

BIO CELLX

AUTOMATED 3D CELL CULTURE. SIMPLIFIED.

BIO CELLX



CELLINK 
A BICO COMPANY

Welcome to the era of biodispensing.

As industry leaders in bioprinting, our knowledge of 3D biology remains unrivaled. This in depth understanding of customer needs, focused through a lens of bio convergence, enabled the perfect harmonization of bioprinting best practices with higher throughput and automation capabilities present in liquid handling technologies to give birth to the worlds first ever biodispenser and a new modality to the world of biofabrication. A hassle and engineering free method to develop reproducible 3D models compatible with existing analysis workflows. Welcome to the era of biodispensing.



Effortless Hydrogel Extrusion

Each of the three cartridge stations offers precise temperature control ranging from 0°C to 60°C, allowing for hassle-free printing of ECM hydrogels.



Unprecedented Reproducibility

Using positive displacement technology, and features like onboard cell mixing, the BIO CELLX provides unprecedented reproducibility across wells and constructs.



High Throughput Like Never Before

Rapidly plate up to 384 well plates with controlled dispensing.



Maximize Workflow Efficiency

With features like automatic mixing of cell suspension and a reagent with a bioink, the BIO CELLX significantly reduces the material preparation time in your 3D cell culture process.

WORKFLOW BENEFITS



Time savings



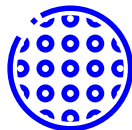
High Reproducibility



Easy to use



Cost Effective



High throughput

TRANSITIONING TO AUTOMATED 3D CELL CULTURE

PREPARATION

Culture Cells

Culture cells of your choice.

Select a bioink

Pick a bioink from a large portfolio offered for BIO CELLX.



DISPENSING PROTOCOL

Bioinks and cells mixing

BIO CELLX automatically prepares the bioink and mixes it with cell suspension.

Dispensing

BIO CELLX dispenses 3D models using pre-set parameters at a press of a button.

Crosslinking

BIO CELLX crosslinks the models using built-in photocrosslinking and thermal modules.

ANALYSIS

Post Dispensing

Add cell medium, incubate, and dose drugs to your 3D models.

Assays and Analysis

Analyze your 3D models using standard assays or imaging methods.

PRECISE & REPRODUCIBLE

A high-precision positive displacement extrusion system which provides reproducible results every single time, regardless of the dispensed material.

HIGH-THROUGHPUT SOLUTION

By supporting microplates up to 384-well plates, the platform offers a perfect solution for drug discovery applications.

HIGH ACCURACY AUTOMATED CALIBRATION

To achieve an industry-beating positional accuracy, a sensor suite measures the position of each of the dispensing orifices in relation to the position of the vessel. An algorithm compensates any inaccuracies to ensure the precise position of the dispensed model.

STERILITY UNCOMPROMISED

CELLINK's fully-enclosed, proprietary clean chamber system, combined with a patent pending de-lidding solution, ensures the sterility of the entire workflow when working on a bench top in a laboratory environment.

BUILT-IN DISPENSING PROTOCOLS WITH CELL LINE FLEXIBILITY

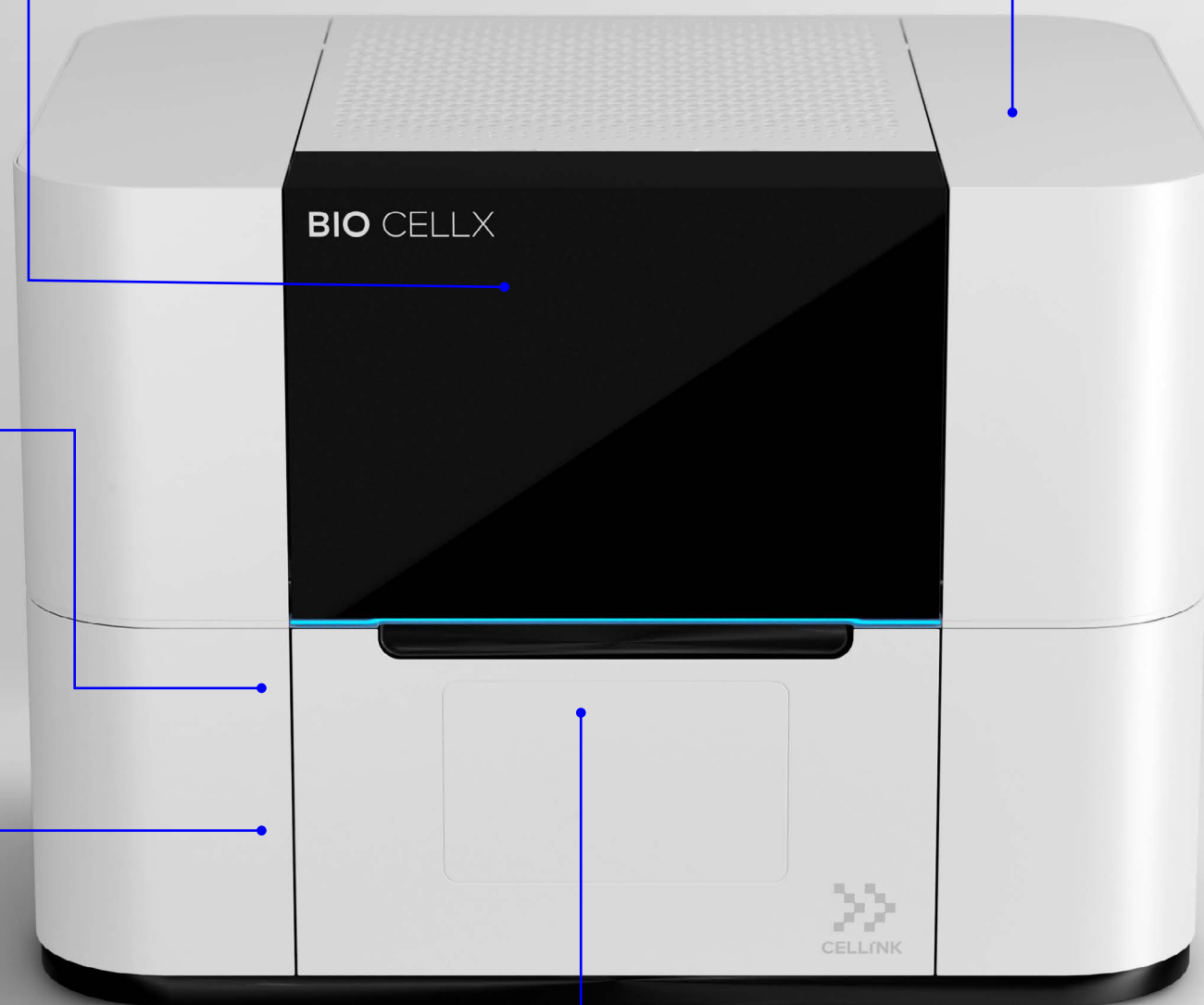
Save time with easy to use dispensing protocols containing validated geometry and bioink combinations.

NOZZLE PRIMING, NOW WITH AI

For the first time ever, ensure flawless dispensing courtesy of artificial intelligence powered nozzle priming, with onboard bubble detection for consistent cell laden constructs.

NO MODELING REQUIRED

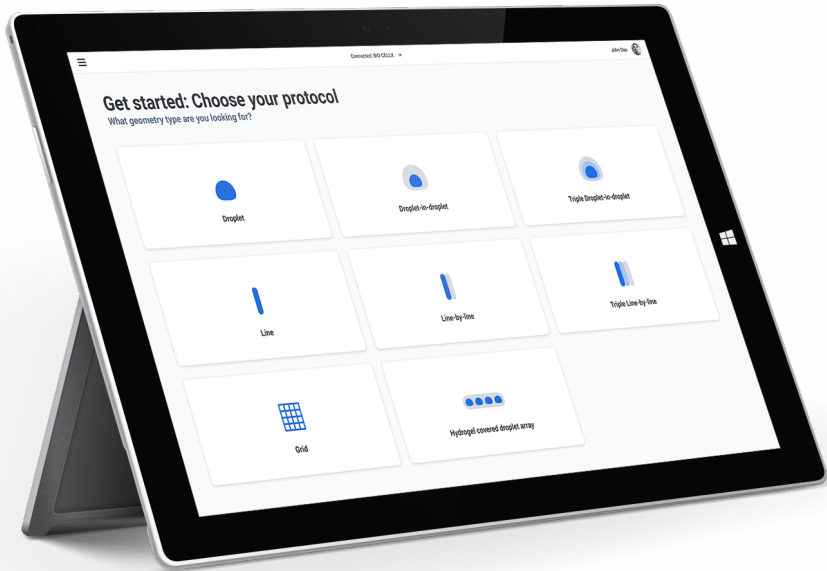
Built-in 3D models mean no time wasted in CAD software.



BIO CELLX Studio

Maximizing walk-away capabilities through the power of automation.

A brand-new, intuitive version of DNA Studio guides users through the entire process, from setting up the system to selecting one of the pre-set and pre-validated dispensing protocols. **No training required.**



No coding experience needed

An intuitive user interface requires no prior coding experience.



Touchscreen optimized

It has never been easier to operate an interface with a gloved finger.



No modeling required

Built-in 3D models mean no time wasted in CAD software.



Adjustable droplet size

Select the size of droplets in line with your goals and downstream analysis methods.



Camera view

Observe the samples as they get dispensed.



Flexible well selection

Selecting single wells or columns in a plate is as easy as swiping a finger.

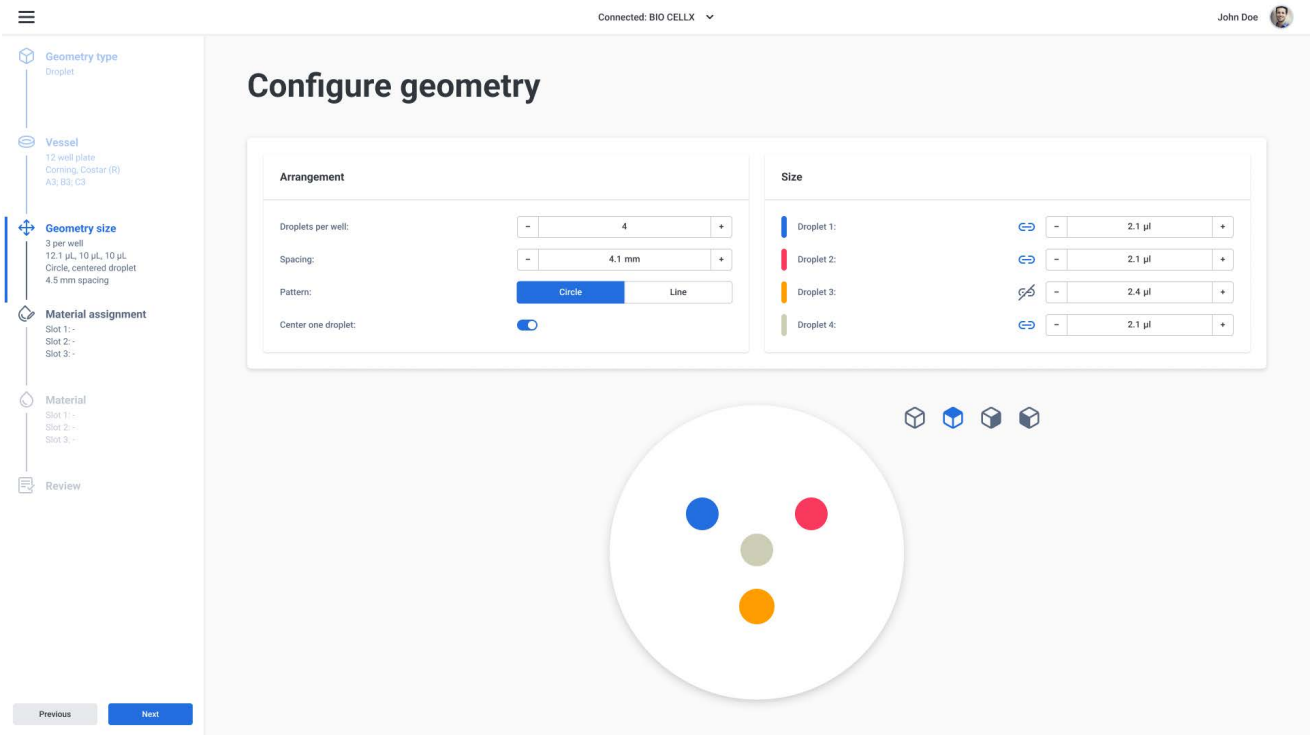


From one to thousands of samples in one go

The interface will guide you through the process of filling multiple plates.

Discovery Mode

We understand research needs develop over time and while dispensing protocols are continuously developed and validated by our scientists, with discovery mode you have the ability to develop your own custom protocols.



Custom bioink support

Optimize dispensing parameters to work with hydrogels that you know.



STL file support

3D bioprint from STL files for full freedom of design.



Optimize mixing parameters

Adjust mixing parameters to achieve higher cell viability or better homogeneity of the solution.



Flexible material assignment









Dispense up to 3 biomaterials and assign them per well or per construct.

PRODUCE 3D CELLULAR MODELS WITH MINIMAL EFFORT

Dispensing protocols

With built-in dispensing protocols, BIO CELLX can produce a number of geometries suitable for a wide range of assays and application areas.

3D MODELS / ASSAYS

	CONSTRUCT TYPE							
	 Droplet	 Droplet-in-droplet	 Triplet droplet-in-droplet	 Line	 Line-by line	 Triple Line-by line	 Grid	 Hydrogel-covered droplet array
Spheroid	+++	++	+	++	++	++	+	++
Organoid	+++	++	+	++	++	++	+	++
Cell-invasion	-	+++	+++	-	++	++	+	+++
Chemo-attraction	-	+++	+++	-	+++	+++	+	+++
Metastasis model	-	++	++	-	++	++	+++	+++
Immuno-oncology model	+++	+++	+++	++	++	++	+++	+++
Tissue model	+	++	+++	+	++	+++	+++	+++
Multilayer tissue model	-	-	-	-	-	-	+++	-
Complex organoid/tumoroid model	+	++	+	++	++	+++	+++	+++

Pre-set for your convenience

- 1. Construct geometry
- 2. Bioink dispensing profiles
- 3. Crosslinking profile

Flexibility to fit your research

- 1. Cell type
- 2. Model size
- 3. Plate selection

Carefully Curated Bioinks

The BIO CELLX is compatible with the most widely used biomaterials capable of recapitulating in vivo like conditions, providing cells with the ideal environment for growth and proliferation.

TELOCOL®-10 Type I bovine collagen for multiple tissue types, maximum cell viability and tunable concentration.

GELMA Universal, gelatine-based bioink that provides mammalian cells with the essential properties of their native environment.

GELMA FIBRIN GelMA-based bioink that contains fibrinogen for enhanced vascularization of tissue models.

GELXA GelMA-based bioink with an addition of xanthan gum and alginate for enhanced printability and stability.

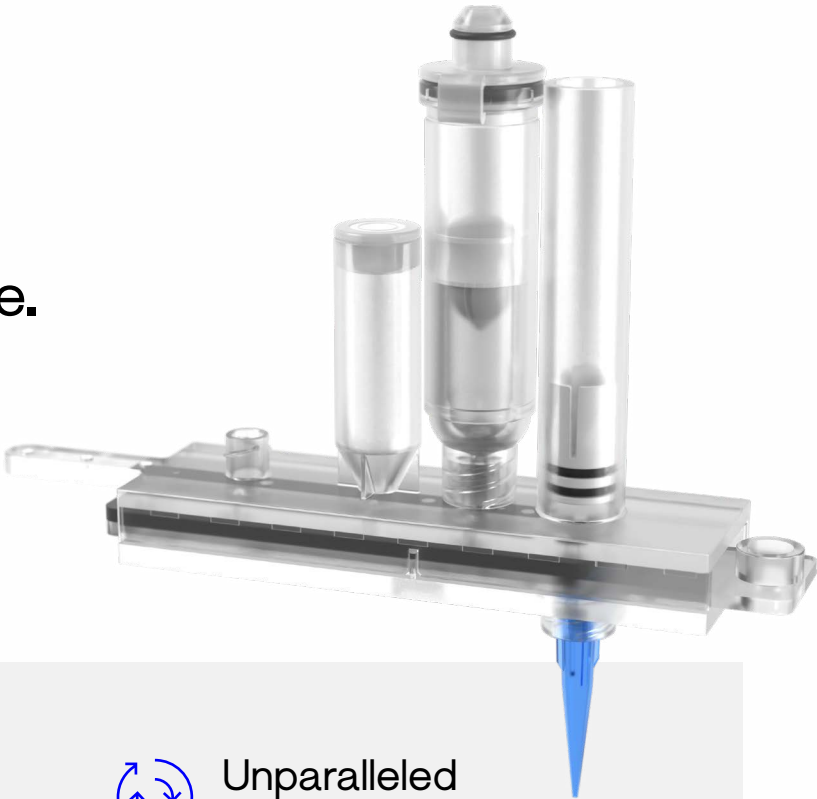
GELXA BONE Enhanced formulation of GelXA for bone applications.

ALGINATE 5% Versatile and viscous hydrogel with tunable stiffness.

NO-HASSLE 3D CELL CULTURE

Effortless biomaterial preparation. Every time.

With a novel patent pending mixing and dispensing mechanism onboard. The BIO CELLX brings a new degree of ease to creating physiologically relevant 3D models, with the ideal matrix environment, and biomechanical cues for your downstream assays.



Homogenous cell density, always.

With gentle mixing built into the patent pending BIO CELLX cartridges, cell density remains evenly distributed throughout dispensing, ensuring reproducible 3D models across wells.



Unparalleled repeatability.

With automated bioink preparation reduce variation in mechanical properties, cell viability, pH and air content of samples for consistent results every single time.

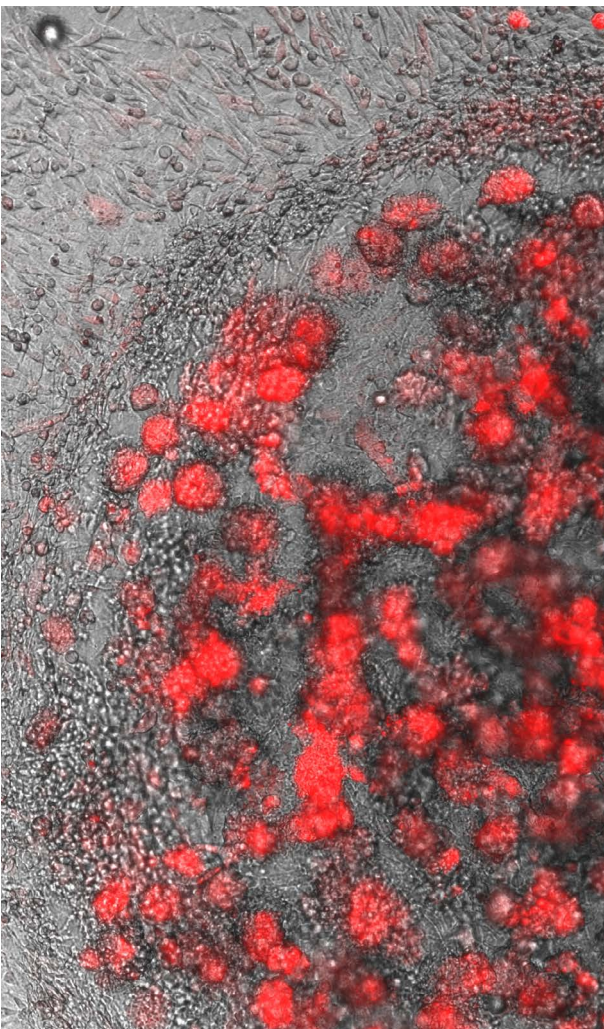
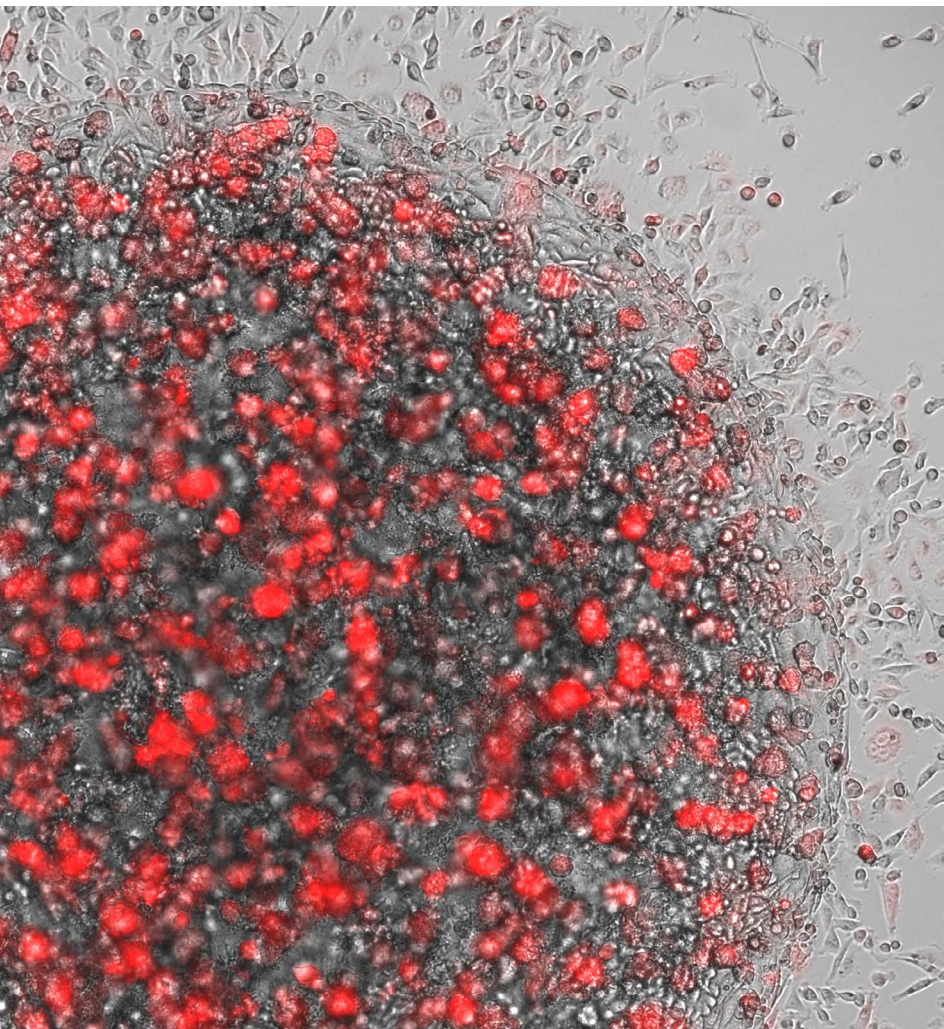
SCAN ME

To read all of our application notes



Validated for success

Explore detailed app notes written by CELLINK scientists, demonstrating the impact of transitioning to 3D cell culture across a multitude of critical research applications.



Technical Specifications

Outer dimensions (L x W x H), mm	765 x 580 x 555
Build volume, mm	125x85x38
Build surface compatibility	Multi-well plates 6-well to 384-well, Petri dishes
Theoretical resolution XY, µm	3
Theoretical layer resolution, µm	1.5
No. of cartridge stations	3
Bioink max. volume, mL	3.0
Cell media max. volume, mL	2.0
Source fluid temperature range, °C	0-60
Theoretical minimum droplet size, µL	0.2
Volume unit step, µL	0.1
Printbed temperature range, °C	0-60
Photocuring system, nm	365, 405, 485, 520
Filter class, chamber airflow	HEPA 14
UV sterilization	UV-C (275nm)
Calibration	Automatic
User interface	Tablet
Connectivity	Ethernet, WiFi



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CONTACT US FOR MORE INFO

www.cellink.com | sales@cellink.com | US: +1 (833) CELLINK | EU: +46 31 128 700

