

Okomera: Functional Precision Cancer Medicine Enabled By Droplet Microfluidics

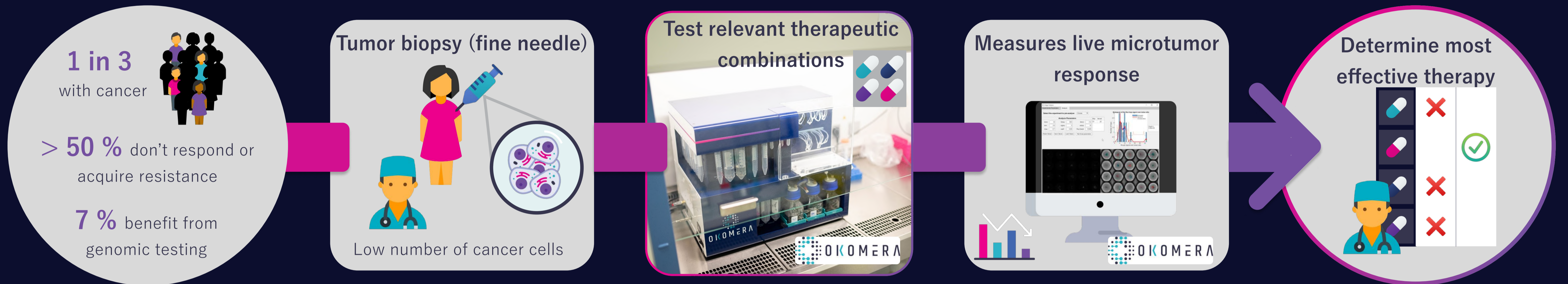


Thomas DUBOYS, Gaëtan MARY, Layla FUOCO, Lucile MERCIER, Ankur CHAURASIA, Cécile PLAIRE, Alice DECHELETTE, Benoit CHARMETTANT, Sandra JERNSTRÖM, Raphaël F.-X. TOMASI

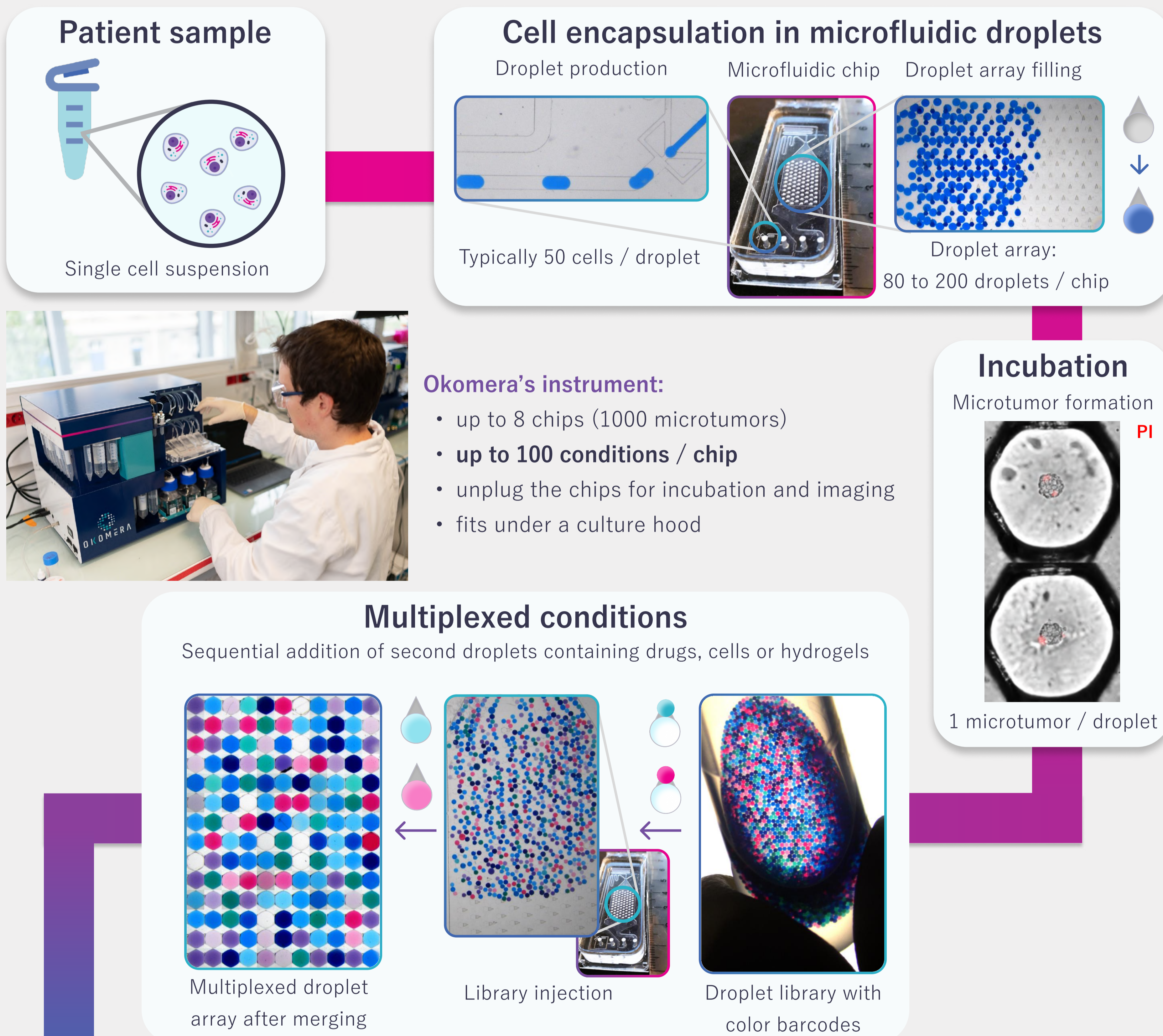
Okomera, iPEPS, the HealthTech Hub, Paris Brain Institute, Hôpital Pitié Salpêtrière, 47, Boulevard de l'Hôpital, 75013 Paris, France

Abstract Functional precision cancer medicine relies on testing live ex vivo patient tumor cells, and is limited by the scarcity of these precious patient samples. Okomera's patented droplet microfluidic technology provides a miniaturized and automated solution, enabling 3D culturing and multiplexed testing of patient cancer cells in relevant microenvironments to guide treatment decision.

Live testing of tumor cells ex vivo



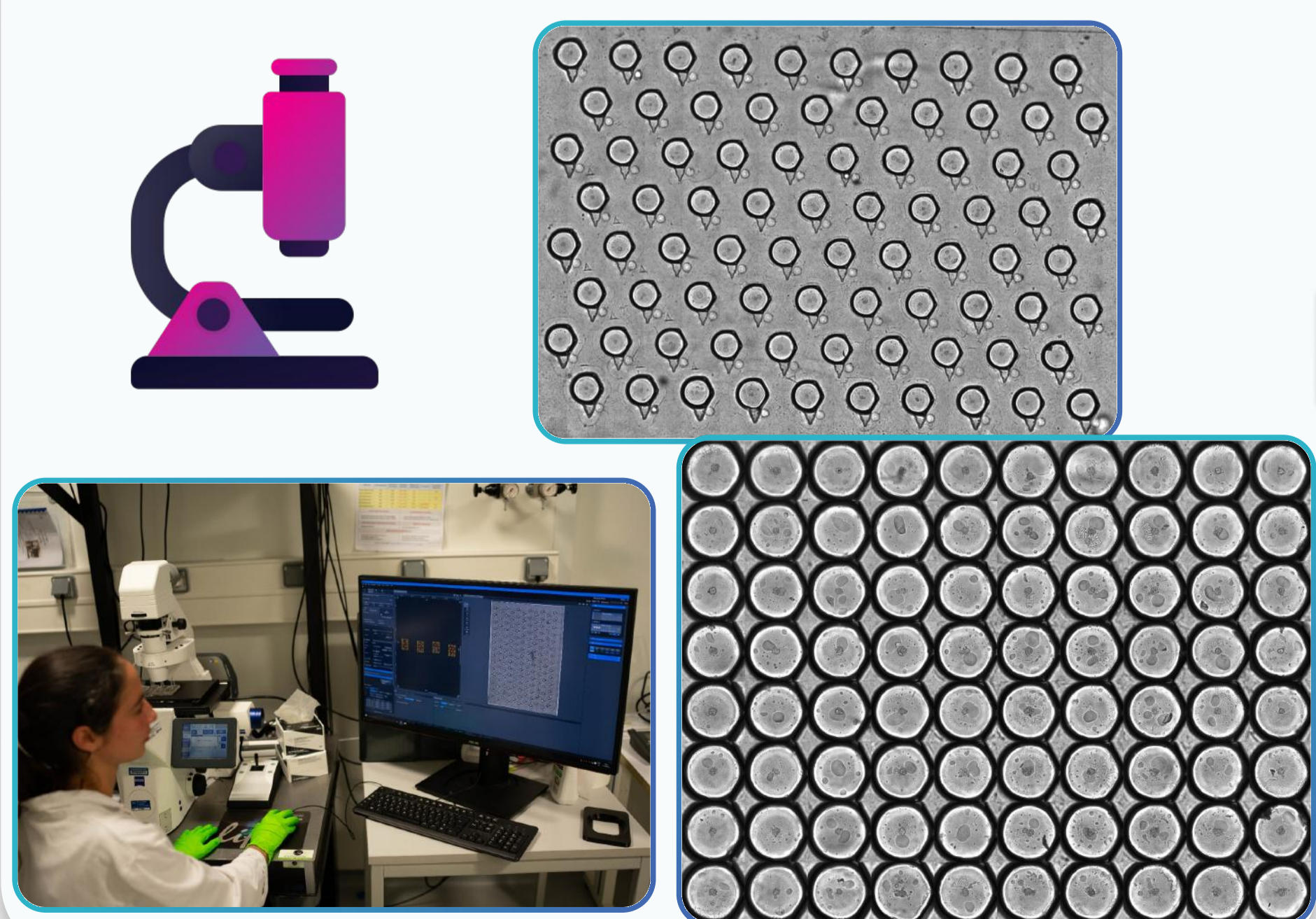
Protocol



- Okomera's instrument:**
- up to 8 chips (1000 microtumors)
 - **up to 100 conditions / chip**
 - unplug the chips for incubation and imaging
 - fits under a culture hood

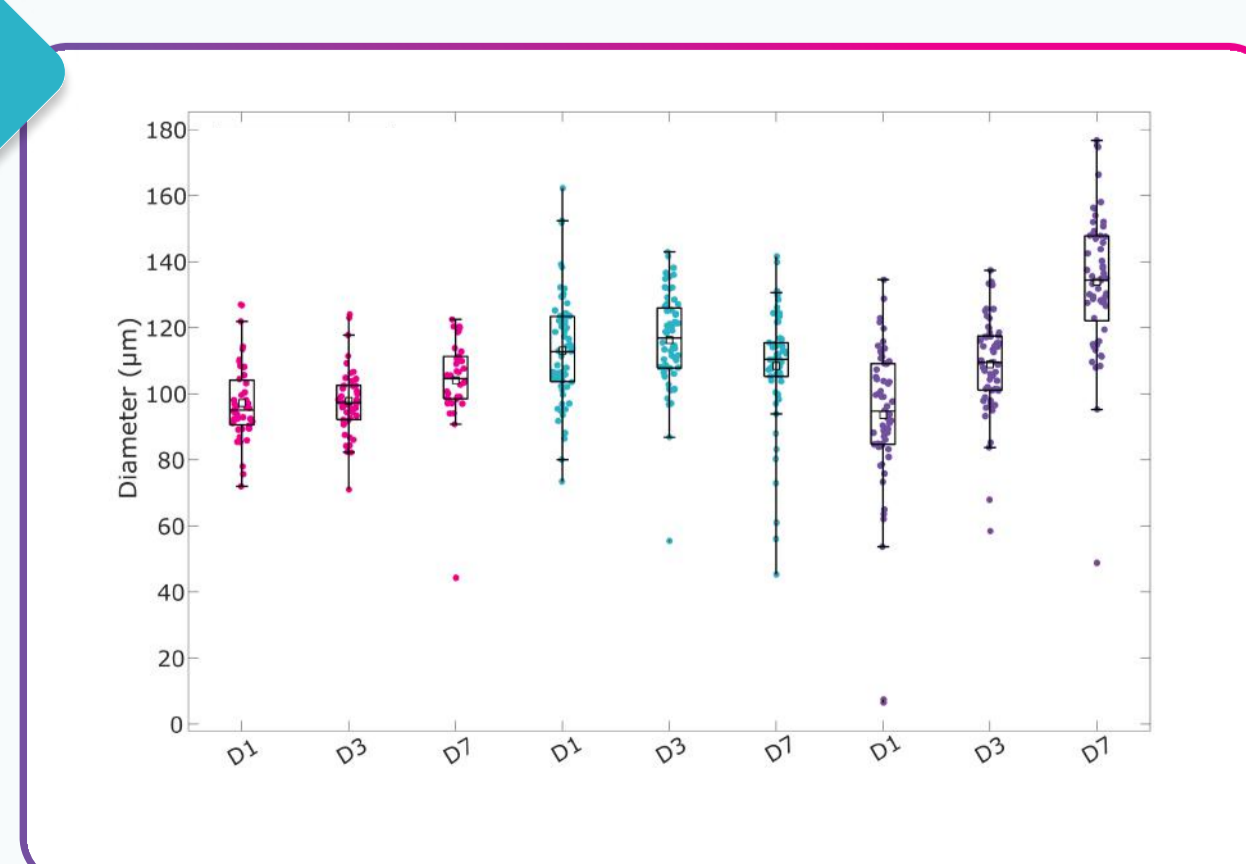
Imaging

Classical epi-fluorescence microscopy



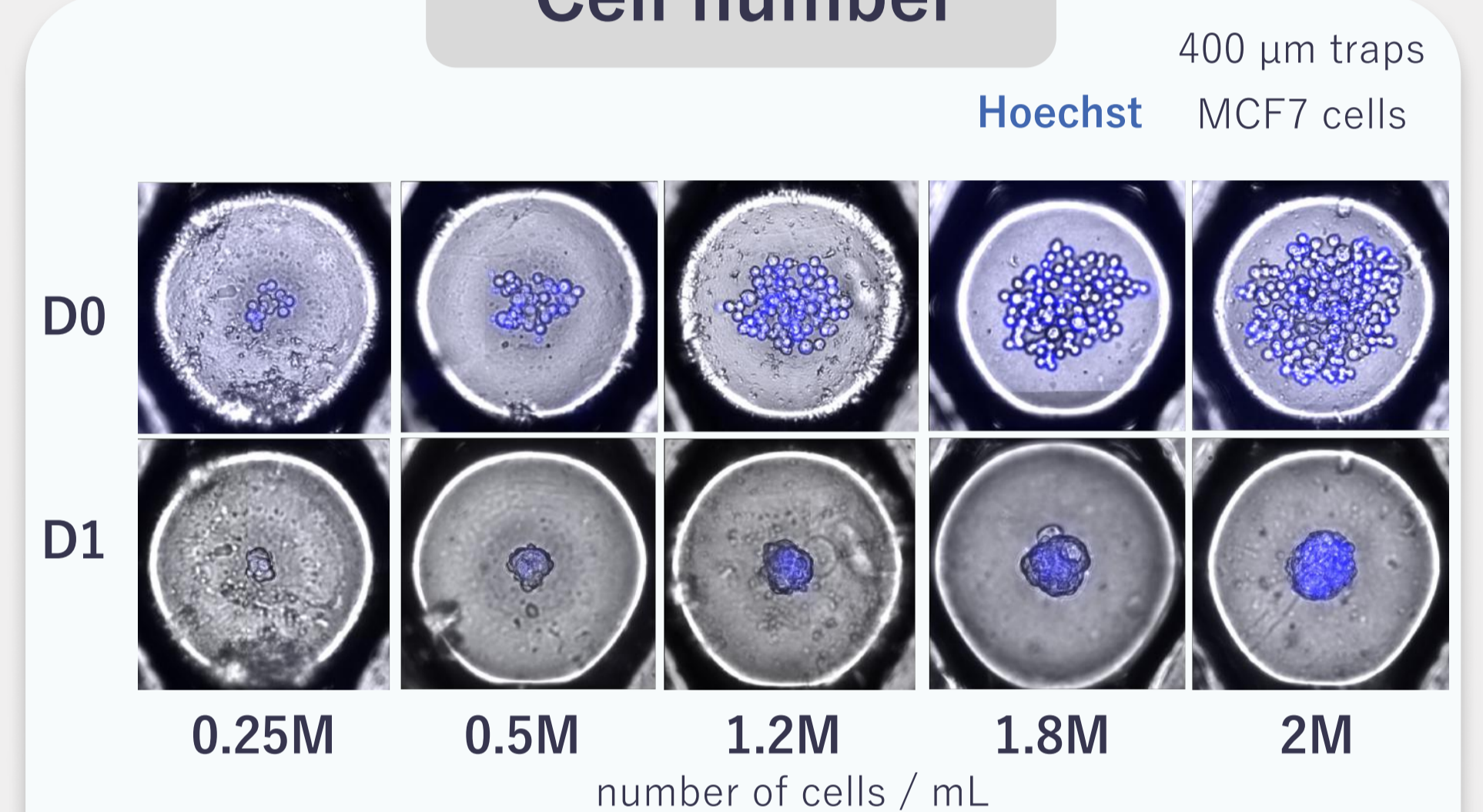
Analysis

Artificial Intelligence-powered image analysis



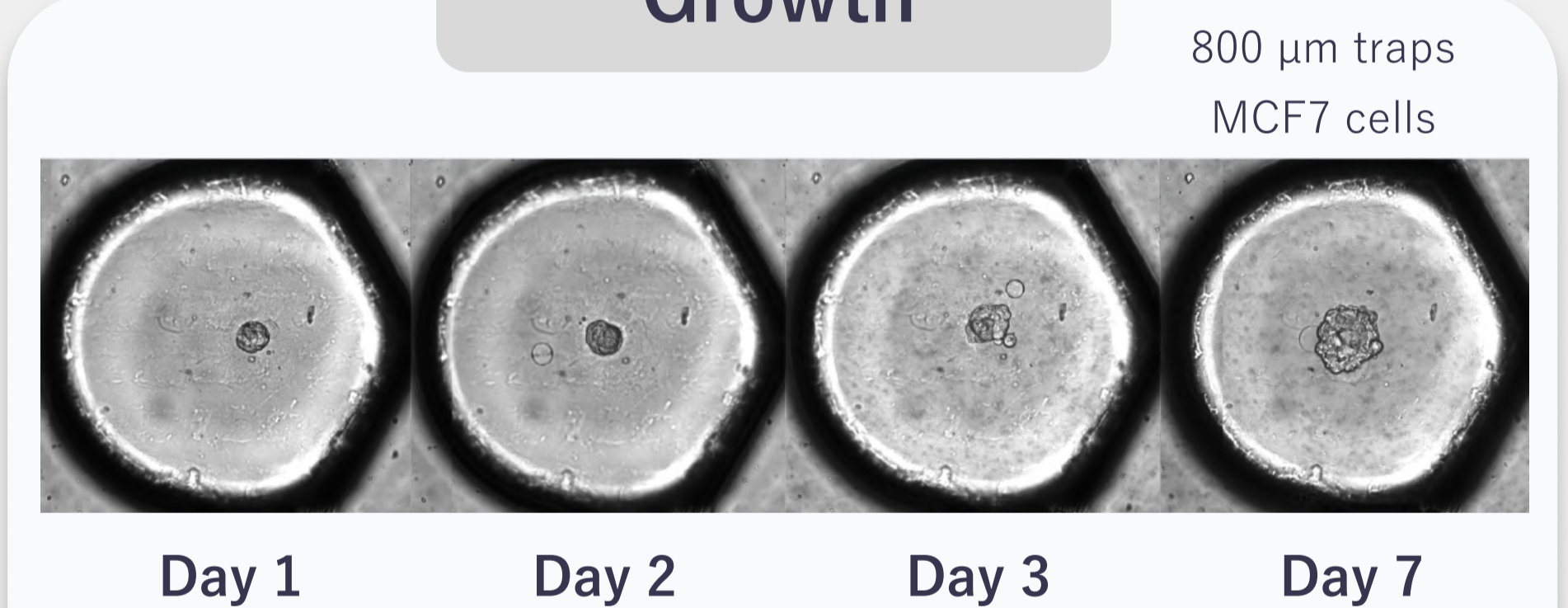
Application

Cell number



Encapsulated cell number depends on the cell concentration of the initial sample

Growth



Microtumor growth over 1 week

Hydrogels

Hydrogel droplets:

- Matrigel™
- Collagen I

H4-II-EC3 cells spreading after 2 days in Matrigel™



Other applications

Immuno-oncology

Combinatorial drug screening

Funding



Contact: communications@okomera.com