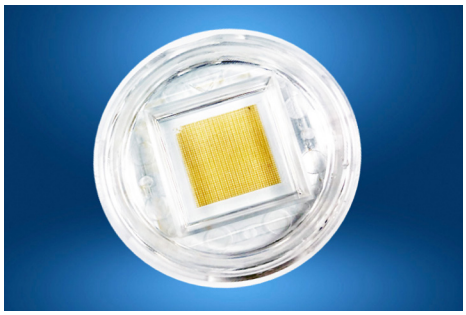
CellRaft® Arrays

Available in seven formats to optimize specific application workflows and outcomes.

CellRaft Single Array

Our most versatile array, suitable for any application.

Sizes:
100 x 100 microns microwells - 40k CellRafts Per Array
200 x 200 microns microwells - 10k CellRafts Per Array



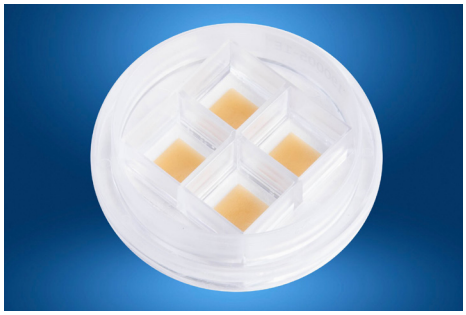
CellRaft Quad Array

Four individual reservoirs make this array the best choice for:

- Clonal expansion and colony selection for parallel gene editing and cloning
- Multivariable treatments and differing media applications

Sizes:

100 x 100 microns microwells - 25,600 CellRafts Per Array (6.4k per reservoir)
200 x 200 microns microwells - 6,400 CellRafts Per Array (1.6k per reservoir)



CellRaft HexaQuad™ Array

Up to 24 individual reservoirs make this array the best choice for:

- High throughput CRISPR screening, clonal expansion and colony selection
- On-array functional assays and dosing studies

Sizes:

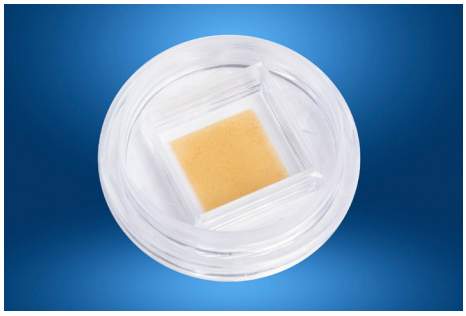
100 x 100 microns microwells - 153,600 CellRafts Per Array (6.4k per reservoir)
200 x 200 microns microwells - 38,400 CellRafts Per Array (1.6k per reservoir)

3D CellRaft Array

Large surface areas that allows cell growth up to 1 mm in diameter make this array best for:

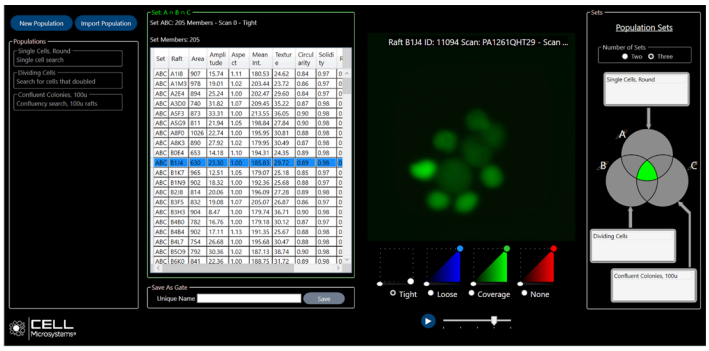
- 3D structures, including organoids

Size:
500 x 500 microns microwells - 2,114 CellRafts Per Array



CellRaft Technology

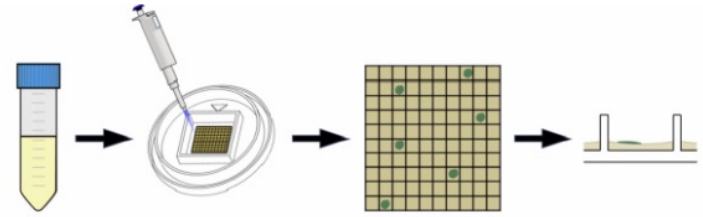
The CellRaft technology is an entirely new and seamless way of enabling cell culture, analysis, and isolation that goes beyond trypsinization and dispensing a single cell into a well. This unique method for developing monoclonal colonies from single cells uses three components (1) a CellRaft Array comprised of CellRafts (2) CellRaft Cytometry™ software and (3) CellRaft AIR, an integrated platform that incorporates rapid imaging, software-guided identification, and automated isolation.



What is a CellRaft?

The key to the technology is the CellRaft Array, a novel proprietary tissue culture dish containing thousands of microscale cell culture growth surfaces called CellRafts. Each CellRaft is housed within an individual microwell, allowing for gravity-based separation of a population into single cells.

Despite being spatially separated in the microwells, the novel design of the array allows the entire cell population to share a contiguous media volume, which leads to improved viability and proliferation of single cells compared to other single-cell culture methods. The cells are cultured while attached to the CellRaft for the entire duration of the experiment, with no need for dissociation or sorting to recover the validated clones.



Prepare Cell Suspension

Dispense Cell Suspension into CellRaft Array

Cells Settle into Microwells via Poisson-like Distribution

Cells Attach to Polysterene CellRaft

Software-Guided Identification and Automated Isolation

Finding those precious clones is easy using the CellRaft AIR System and the CellRaft Cytometry™ software. The arrays are rapidly scanned on the instrument in brightfield and three-color fluorescence in as little as seven minutes*.

The arrays are maintained in standard tissue culture incubators when not being scanned or isolated, freeing up the instrument for other experiments. Using software analysis tools, CellRafts can be analyzed for a wide range of parameters for expression or function, morphology, and time or a combination of all three to identify the desired phenotypes. After the automated identification of CellRafts with the cells or colonies of interest, the rafts can be easily mapped for isolation.

Isolation of the CellRafts is fully automated. The CellRafts are released from the array and isolated using a magnetic wand. The process is rapid, gentle, and efficient, yielding a 96-well plate filled with viable, validated clones.

*time dependent on experimental conditions

"One of the **biggest bottlenecks** in our lab is the ability to **produce clones at a fast rate**. The CellRaft AIR is uniquely placed in that **cells are able to survive,** as they share the media, and it is very gentle. We **are able to really speed up** the process using the CellRaft AIR System."

— Associate Director, Cell Engineering at a Pharma Company

More Viable Clones – Faster

Generate phenotypically-verified single cell-derived colonies in as little as 72 hours, with just 15 minutes of hands-on time, and 10 to 50x the number of clones compared to traditional methods. Cells share and enrich a common culture media while remaining separated. This contiguous media approach is much more favorable and dramatically increases cell viability.*

Eliminate the need for trypsin, fluidics, or limiting dilution while getting more clonal colonies. Our system also uses less plasticware and media than competitors.

*compared to FACS into a 96-well culture plate