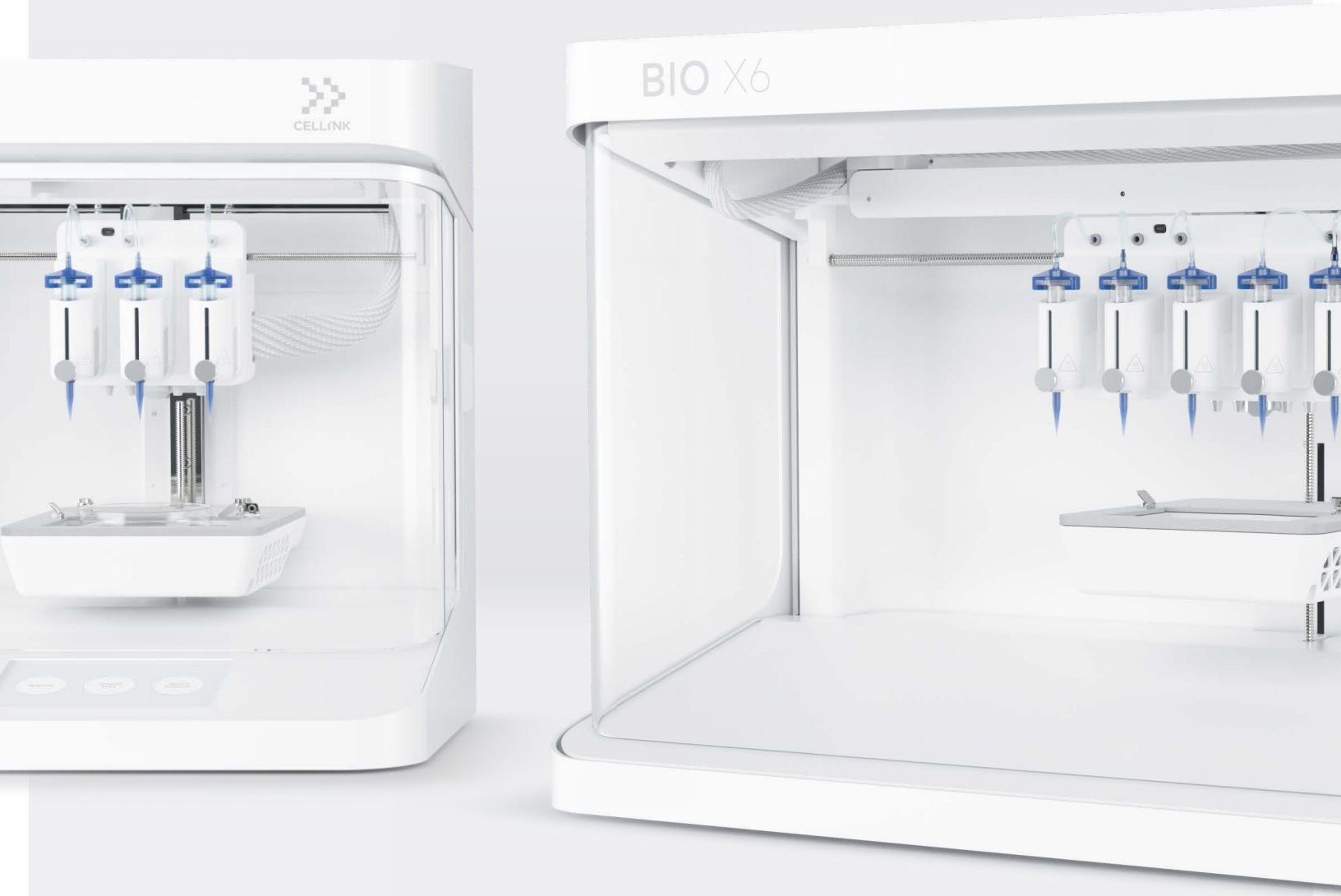
CELLINK
A BICO COMPANY

The BIO X Series

Gen 3 / Reloaded. Refined. Reinspired.



DEFINING THE STANDARD IN BIOPRINTING

Contents

Industry leaders in bioprinting

What is bioprinting?

The future is created in the present, and bioprinting will change the future of health.

Extrusion-based bioprinting precisely dispenses biocompatible materials layer by layer, following tool paths generated in slices from 3D models. Our extrusion-based bioprinters are designed with flexibility in mind to give bioengineers the freedom to work with a wider range of biomaterials, opening the door for more relevant tissue engineering.

Your partner in bioprinting.

CELLINK is the leading innovator of bioprinters, bioinks and technologies at the forefront of 3D cell culture, driving to a future where on-demand bioprinted human organs and tissues are a reality.

"CELLINK has created an easy-to-use and versatile piece of equipment. I'm able to print with three different print-heads containing different cell types and inks, and I can program these to have different infill patterns giving end-less possibilities to printed constructs."

Sarah Lindsay
University of Cambridge

"CELLINK has taken our feedback and adapted their system while being actively engaged in the process."

Dr. Grande
The Feinstein Institute for Medical Research

"Best in-class bioprinter. All-around quality product and service. Very practi-cal printer with intuitive operations."

M. Elbadawi
UCL

BIO X

The go-to bioprinter for life science companies, researchers and innovators.

Engineering excellence

Built with high-quality motors and gantry systems, the BIO X series ensures pinpoint precision in the x, y and z directions.

Integrated touch screen interface

Set up full bioprinting protocols directly from the system. Simply upload an .stl or .gcode file.

3 modular printhead slots

Each BIO X comes with interchangeable Intelligent Printheads, enabling countless configurations, printing ranges from 4°C to 250°C and unparalleled flexibility.

UL & CE certificates

Passed rigorous electrical safety testing and verification to ensure safety and durability.

Built-in oil-free compressor

Capable of exerting 200 kPA of pressure right out of the box.

Regulated for 700 kPA if an external compressor is connected.

BIO X6

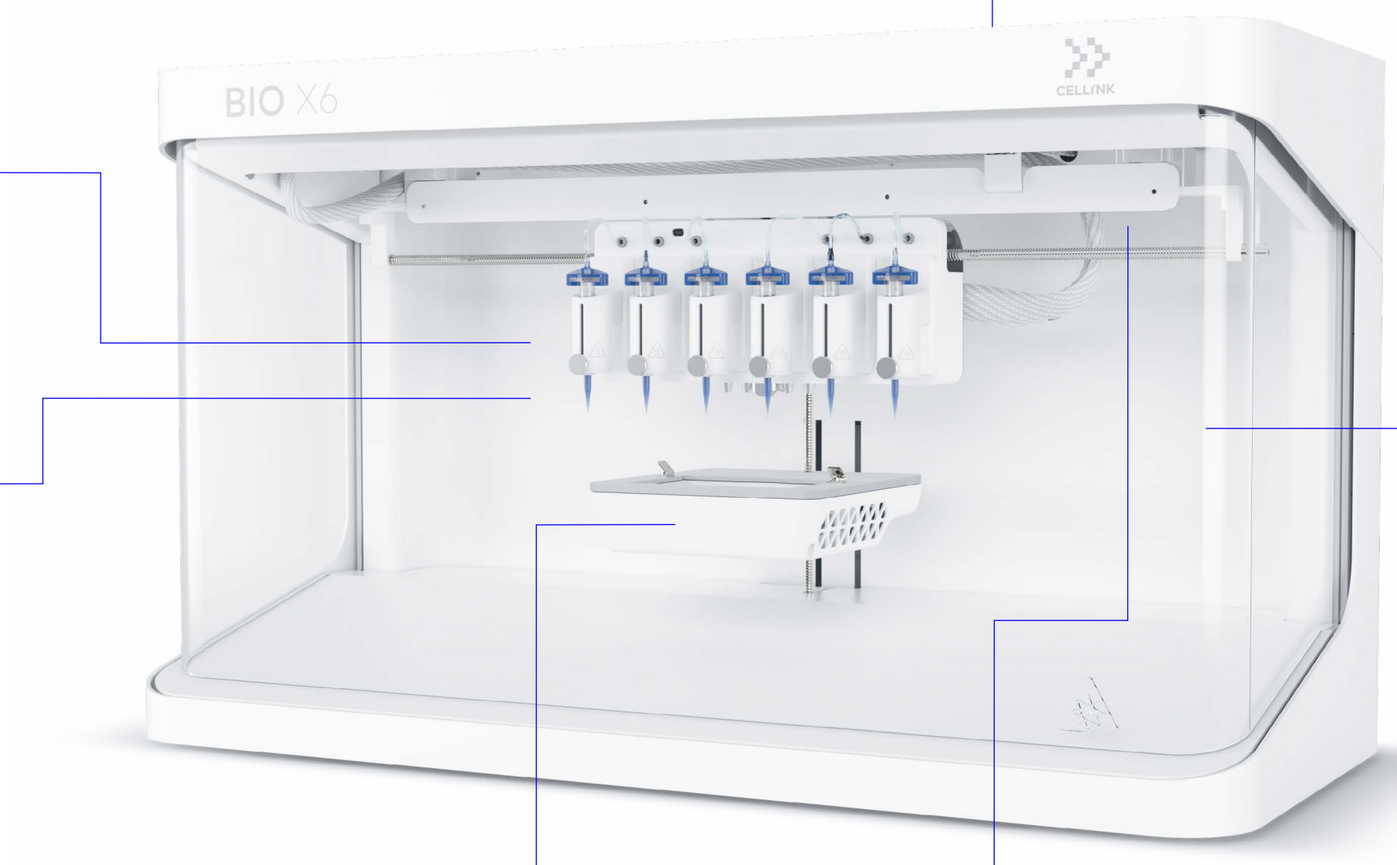
Elevate your bioprinting workflows. Effortlessly.

Uncompromised sterility

The BIO X series comes equipped with Clean Chamber Technology powered by dual HEPA filters and UV-C germicidal lights.

6 modular printhead slots

Each BIO X6 comes with interchangeable Intelligent Printheads, enabling countless configurations, printing ranges from 4°C to 250°C and unparalleled flexibility.



Injection molded components

Durability in design and production methods with premium injection molded components.

Targeted crosslinking

Leverage 4 LED modules (365 nm, 405 nm, 485 nm, 520 nm) or the UV toolhead for targeted crosslinking of light-senstive materials.

Total temperature control

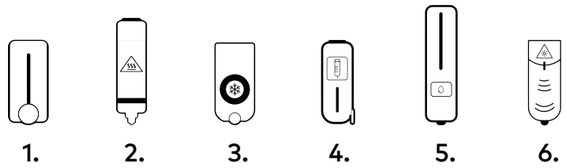
Set your printbed anywhere from 4°C–65°C for optimal printing.

Advanced printing methods

Dual-pressure settings enable multimaterial and coaxial printing.

Intelligent Interchangeable Printheads

Choose from our intelligent interchangeable printheads to achieve unparalleled flexibility in bioprinting.



1. Pneumatic Printhead
Temp: Up to 65°C

Leverage pneumatic pressure to build constructs layer by layer. Available in two sizes (3 mL and 10 mL) and able to heat up to 65°C, the Pneumatic Printhead is the workhorse for your bioprinting needs.

2. Thermoplastic Printhead
Temp: Up to 250°C

Print with synthetic polymers like PCL, PLA and PLGA for increased biomimicry and complexity.

3. Temperature-controlled Printhead
Temp: 4°C - 65°C

Print collagen-based bioinks and other bioinks that require precise temperature control effortlessly.

4. Syringe Pump Printhead
Temp: Up to 65°C

Take total control of the flow rate and deposited volume, no matter the viscosity, thanks to a mechanically driven stepper motor.

5. Electromagnetic Droplet Printhead
Temp: Up to 65°C

The inkjet technology allows for a high printing speed with precision. It can print a wide range of low- and medium-viscosity bioinks as well as offering heat control.

6. Photocuring Toolhead

UV toolhead enables targeted photocrosslinking of biomaterials. Adjust intensity, duration, and crosslinking height based on the materials used. You can even build biomechanical gradients within a construct.

Enhanced Coaxial Printing

Leverage every printhead position on your BIO X6 and even the Temperature-controlled Printhead for this advanced technique and set up full protocols all from within the DNA Studio 4 interface.

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Bioinks, Biomaterials and More

The most extensive biomaterial portfolio, for every cell type and application

At CELLINK, we understand that your research needs may vary. That is why we stock our products in multiple different formats. Take full control of your biomaterial composition with our bioink components and build the perfect bioink for your experimental setup. Leverage additives like photo-initators and thickeners for effortless printing.

Or take it from us, as the first bio-ink company in the world, we know a thing or two about formulating bioinks. Our ready to print bioinks are specially optimized for printing fidelity and maintaining cell viability. Select from animal-based materials like collagen or gelatin, or work with plant-based materials like alginate and NFC.

When we say "materials for every cell type," we mean it. Choose from our robust collection of tissue specific bioinks, rigorously tested and tailored for working with specific cells thanks to premium additives like laminins, fibronectin and calcium phosphate.

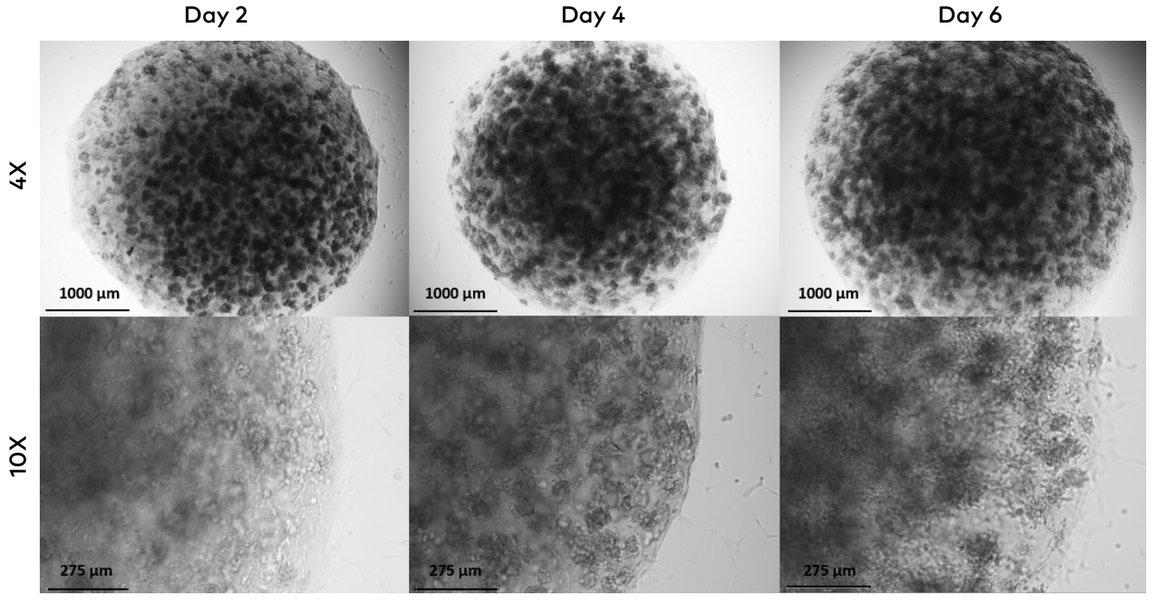
Bioink Components	Ready To Print	Tissue Specific Inks
NFC	GelMA C	CELLINK/GelXA LAMININK+
Xanthan	GelMA	CELLINK/GelXA LAMININK 111
Gum	ColMA	CELLINK/GelXA LAMININK 121
VitroCol	Lifeink 220	CELLINK/GelXA LAMININK 521
PurCol	Lifeink 260	CELLINK/GelXA LAMININK 111
Collagen 3	TeloCol-10	CELLINK/GelXA LAMININK 411
Collagen 1	Atelocol	CELLINK/GelXA LAMININK 521
	GelMA HA	CELLINK/GelXA BONE
		CELLINK FIBRIN
		CELLINK/GelXA SKIN

Changing how science is conducted

Unlock the advantages of 3D cell culture and reap the benefits of automation and reproducibility for greater insights

Drug Discovery and Disease Modeling

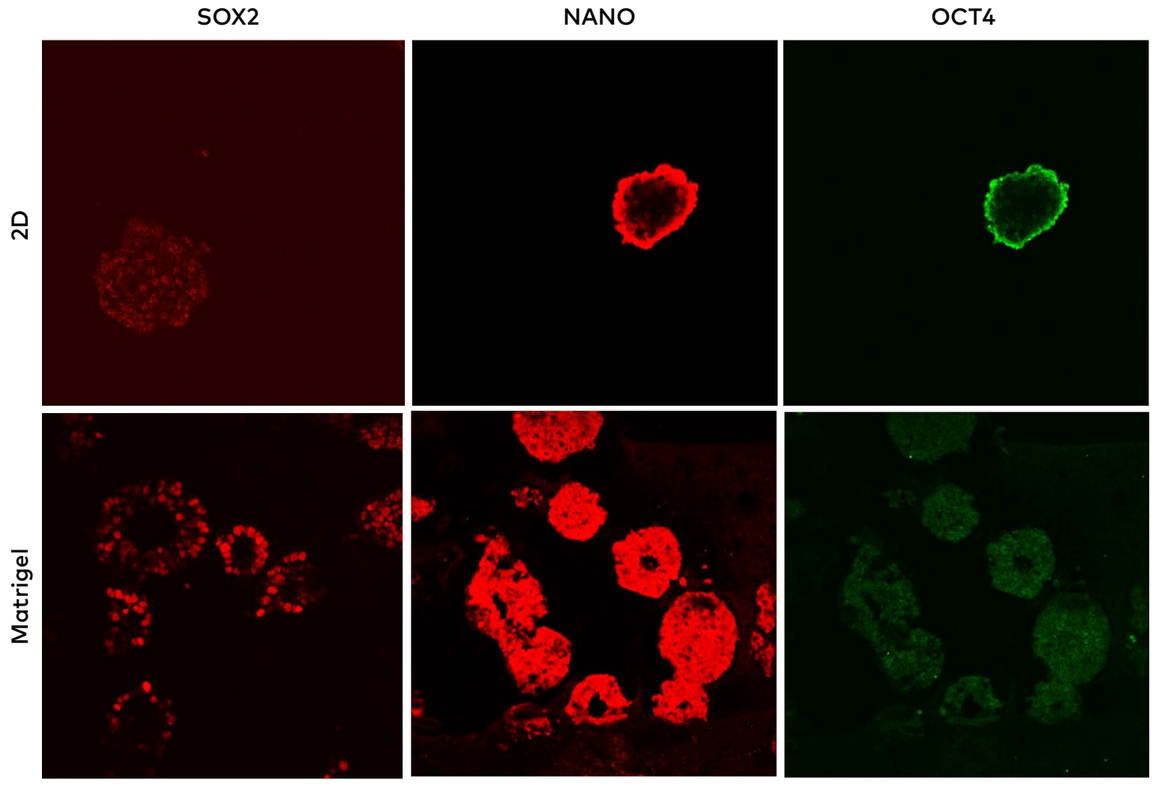
Accelerate the development of life-saving drugs or therapies. With the BIO X Series, researchers can develop complex models that better capture *in vivo* biology to better understand diseases and evaluate the impact of drugs, without harming humans or animals.



Bioprinted mini livers used to test hepatotoxicity caused by drugs and medicines.

Regenerative Medicine

With an emphasis on cell viability, the BIO X Series allow researchers to consistently print with sensitive cells like stem cells. Coupled with the extensive biomaterial portfolio, protocols can be developed to maintain the magic of stem cells and better understand the science of regeneration and differentiation.



A comparison of 2D vs 3D cell culture of iPSCs shows an increase incidence of pluripotency markers in 3D.

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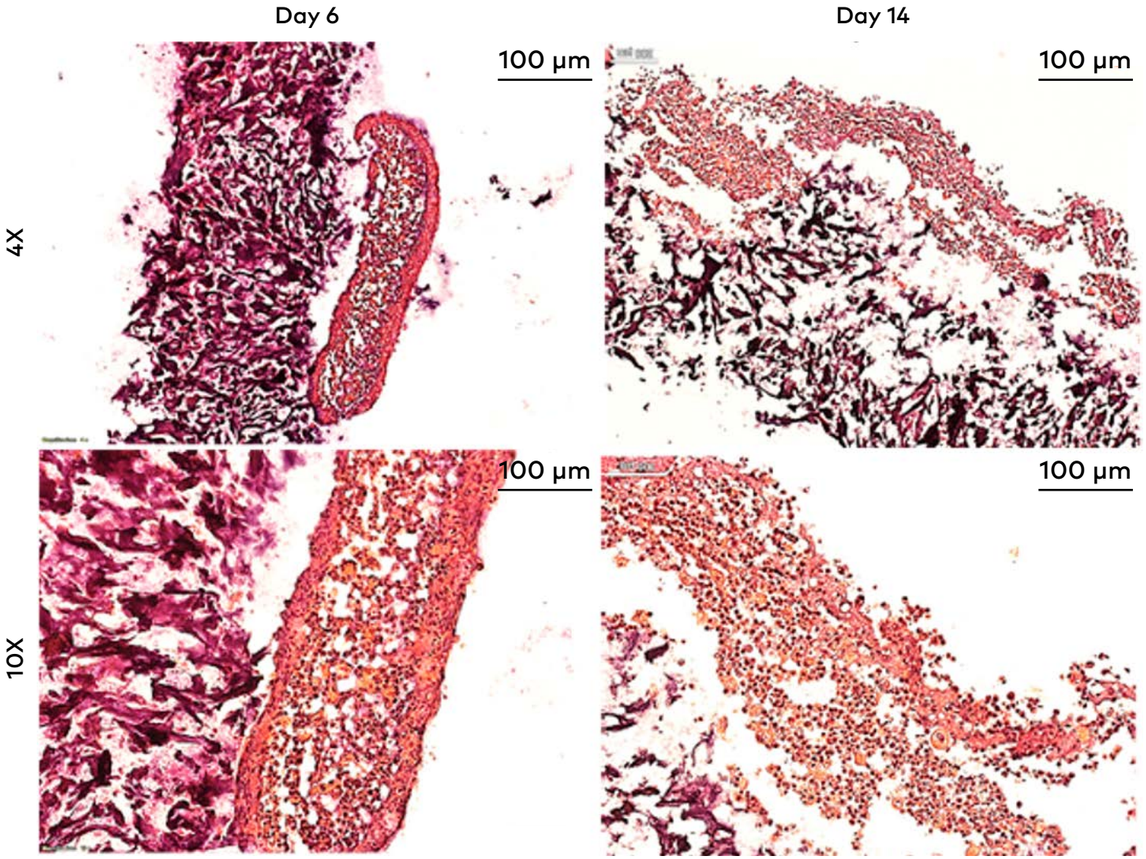
Tissue Engineering

With the ability to precisely control geometries and cell concentrations, significant breakthroughs are being made in the realm of engineering functional tissue. A promising future for organ shortages is on the horizon.



Organs are being printed to an increasing degree of accuracy. Pictured is printed skin that after 14 days in culture develops the correct structural formation of the epidermis above the dermis.

Personalized Medicine

Biosensors

COVID-19

Pharmaceutical Printing

Material Science

Drug Delivery

Soft Robotics

Organ-on-a-chip

Food Alternatives

Microfluidics

Looking for more? Discover our Application Notes written for scientists by scientists.

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POWERED BY

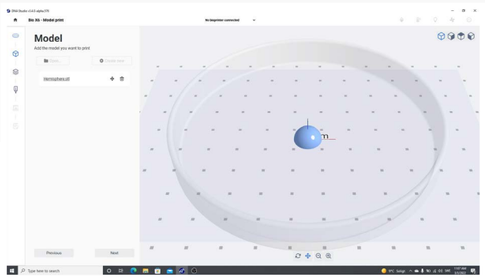
DNA Studio 4

From model generation to print records, cover the entire bioprinting workflow with the most powerful, user-friendly and versatile bioprinting software to date.

Shape generator

From idea to print

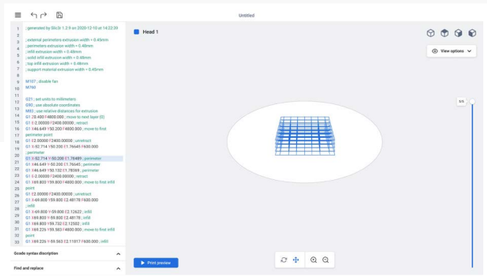
Shape generator enables users to develop simple 3D models without cumbersome CAD software. Select from boxes, cylinders or hemispheres, and begin your research faster than ever before.



Decoding G-Code

Say goodbye to tedious G-Code writing

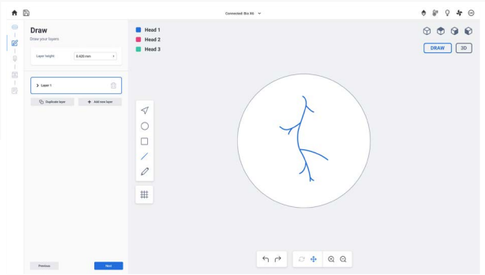
Develop G-Code directly from an STL or edit effortlessly from within DNA Studio thanks to an integrated G-Code editor. Visualize how your BIO X or BIO X6 will follow the tool path, where your changes are being made and ensure a successful print every time.



Draw and Print

Limitless possibilities unlocked

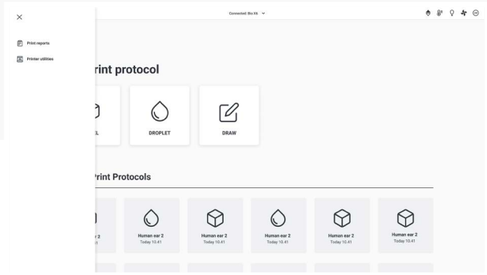
Create complex constructs with your finger. Draw lines, circles or squares, and allocate different printheads to develop multi-material constructs with ease.



Print Report

Every step. Documented.

Whether it is for print optimization, publication or quality documentation. With DNA Studio 4, users can generate print reports capturing every parameter from their prints, exported in a visually appealing format.



Technical Specifications

The best support in the industry

CELLINK's global team of application specialists are ready to provide support when you need it. With multiple support packages available to meet your needs, rest assured you are not alone on this journey. A member of our team can reach out within hours of recieving your request. We are happy to work by phone, over email, through video chat and on-site to perform installations, repairs and preventive maintenance or application support.

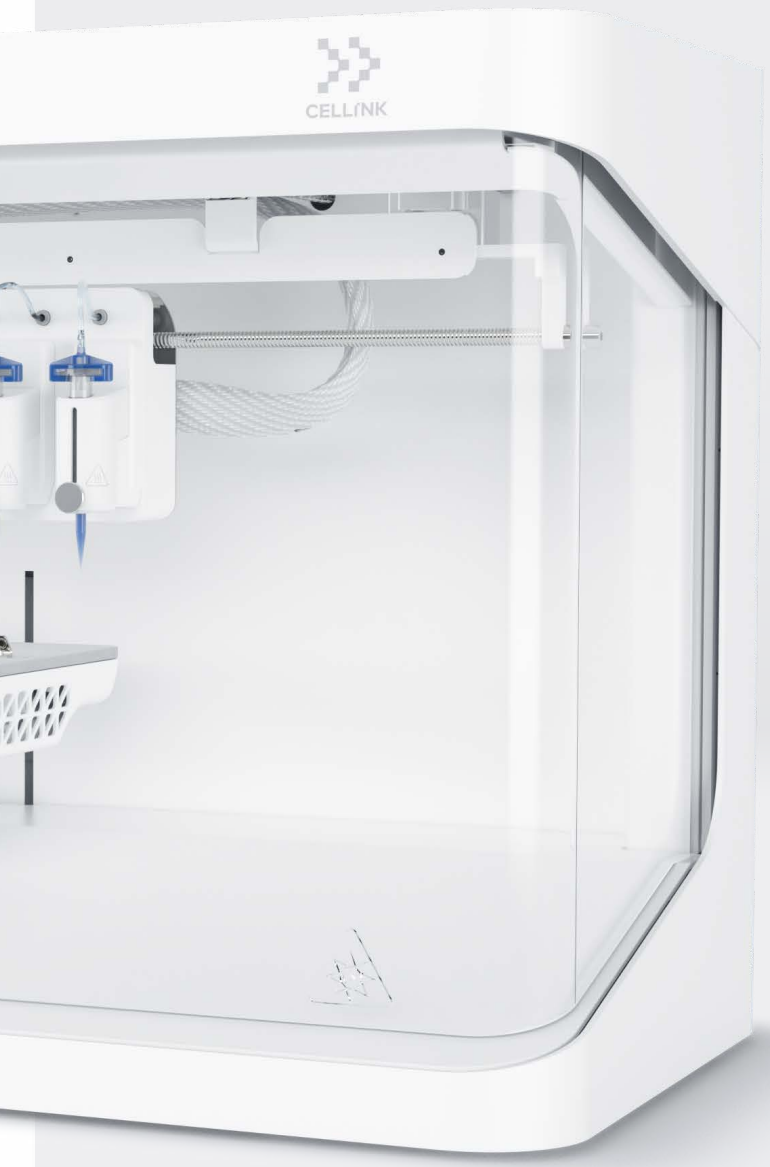
BIO X

Outer dimansions (L x W x H), mm	477 x 441 x 365
Weight	18 kg
Build volume	130 x 90 x 70
Build surface compatibility	Multi-well plates, petri dishes, glass slides
Theoretical Resolution Y X, µm	1
Layer resolution, µm	1
Pressure range (internal pump), kPa	5 – 200
Pressure range (external air supply), kPa	5 – 700
No. of printhead slots	3
Photocuring sounrces (built-in), nm	365, 405, 475, 520
Printbed temperature range, °C	4 – 65
Filter class, chamber airflow	HEPA 14
UV sterilization	UV-C (275nm), 2W output
Calibration options	Manual and Automatic
User interface	Integrated Display, DNA Studio
Desktop application compatibility	Windows
Connectivity	USB Storage, Ethernet connection
Supported file formats, software	.gcode, .stl
Power input	100 – 240V, 50 – 60Hz, 600W

BIO X 6

Outer dimansions (L x W x H), mm	850 x 400 x 500
Weight	47,4 kg (104,5 lb)
Build volume	128 x 90 x 90
Build surface compatibility	Multi-well plates, petri dishes, glass slides
Theoretical Resolution Y X, µm	1
Layer resolution, µm	1
Pressure range (internal pump), kPa	5 – 200
Pressure range (external air supply), kPa	5 – 700
No. of printhead slots	6
Photocuring sounrces (built-in), nm	365, 405, 475, 520
Printbed temperature range, °C	4 – 65
Filter class, chamber airflow	2 HEPA 14
UV sterilization	UV-C (287 nm), 2W output
Calibration options	Manual and automatic (ultrasonic based)
User interface	Tablet or computer
Desktop application compatibility	Windows, Mac OS
Connectivity	USB storage, Ethernet connection, Wi-Fi
Supported file formats, software	.gcode, .stl, .amf, .3mf
Power input	100 – 240V, 50 – 60Hz, 600W
Fuse	250VAC F6 3A
Structure	Powder-coated, aluminium frame

Find out more about CELLINK and
our products at cellink.com



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