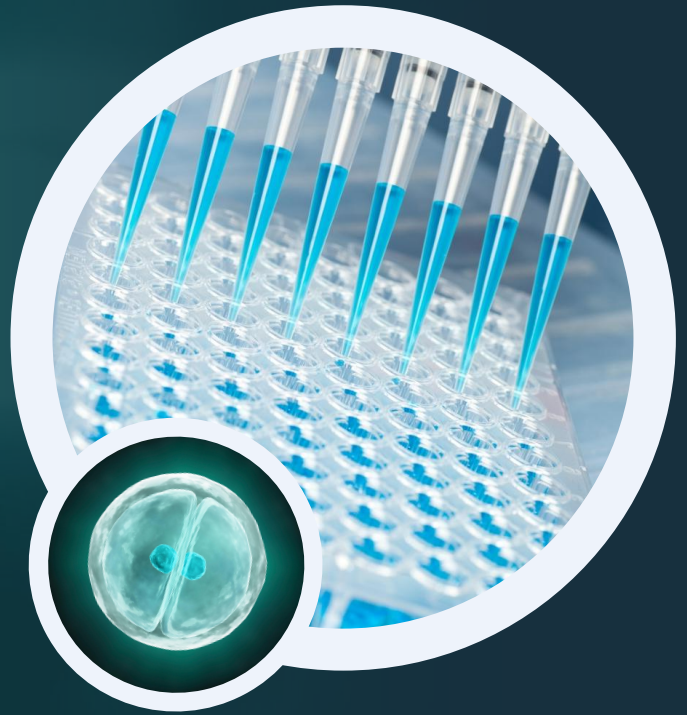
LEVITAS BIO

Discover More, Spend Less

LeviCell Array Systems

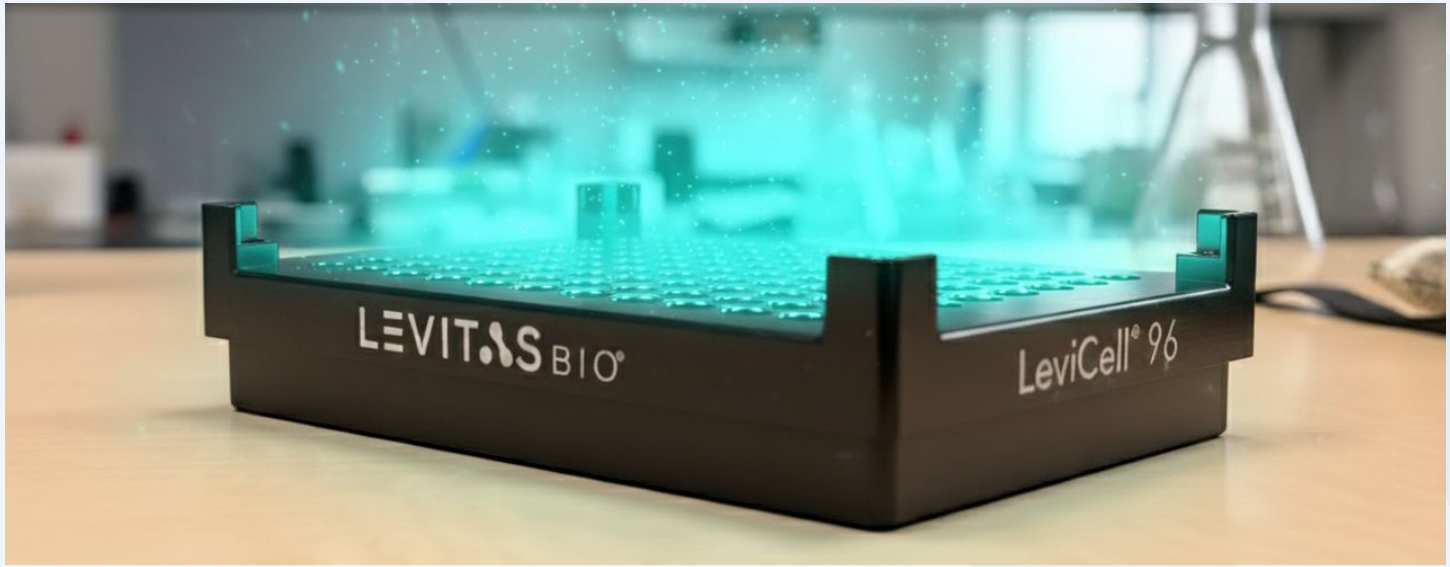
Scalable Cell Enrichment & Washing Solutions



Jan 2026

Scalable Cell Enrichment & Sample Processing Solutions Starts Here

LeviCell® Array Systems



Selective Arrayed Levitation Technology (SALT™) delivers label-free, flexible throughput cell enrichment and washing across every scale

The LeviCell Advantage

All-in-One Workflow

Simultaneous live cell enrichment and depletion of debris, RBCs, CD45 and myelin.

Scalable Solutions

From pilot studies to high-throughput, we have the right fit for you.

Label-Free & Gentle

Preserve cell viability and phenotype integrity.

Streamlined Workflow

Exponential hands-on time and step savings.

Exceptional Purity

Isolate target cells with unparalleled precision.

Flexible Input

Works with cells, nuclei, and organoids.

Your Research. Your Scale. Our Technology.

LeviCell 12

Quality for
Every Insight

- 12 samples / run
- Fast, simple, low-cost
- Fully upgradable

Best For

- Lower-throughput studies
- Pilot & optimization studies
- Flexible sample inputs

LeviCell 96

High-Throughput
Uncompromising Quality

- 96 samples / run
- Enrichment and cell washing
- Sample flexibility

Best For

- Medium to high-throughput studies
- Single-cell genomics
- Standardized assays
- Running sample replicates

LeviCell Pro

Integrated
Automation at Scale

- Integration into existing liquid handler
- Walk away automation
- Full flexibility

Best For

- Large-scale studies
- Fully automated labs
- Leveraging existing liquid handling capabilities
- Maximizing walk-away time

100x throughput. 10x cheaper. Zero compromises

100X Throughput

Fully automated 96-well workflow

- 1-96 samples at a time
- Parallel enrichment and targeted depletion
- SBS format, automated workflow

10X Cheaper

$10 per sample all in

- Includes live cell enrichment and debris removal
- No additional steps required
- Reproducible results well x well

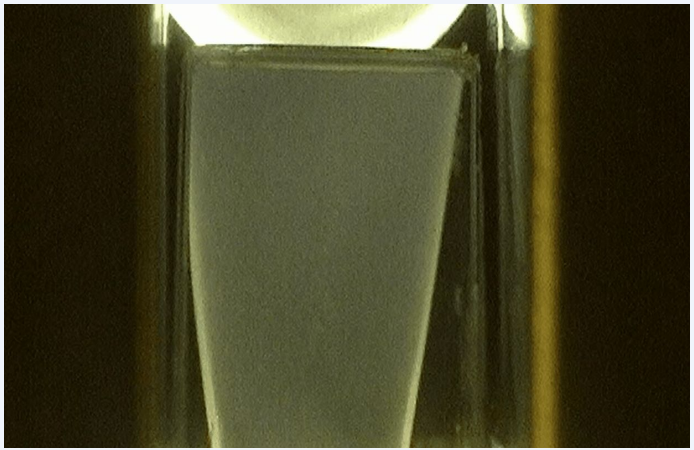
The Payoff

Samples to insights
Exponentially faster. Cheaper. Better.

- **Exponential** returns on ROI
- **Scale up** like never before
- **Leapfrog** competition with better data models

Are you ready for the sample prep revolution?

Innovative Technologies that Deliver Sample Prep at Scale



From N of 1 to 96, LEVITAS BIO® Enables:

Higher Throughput

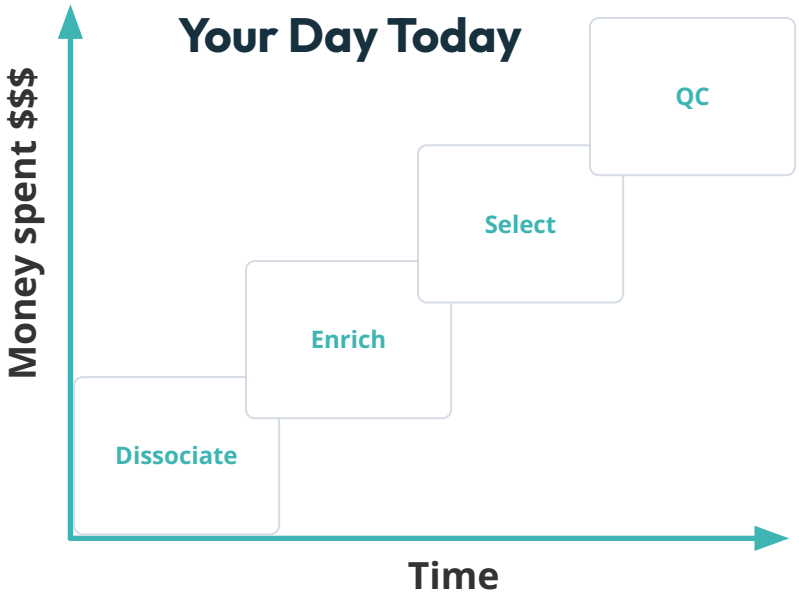
Lower Cost

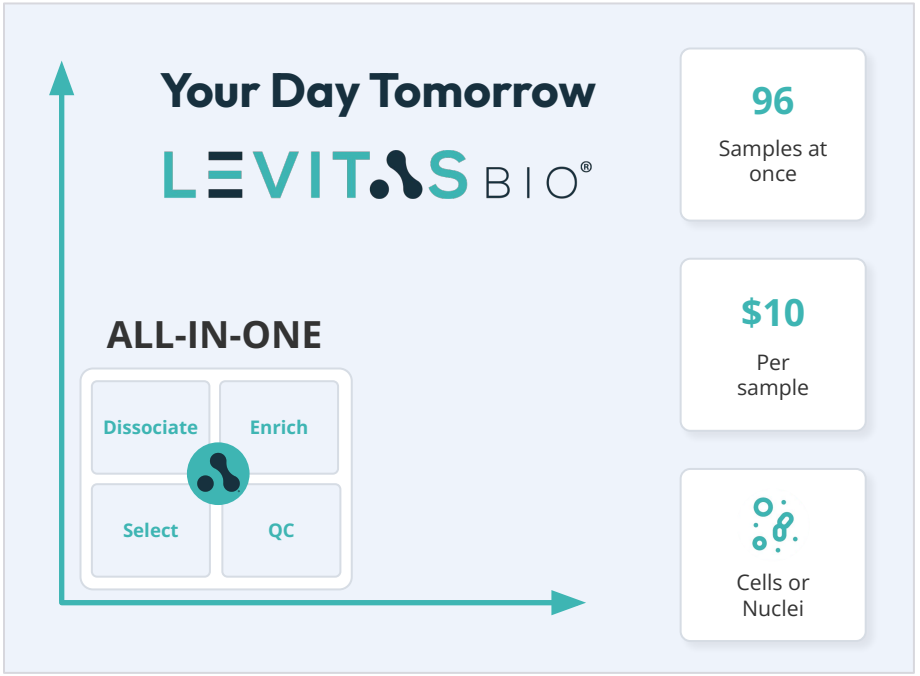
Better Data

100x throughput

10x lower costs

Superior data/efficiency





Levitation is Revolutionizing Research Around the World

Pharma/Biotech

sanofi

gsk

VERTEX

abbvie

Bristol Myers Squibb™

DISCOVERY LIFE SCIENCES

AMGEN

psomagen

Genentech
A Member of the Roche Group

MERCK

Academia

Stanford University

St. Jude Children's Research Hospital

NIH

UC San Diego

HARVARD UNIVERSITY

Cleveland Clinic

Memorial Sloan Kettering Cancer Center

UCL

Imperial College London

MAYO CLINIC

Mount Sinai

MAX PLANCK GESELLSCHAFT

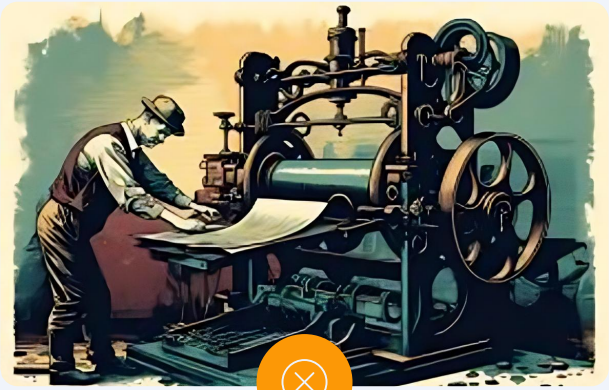
UCSF

Penn

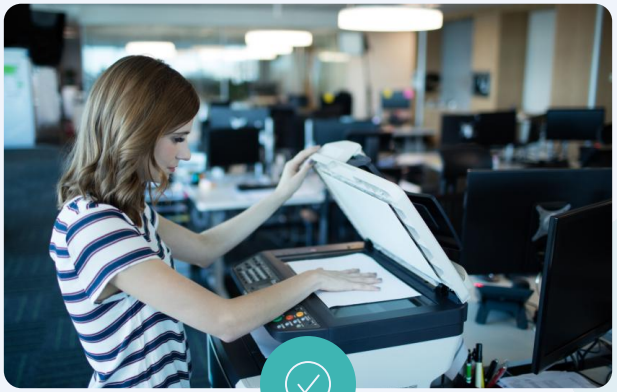
BROAD INSTITUTE

UNIVERSITY OF OXFORD

Today's Cell Processing Methods are Manual, Slow, and Linear



- Manual
- Linear Processing
- Single Functionality



- Automated
- Parallel Processing
- Multi-functional

Sample Processing is Now a Key Bottleneck in Large Datasets

Starting Samples

- Tissue
- Blood
- Cell Culture
- Engineered Cells
- AgBio

Sample Processing & Characterization

Critical Bottleneck

Downstream Workflow

Proteomic Assays

Genomic Assays

10x GENOMICS · illumina · BD · revvity · Parse · SCALE biosciences

LeviCell® Array System – Fast, Simple, Flexible

Unmet Need	Current	LevitasBio	Key Benefits
Sample Flexibility	X	✔	• Non-adherent and adherent cells • From bacteria to organoids • Debris and contaminant tolerant
Unbiased cellular profile and response	X	✔	• No stains or markers • No high pressures or microfluidics • Maintains activation and expression states
Ability to multiplex with LeviSelect depletion assays	X	✔	• Deplete unwanted cell populations • Enrichment and depletion in one assay • Workflow consolidation saves time/money

Key Applications - Automated SBS Plate Workflow

Cytometry

Incorporates pre-sorting enrichment

- Debris removal
- Live cells
- Targeted depletion

Cell washing & background removal

- Unbound antibody
- Dyes

CITE-Seq

Pre-encapsulation enrichment

- Debris removal
- Live cells
- Targeted depletion

Cell washing & background removal

- Unbound antibody

scRNA-Seq

Pre-encapsulation enrichment

- Debris removal
- Live cells
- Targeted depletion

3D Culture

Organoid & spheroid enrichment

- Debris removal
- Dissociated or whole 3D culture enrichment
- Multi-factorial workflows

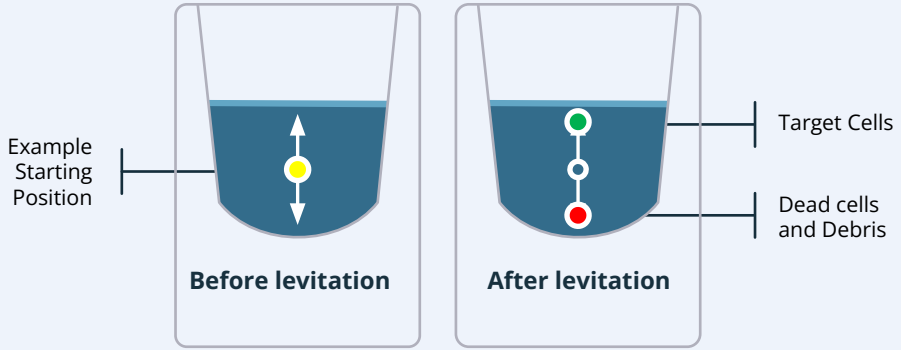
Revolutionary Selective Arrayed Levitation Technology (SALT™)

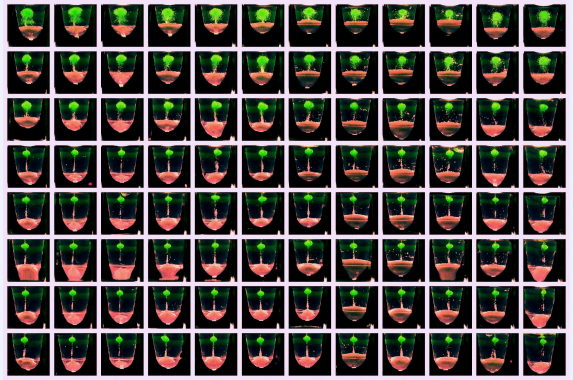
Originally invented by George Whitesides at Harvard

George Whitesides

Delivering on 8 years of development by bringing value to high throughput users

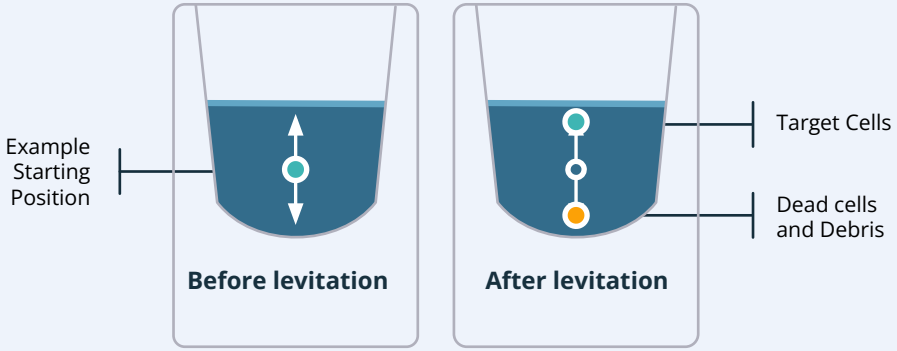
Proprietary High-Density Levitation Array enables gentle isolation and characterization of cells without the use of any labels or markers





Revolutionary Selective Arrayed Levitation Technology (SALT™)

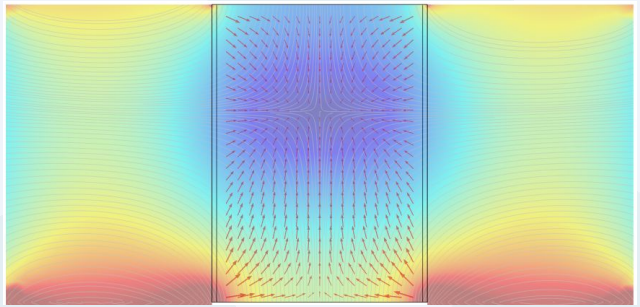
The **LeviCell® 96 Array** represents a precision-engineered advancement in magnetic levitation technology. This automation-ready platform replaces traditional mechanical sorting with a **physics-based, density-discriminating levitation array**, enabling **high-throughput, label-free cellular separation** across 96 parallel wells. Each array delivers consistent, reproducible fractionation of viable cells and subcellular structures—**without compromising cell integrity or downstream data fidelity**.



Revolutionary Selective Arrayed Levitation Technology (SALT™)

Each LeviCell 96 Array is a **complex magnetostatic architecture**, designed and calibrated to achieve unprecedented field uniformity and repeatability.

- Contains **hundreds of custom-engineered permanent magnets**, individually characterized for magnetic flux density and polarity balance.
- **Precision alignment and calibration** deliver magnetic-field uniformity within **±10 µm** across the 96-well plane—critical for maintaining levitation equilibrium consistency across all channels.
- The **design, calibration, and manufacturing processes** required goes far beyond any generic plate-based magnetic array, integrating custom metrology, micro-machining, and automated QA validation pipelines.
- The result is a **high-stability levitation environment**, seamlessly integrated with robotic liquid-handling systems and optical detection subsystems, forming the core of SALT™ performance.



The Levitation Solution – A Revolutionary Workflow

Add Levitation Agent

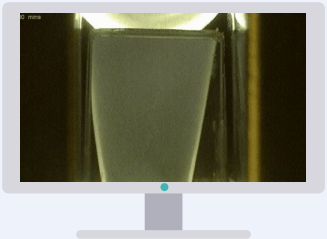
5 min

- Levitation Agent dispensed into up to 96 wells
- Levitation begins on SALT Array
- Assay of interest added, for interaction studies

Levitate

20-40 min

- Levitation begins
- Levitation height depends on cell viability, interactions, etc.
- Results displayed (future imaging upgrade)

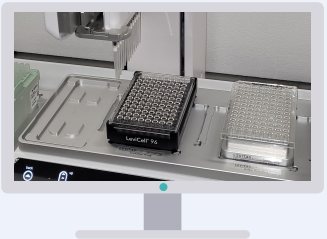


Collect

5 min

- Fraction of interest collected for downstream

Sequencing | Culturing | PDX, etc.



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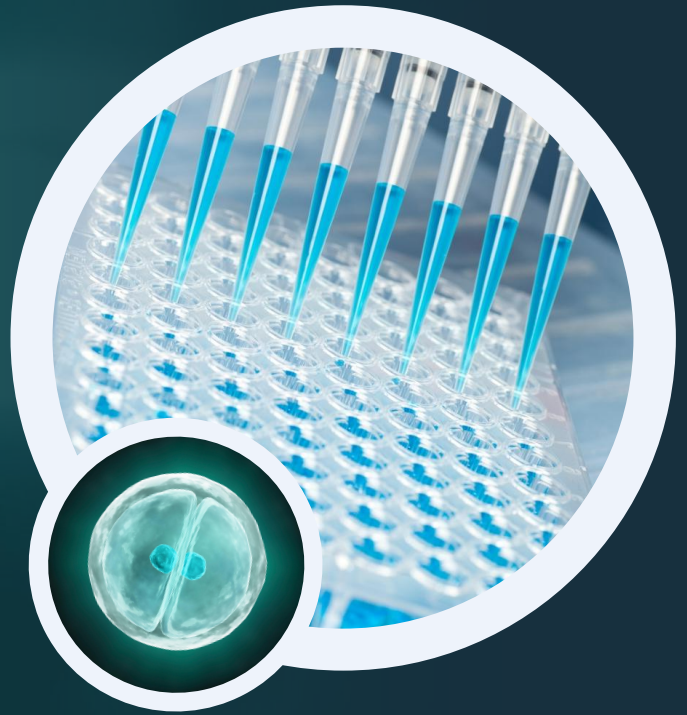
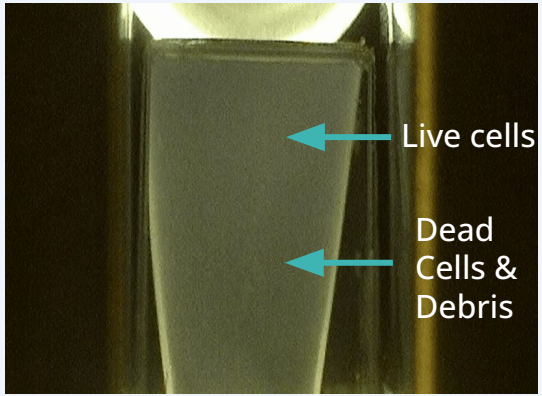
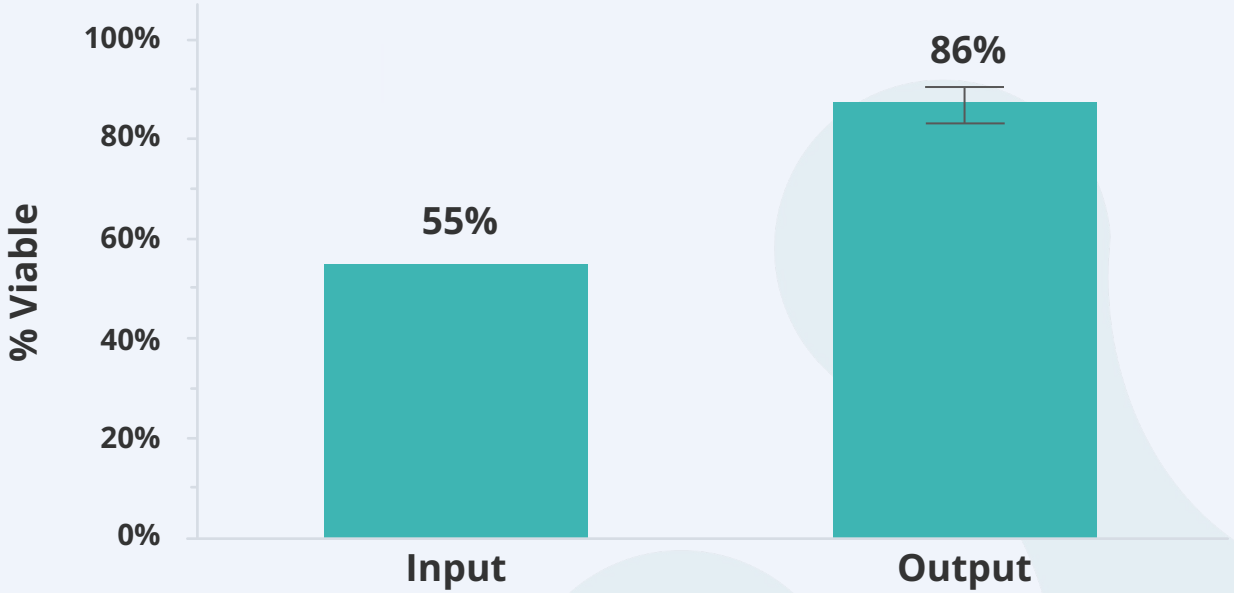
Applications on LeviCell System



Viable Cell Enrichment | Cell Washing | Targeted Cell Depletion | Organoids

Viable Cell Enrichment at Scale Without Beads or Labels

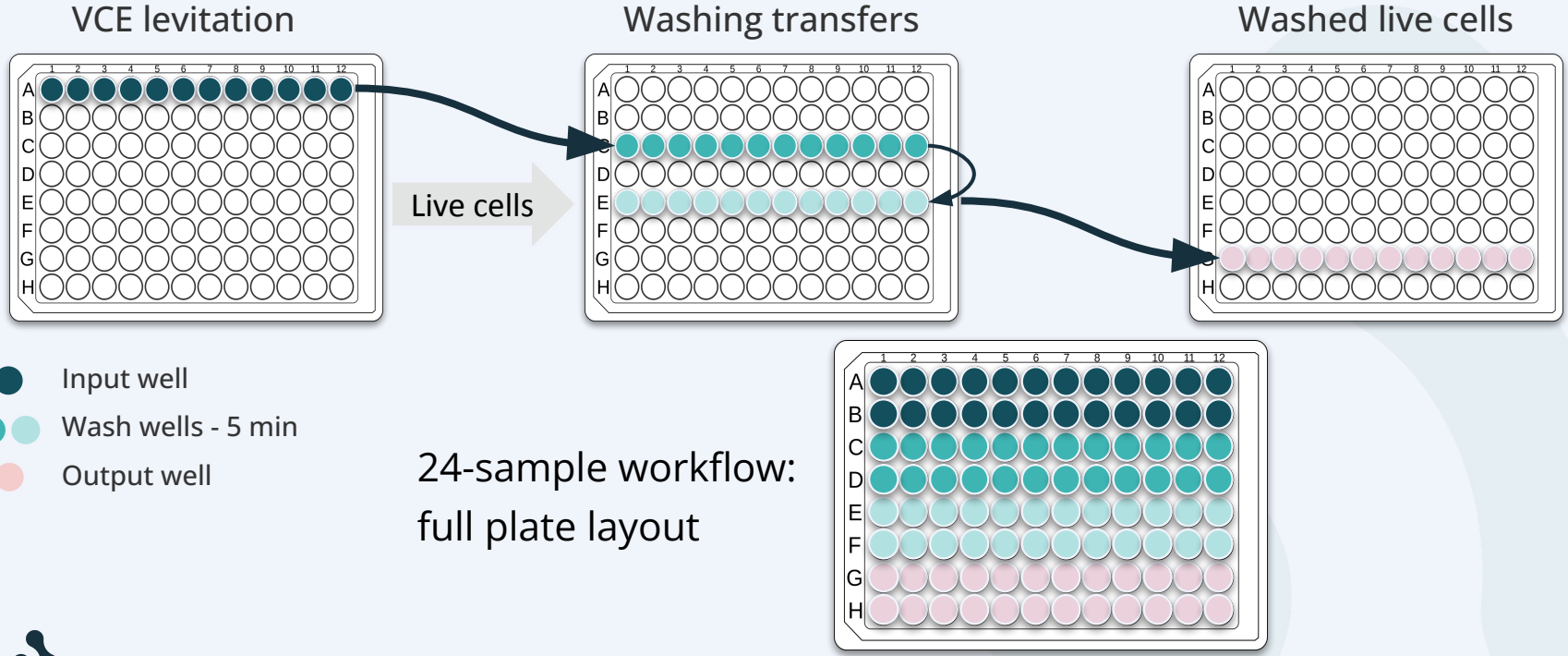




Significant viability improvement from low-quality Jurkat cell sample.
Yields **> 50%,** even from low-quantity starting input (128k cells/well)

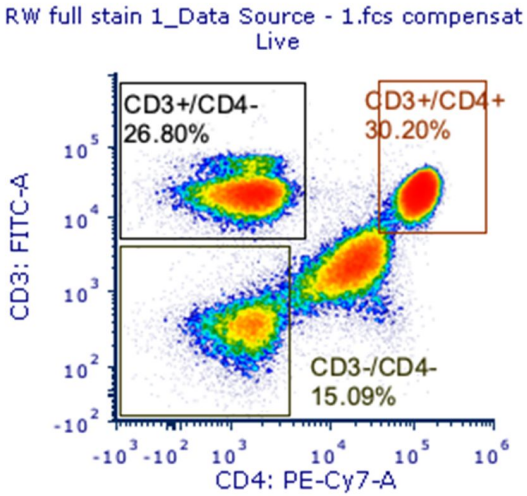
Innovative Cell Washing Capabilities Open More Possibilities

- High-throughput removal of stains, unbound antibody, and debris
- Viable cell enrichment (VCE) comes along ‘for free’

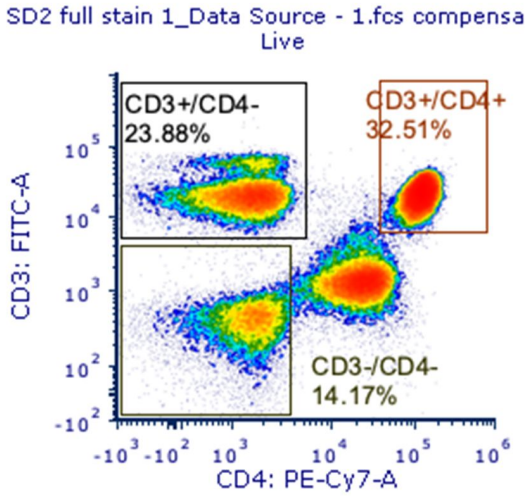


High-Throughput Washing Performance – PBMC Example

2X Manual washes



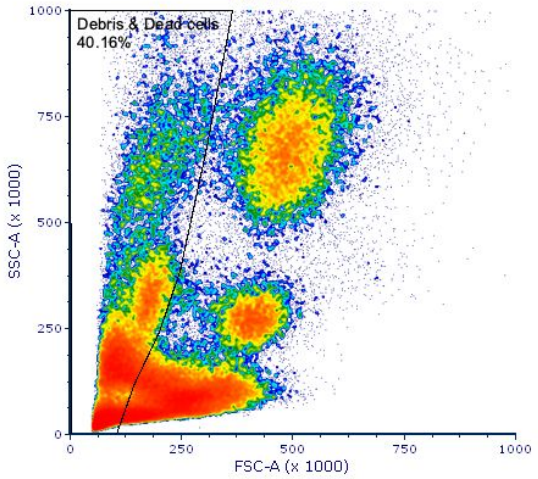
Levitation



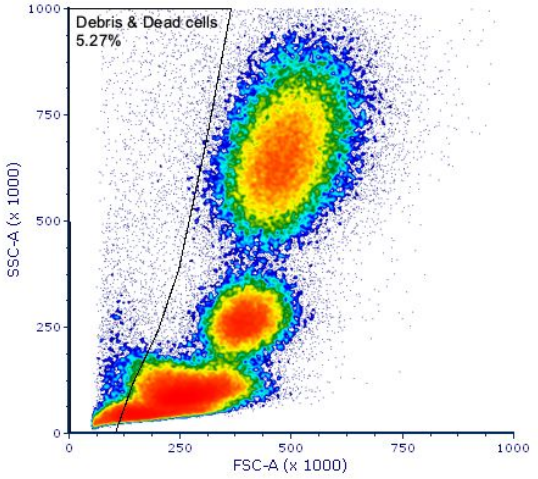
LevitasBio is able to wash away unbound cell type markers conjugated to conventional fluorescent dyes without the challenges of manual processing.

Removes Debris as Well as Dead Cells, Still “For Free” Over Manual

After manual wash

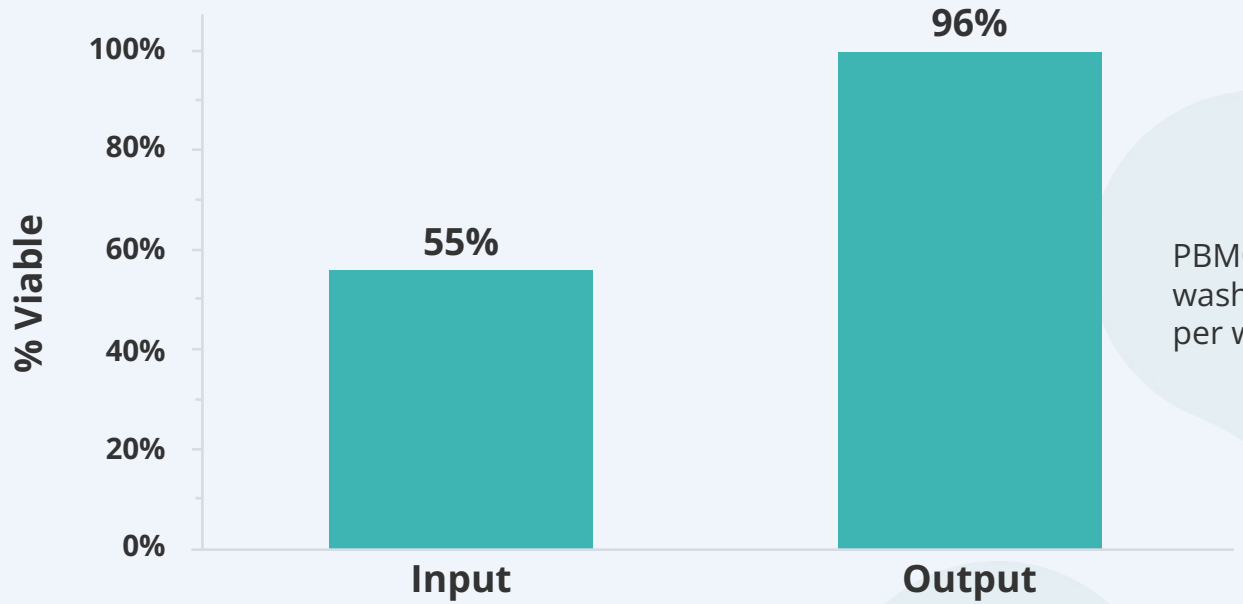


After Levitation wash



Live Cell Enrichment is intrinsically performed as part of the washing protocol – **no additional steps required.**

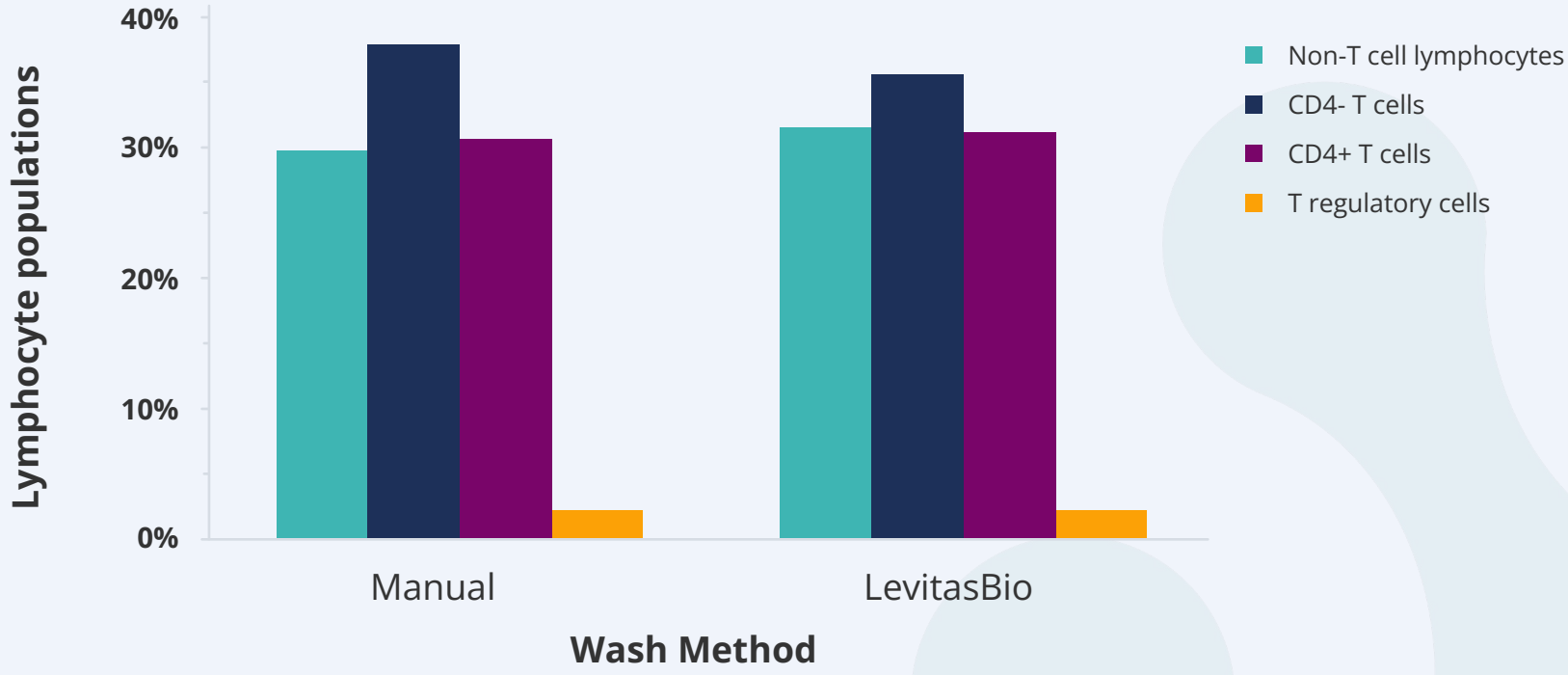
Cell Washing is Gentle and Delivers High Sample Purity



PBMC enrichment during washing – 500,000 cells per well input

Extremely high output purity
Yields 77% - 87%

Levitation Technology Does Not Alter Population Representation



Superior Performance With Minimal Time and Effort

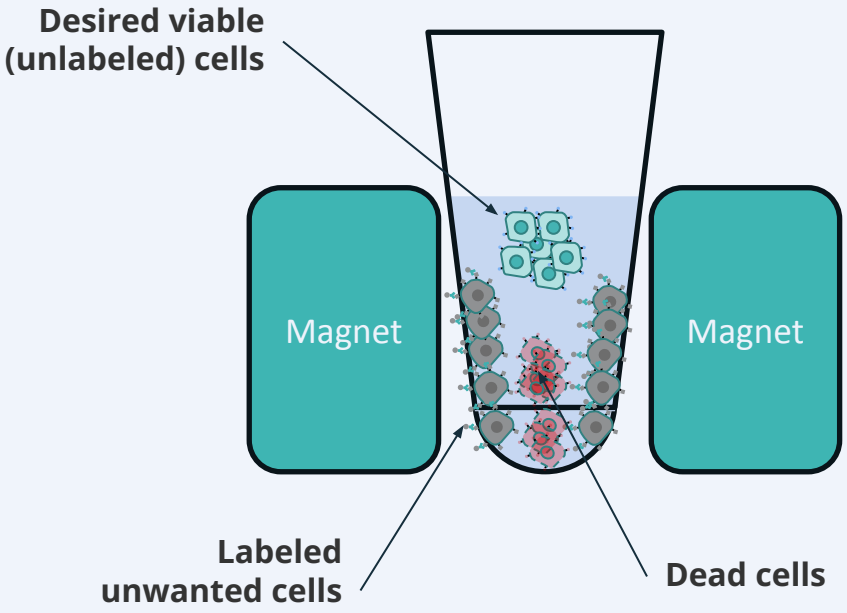
Live Cell Enrichment

Yield	>50%	Viability	Up to 99%
Debris Removal	60%	Levitation Time	40 min
Transfer Steps	1	Total Time	50 min

PBMC Washing for Cytometry

Yield	>50%	Viability	Up to 99%
Population Bias	NO	Time per transfer	5 min
Transfer Steps	3	Total Time Incl. Staining	55 min

LeviSelect Technology + LeviCell Enable Simultaneous Removal of Unwanted Populations From Samples



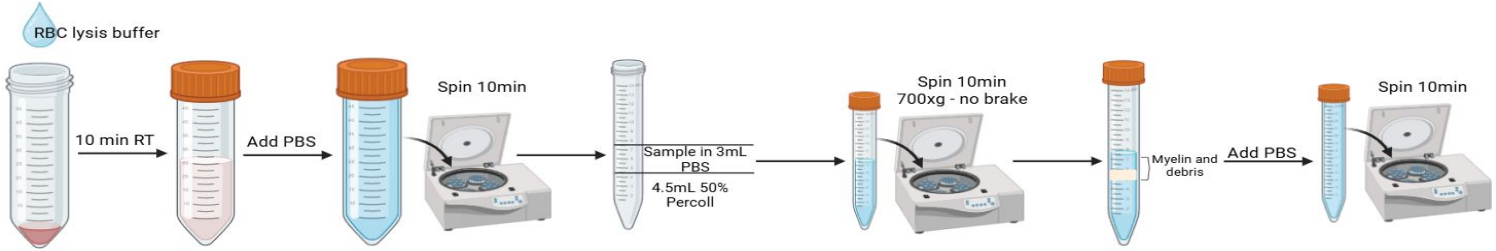
- Antibody-mediated removal of unwanted cells or contaminants via negative selection
- Simultaneous target cell and viable cell enrichment

Available Assays:

Specific immune cell enrichment
CD45+ depletion
Red blood cell depletion
Myelin depletion
“BYOA” (Bring Your Own Antibody)

Brain Processing: 100X Improvement Over Today

Traditional:



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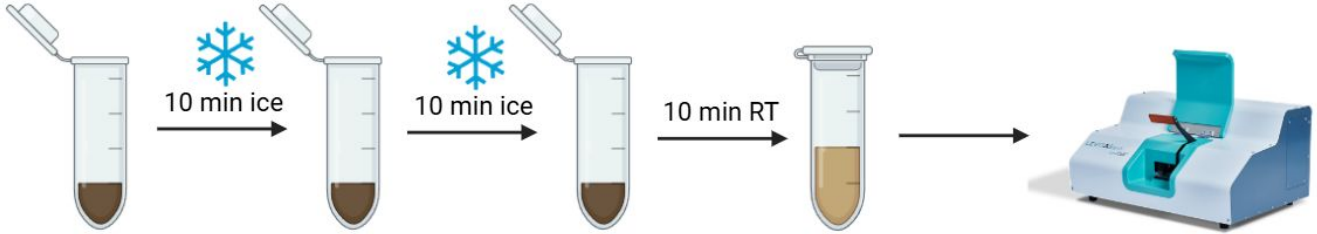
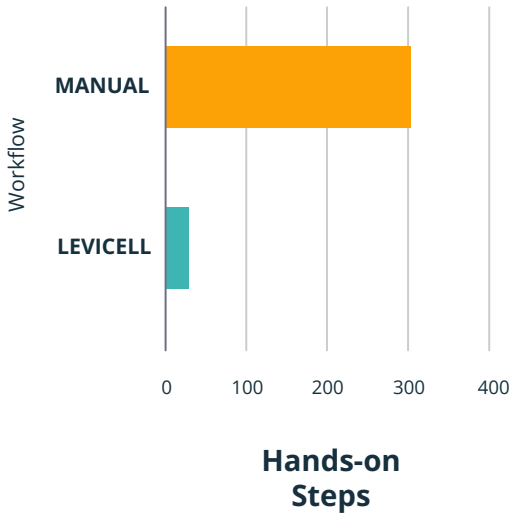
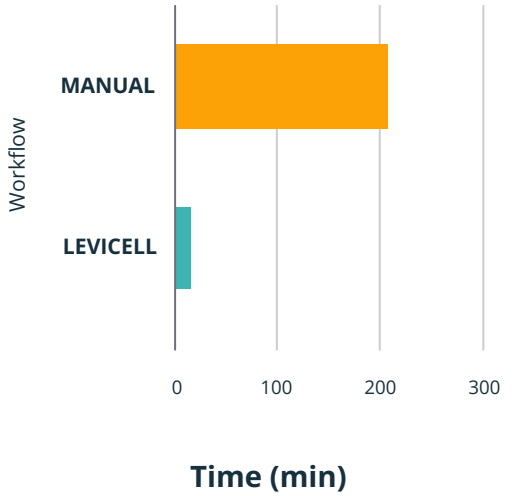


Massive Workflow Improvements on the LeviCell System for Neuro

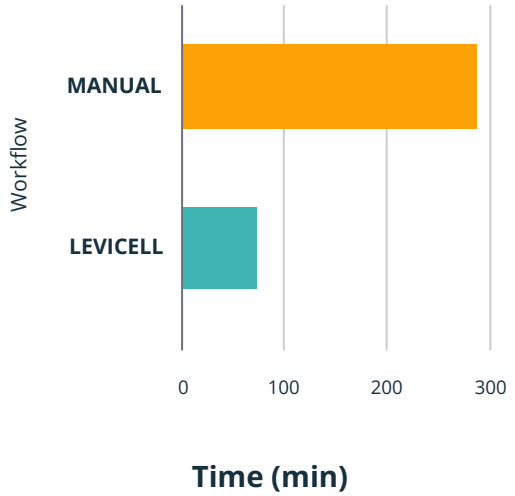
Hands-on Steps:
24 Samples



Hands-on Time:
24 Samples

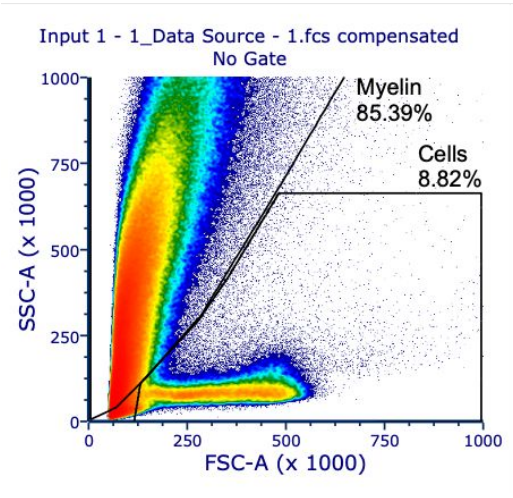


Total Time:
24 Samples

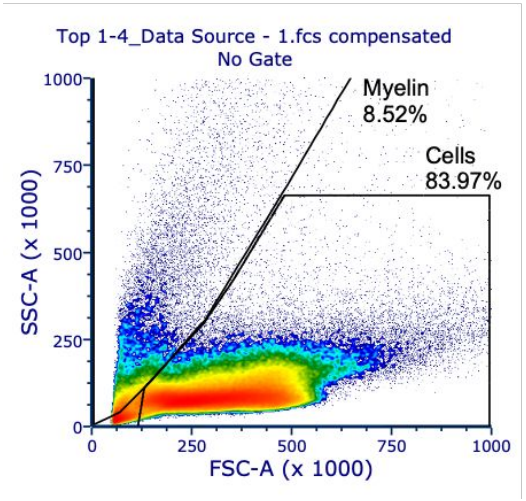


Delivering Clean, Reliable Data - Well After Well

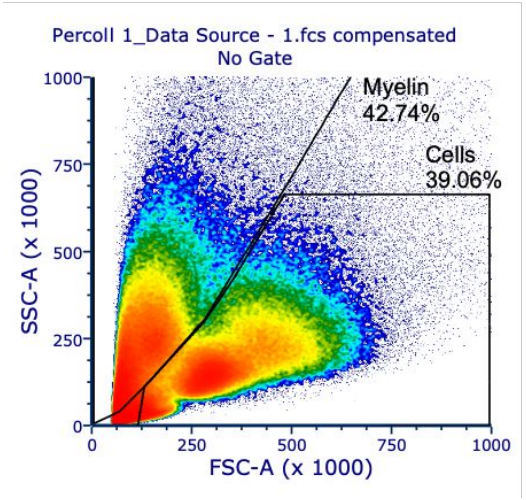
Original Sample



After LeviSelect



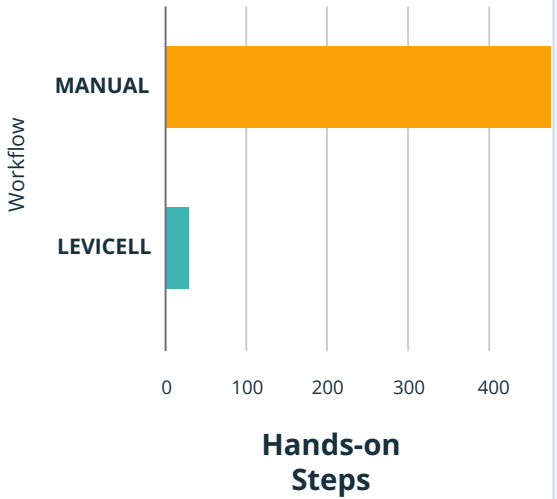
After Traditional Method



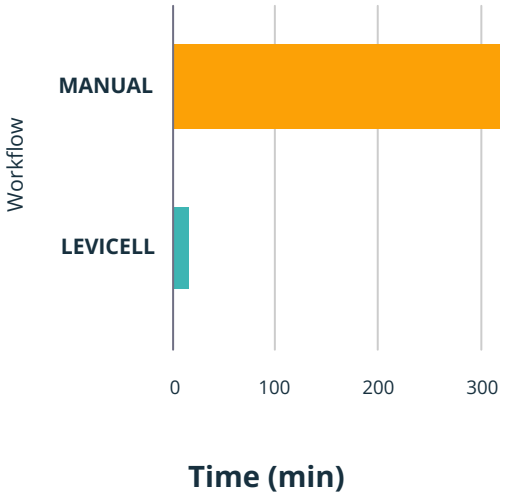
10X Less Myelin with LeviSelect than Traditional Workflow

Revolutionary Workflow Improvements for Cancer Samples

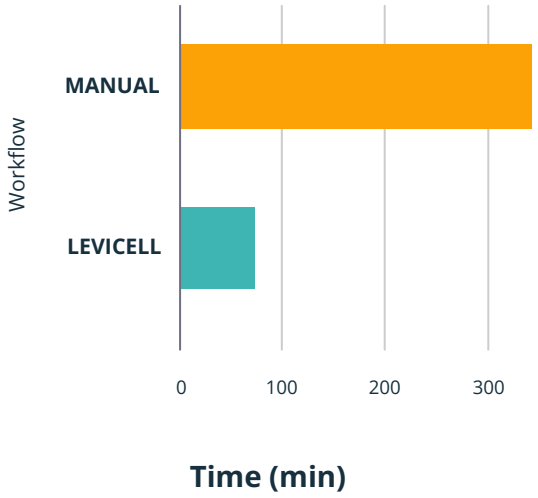
Hands-on Steps:
96 Samples



Hands-on Time:
96 Samples



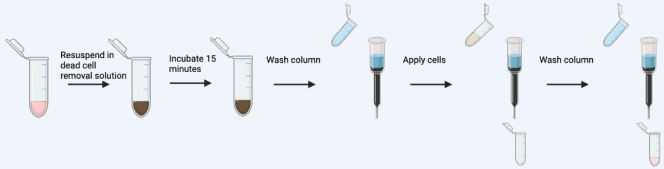
Total Time:
96 Samples



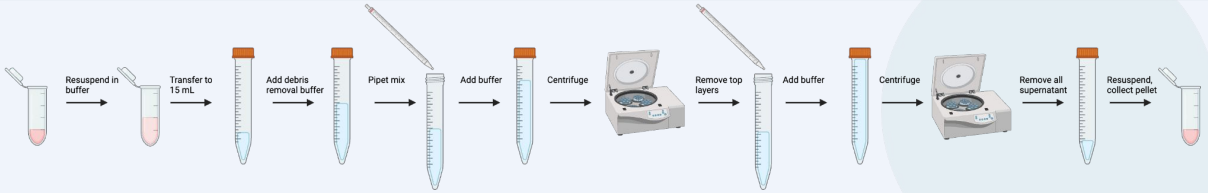
100-fold time and step savings on the LeviCell System

Multiplexing Capabilities of LeviCell Facilitates Complex Workflows Like Cancer Sample Processing

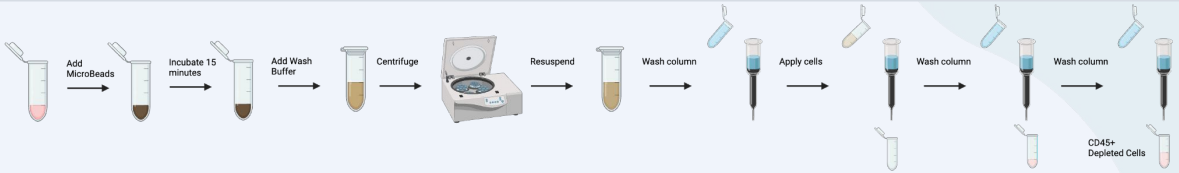
Traditional:
Live cell enrichment using magnetic beads



... then debris removal using gradient centrifugation



... then CD45+ depletion using another set of magnetic beads

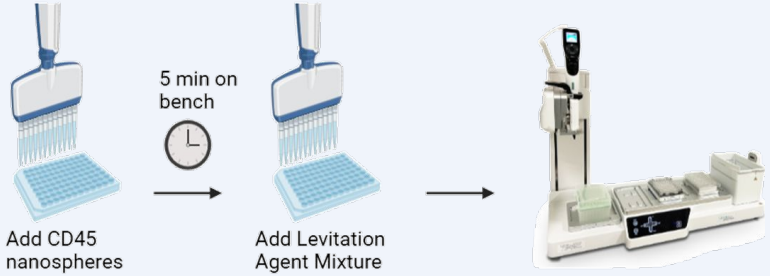


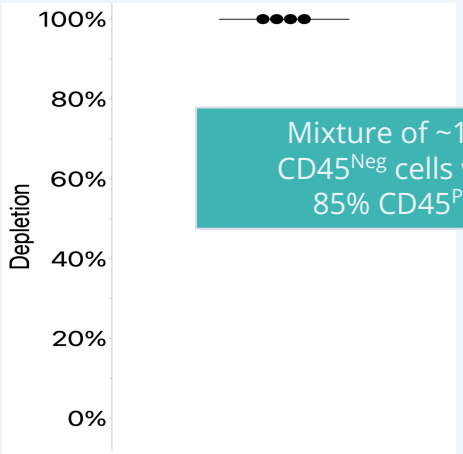
VS

CD45+ Depletion & Live Cell Enrichment in One Levitation Step

LEVITAS BIO®

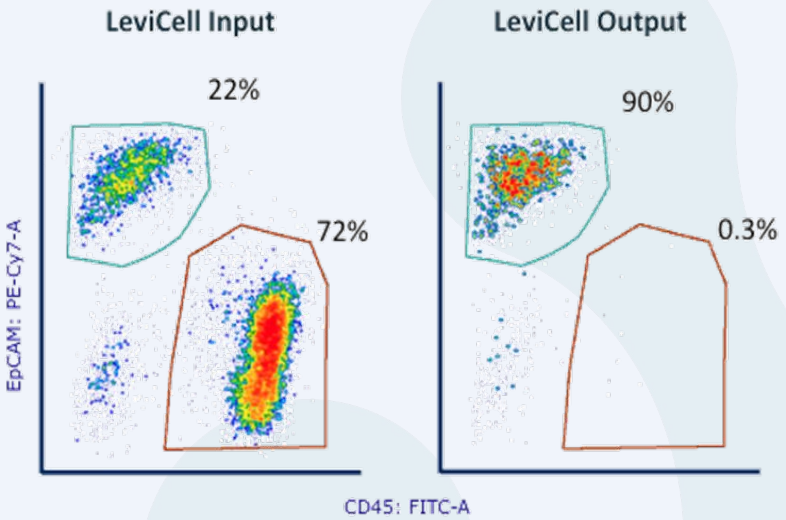
Complete Removal of CD45+ Cells on the LeviCell System





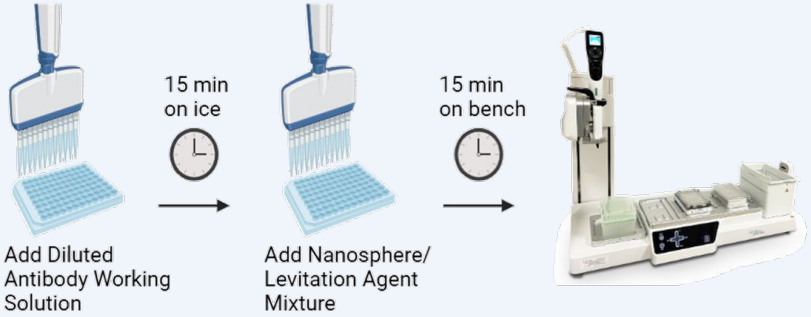
Mixture of ~15% $CD45^{Neg}$ cells with 85% $CD45^{Pos}$

Human Colorectal Cancer DTC*



*Data from LC1.0, LC96 data expected to be very similar

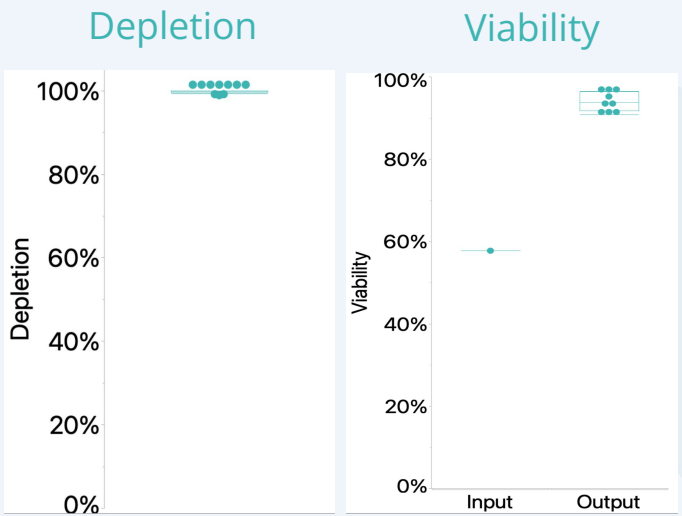
LeviSelect Technology Delivers Nearly 100% Red Blood Cell Removal on the LeviCell System

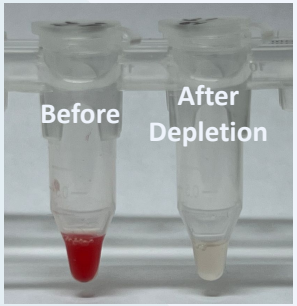


Sample consists of ~60% viable cells contaminated with 99% red blood cells

>99.4% of the RBCs are removed post-enrichment

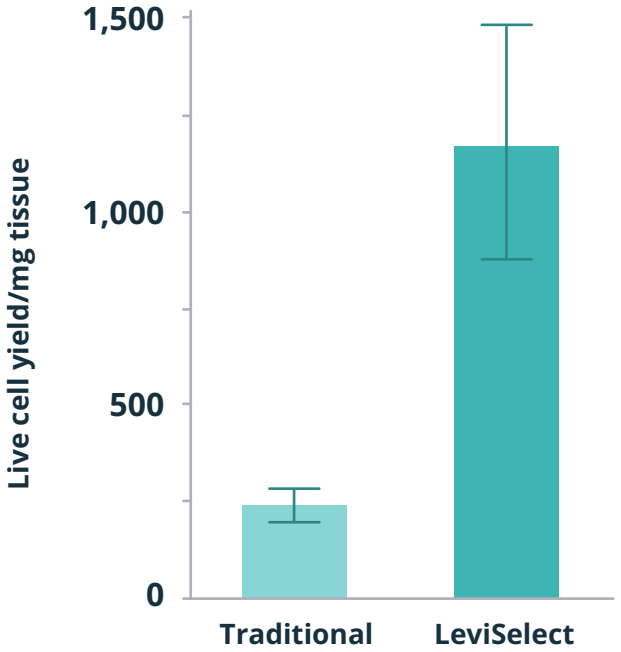
Viability is simultaneously increased to 93.5%, *with no extra steps*

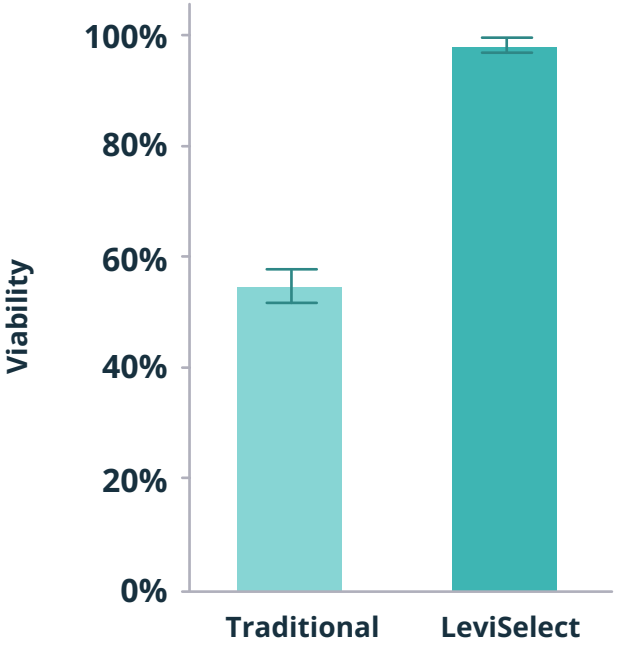




Get more relevant sequencing data from your single cell or bulk RNA-Seq runs!

All While Delivering Superior Data in Every Metric





5X More Live Cells with LeviSelect than Traditional Workflow

Revolutionize Your Organoid Workflows

LeviCell system processes up to 500,000 cells per well or organoid sizes >500 microns, providing high-throughput capabilities for organoid research

Organoid Sample Challenges Today

- Variability of results due to size and morphological differences
- Lack of standardized protocols

...results in less-than-ideal outcomes

How LeviCell Delivers for Organoid Workflows

Gentle, Label-Free Cell / Organoid Separation

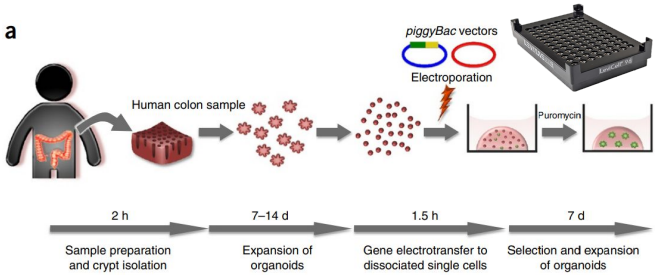
Dead Cell / Debris Removal

Flexible-Throughput Processing

Increased Efficiency and Faster Results

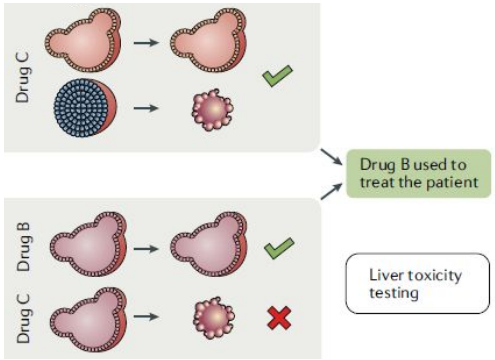
Two Ways to Enhance Organoid Production

LeviCell can enrich for viable input cells
Example: post-transfection

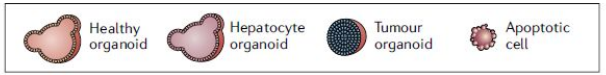


From the human colon sample, genetically modified organoids can be obtained in 3 weeks.

LeviCell can enrich for organoids
Example: after drug treatment

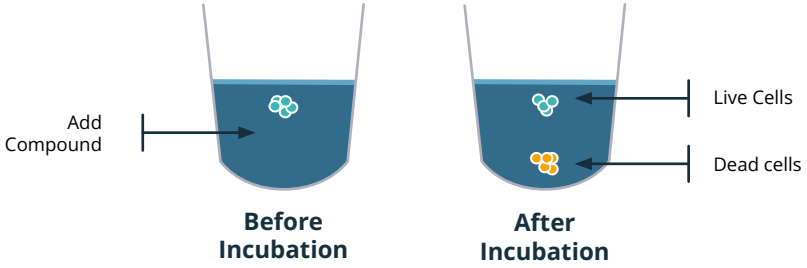


LeviCell can select the live cells after a drug treatment and collect them for further analysis or evaluation of the treatment and toxicity

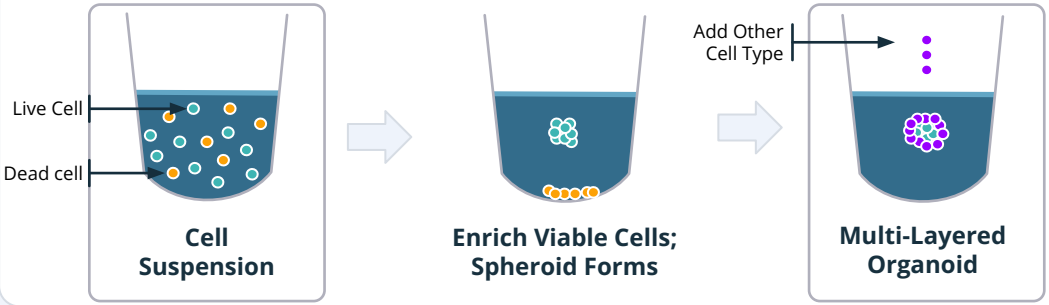


Multi-Factorial Organoid Workflow Capabilities

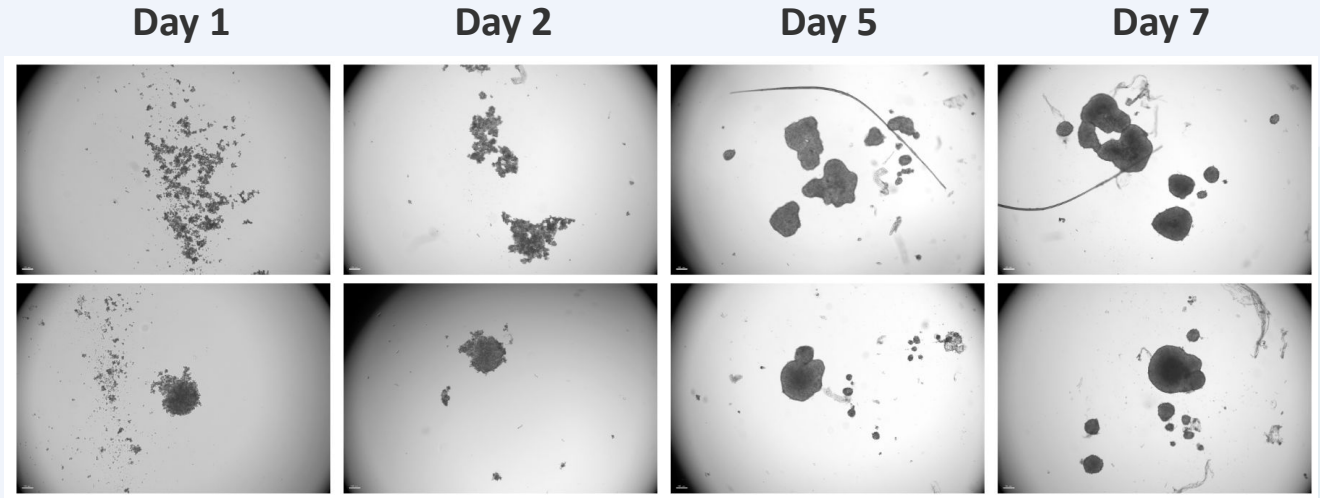
Compound Screen and Collection



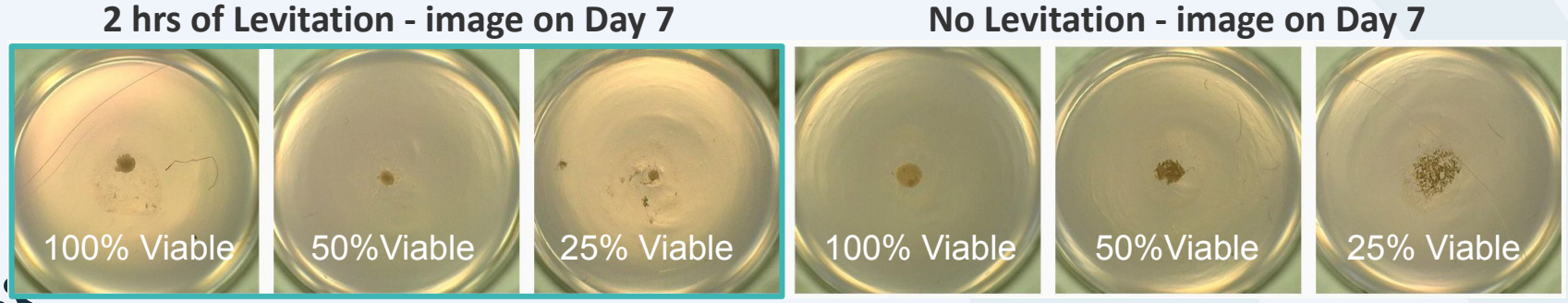
Multi-layered Organoid Development



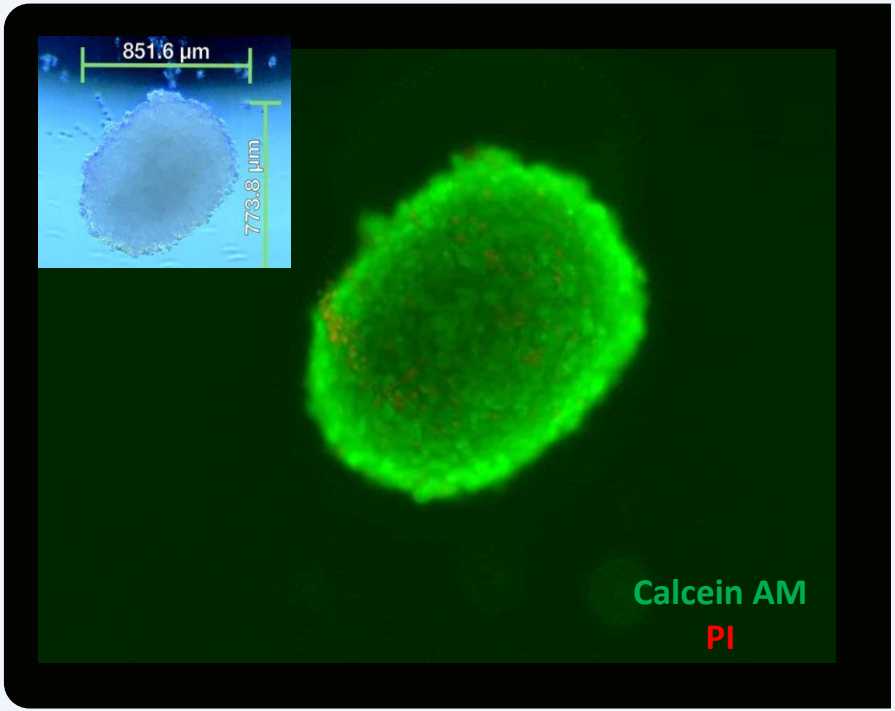
Spheroid Structures Can Be Formed Rapidly and Show Stability Even with Low Starting Viabilities



Levitation promotes live cell-to-cell contact sooner

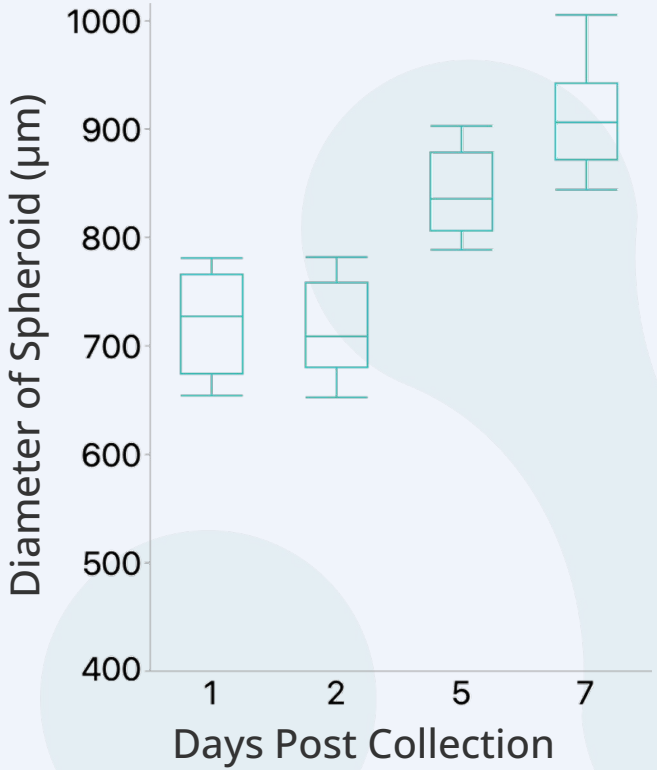


Spheroids Formed on the LeviCell Array are Highly Viable



Cell type: HepG2

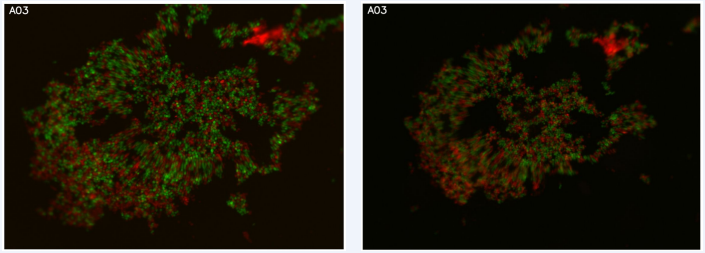
Cells were levitated for just 2 hrs



Multi-Layer Spheroid Construction Opens New Possibilities for Cell Interaction Studies

No Levitation

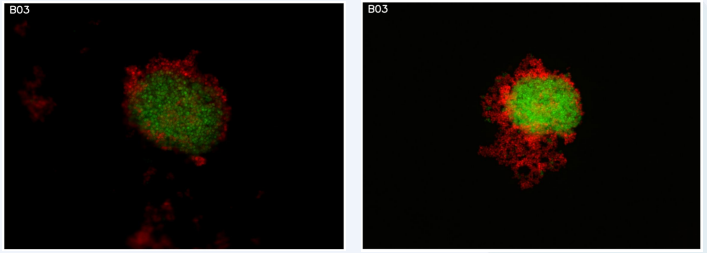
Day 1 Day 6

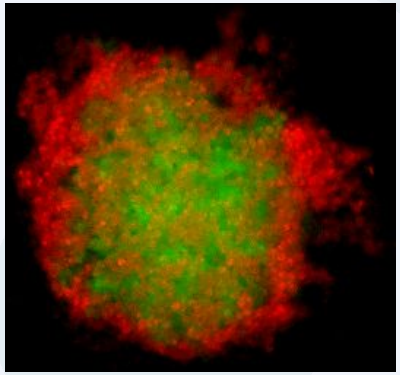


Without levitation, the different layers of cells were not organized

Levitation

Day 1 Day 6





Recapitulate tissue cell-cell type interactions 3D *in vitro* (e.g. cancer microenvironment studies)

Cells were stained with CellTracker Red or Green before processing

LeviCell Spheroid and Organoid Applications

Cell Culture Spheroid Production

- Rapid production with ‘hands-free’ automation with consistent shape/size/density
- Tumor spheroids and organoids production
- Built-in viability information/monitoring with imaging array (future capability)

Spheroid Shape Engineering & Layering

- Capability to shape cells by altering magnetic direction
- Potential customized shape by request
- Layering of multiple cell types

In Vitro Drug Studies

- In vitro drug studies are faster and more efficient
- Viability enrichment of starting cells, or already-formed organoids

LEVITAS BIO®

Thank you

LevitasBio drives scientific discovery by delivering solutions that enable accurate, reliable, and reproducible results

Levitasbio.com

LeviCell System Specifications for Sample Enrichment

Specification	Value
Max number of samples per plate	96
Volume per sample	50 µL
Minimum number of input cells	10,000 per well
Maximum number of input cells	500,000 per well (48M cells total per plate)
Number of output fractions	192
Enrichment time (typical protocol)	40 min

LeviCell System Specifications for Sample Enrichment

Operational

Input voltage	100-240 VAC, universal 47 – 63 Hz
Input current	Standard outlet
System dimensions W x D x H	750 mm x 500 mm x 630 mm (30" x 19" x 25")
Instrument weight	27 kg (59 pounds)

Environmental

Operating ambient temperature	19 °C – 25 °C
Operating relative humidity	< 85% RH ambient, non-condensing
Shipping environment	5 °C to 50 °C, RH 5% - 99%, non-condensing