Nautilai Plus™

Scalable, Multimodal Functional Profiling
From 2D Cells to 3D Tissues

curi bio

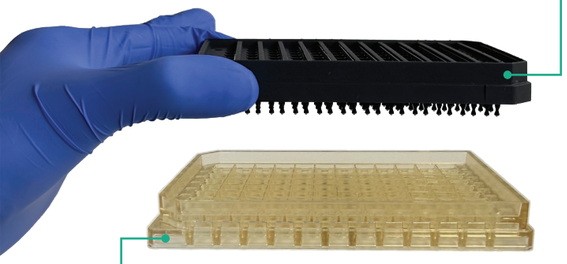
Functional Data. Now in 96.

Introducing the Next Scale of Engineered 3D Tissue Technology.

96 tissues per plate | >95% casting success | 0.5 mL media per well | as few as 150K cells per tissue

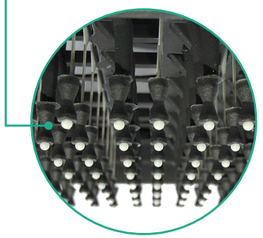
Purpose-built consumable for high throughput

96 tissues suspended between a rigid and a flexible post in an ANSI/SLAS-compliant plate.



Optimized for precise tracking

Intentional design ensures accurate feature identification, enabling precise force readouts.

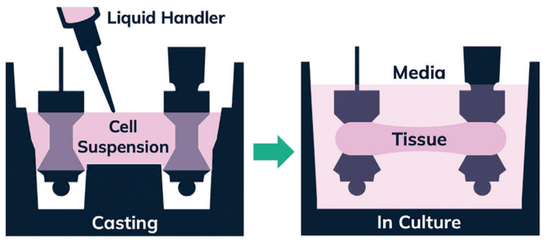


Cell-agnostic tissue casting by design

Cast cardiac, skeletal muscle, neuromuscular; Primary, iPSC, animal; your choice of cell lines, ratios, and media change schedule.

Off-the-shelf cells and media solutions

Kickstart your research with Curi Bio's cardiomyocyte and myoblast cell lines, and media optimized for 3D tissue cultures.



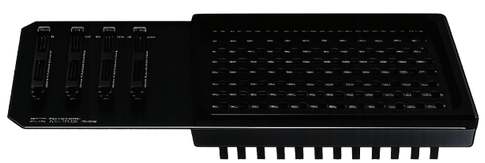
Built for Efficiency and Automation.

Automation-ready casting protocols, validated on commercial liquid handlers, deliver an over 95% casting success rate.

The separate tissue lattice from the culture plate allows safe and effortless (manual or robotic) transfer of tissues to new media conditions.

Add Stimulation. On Demand.

The carbon-electrode stimulation lid pairs the 96-well plate for chronic conditioning, exercise protocols, and synchronized recordings. Insertable, reusable, and validated for chronic use — separation of culture plate and electrodes ensures electrode wear doesn't impact your experiment.



Nautilai *Plus*. Multimodal at Scale.

Contractility and Fluorescence in One Instrument.

2D cultures | Organoids | 3D Tissues | 96-well Contractility | up to 1536-well Fluorescence

Streamlined End-to-End Workflow

1

Prepare your sample, your way

The fully sample-agnostic optics of Nautilai *Plus* allow you to select the cell source and culture type with no limitation. Whether 2D cultures, organoids, or 3D tissues, Nautilai Plus supports any format excitable at 470 nm, enabling live calcium and voltage transients.

Scale your research with Nautilai *Plus*

2

Make the most of idle incubation time with stimulation

Condition, exercise and mature your samples with electrical stimulation in Nautilai *Plus* or the incubator using the embedded or standalone instrument Stingray.

Stimulate in the incubator with Stingray

3

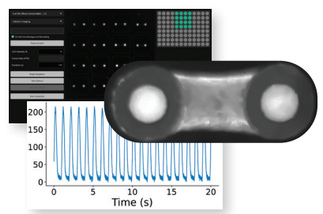
Run whole-plate stimulation and recordings with a few clicks

Capture 96-well contractility and up to 1536-well fluorescence across the entire plate. Optimized regions of interest for each format prioritize the data that matters.

4

Augment your data with visual validation at every step

Every recording supports live-view video and is stored alongside video files and raw waveforms from the entire plate – ready for inspection.



Intuitive user interface with practical visual output

5

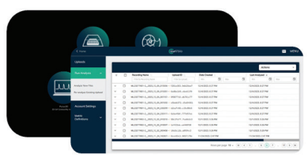
Extract and analyze quantitative metrics with Pulse™

Twitch force, beat rate, decay kinetics, calcium amplitude, AP duration, and more - extracted automatically from every well. Centralized, comparable, accessible on Curi Bio's online Pulse platform.

6

Include the downstream assays you trust

Sequencing, media analysis, proteomics, histology – Virtually any industry standard assay. Carry your samples forward into the assays you already run.

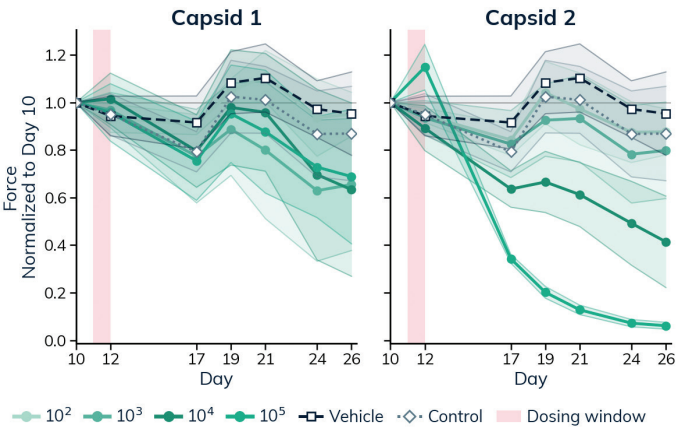


Analyze your data and drive insights on Pulse

One System. Countless Applications.

AAV Capsid Screening

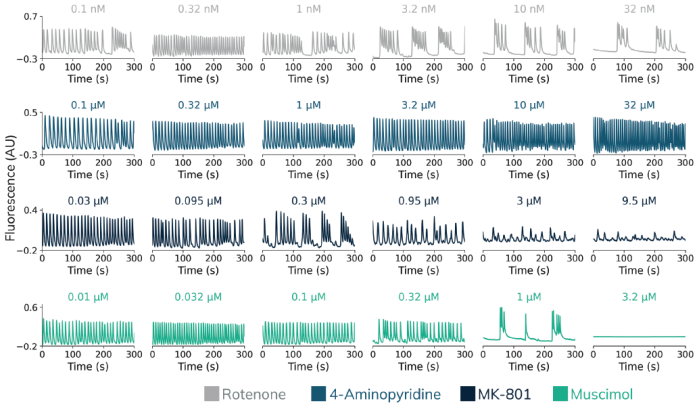
Nautilai *Plus* and the 96-well plate enable parallel screening of 6 AAV capsids across four MOIs in a single plate of 3D Skeletal Muscle Tissues. Fluorescence-based expression quantification revealed that Capsids 1 and 2 exhibited maximum expression of the same order of magnitude. The distinct effects on function (force) reveal that strong expression may be accompanied by impaired function, underscoring the need for evaluating function in addition to transfection efficiency.



N≥4 tissues per datapoint (+/- one StDev)
Capsids donated by Dyno Therapeutics®

Neuroactivity Profiling

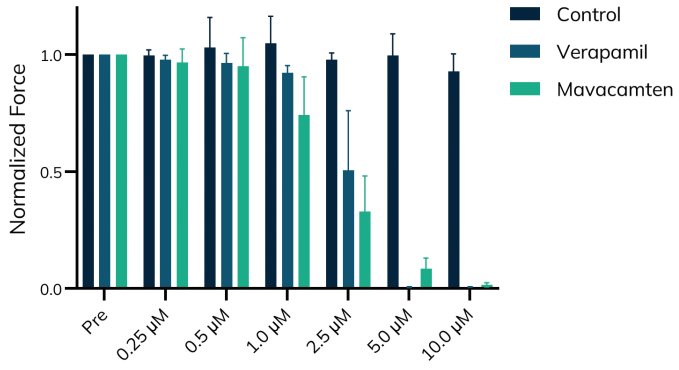
Nautilai *Plus* pairs with 28bio's CNS-3D Brain Organoids to deliver high-throughput functional profiling of neuroactive compounds. Spontaneous calcium transients are captured across all 384 wells, resolving dose-dependent transient frequency for four mechanistically distinct modulators and supporting quantitative IC_{50}/EC_{50} analysis through Pulse™.



Courtesy of 28 bio

Cardiac Small Molecule Potency

The 96-well plate allows the co-culture of multiple conditions in a single plate, enabling large dose-response studies. In this example, well-defined cardiac modulators with mechanisms of action upstream and downstream of calcium release were quantified in a 7-point dose response curve, with at least 6 tissues per condition.



N ≥ 6 tissues per datapoint. Error bars reflects one StDev.

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