Solentim

VIPS™ Verified In-Situ Plate Seeding

Accelerating workflows for single-cell cloning

High efficiency, single cell seeding with enhanced, image based regulatory assurance.

ADVANCED INSTRUMENTS

Single cell workflows start here

High value cell workflows relying on CHO, HEK and iPSC derived cells, all start with VIPS™. Designed for processes utilising Master Cell Banks, VIPS combines high performance seeding with the capture of quality evidence of clonality at two different time points providing the best possible start to your process.

VIPS Verified In-Situ Plate Seeding

All in a single benchtop instrument.

Use VIPS to accelerate and add assurance to fluorescence-activated cell sorting (FACS) and minipool enrichment based protocols.

Gentle, high efficiency seeding

96 and 384 well low pressure seeding, optimised for CHO, HEK and iPSC cells.

+ in-well z-stack imaging for assurance

Captures twenty z-stack images of the nanolitre droplet to visualise the single cell immediately post dispensing.

+ artificial intelligence powered single cell detection

Advanced analysis discriminates single cells from debris, empty wells and aggregates as the first piece of quality evidence of clonality.

ASSURANCE STEP 1

+ automated media fill

Wells are automatically filled with cell culture media.

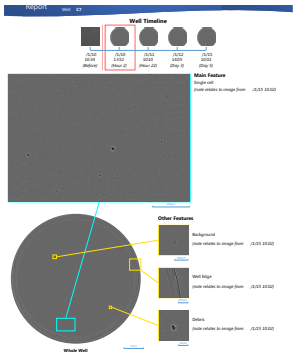
+ whole well imaging for assurance

Whole well imaging for the crucial 'day 0' evidence of clonality.

ASSURANCE STEP 2

+ Double-Lock Clonality Report

Total wrap around dynamic pdf capturing.



+ export to STUDIUS™.

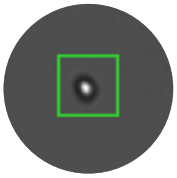
Bring crucial project data into STUDIUS project management system.

Understanding the Double-Lock of Assurance

ASSURANCE STEP 1

Quality evidence of clonality immediately post dispensing.

Not in the nozzle, not in the tube, not in the air but in dispensed, nanolitre droplet, VIPS provides a complete z-stack of evidence, analysed by artificial intelligence to support the existence of a single cell in the well.



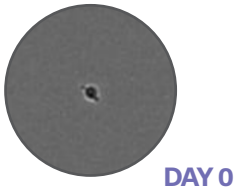
Dispensed Droplet Image

ASSURANCE DOUBLE LOCK

ASSURANCE STEP 2

Quality evidence of clonality, whole well imaging post media fill.

The whole well, imaged with technology designed specifically for single-cell detection.



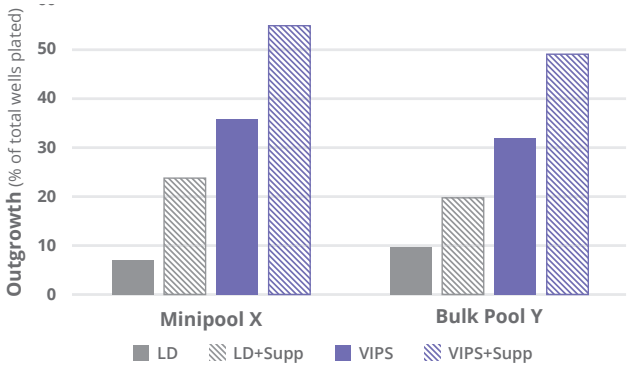
Whole Well Day 0 Image

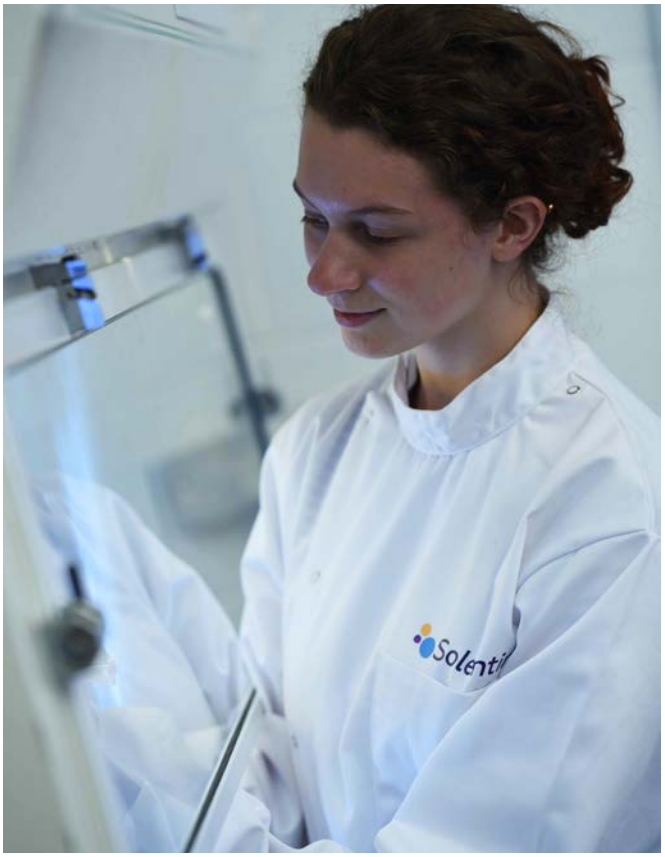
VIPS, Accelerating Assured Workflows - Single round, not twice round

VIPS more than halves the time for single cell cloning workflows when compared to a typical two step limited dilution methodology.

VIPS + InstiGRO™ Cell Growth Reagents, a powerful combination

Designed for automation, InstiGRO plus VIPS gave Sigma up to seven-fold improvements in the number of colonies growing in each plate and GSK, a 11-fold improvement.

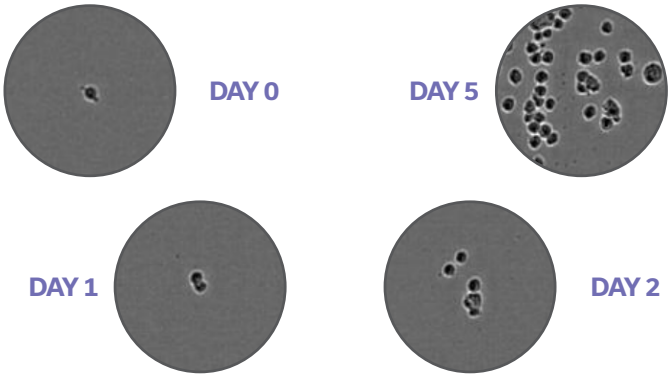




Tracking daily outgrowth

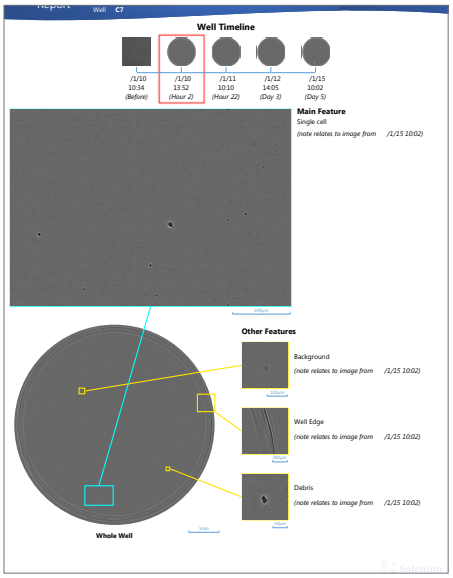
During the clonal growth phase, VIPS performs daily high-clarity whole well imaging, recording a timeline of well images and performing analysis to measure confluency.

Images demonstrating logical, time relevant binary division of cells can be used to support the case for clonality.

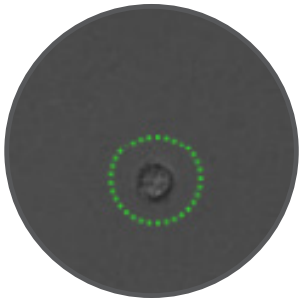


Wrap-around dynamic Clonality Report

To complete the story, VIPS pulls together data from seeding, Day 0 and subsequent outgrowth within a dynamic pdf. Cataloguing both in data and images the whole story from single cell cloning to colony. The VIPS clonality report can be directly used as an important source of evidence, with a strong track record of IND submission success.



Master cell bank generation

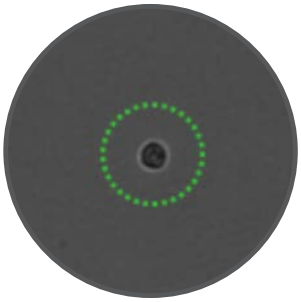


Cell line development (CLD) for biologics

CHO, CHO-S, CHO K1,HD-BIOP3 (Horizon), CHOZN (Millipore Sigma)

Assurance of clonal derivation

A crucial component of quality and consistency, the Food and Drug Administration (FDA) and European Medicines Agency (EMA) both seek assurance of clonally derived MCB in IND submissions.

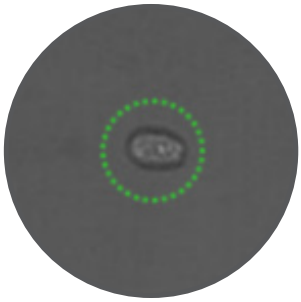


Gene therapy

Examples: HEK293, 293T, HeLa, Sf9

Cell lines for viral vector production

Solentim customers have developed and banked stable, high producer clones - with demonstrated monoclonality - in less than three months.



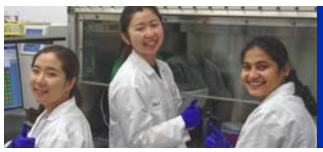
Human induced pluripotent stem cells

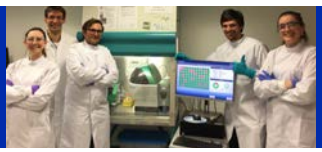
Examples: disease models and CRISPR-edited iPSCs

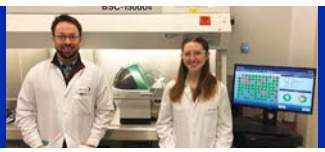
Manipulation and pluripotency

Gentle single-cell seeding and handling for successful clonal outgrowth of high-value iPSCs.

A decade of demonstrated success







"Demonstrating monoclonality has never been more reliable and straightforward. No more ambiguity, no more ghost cells. Both our clients and our own scientists are very pleased with the data the VIPS instrument generates."

Ferenc Boldog
Director of Cell Line Development • ATUM

"The VIPS is unique, being the only single cell cloning system on the market that tracks a single cell's arrival in the actual well."

Camille Evenou
CLD Scientist • Celonic

"For the VIPS, there's so little media centred in the well that it makes it easy to locate the cell and prove to the health authorities that the cell line is clonal."

Thomas Kelly
Scientist • Janssen R&D LLC

"The cell line generation report (or clonality report) has satisfied our IND filing requirements for the Chinese NMPA."

Andy Tsun, PhD
Co-Founder and VP of Discovery Biology
Biotheus Inc.

Enhance productivity by adding Cell Metric® to your VIPS workflow

Enhance your workflow with the seamless integration of VIPS and the Cell Metric whole well imager.

Data Sync and shared reporting automatically connects seeding data, seeding images, day 0 evidence of clonality whole well image and subsequent outgrowth time point images.

Cell Metric is available as a stand-alone system, with a multi-plate loader or module for third party robotic arm integration.

DATA SYNC

VIPS™

Cell Metric® CLD

The experts on cell line development workflows

We draw on decades of high-level scientific skill in cell line development to advise our customers on modern assurance-focused workflows.
Contact us to request recent case studies and to discuss your specific challenges with our expert team.

Quality support for your cell line development process

We combine unrivalled technology and expertise to deliver complete assurance and we build quality into every step. In a changing regulatory landscape, we keep an eye to the future, providing a global network of support for our customers.

We offer installation qualification/ operational qualification (IQ/OQ) packages for quality-led installation, as well as on-site application and service and support packages to maximize your investment.

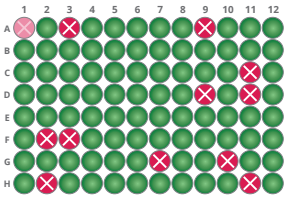
Designed to accelerate single-cell cloning workflows

Solentim technology has one goal, that of confidence. Confidence comes from clarity of data, the ability to reproducibly verify, at multiple stages in a workflow, evidence and assurance of single cell derivation.

To that end, Solentim has developed a range of novel technologies:

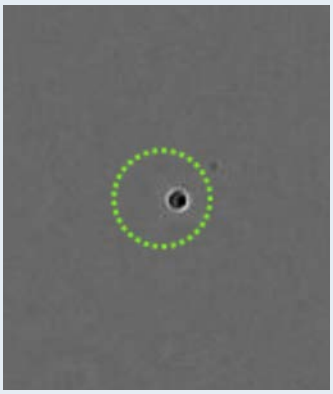
Seeding for high clonal efficiency

We employ the simplest and safest method of single-cell dispensing, with no complex fluidics or mixed samples. VIPS uses low pressure to seed cells in nanoliter droplets into empty wells.



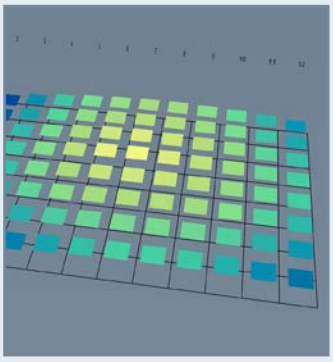
Advanced image analysis

Using advanced image analysis technology, z-stack images are processed to confirm the presence of a single cell.



Always in focus

VIPS performs total plate laser focus scanning, adjusting for plate contours, to ensure an optimal focal position for each well.

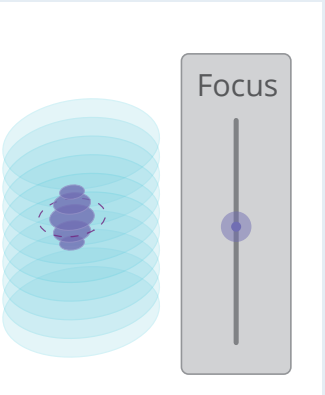


In-line media dispensing

Immediately after confirmation of cell seeding, VIPS automatically dispenses culture media into the well, protecting your high-value cell.

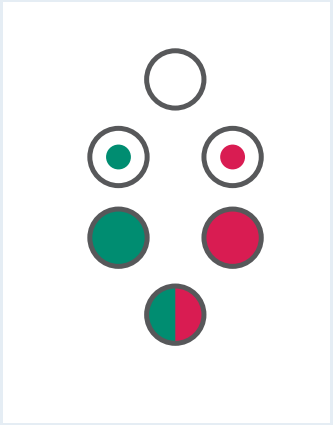
In-well z-stack imaging

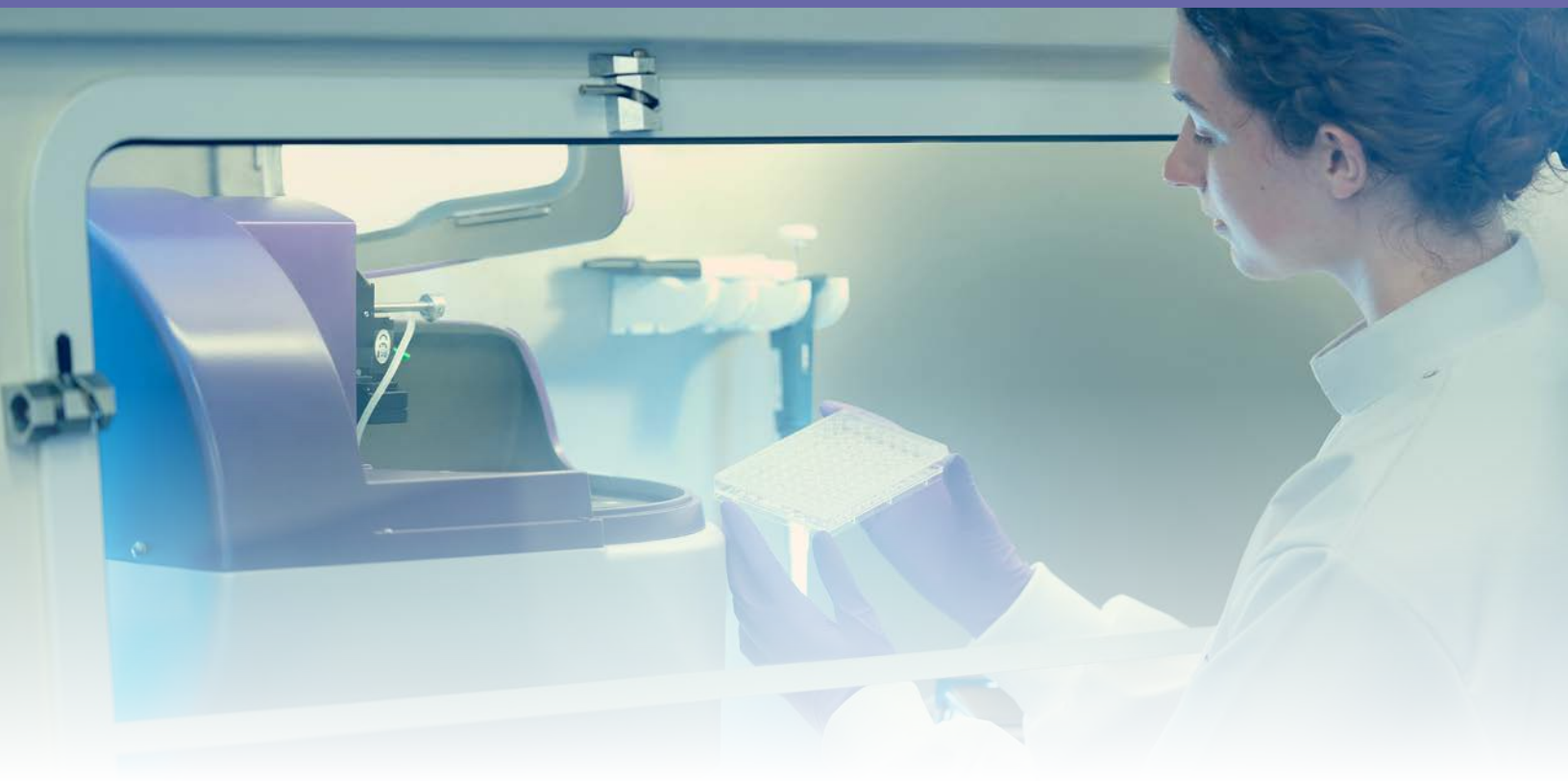
Immediately after seeding, the droplet is imaged at 20 different focal positions.
This broad z-stack encompasses the optimal plane for image analysis enabling confident single cell detection.



QC verification process

To assist in the verification of your clonality workflow, VIPS offers a verification methodology option based on rare-event fluorescence imaging.





About Advanced Instruments

Advanced Instruments is a global company offering a novel portfolio of analytical tools including, OsmoTECH®, a robust line of micro-osmometers to support bioprocessing and quality control (QC), and Solentim, a portfolio of best in class imaging and single-cell deposition technologies for cell line development workflows and assurance of clonality for regulatory bodies.

Our Solentim portfolio enables the clonal isolation, outgrowth, and characterization of the highest value cells for monoclonal antibody upstream development and cell and gene therapy. This enables our customers to use these clones and have the documentation they were clonally-derived to confidently form their Master Cell Banks.

ADVANCED INSTRUMENTS

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ML-008 Rev:001

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