



Biopixlar[®]

3D SINGLE-CELL BIOPRINTING



 fluicell[®]

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PRINT TISSUES AS NATURE INTENDED

Biopixlar is a completely new type of bioprinter with the unique capability to position cells in three dimensions with high resolution and precision.

Based on innovative Fluicell technology, Biopixlar is capable of generating detailed, multi-cellular biological tissues, directly in native cell culture media.

Using a microfluidic printer head, Biopixlar is designed for handling scarce and valuable cell sources such as stem cells and primary cells.

Biopixlar is all-in-one discovery platform that will help researchers around the globe to build novel tissue models for drug development, disease understanding and regenerative medicine research.



Single-cell resolution



**High precision
and reproducibility**



Multi-cellular models



>95 % cell viability

AN ALL-IN-ONE DISCOVERY PLATFORM...

Bioprinter

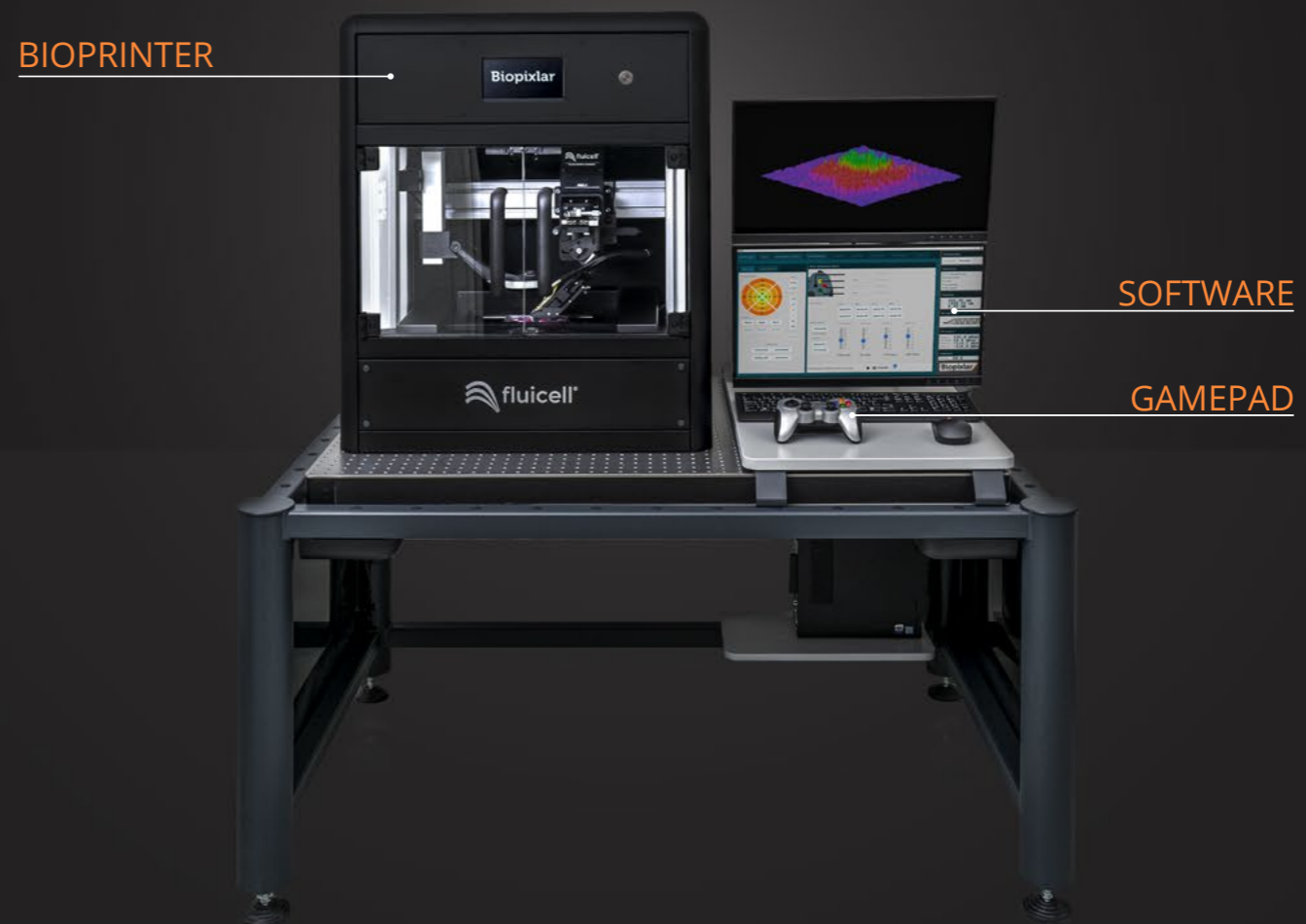
Biopixlar is capable of printing multiple different cell types in one run with high precision and resolution. The bioprinter includes a micromanipulator arm and a motorized stage that let you precisely position the printer head and sample. The onboard multi-color fluorescence imaging setup allows real-time monitoring of your printing process and post-print analysis.

Software

The cross-platform Biopixlar software enables easy configuration of the bioprinting process. Through the software, you can control positioning of the printer head, cell type selection as well as the printing rate, fluorescence configuration and heating. A graphical user interface is included for design of 2D structures.

Gamepad

The gamepad interface brings an entirely new way to experience bioprinting by putting full control of the process in the palm of your hand. With the gamepad, you have the ability to position the printer head and deposit cells with the press of a button.

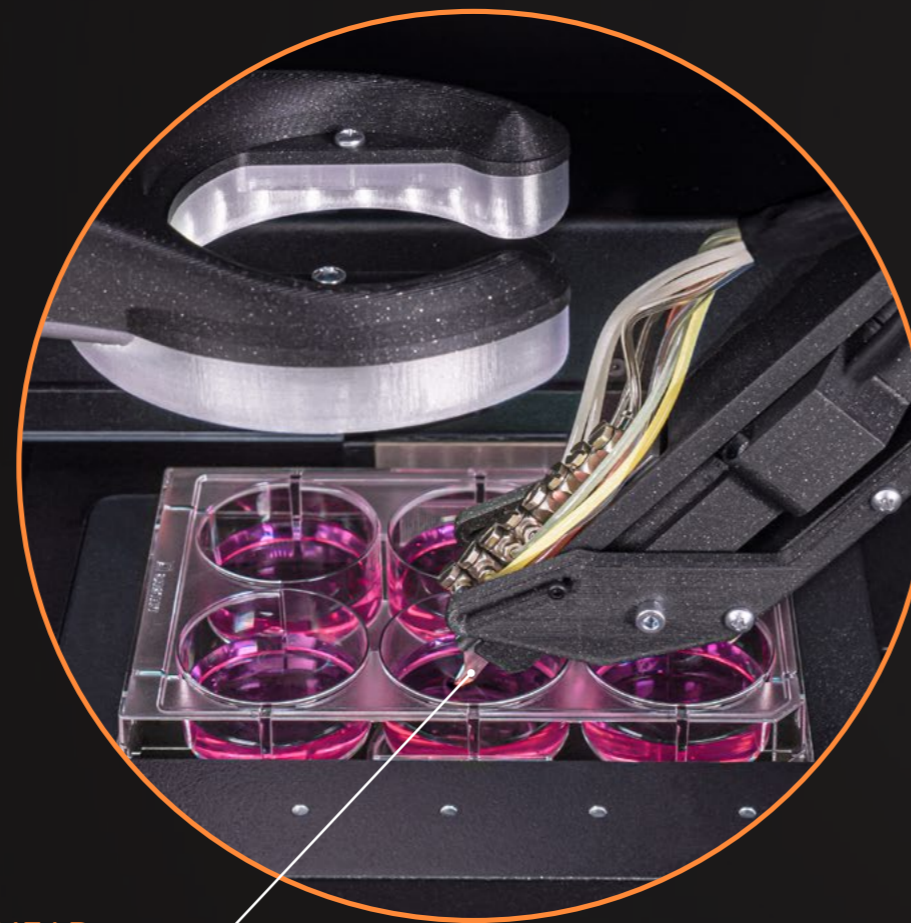


...EMBEDDED WITH USER-FRIENDLY FEATURES

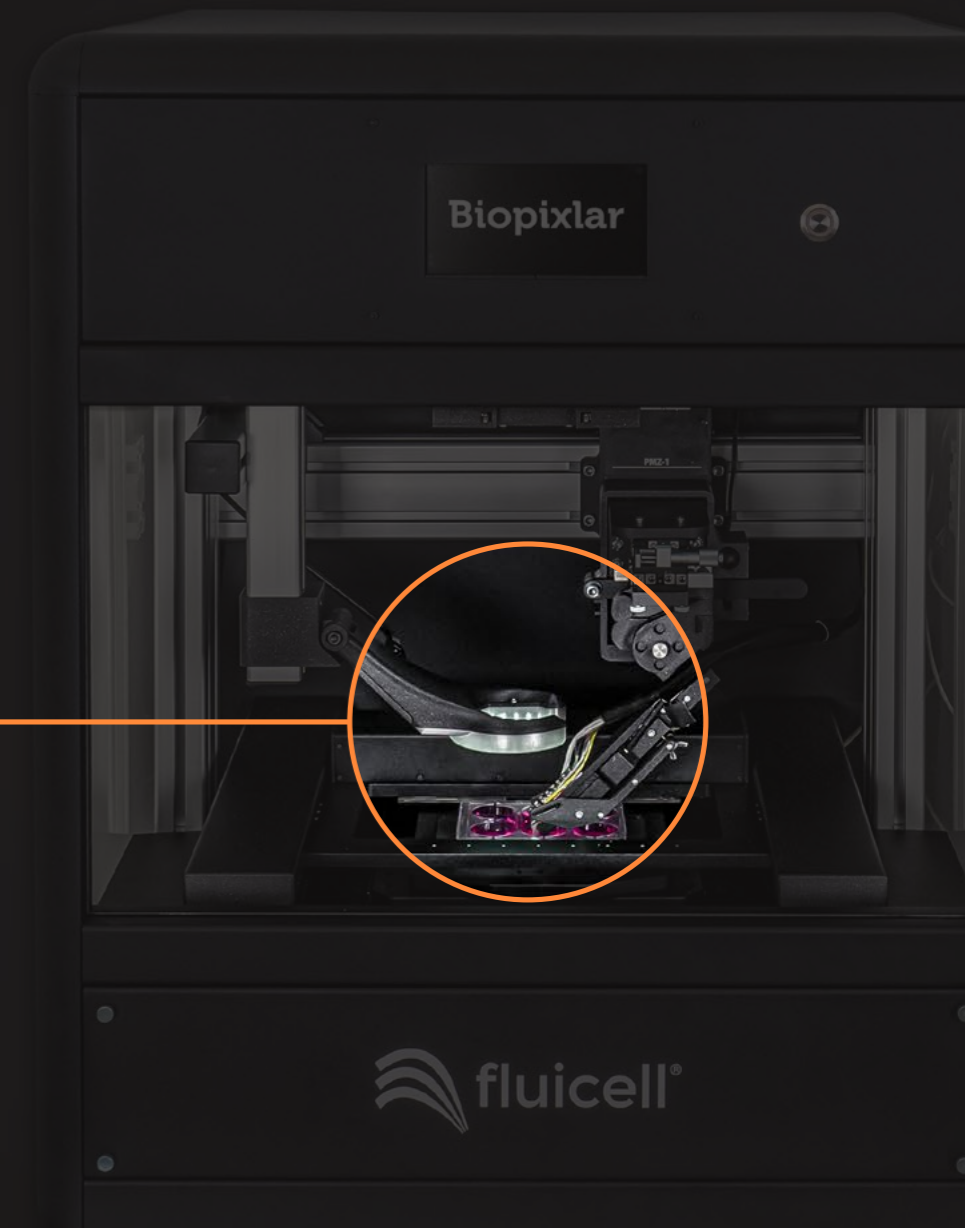


TAKE A CLOSER LOOK

The printer head, based on innovative Fluicell microfluidic technology, is capable of printing several different cell types.



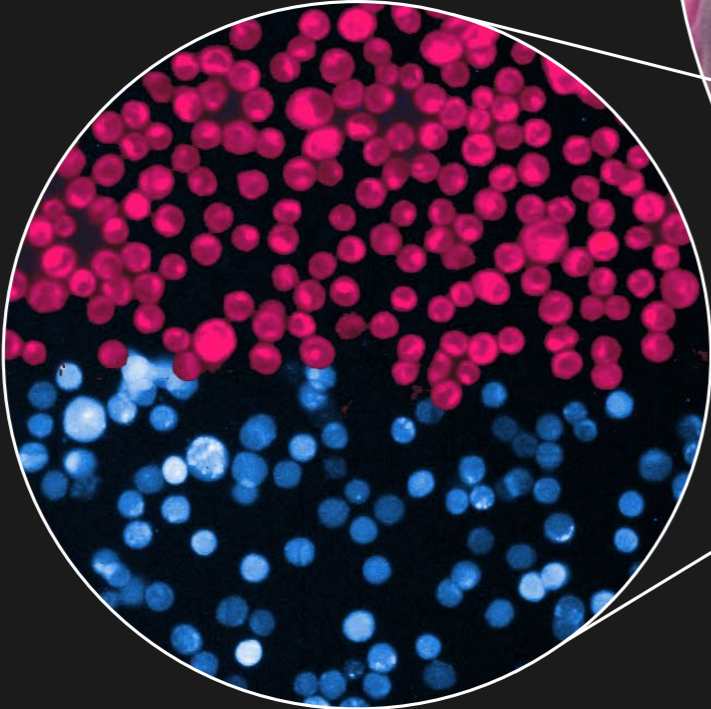
MICROFLUIDIC PRINTER HEAD



fluicell®

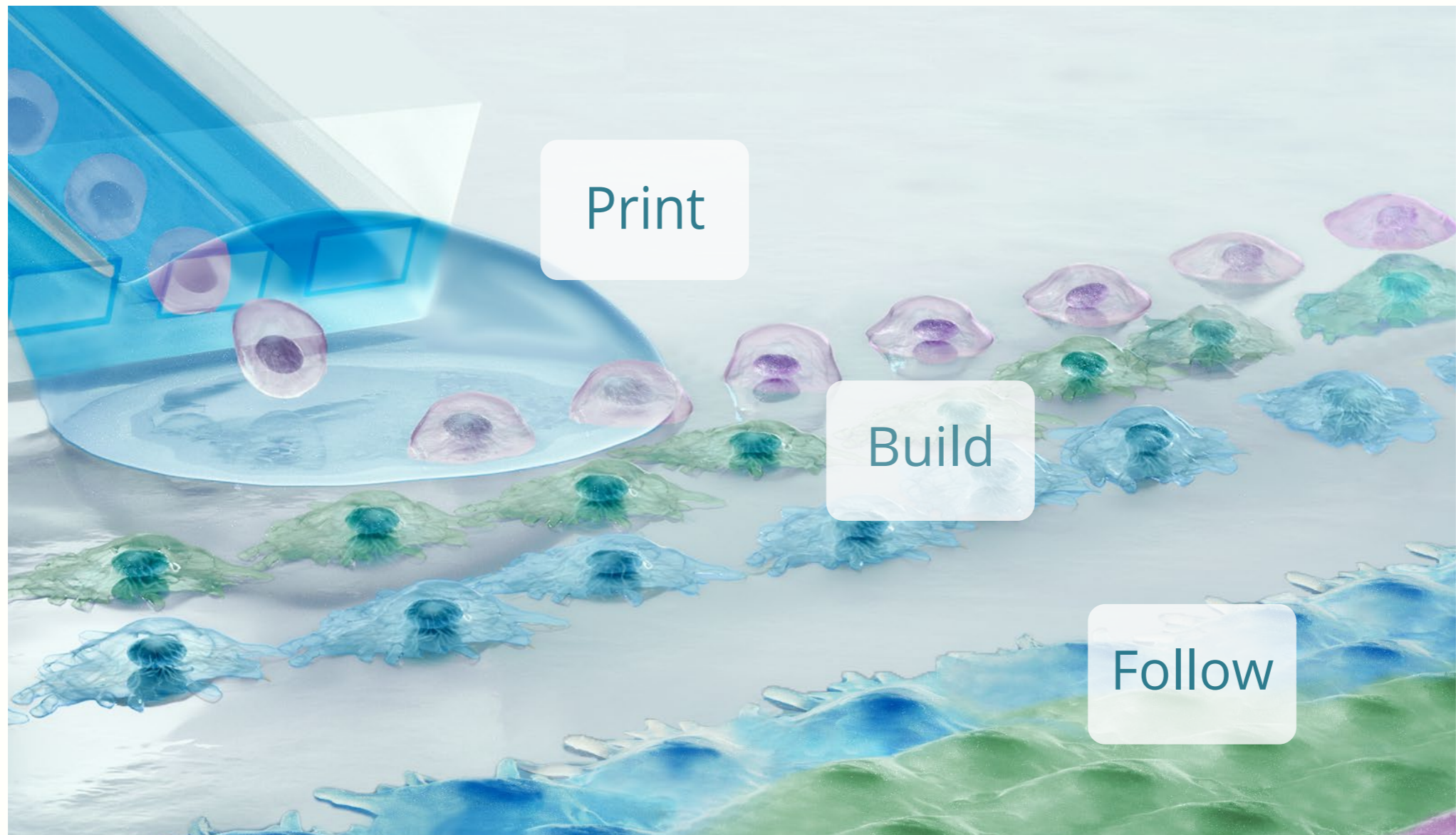
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High precision



High resolution

BUILD BIOLOGICAL TISSUES THROUGH CELL-BY-CELL PRINTING



Print

Print with precision by placing cells directly where you want them.

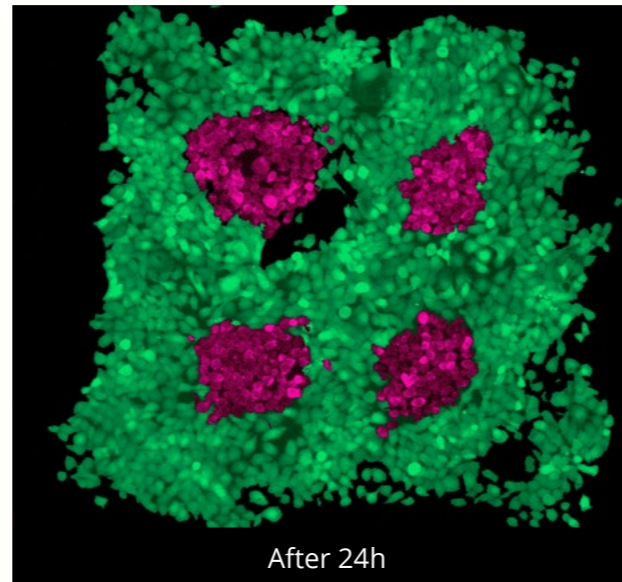
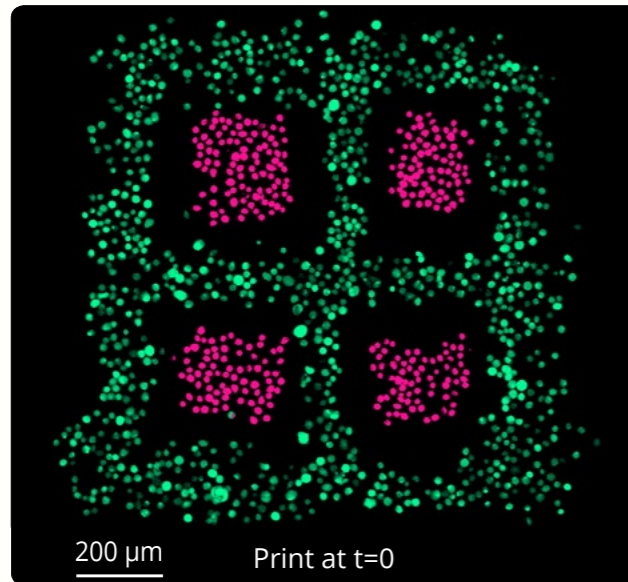
Build

Design complex tissue models by printing different cell types.

Follow

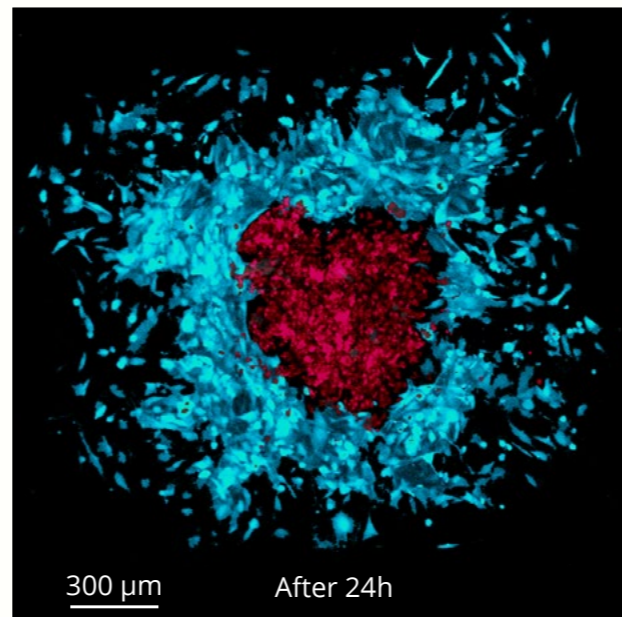
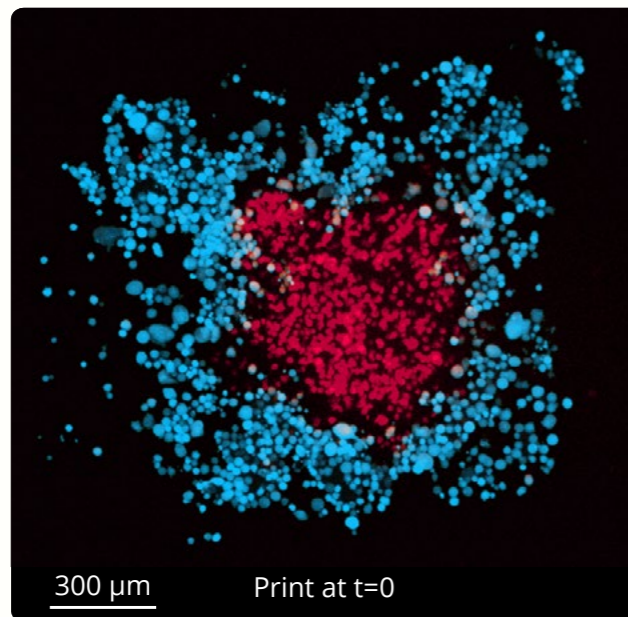
Monitor the printing process using the fluorescence imaging setup.

DESIGN YOUR IN VITRO MODELS



SKIN CANCER MODEL

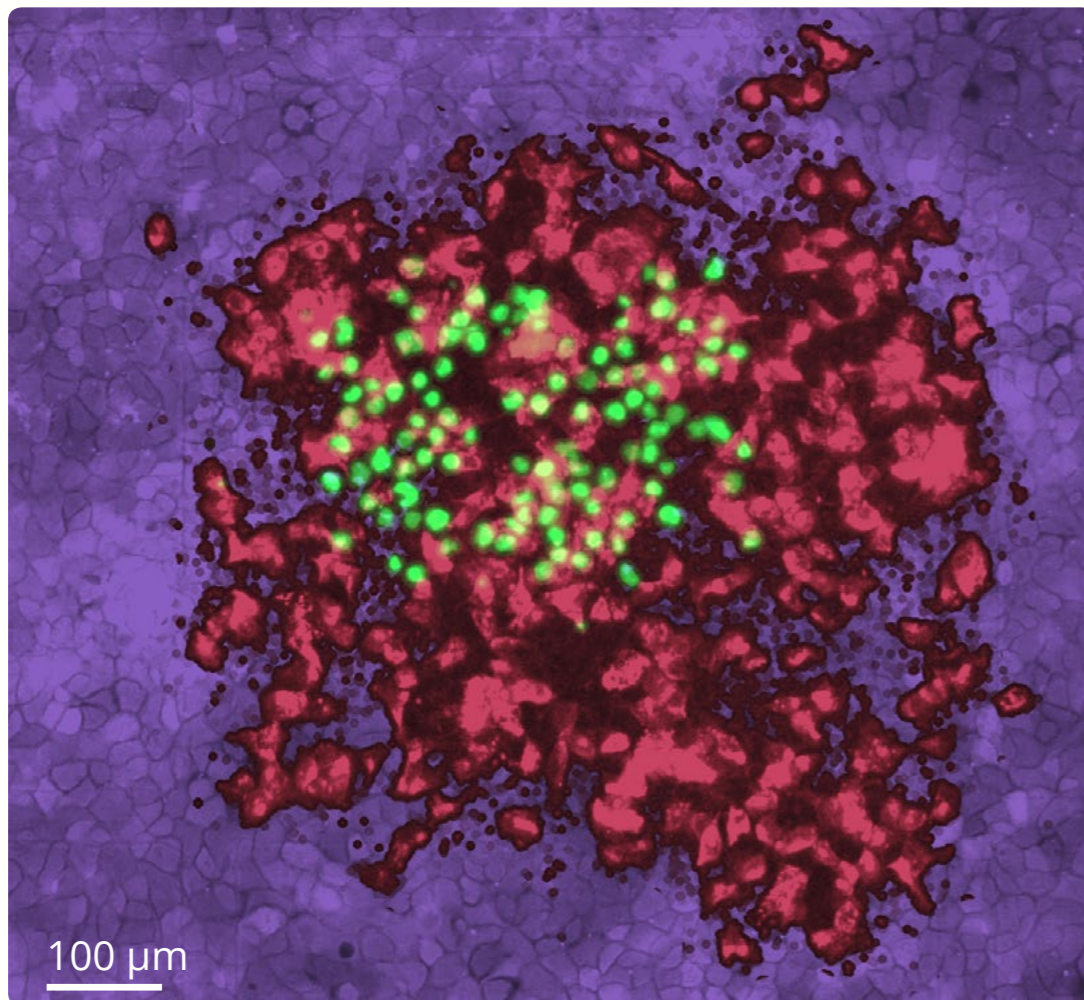
Fluorescence microscopy images of four printed patches of skin cancer cells (A431, in pink) surrounded by epithelial cells (HaCaT, in green) taken at t=0 and 24 hours after printing.



LIVER CANCER MODEL

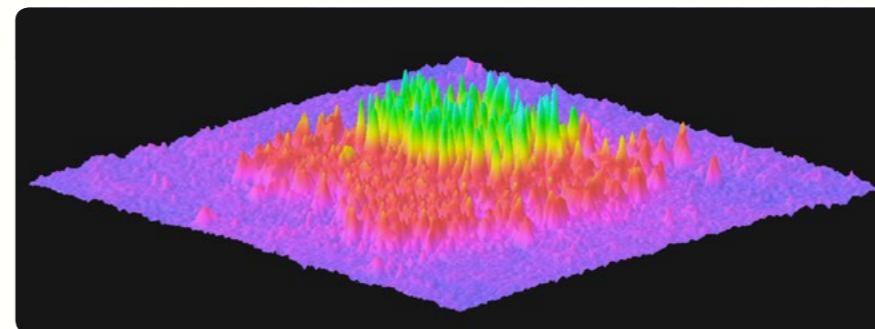
Fluorescence microscopy images of a printed patch of liver cancer cells (HepG2, in red) surrounded by fibroblasts (3T3-J2, in blue) taken at t=0 and 24 hours after printing.

PRINT 3D MODELS, LAYER BY LAYER



3D TISSUE MODEL

A fluorescence overlay of a 3D tissue model printed with skin cancer cells as a base line (A431, in purple), epithelial cells as a middle layer (HaCaT, in red) and skin cancer cells as a top layer (A431, in green).

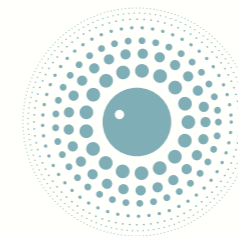
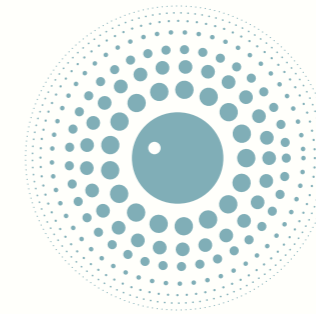
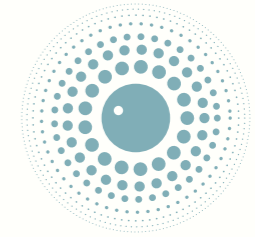
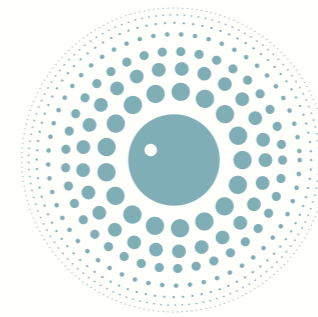


Alternate representation of the micrograph showing the layered structure of printed cells.

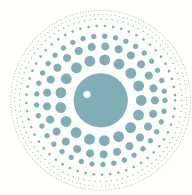


BIOPRINTING PERFORMANCE

PRINTING TECHNOLOGY	Microfluidic hydrodynamic confined flow technology
PRINTING DIMENSION	2D and 3D
PRINTING MODE	Direct printing of cell suspension without the need for gel matrix
PRINTING SURFACE	Cell culture dish with culture medium or buffer
DEPOSITION MODE	From individual cells to thousands of cells
PRINTER HEAD	Exchangeable single-use printer head made from medical grade elastomer with the capacity to hold up to 3 different cell types



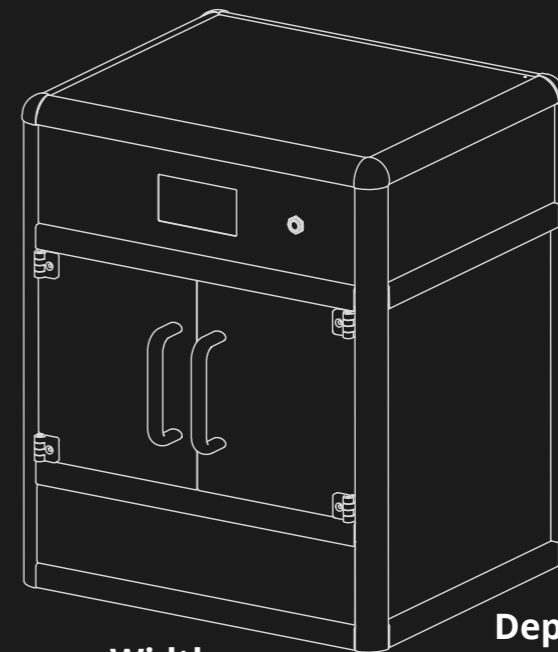
MICROSCOPE SPECIFICATIONS



ILLUMINATION	LED fluorescence illumination and bright-field
FLUORESCENCE FILTERS	Blue: Excitation 370-410 nm; Emission 429-462 nm Green: Excitation 473-491 nm; Emission 502-561 nm Red: Excitation 580-598 nm; Emission 612-680 nm
OBJECTIVE	Air 10x (Olympus Plan Fluorite Objective, 0.3 NA, 10 mm WD)
CAMERA	3 Mpx High sensitivity 1920 x 1080

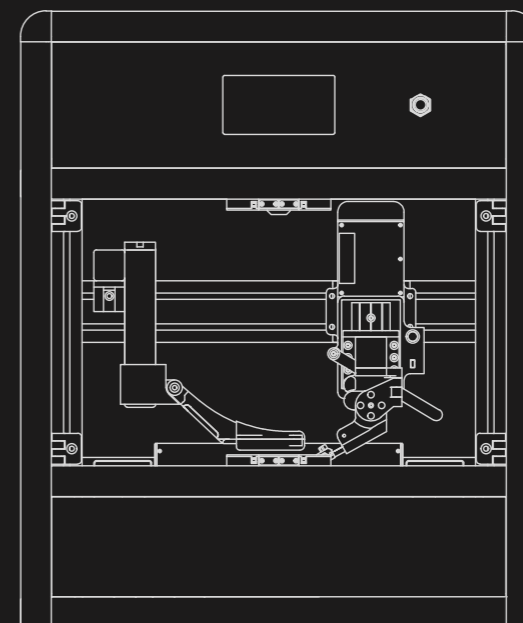
ADDITIONAL SPECIFICATIONS

STAGE TRAVEL RANGE	16 × 16 cm
MOVEMENT PRECISION	2 μm
SLIDE HOLDERS	For 35 mm cell culture dish For 50 mm cell culture dish For Microtiter plate (6 wells)
SOFTWARE	Java – cross-platform compatible
CONTROL INTERFACE	Gamepad
AIR FLOW	Filtered air enclosure



Width:
70 cm

Depth:
57 cm




Height:
80 cm




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