

Label-Free Approaches for Maximizing Your Data Output with CBAs

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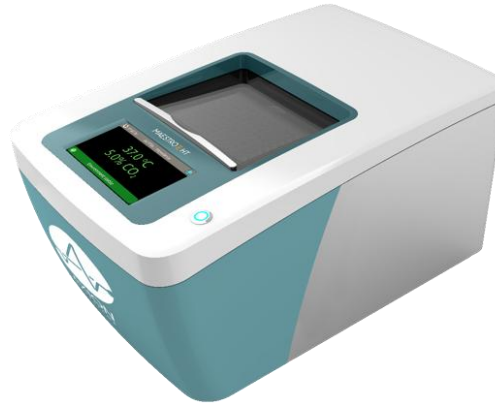


Axion Biosystems Label-Free Analysis Instruments



Omni FL

- Live-cell imaging fluorescence microscope
- Wound healing
- Confluency
- Clonogenic module
- iPSC module
- Organoid module



Maestro Z

- Impedance-based viability measurements
- Suitable for monitoring cell proliferation, cytotoxicity or cell killing



Maestro Edge, Pro & Volt

- Microelectrode array-based monitoring of electrically active cells (cardiomyocytes, neural cells, muscle cells)
- Measures in specialized plates

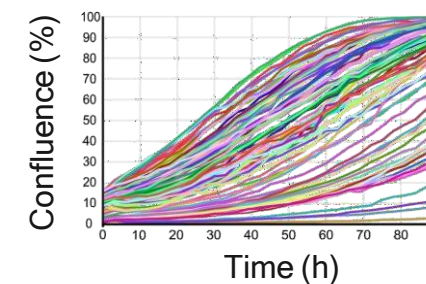
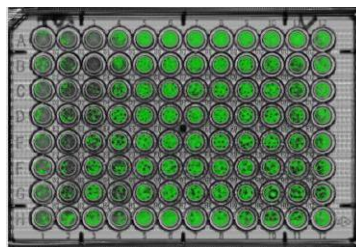
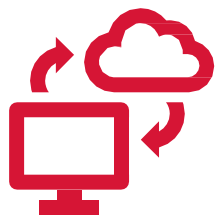
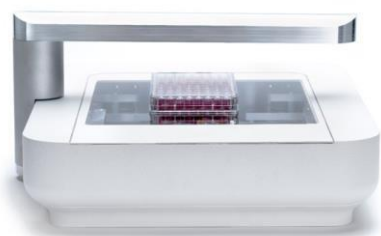
Omni FL Live-Cell Imaging Microscope



- ✂ Live-cell imaging microscope with brightfield and optional fluorescence
- ✂ Scans the entire culture vessel (plates, Petri dishes, flasks)
- ✂ Two fluorescent channels for red and green fluorescence
- ✂ Several types of image analysis algorithms
 - ✂ Wound healing
 - ✂ Confluency
 - ✂ Clonogenic module
 - ✂ iPSC module
 - ✂ Organoid module
 - ✂ Fluorescence module

Omni Full Plate Scanner

⌘ On demand, in incubator imaging



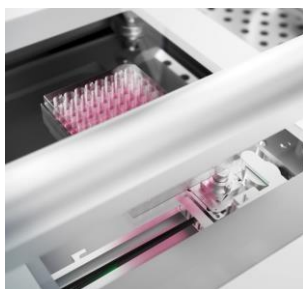
Scan

Cloud Upload

Auto Stitching

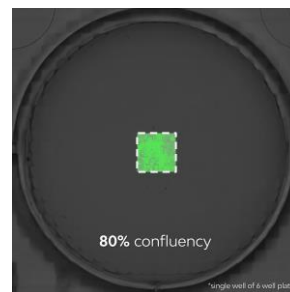
Image Analysis

Plot Data



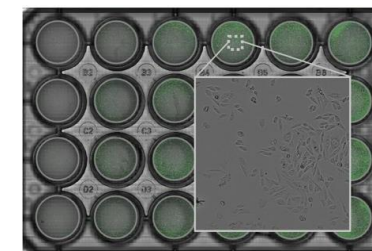
Continuous motion imaging

- Automated whole-plate imaging
- Continuous motion recording
- 9,000 images per scan (e.g., hour)
- Undisturbed image acquisition (weeks)



Full well readout

- Scans entire well and instantly stitches images to give a full well view



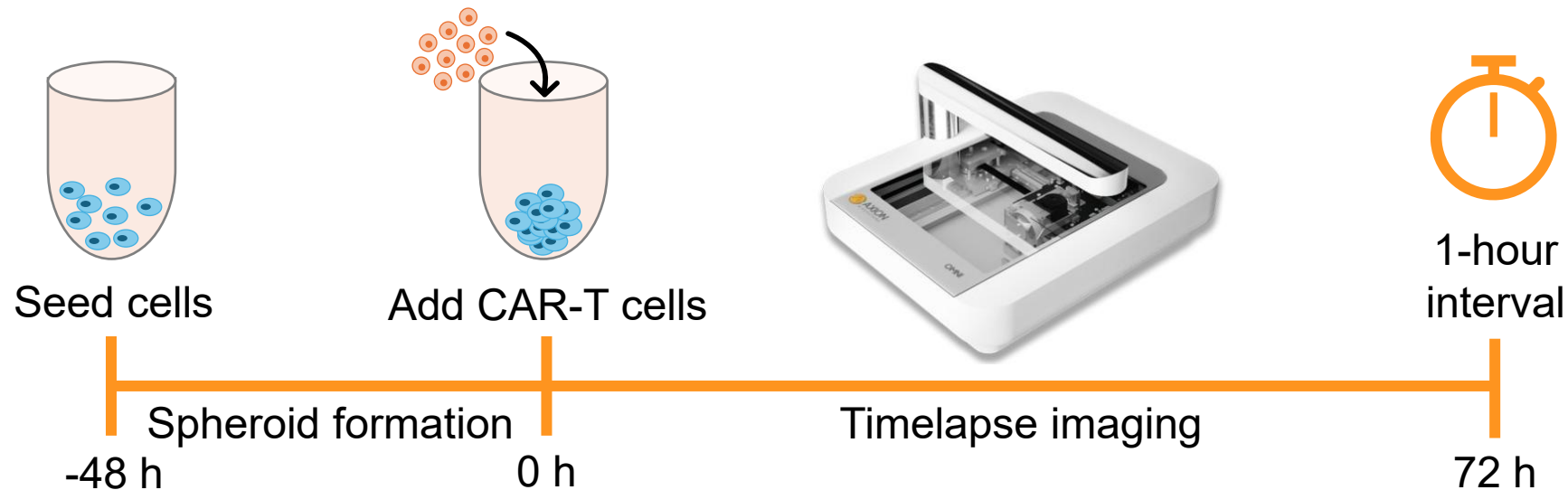
CytoSMART Omni AI

The AI image analysis enables:

- Automated stitching of 9,000 images/scan
- Automated ROI detection
- Automated detection & quantification within ROIs

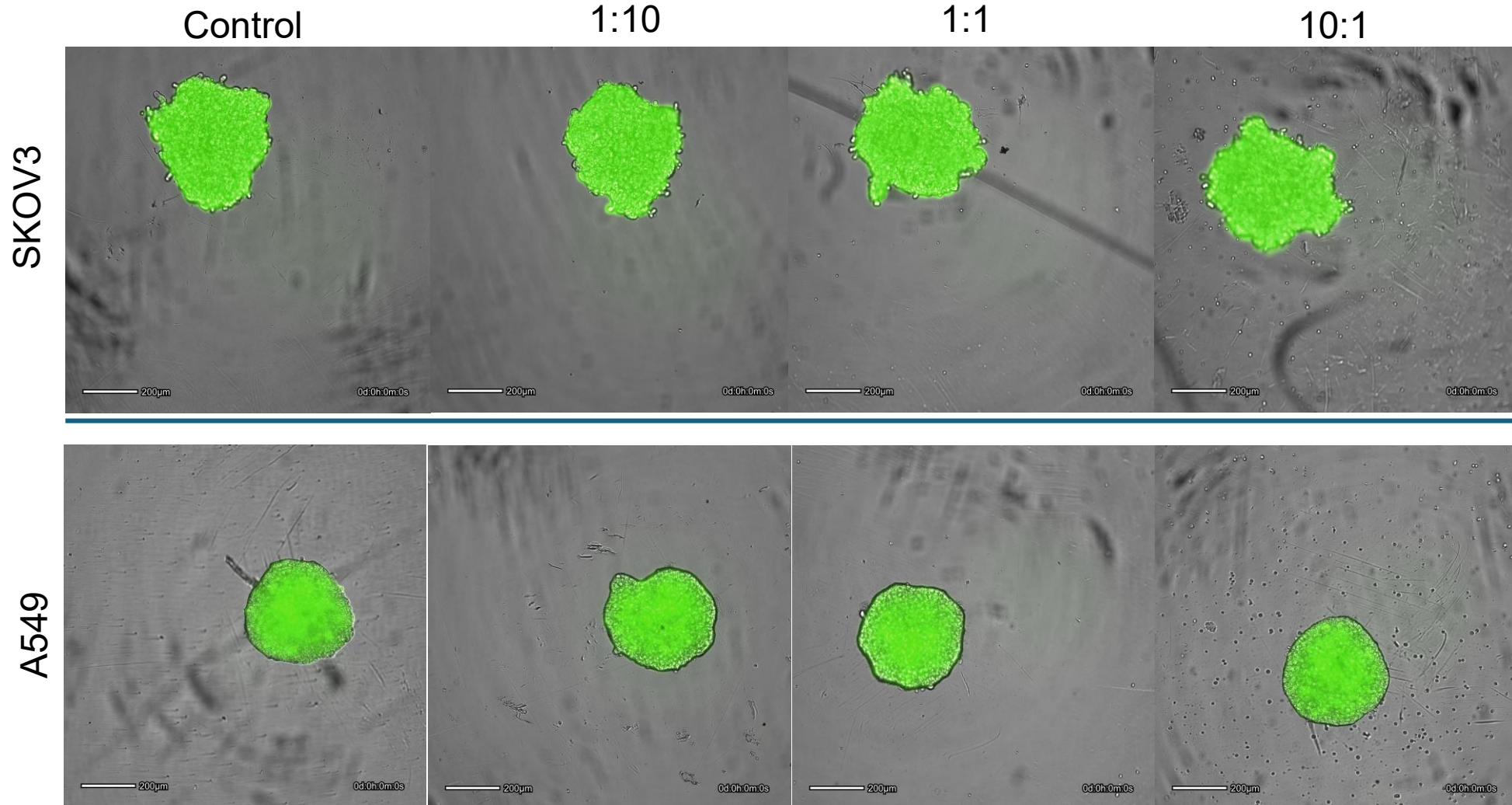
Optimizing CAR-T Therapy Conditions

- ✂ Does tumor antigen density impact CAR-T Cell performance?
- ✂ HER2 CAR-T cells were cocultured with:
 - ✂ SKOV3 (high HER2 expression)
 - ✂ A549 (low HER2 expression)
 - ✂ Stable GFP expression



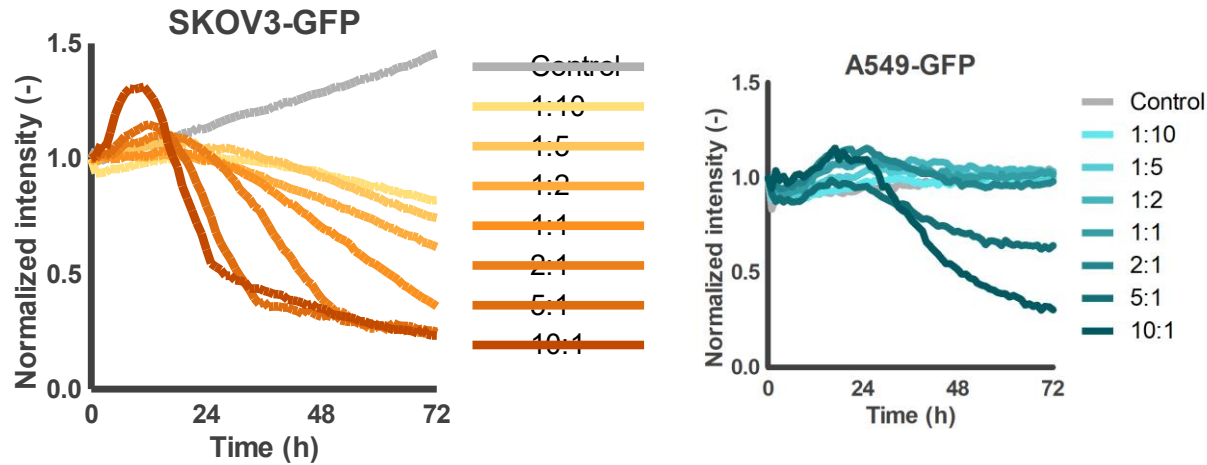
Cancer Spheroid Killing

- ✂ Killing of SKOV3 and A549 spheroids by HER2 CAR T-cells
- ✂ SKOV3 spheroids are killed at lower E:T ratios compared to A549 cells due to higher HER2 levels



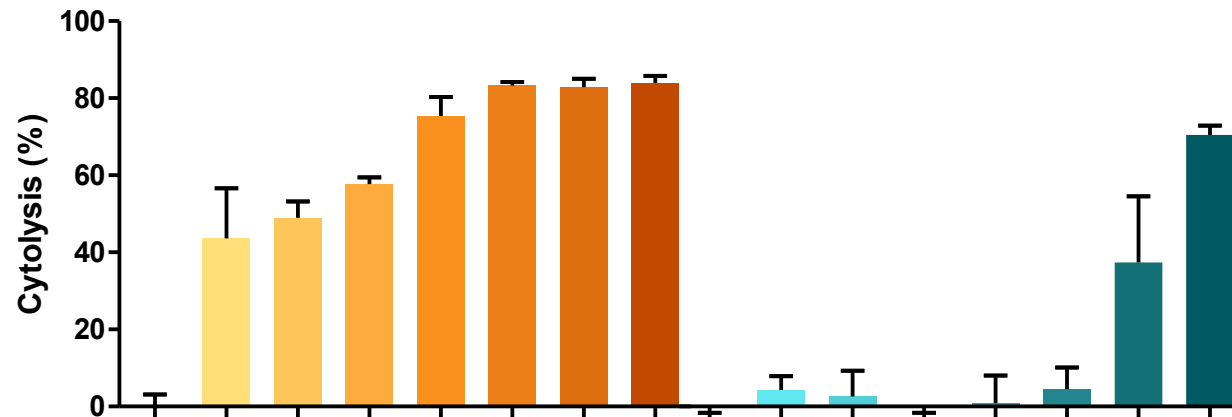
Spheroid Immune Cell Killing

✂ Killing of SKOV3 and A549 spheroids by HER2 CAR T-cells

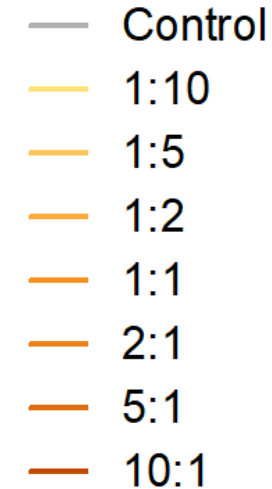


✂ Plot data and calculate cytolysis values for different ratios of cancer and effector cells

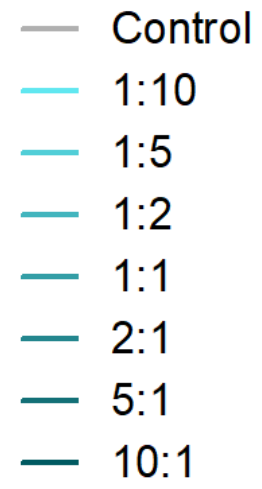
Cytolysis at 72h



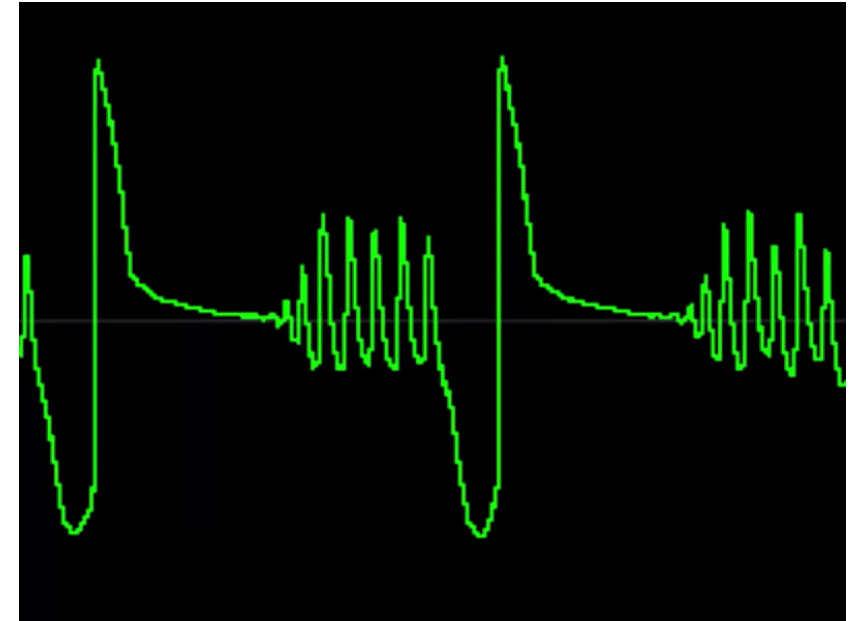
CAR-T : SKOV3



CAR-T : A549



Fast, Easy and Powerful Neural Analysis with Maestro Volt, Edge and Pro



| Features | Maestro Pro | Maestro Edge | Maestro Volt |
|--------------------------|----------------------|----------------------|--------------|
| Throughput (well format) | 6, 24, 48, 96, 384* | 6, 24, 96* | 6 |
| MEA Mode | ✓ | ✓ | ✓ |
| MEA Viability | ✓ | ✓ | |
| Impedance Mode | ✓ | ✓ | |
| Environmental Control | ✓ | ✓ | ✓ |
| Automation API | ✓ | ✓ | |
| Stimulation | Electrical & Optical | Electrical & Optical | Electrical |
| Omni Compatible | ✓ | ✓ | ✓ |

*Well format available in impedance only

- ✂ Analyze network metrics or single electrically active cells
- ✂ Both cardiac and neural cells analysis on single device
- ✂ Built in incubation chamber with controllable CO₂ and temperature

Maestro Edge – Detecting Electrical activity in 3D



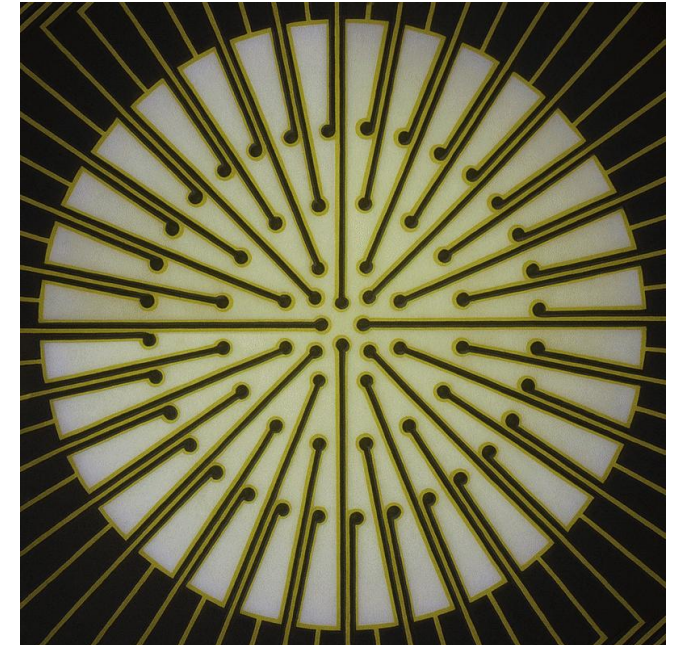
SpheroGuide

- ✂ Integrated placement funnel
- ✂ 48-well format - 16 electrodes per well
- ✂ Transparent bottom



SpheroHD

- ✂ Single well for 4 individual organoids
- ✂ 16 electrodes for each organoid



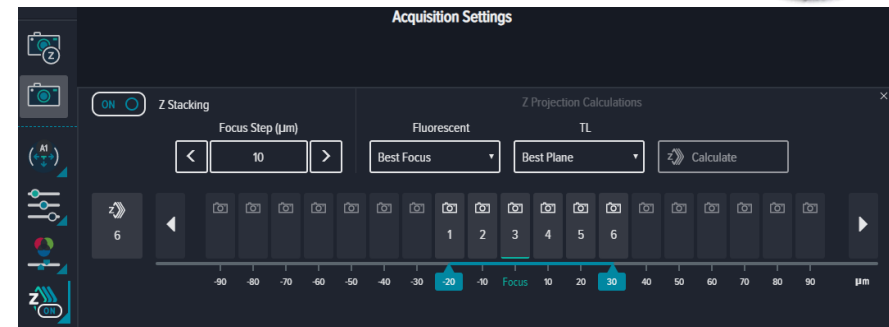
3DMap

- ✂ Single-organoid placement
- ✂ Flexible electrode design to detect electrical activity from bigger surface area of neural organoids

ImageXpress Pico, benchtop, but high-throughput



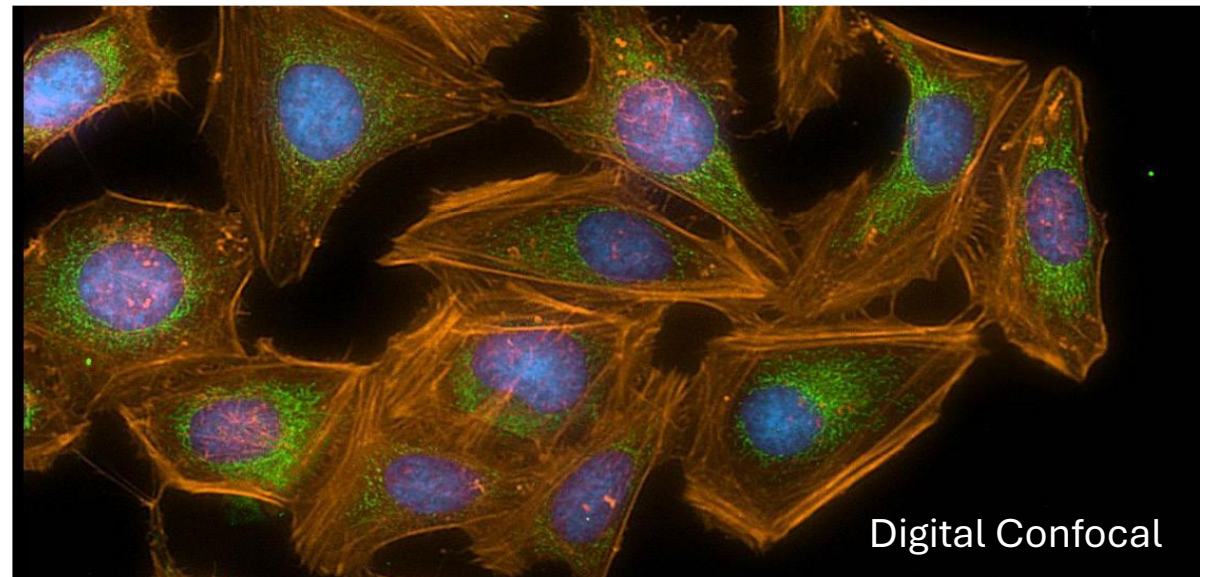
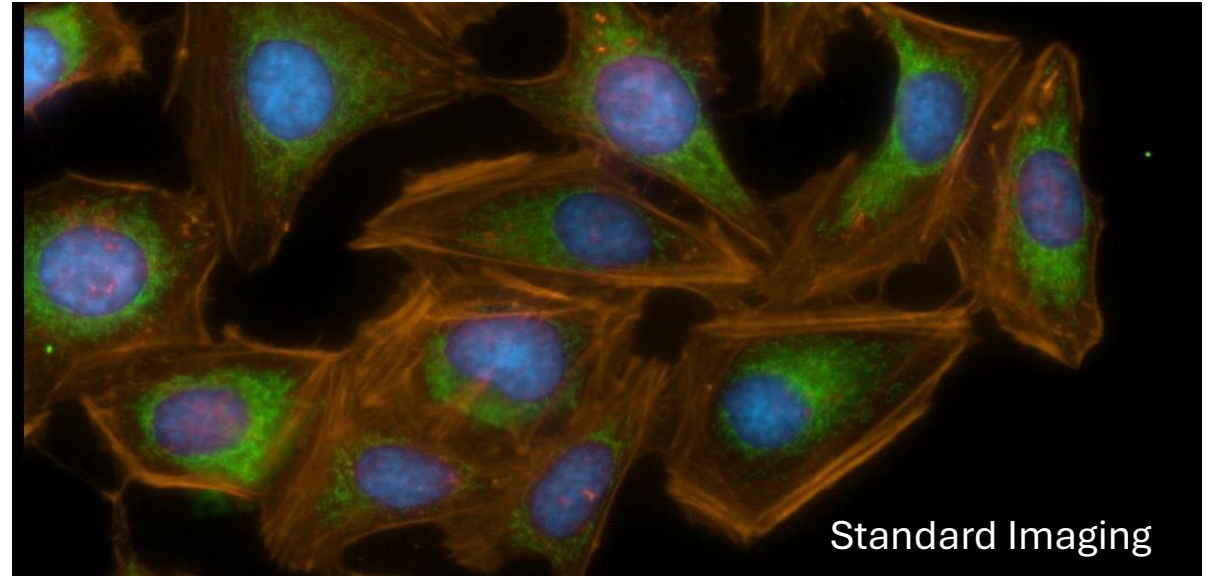
- ✂ Microtiter plates slides, petri dishes
- ✂ 4 objectives: 4x - 10x - 20x - 40x / 63x
- ✂ Z-stack acquisition with maximal projection
- ✂ 6 fluorescence wavelengths: DAPI - CFP - FITC - TRITC - TRED - CY5
- ✂ Brightfield (for label free) and colometric (for histological stain) imaging
- ✂ Live Preview mode and ROI selection
- ✂ Hardware and Image-based Autofocus



ImageXpress Pico, benchtop, but high-throughput

- **Digital Confocal**

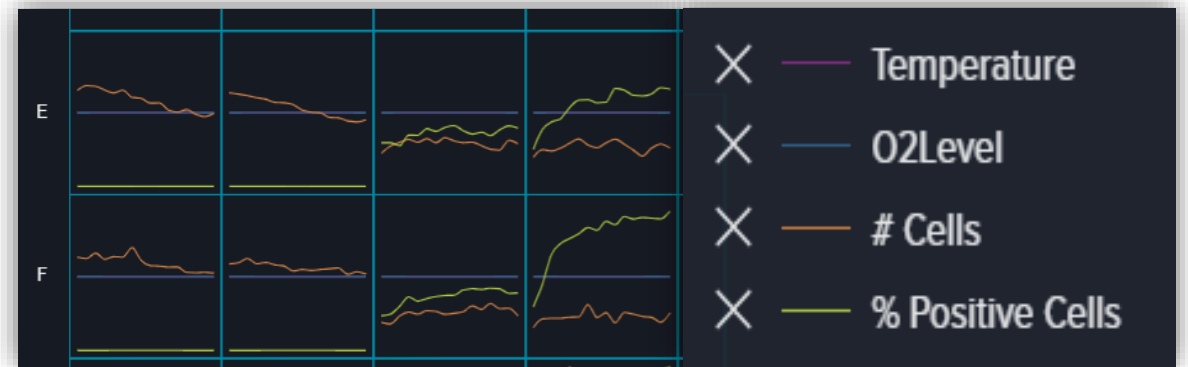
2D on-the-fly Image Deconvolution



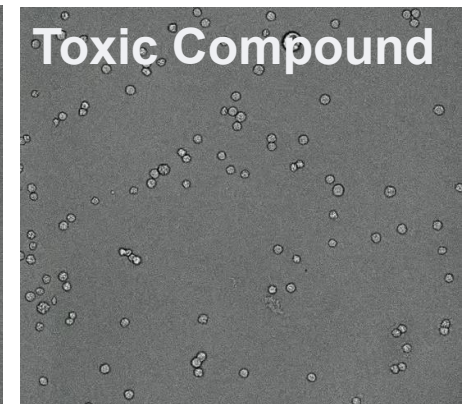
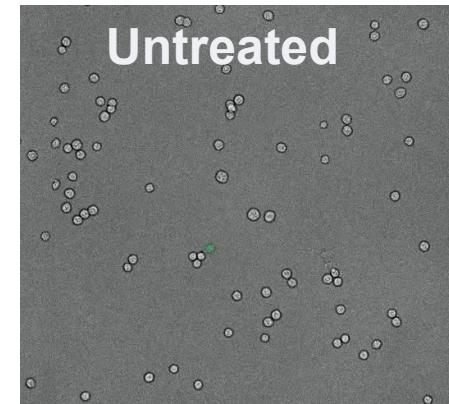
ImageXpress Pico, benchtop, but high-throughput

- Live cell environmental control

Temperature, CO₂, O₂ (or N₂) and humidity

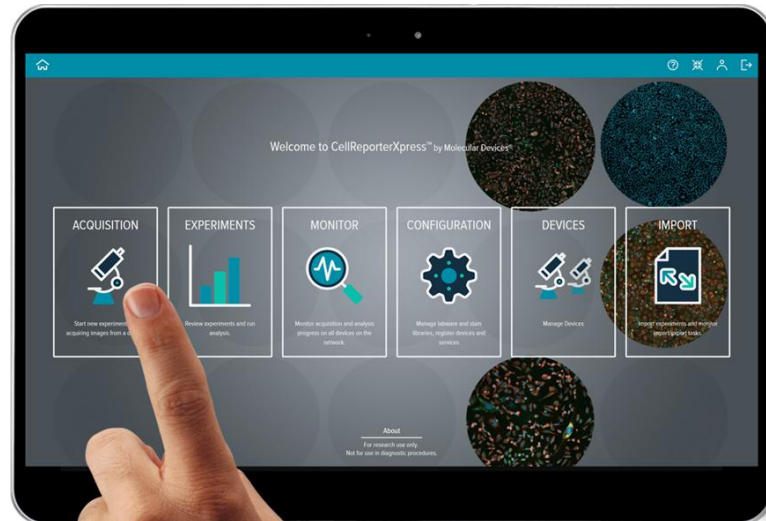


Dead Cells

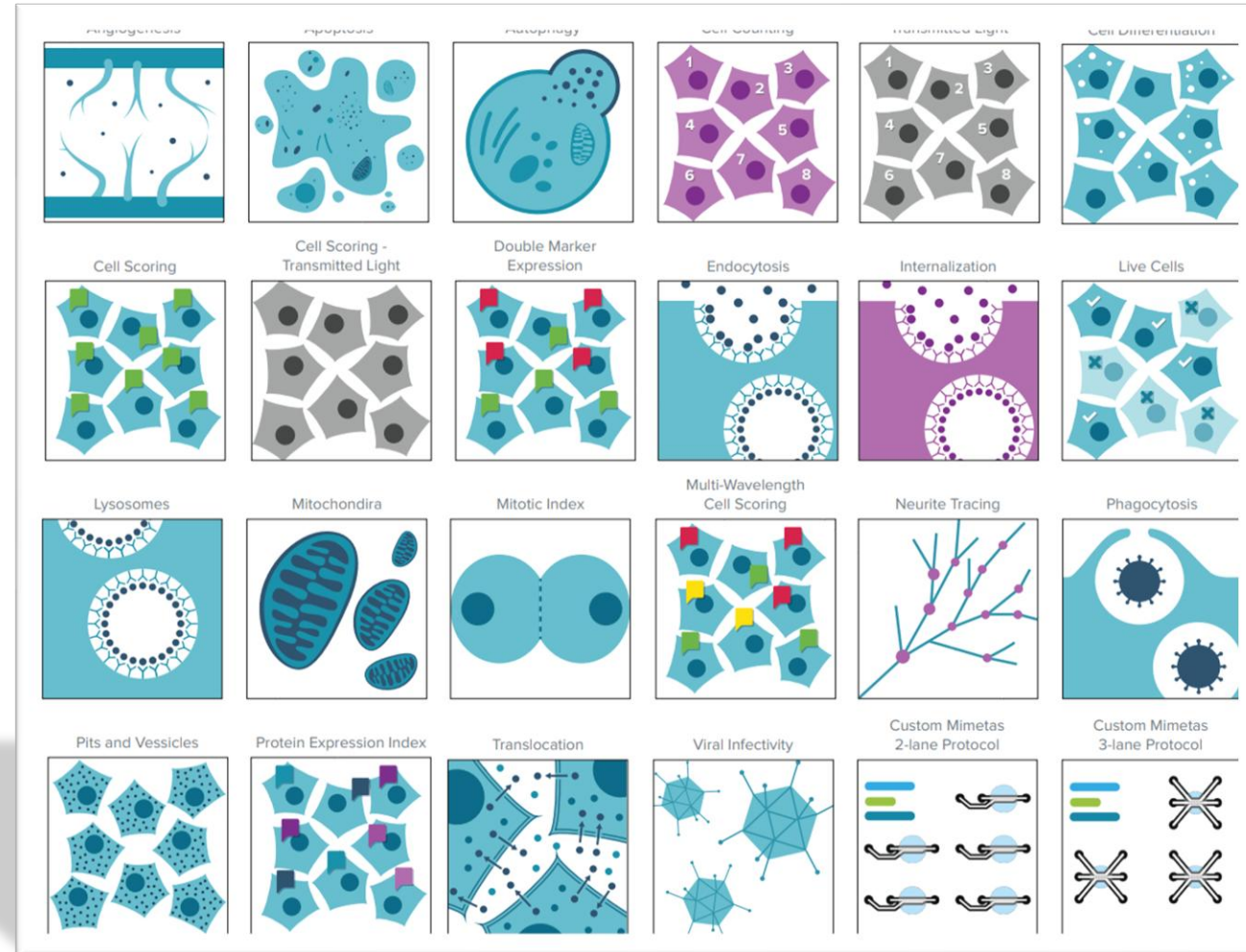


Cell ReporterXpress, Acquisition & Analysis Software

- Easy to use
- Browser-based interface
- Fast access to meaningful data



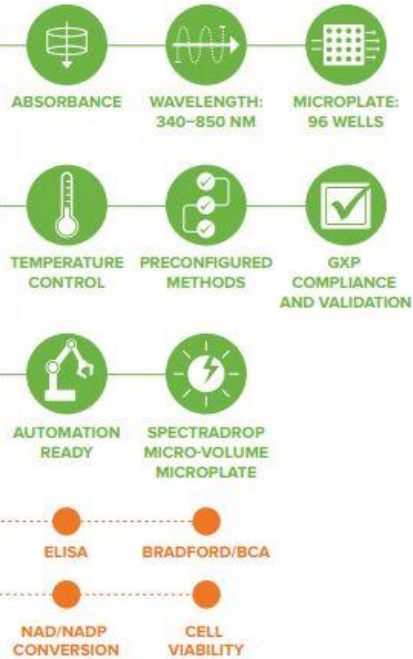
25+ Pre-defined Analysis Protocols



Monochromator-Based Microplate Readers



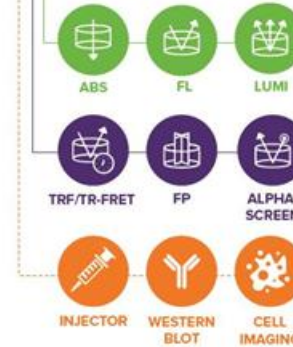
SpectraMax® ABS



SpectraMax® ABS Plus



SpectraMax® i3x



SpectraMax® iD5e



SpectraMax® iD3s



environmental control for CO₂/O₂ regulation

advanced shaking for microbial growth assays

Primary Cells, Stem Cells and Media **Lonza**

- Primary cells - over 150 human and animal cell types available
- Clonetics media a growth factors for wide spectrum of primary cells
- Stem cells together with media
- Blood and immune cells from vast collection of donors and sources
 - Specialized X-Vivo™ media
 - Specialized GMP T-Vivo media



High Quality Cell Culture Media and Sera



- German company established in 2013
- Specialises on the production of high quality sera and cell culture media and reagents
- Possibility of custom manufacturing from 20 liters



Sera

- FBS
- FBS Xtra
- FBS Advanced
- Human sera



Cell Culture Media

- Classic liquid media
- Classic powdered media
- Special culture media
- Cryopreservation



Cell Culture reagents

- Supplements and additives
- Antibiotics
- BSA
- Trypsin
- Cell separation



Balanced Salt Solutions

- Liquid buffers
- Powdered buffers



Diagnostics

- Virology media
- Cytogenetics

High Quality Sera for Cell Culture



| FBS Standard | FBS Advanced | FBS Xtra |
|--|--|--|
| Natural FBS | Slightly reduced raw FBS content | Reduced raw serum content |
| Low endotoxin | Cost-efficient with defined additives | Chemically defined additives |
| Consistent quality | Minimal lot-to-lot variations | Reduced lot-to-lot variations |
| Pricing highly dependant on raw FBS price fluctuations | No further batch testing necessary | More sustainable ingredients |
| Suitable for all cell types | Best for tumor cells & less demanding cell types | Best for tumor cells & fast-growing cell types |

MSC StemPrime – Novel Medium for MSCs

- ✚ New chemically defined medium for culture and propagation of mesenchymal stem cells
- ✚ The medium comes in both research use and GMP quality (for clinical applications), only difference is presence/absence of phenol red and additional testing procedures for GMP
- ✚ Serum-free, xeno-free, animal-free, ultra-low endotoxin levels
- ✚ Suitable for isolation, expansion and compatible with all MSC types
- ✚ Two component kit – medium and recombinant growth factor supplement
- ✚ Easy scaling and transfer from lab to large-scale culture
- ✚ **Free-samples for testing available!**

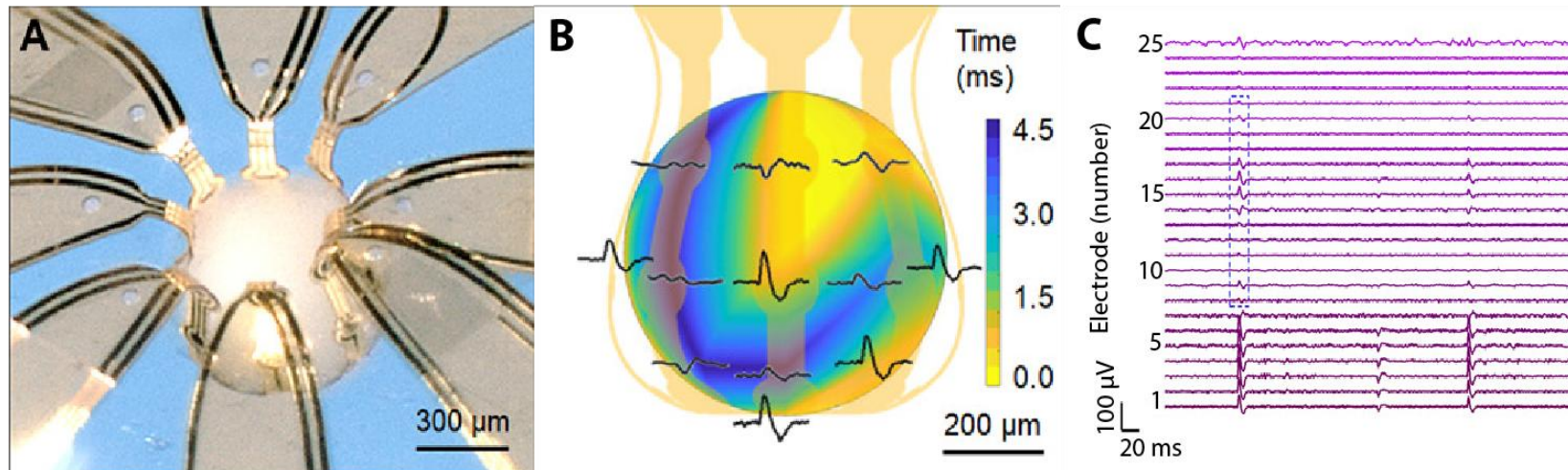
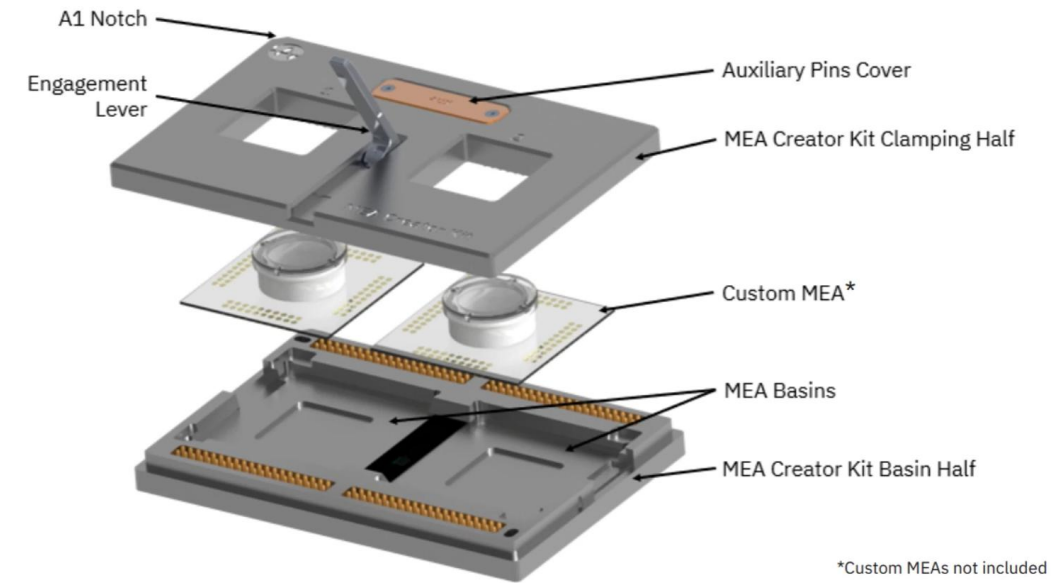


Thank you for your attention!



Maestro MEA Creator Kit

- ✂ Kit for custom made MEAs for special types of analyses
- ✂ Design and manufacture your own specialized MEAs
- ✂ Integrate other components such as sensors or external stimulation through auxiliary port



A 3D neural interface (A) records from electrodes all around the cortical spheroid (B). Coordinated neural activity was measured on the Maestro Pro (C). Adapted from [Park et al., Sci. Adv. 7, eabf9153 \(2021\)](#).

Don't Miss on Relevant Data by Taking Small Samples

Brightfield full vessel scan

