AVA™ Emulation System

A high-throughput Organ-Chip platform that generates human-relevant data at scale.

The AVA Emulation System is our groundbreaking "Ad Vivo Architect," bridging the translation gap by merging the throughput of *in vitro* studies with the fidelity of *in vivo* models to create more human-relevant biology at scale.

By supporting up to 96 individual Organ-Chip samples ("Emulations") per experiment, AVA delivers high-powered insights that enable faster, more confident decision-making in drug development.

A 3-in-1 Organ-Chip System

High-Throughput Organ-Chip Culture Module

AVA supports up to 96 independent Organ-Chip Emulations per run, for maximum insights with minimum hands-on time

Self-contained incubator

AVA is a free-standing benchtop unit that minimizes your lab's footprint while maximizing data output—all while seamlessly controlling temperature, humidity, and CO_2

Automated microscope

Capable of phase contrast and 3-channel fluorescence imaging, AVA's fit-for-purpose microscope automatically acquires images of each Emulation under flow throughout the course of the experiment to capture tissue morphology and biomarker expression levels over time.

Key Benefits

High throughput

Run up to 96 independent samples in a single experiment

Low operating costs

4X reduction in cost of consumables & 50% reduction in cells & media per Emulation*

Save time and labor

60% reduction in hands-on, in-lab time*

*Compared to comparable experiments on Zoë

emulate

Specifications

AVA Emulation System

Culture	Flow range	0 µL/h, or 10-2,000 µL/h ± 10%*
	Stretch range	N/A
	Stretch frequency	N/A
	Temperature	37°C
	Humidity	80-95%
	CO_2	5%
		*Flow tolerances may vary.
Microscope	Objective	10X air
	Digital zoom	200%
	Light source	LED
	Camera	CMOS sensor, 8.3 MP resolution
	Imaging modalities	Phase contrast, 3-channel fluorescence
	Filters	• Blue (e.g., DAPI): Excitation 370-410 nm; Emission 429-462 nm • Green (e.g., FITC): Excitation 473-491 nm; Emission 502-561 nm • Red (e.g., Texas Red): Excitation 580-598 nm; Emission 612-680 nm
	Image format	TIFF
General	Overall size	762 x 445 x 559 mm (30 x 17.5 x 22”)
	Weight	63.5 kg (140 lbs)
Operating requirements	Instrument rating	24 VDC
	Gas input composition	100% CO_2
Recommended computer specifications	Internal storage	10 TB
	RAM	16 GB
	Operating System	Windows 10 or 11 (64-bit)

Chip-Array

Bottom channel height	100 µm
Top channel height	1,000 µm
Maximum bottom channel shear	2.3 dyn/cm^2
Maximum flow rate	2,000 µL/h
Membrane pore size	3 µm
Membrane thickness	22 µm
Imaging distance from bottom of chip to top of membrane	172 µm
Co-culture surface area	12.8 mm^2
Chip material	Low drug-absorbing rigid plastic with a polycarbonate tissue culture membrane
Emulations per chip	12
Media Reservoir volume	1.3 mL
Independent flow in both channels	Yes
Stretch	No
Direct access to top channel	No
Air-liquid interface	Yes
Tissue-vascular interface	Yes