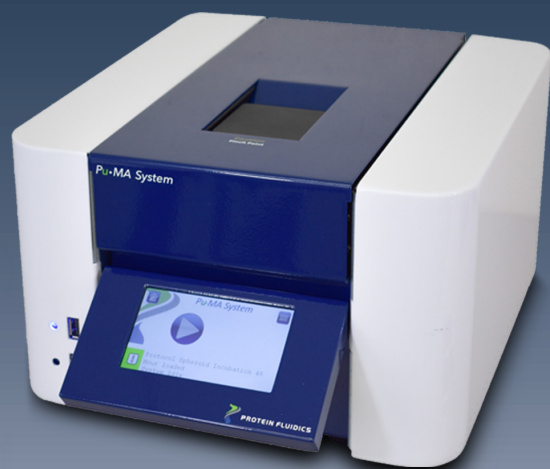
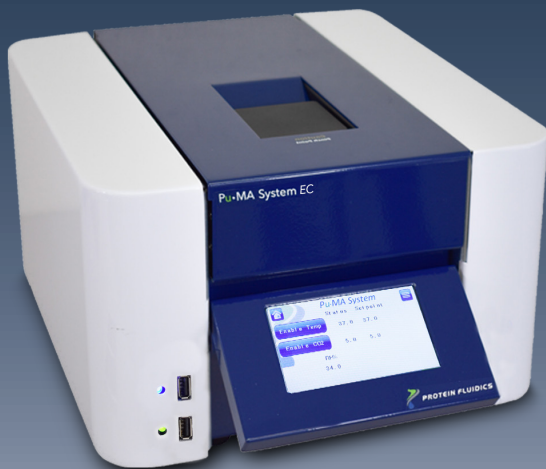


Pu·MA Systems®

3D-Cell Discovery Engines



Lab-on-a-Flowchip

Performance & Precision

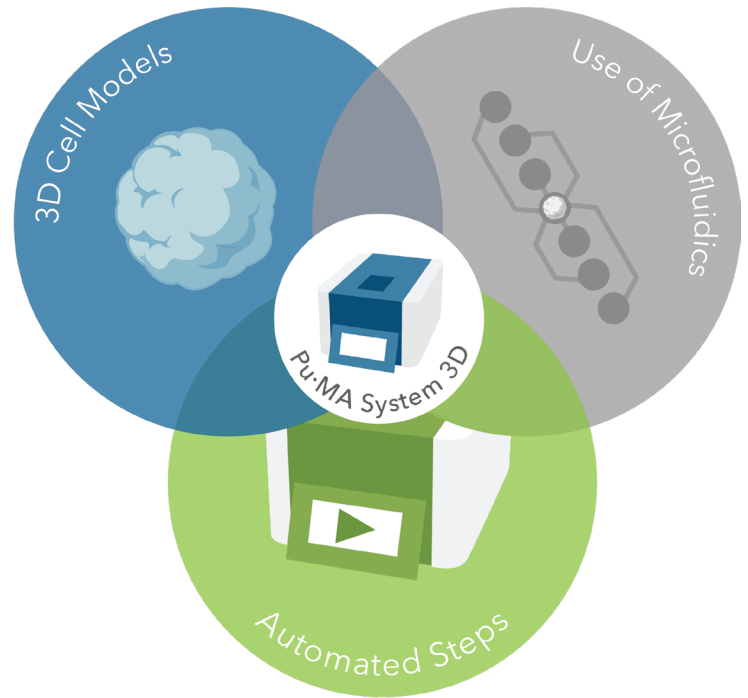
- Automated fluid transfers
- Maintain physiological conditions
- Control flow & stress environment

Efficiency

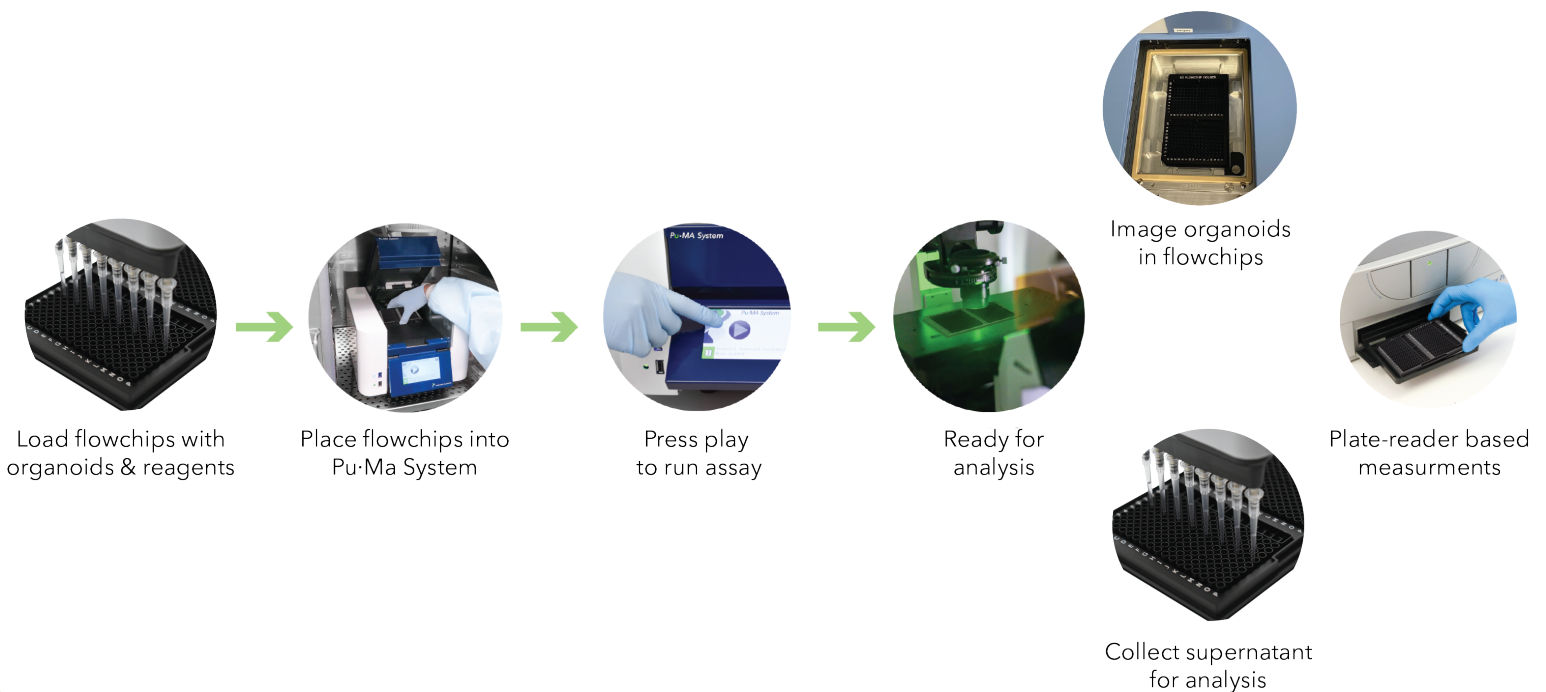
- Easy-to-use organoid assay system
- "Hands-off" media exchange, sampling, staining
- Eliminates damage or loss of organoids

Flexibility

- Free-forming, semi-solid support (ECM hydrogel grown)
- Size ranging from 100 μm up to 1 mm
- Compatible with multi-modal down stream analysis

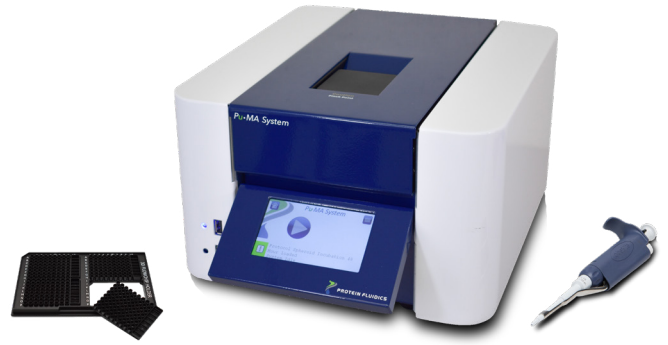


Simplified Workflow



Pu·MA System

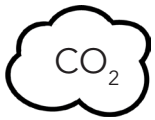
The Pu·MA System and Pu·MA System EC are benchtop devices which can perform automated 3D cell-based assays at the touch of the screen. The Pu·MA System EC has the additional ability to control the flowchip environment for organoid growth and condition sensitive assays.



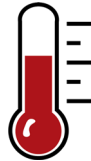
At a Glance

Features	Pu·MA System	Pu·MA System EC
Automated Reagent Exchange	●	●
Pre-Programmed Assay	●	●
Custom Timed Assays	●	●
Built-in Environmental Controls	—	●

Pu·MA System EC Conditions



1% to 10%

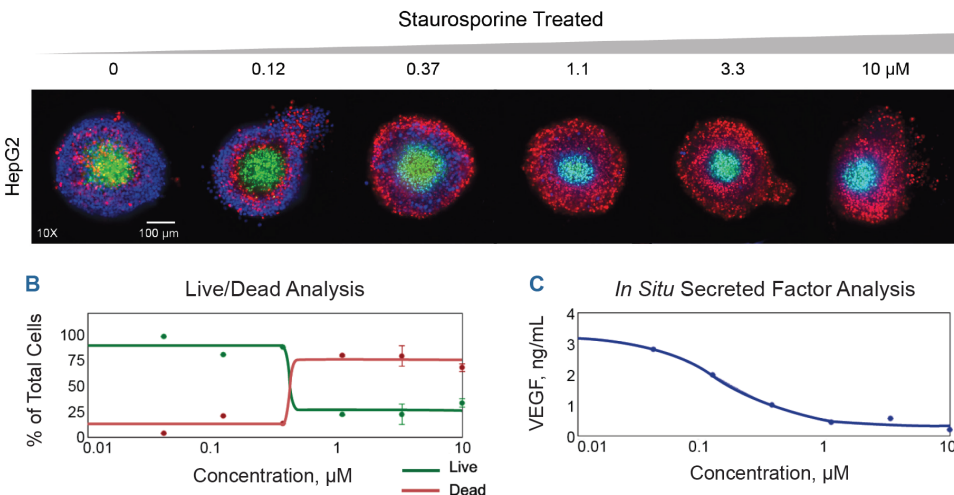


+5 °C above ambient
to 40 °C



> 80% humidity
with reservoir

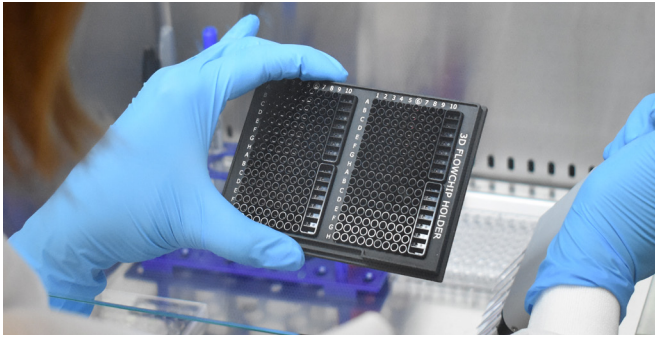
Assays and Applications



- Immune cell co-cultures
- IF staining for biomarkers
- *In situ* supernatant sampling
- Assays with hydrogels
- Toxicity testing
- Metabolite analysis
- And More!

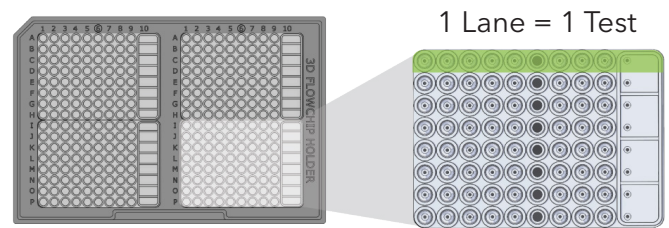


3D Flowchips



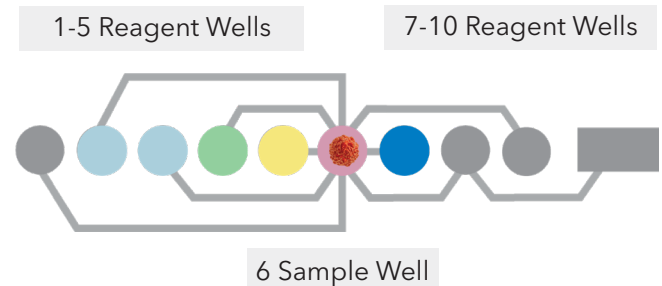
At the heart of the system are our Flowchips; consumables that are to be used within the Pu·MA System and Pu·MA System EC. They are designed using proprietary microfluidics for reagent exchange. The Pu·MA System executes automated fluid exchanges via microfluidic channels under the Flowchip wells, a 20X reduction in pipette steps.

- Use 1 to 4 flowchips
- Each lane = 1 test, 8 lanes per flowchip
- Run up to 32 tests simultaneously
- Optically clear bottom for high-content imaging.
- Wells = 384-well spacing (SLAS ANSI standard)

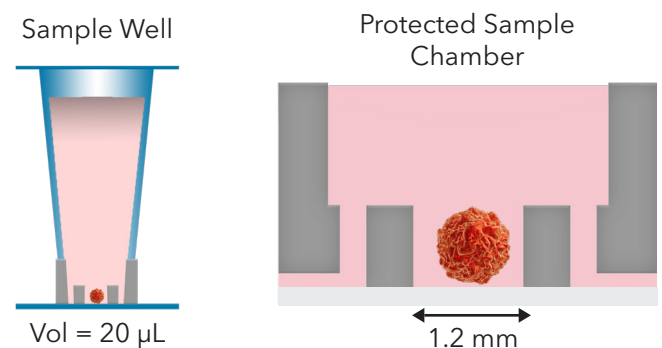


- Wells connected by microfluidic channels
- "Hands-off" fluid transfers
- 1-to-1 fluid exchanges between reagent and sample well

Microfluidic Channel Layout



- Sample well with protected sample chamber
- Samples are undisturbed
- Perform multiple fluid exchanges
- Image your samples *in situ*



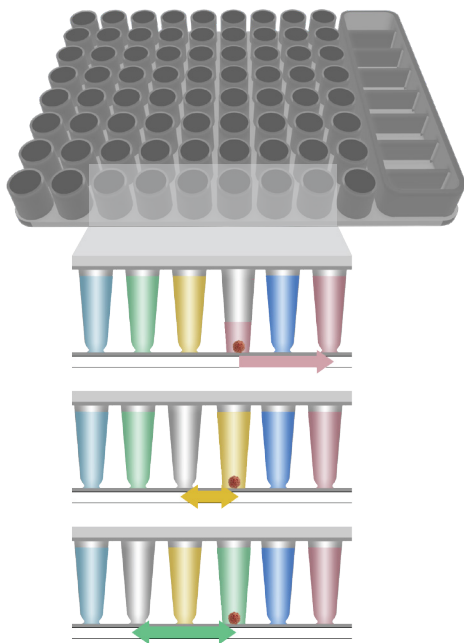
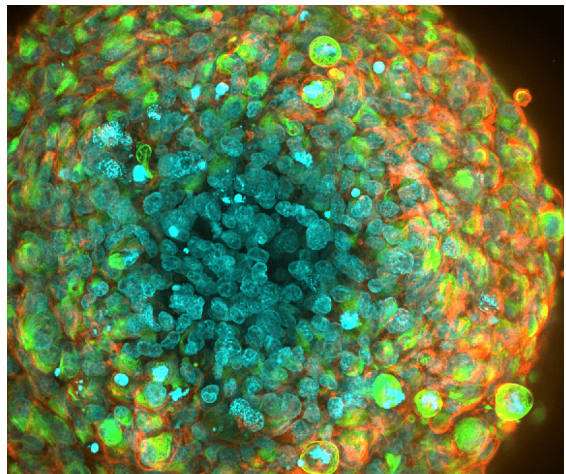
Benefits to Your Research

Improve Your IF Staining

Zero organoid perturbation during multiple assay steps

Reduce pipetting by 20X - Save 5 hours of hands-on time

10X more precise organoid location for microscopy



Streamline Your Assay

20X reduction of pipetting steps in assay = reduced human error

Only **15-minute flowchip** prep time & **5-minute protocol** set up

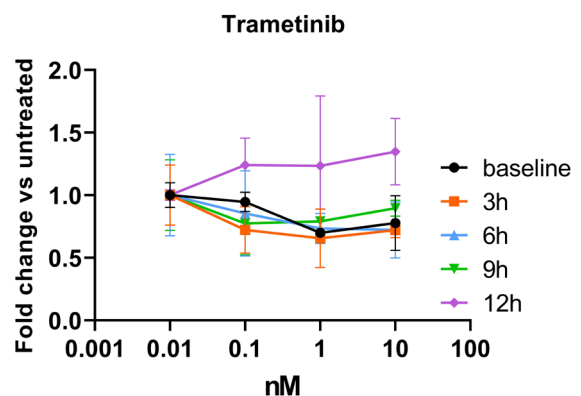
Only **1-touch** to run your assay protocol for hands-off workflow

Explore New Dynamics

5X increased sensitivity for secreted analytes in supernatants

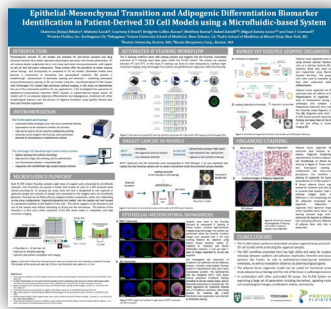
Up to **7 customized timed** supernatant samples can be collected per sample

>95% fluid transfer reproducibility during assays

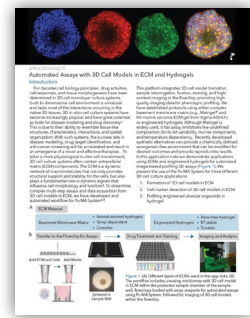




Publications



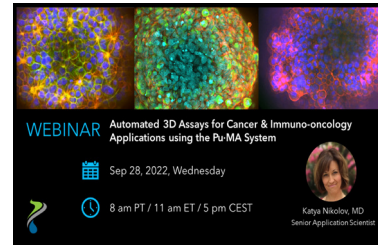
Posters



Application and Technical Notes



Data Sheet



Webinars

Choose less pipetting & more science!

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