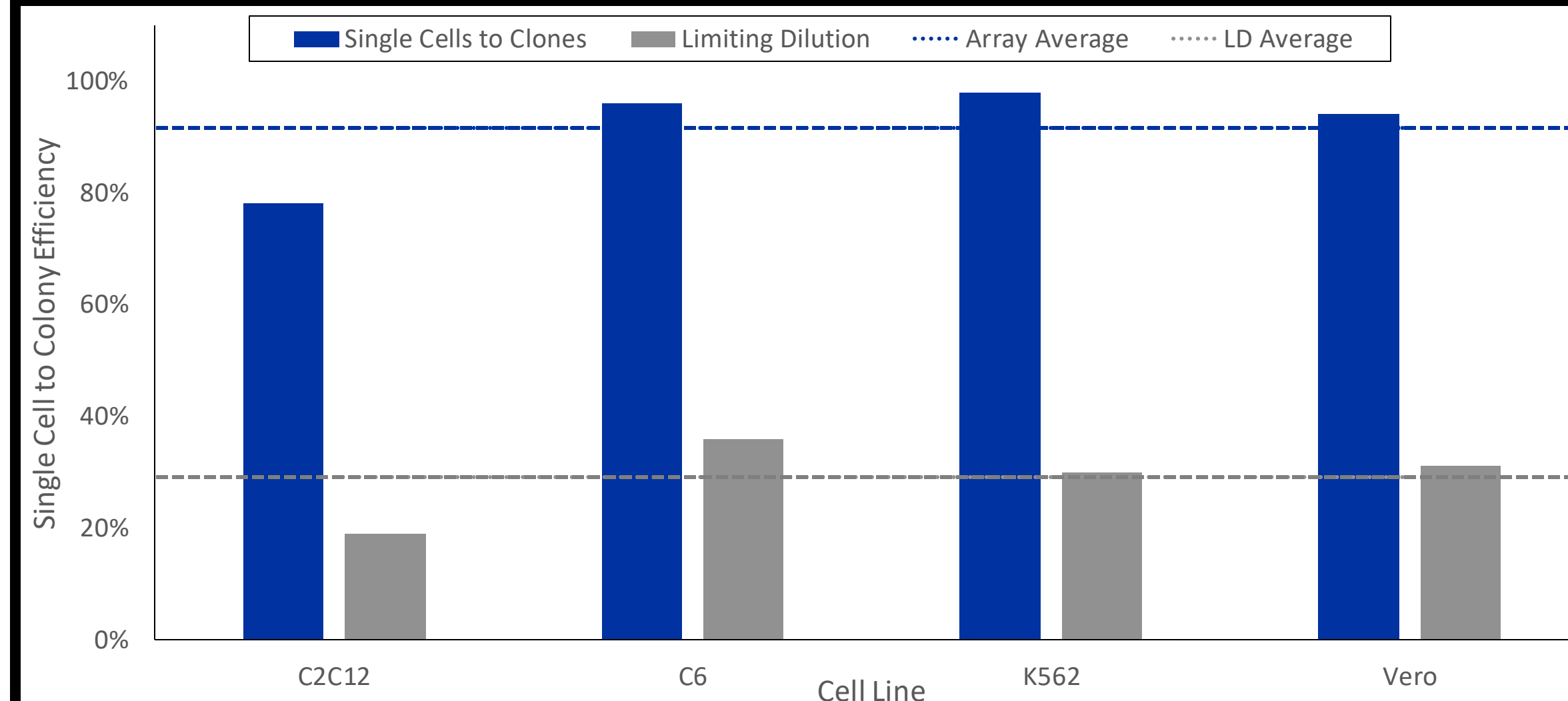


Figure 3: Colony Formation of Single Cells on the CellRaft Array vs Limiting Dilution. Single cells on a CellRaft were identified and tracked for colony formation, via CellRaft Cytometry, before isolation. On Array, the average colony formation was **92%** relative to 29% for Limiting Dilution.

Rapid Growth of Monoclonal Colonies after CellRaft Isolation

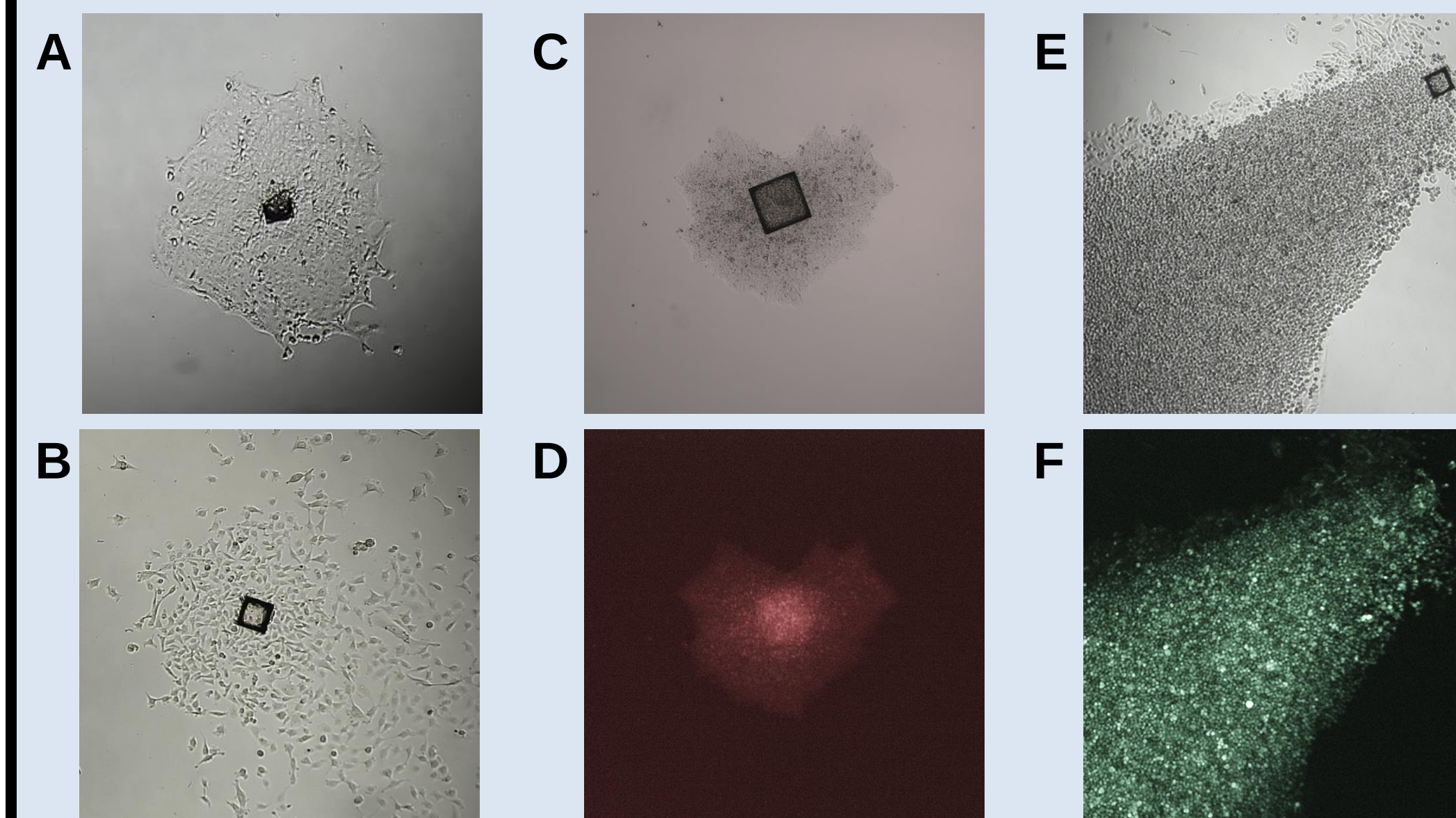


Figure 5: Colony Outgrowth from Isolated CellRafts. Colony expansion off-raft was imaged on a bench microscope 7-10 days post-isolation. Colony formation for various cell lines: A) Vero B) HT-1080 C) iPSC (RFP) brightfield D) iPSC (RFP) red fluorescence channel E) CHOK1 (GFP) brightfield F) CHOK1 (GFP) green fluorescence channel.

CellRaft Cytometry Identifies CellRafts Containing Clones

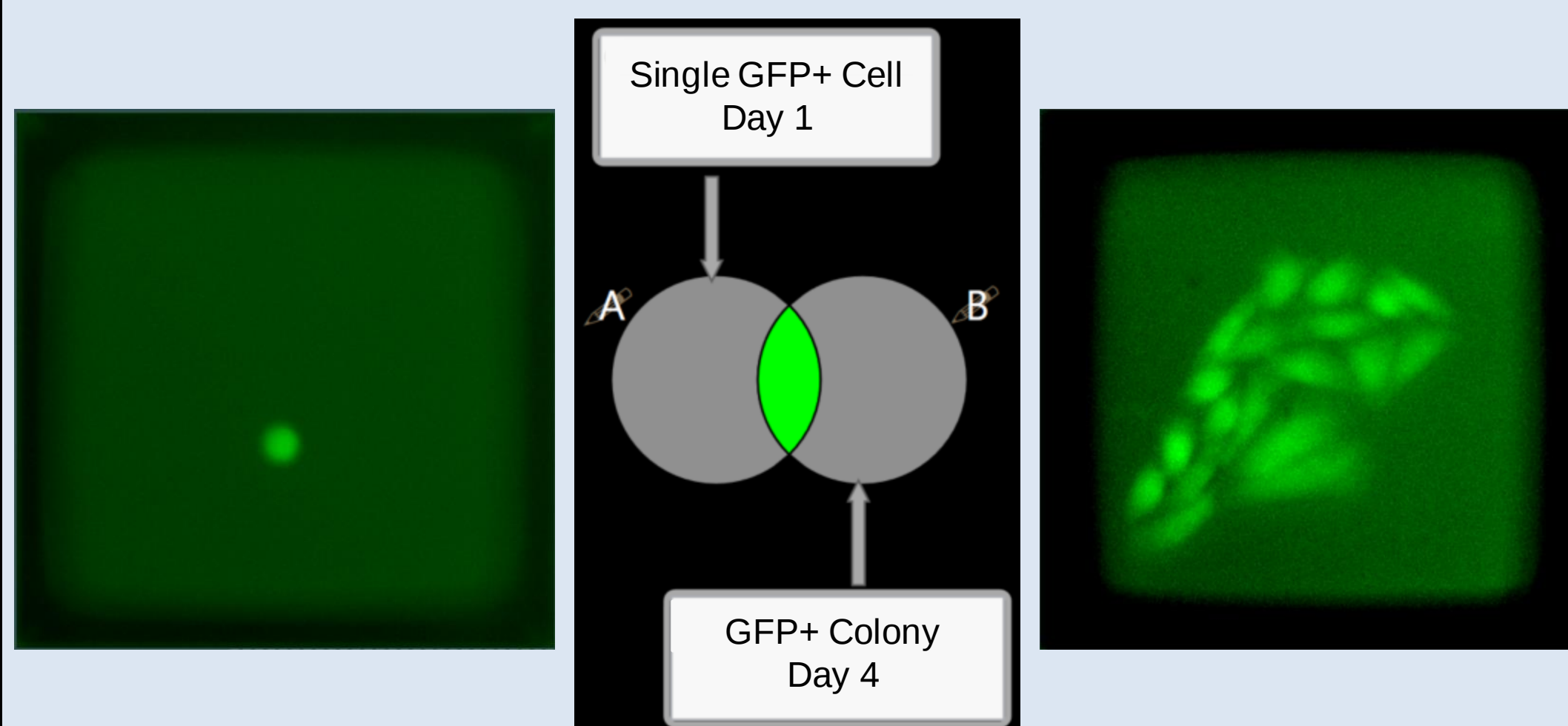


Figure 2: Identification of GFP+ Monoclonal Colonies Using CellRaft Cytometry™. Two population sets, fluorescent single cells on day 1 and confluent colonies on day 4, are intersected to identify CellRafts containing monoclonal colonies.

4X Improvement in Post-Isolation Colony Formation on the CellRaft Array Compared to Limiting Dilution

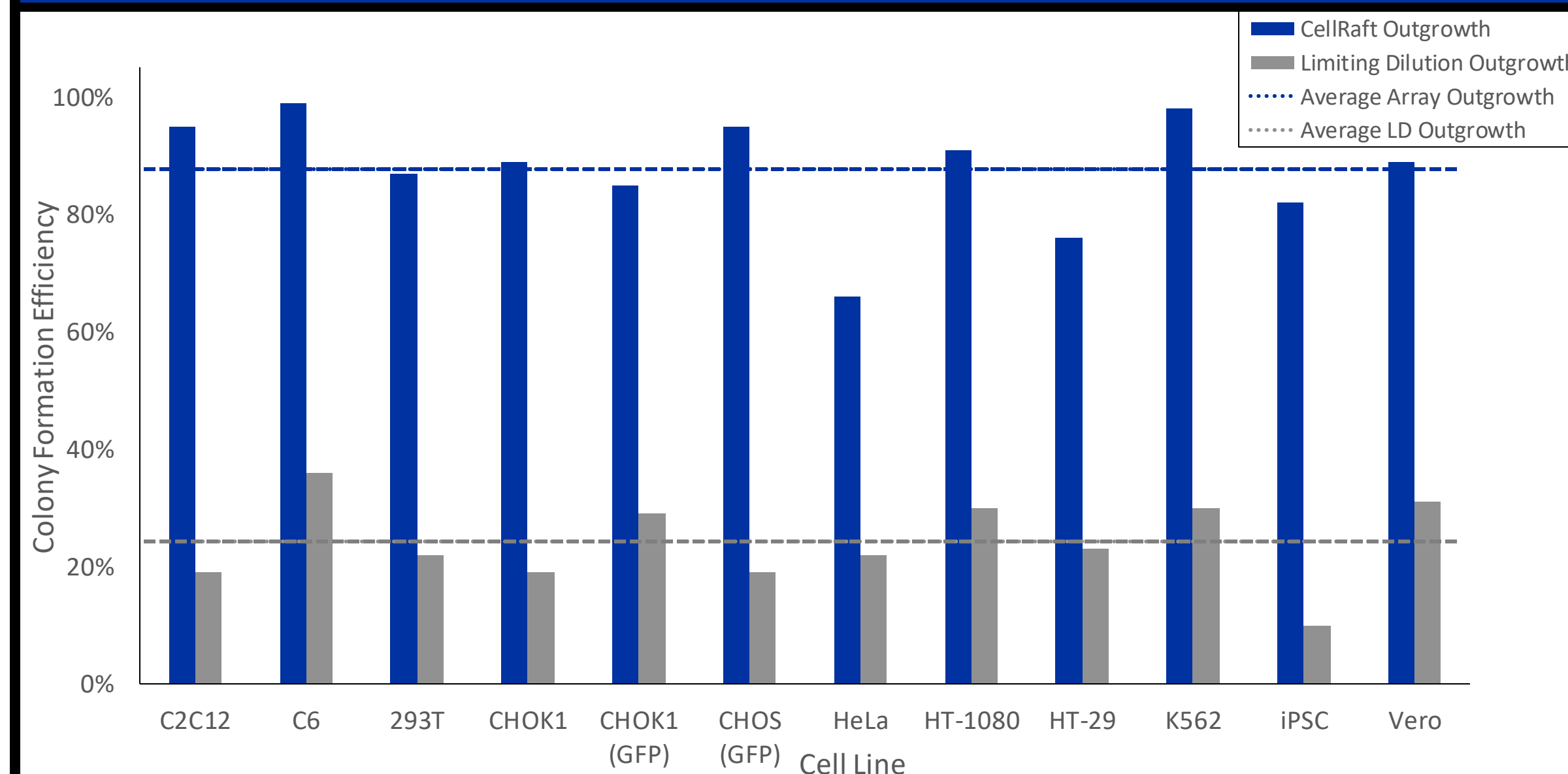


Figure 4: CellRaft Array Improves Colony Growth Compared to Limiting Dilution. Isolated single cell colonies from CellRafts had a mean colony formation efficiency of **88%** in comparison to Limiting Dilution which had 24% colony growth.

Summary

- The traditional method of limiting dilution is costly, labor-intensive, and time-consuming for often feeble outcomes
- The most **efficient** and **effective** method to obtain single cell colonies is to create an easily accessible microenvironment with flask-like conditions
- The **CellRaft Array** has thousands of microwells for cell segregation and shared media to enhance single cell colony formation
- With the **CellRaft AIR System**, image, isolate, and retrieve fully validated, intact clones
- From HEKs to iPSCs, more than **100 cell lines** have been tested with **CellRaft Technology**!