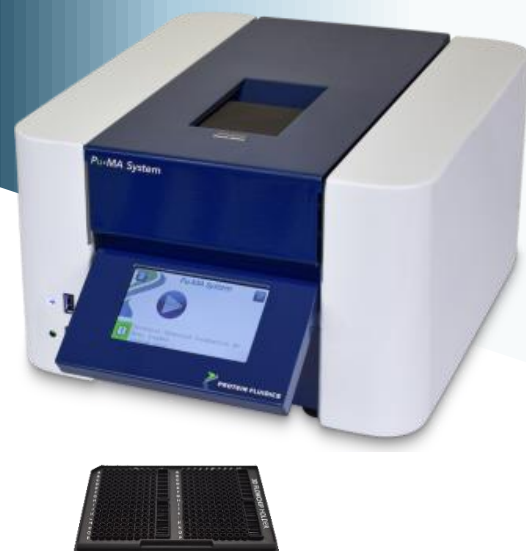


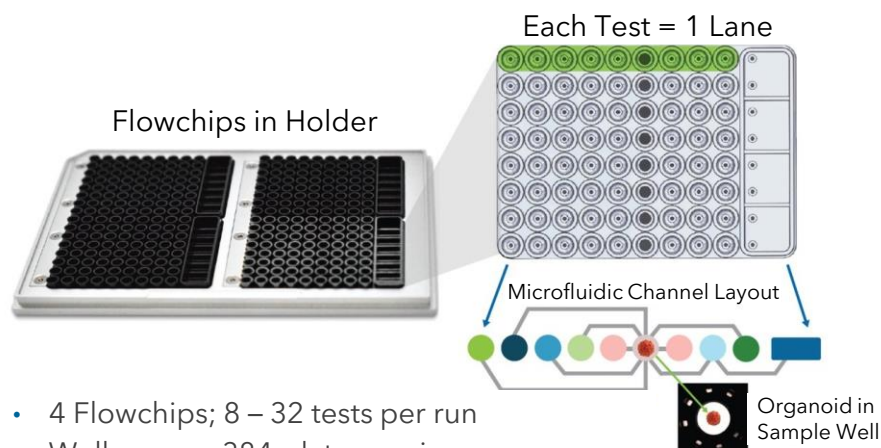
Pu·MA[®] SYSTEM 3D FLOWCHIPS

Automated 3D Cell-Based Assays

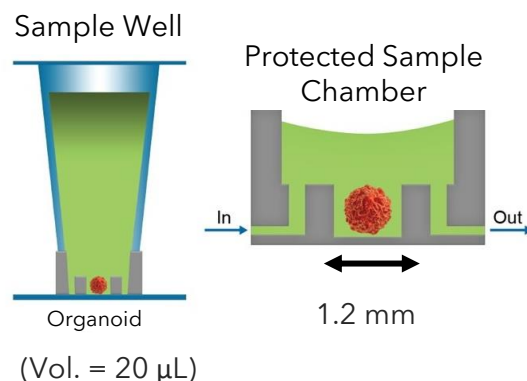
The Pu·MA System 3D has been designed to automate assays for your 3D cell models such as organoids or spheroids. The 3D flowchips are specially designed with our proprietary microfluidics that enable automated media or reagent exchanges for assays such as immunofluorescence staining, *in situ* supernatant sampling or compound treatment.



Pu·MA System 3D Flowchip Features



- 4 Flowchips; 8 – 32 tests per run
- Wells are on 384-plate spacings
- Thin optically clear COC bottom for imaging

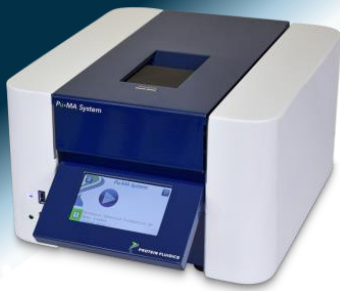


Cromwell EF et al. *SLAS Tech* (2021) 26(3):237-248

Automated Assay Workflow

The Protein Fluidics' Pu·MA System 3D streamlines your workflow to automate assays with minimal user handling. Transfer organoids to the flowchips, add media and reagents, place the flowchips holder into the system, select the assay protocol and press play. The system is touchscreen driven with an intuitive interface. At the end of the assay the samples are ready for downstream analysis such as high-content imaging or luminescence readouts.





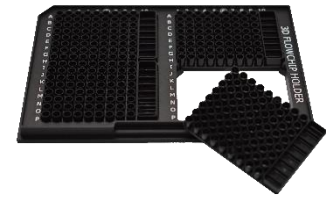
Pu·MA System 3D

- Compact system fits inside tissue culture incubator
- Easy top-loading of flowchips
- Precision pneumatic control



Pu·MA Software

- Touchscreen-driven interface
- Preload assay protocols
- Simple "Select and Play" operations



3D Flowchips

- Open platform for most 3D cell models, spheroids & organoids
- 384-well spacing (SLAS ANSI standard)
- Compatible with high content imaging

How it works

The Pu·MA System and Flowchips use valve-less fluidic switching (VLFS) to precisely control fluid movement in a flowchip. The assay takes place in a protected chamber with microfluidic reagent /media exchanges that eliminates temperature and mechanical perturbations of the 3D cell models (bottom right schematic). Preloaded protocols execute all fluid transfers and incubation steps. Optically clear bottom of flowchips is compatible with high-content imaging

3D Flowchip Specifications

Performance	8–32 Samples per run (1–4 flowchips)
	1–5 days assay time
	> 95% fluid exchange
	CVs of <10% fluid transfer reproducibility
Material	Wells black-walled COC
	Bottom optically clear COC
Dimensions	Wells on SLAS/ANSI 384-well spacing
	Holder = 127.75 x 85.5 x 8.7 mm
Purpose	3D cell-based assays
Environmental	-20°C – 40°C temperature
	15–95% (non-condensing) relative humidity
Compatibility	Standard Pipettors & tips
	High-Content Imaging Systems
	Standard Plate Readers

