



Cell biology

workflows.

EMPOWERED BY TECAN



# Cell engineering.

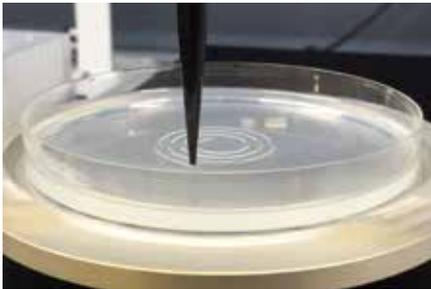
## Tedious manual processes? – automation can help



### **AUTOMATED COLONY PICKING**

SciRobotics' Pickolo™ Colony-Picker is an add-on for Tecan's liquid handling platforms that offers:

- Programming that everyone can do – clicking on the colonies that look best creates a morphological picking profile
- Pick up to 1,000 colonies/hour on the Fluent® Automation Workstation
- Pick bacteria, hybridomas, stem cell colonies, fungi and other small objects



### **BACTERIA PLATING AND STREAKING**

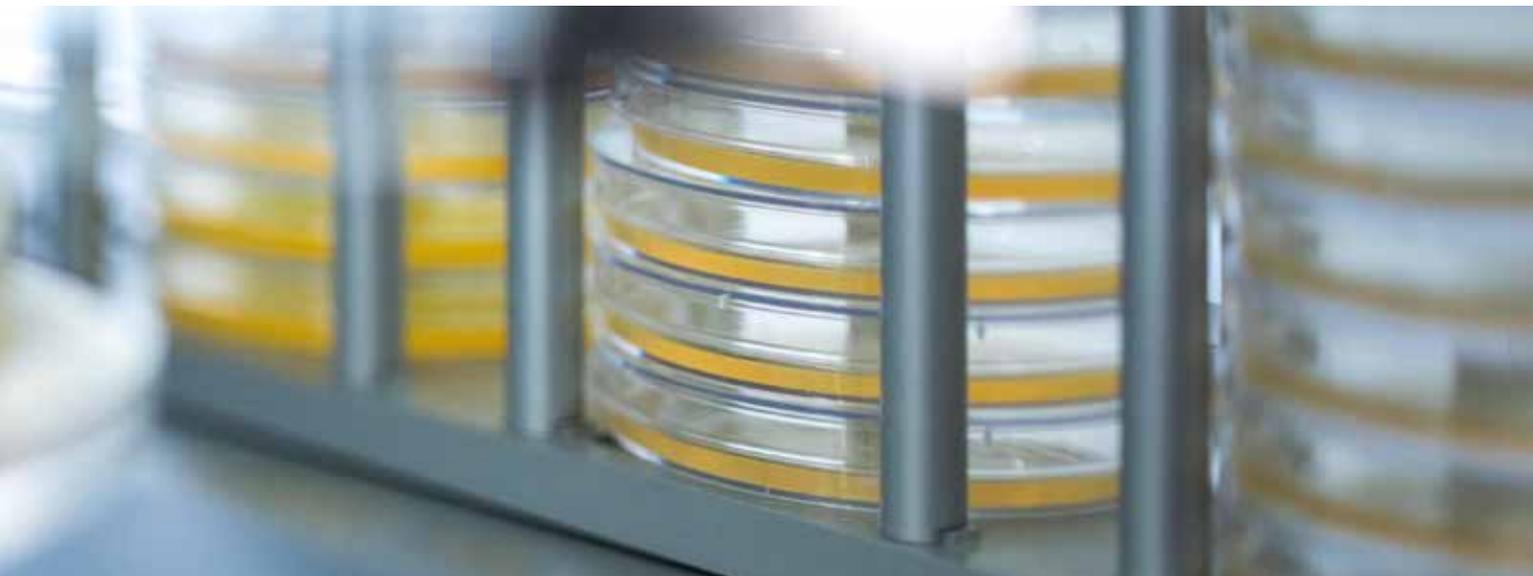
Like Pickolo, the PetriPlater™ is a SciRobotics add-on for Tecan's liquid handling platforms.

- Plate multiple dilutions onto one Petri dish to save storage space, time and plastic labware costs
- Choose from a range of plating modes to achieve the best colony isolation for picking or counting



### **MONOCLONAL ANTIBODY PRODUCTION**

- Set up cell fusion reactions
- Seeding and screening of hybridomas on semi-solid media
- Hybridoma clone selection by limited dilution



### STEM CELL DIFFERENTIATION

- Growth of differentiated and pluripotent stem cells - with or without feeder cells
- Induced pluripotent stem cell (iPSC) growth and differentiation

### 3D CELL CULTURE

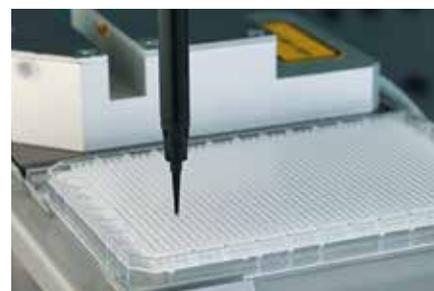
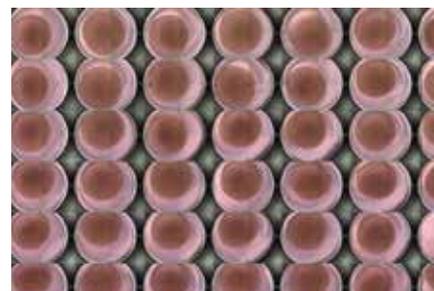
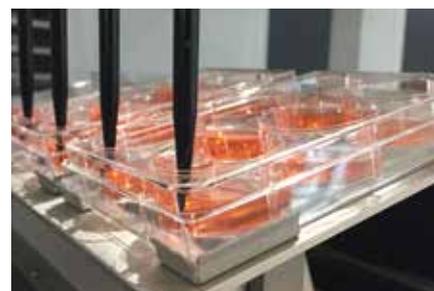
We partner with experts like InSphero, Reinnervate and Lonza to provide your favorite culture technique.

### CLONING, TRANSFECTION AND TRANSFORMATION

- Standard and CRISPR/Cas9 cloning automation
- Chemical and electroporation-based techniques

### CLONE SELECTION

- Limited dilution plating
- Set up hit-picking and cherry-picking applications
- Automate ELISAs to find the best producing clones



# Automate cell culture.

Higher productivity - fewer weekends in the lab



- 1 LAMINAR FLOW HOOD WITH HEPA FILTRATION
- 2 ENVIRONMENTAL CONTROL
- 3 MONITOR CELL GROWTH AND HEALTH
- 4 HANDLE PLATES AND TUBES WITH ONE ARM
- 5 FEED AND PASSAGE CELLS



## WE TAILOR YOUR SOLUTION ACCORDING TO YOUR SPECIFICATIONS

The Tecan Integration Group (TIG) develops customized lab automation solutions to meet individually defined specifications. With your input, our experts create an automation concept and refine this to deliver your personal solution.

- Full documentation
- Ready to go for validation
- Solutions without restrictions

## DISCOVER YOUR OPTIONS

- Numerous off-the-shelf modules and TIG options can be integrated to create your specific cell maintenance workflow, including:



### REFILL TROUGH

Ensures an 'endless' supply of media on the workdeck



### CELL SEEDING

Integrate a MultiDrop™ Combi (Thermo Fisher Scientific) for reliable cell seeding



### LARGE VOLUME TRANSFERS

Fast addition and removal of large volumes



### HIGH CONTENT IMAGING

A range of devices can be integrated, such as a INCell™ Analyzer (GE Healthcare).



### TILTING

Tilt your plate to remove media - just as you would manually

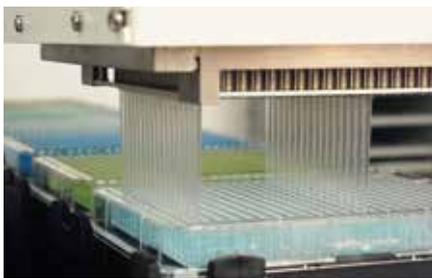


### CENTRIFUGE

Add a centrifuge, such as a Hettich Rotanta®, to spin down cells

# Cell-based assays.

## Multiple tasks - one provider



### ASSAY PLATE SET-UP

Tecan offers scalable solutions to set up cell-based assay plates:

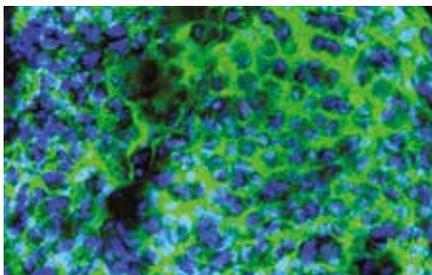
- Three platforms - Fluent® Automation Workstation, Freedom EVO and D300e - with varying levels of complexity
- Preparation of daughter plates, serial dilutions and standard curves
- Low volume digital dispensing - picoliter dispensing directly into microplates for  $IC_{50}$  dose-response and drug combination studies



### CELLULAR HEALTH

Automated workflows - from set-up to analysis - for fluorimetric, colorimetric or luminometric assays, including:

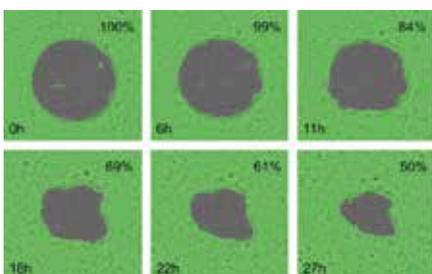
- Cell viability
- Cytotoxicity
- Apoptosis



### SIGNALING PATHWAYS AND REPORTER GENES

Tecan provides the tools for the automation of orthogonal studies, such as:

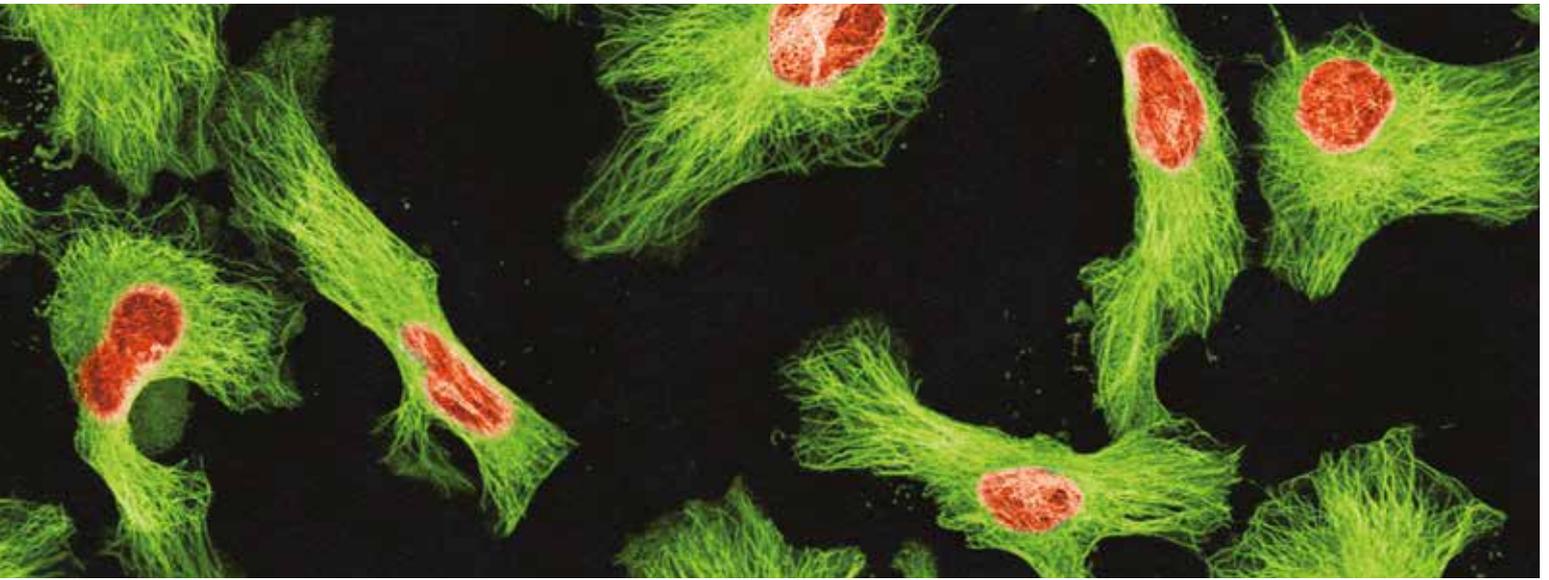
- Kinase activity-based assays
- GPCR assays
- Detection of reporter protein expression



### CELL MIGRATION

Cell migration is a central process in the development and maintenance of multicellular organisms. The Spark® multimode reader offers:

- Automated confluence imaging
- Easy monitoring of cell movement and assembly
- Automation of the Radius™ 96-well Cell Migration Assay



### GENTLE CELL WASHING

Washing cell plates needs precise control of aspiration and dispense parameters to avoid loss of material and poor reproducibility.

The HydroSpeed™ plate washer offers:

- Cell Protection™ extra gentle drop-wise dispensing to minimize cell detachment
- Reduced turbulence via online optimization of the dispense position
- Typical cell recovery of  $\geq 85\%$  using tuneable aspiration settings



### WORKFLOW FROM START TO FINISH

- Tecan is a single provider for liquid handling automation, microplate washing and detection capabilities
- Automate your whole cell-based assay workflow, from plating cells to reading results



### COMPLETE SOLUTIONS

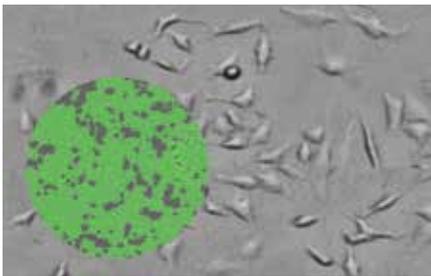
Instruments and devices from numerous providers can be integrated into Tecan systems, including:

- Environmentally-controlled incubators
- HEPA hoods
- Plate and tip storage
- Plate readers and washers
- High content imaging devices
- Flow cytometers



# Detect cell biology.

## Comprehensive and smart



### AUTOMATED CELL IMAGING AND CONFLUENCE MEASUREMENTS WITH SPARK

- Automated QC imaging of cells, eg. after seeding
- Normalize assays by starting with the same confluence or cell number
- Live Viewer gives microscope-like functionality



### SMART AUTOMATION

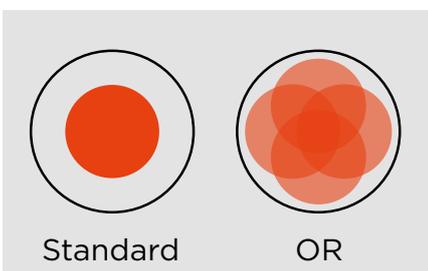
- Temperature, gas and humidity control within the measurement chamber for cell incubation
- Kinetic conditioning allows the system to automatically add a reagent when a predefined cell density is reached
- Monitor several parameters in parallel, such as cell growth and protein production, using different reading modes



### PATENTED LID LIFTER™

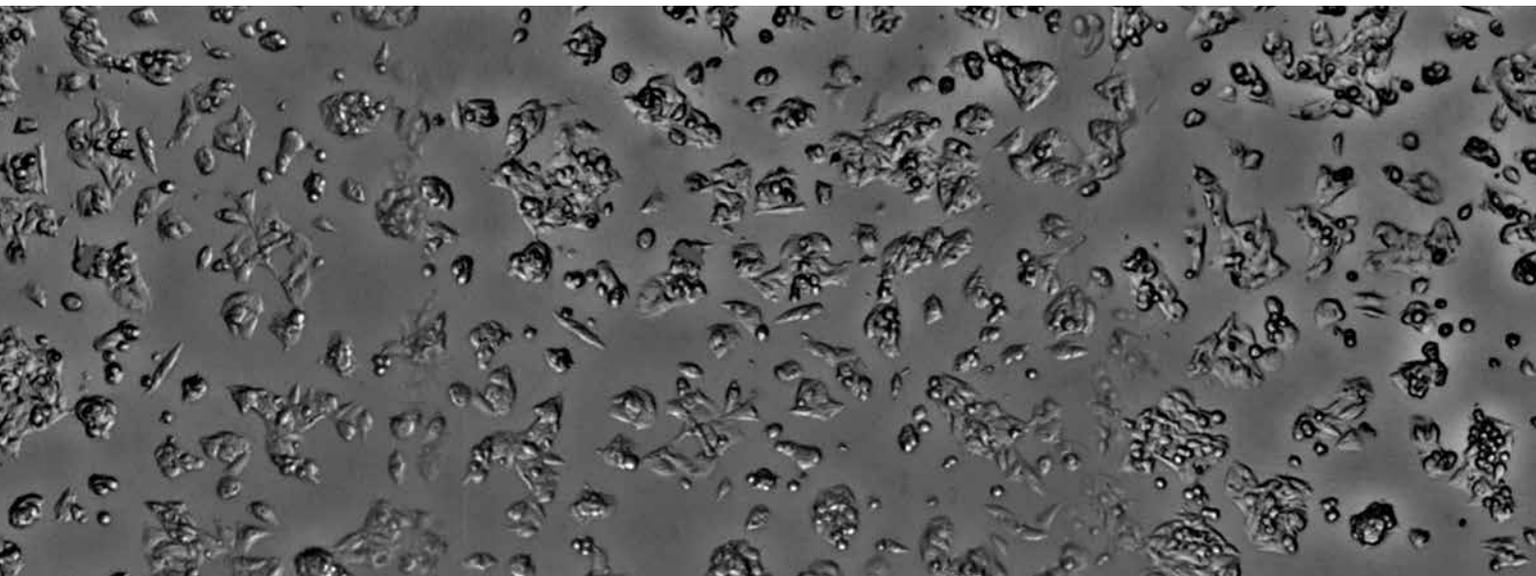
Automated lid handling within the reader offers:

- Injections, absorbance measurements and luminescence reads with lidded plates
- Contamination protection for cells, and pathogen protection for users
- Compatibility with any SLAS-format plate lid using magnetic pads



### OPTIMAL RESULTS WHEN READING CELLS

- Bottom reading function to avoid noise from autofluorescence from the medium
- Automatic z-focusing in bottom reading mode to optimize signal detection and minimize background noise
- Optimal Read function measures at several positions in the well to account for inhomogeneous distribution of adherent cells



### STANDARDIZATION FOR OPTIMAL RESULTS

Tecan completes its liquid handling automation and detection capabilities with a range of microplates, disposable tips and troughs.

### CELL CULTURE PLATES

Tecan microplates are tested for the use with Tecan multimode readers.

- 24-, 48-, 96- and 384-well clear plates for absorbance/confluence measurements
- 96- and 384-well black plates with clear bottoms for bottom reading fluorescence measurements
- Low background signal

### STERILE TIPS

Every Tecan pipette tip undergoes stringent testing to ensure the precision, consistency and purity that is needed for reliable, reproducible results.

- High pipetting volume range -  $\mu\text{l}$  to ml
- Available for eight-channel and multichannel liquid handling arms
- Filtered and non-filtered options

### STERILE REAGENT TROUGHS

- 100 ml capacity
- Free of human DNA
- RNase/DNase free
- Pyrogen/endotoxin free





To see how your cell biology workflow can be made more robust and productive, contact your nearest Tecan office or visit [www.tecan.com/cellbiology](http://www.tecan.com/cellbiology)

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