Anivance ai

NO ANIMALS
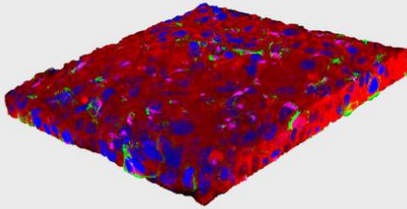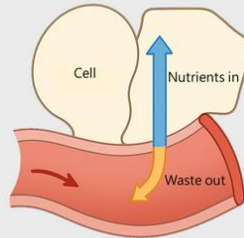## NO HUMANS
JUST TECHNOLOGY

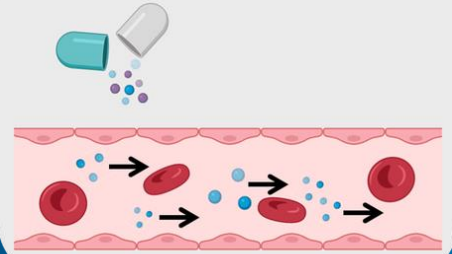## Transforming Cancer Research with Realistic Tumor-on-Chip Systems

Preserves Structural & Cellular Fidelity in 3D Culture

Simulates Blood Flow & Waste Removal

Cell — Nutrients in — Waste out

Mimics Clinical Pharmacokinetics

Technology Integration Platform

CTC-derived Organoids culture → Human Organ Modeling → High Throughput Imaging & Phenotypic Profiling → Predictive AI

CTC-derived Organoids-on-Chip

- Tumor organoids **successfully cultured** and proliferated within the microfluidic chip channel.
- Sustained **viability** and dissemination observed over 7 days.
- Application: Our **dynamic perfusion technology** realistically replicates **drug transport in the bloodstream and tumor tissue**, further enhancing **tumor treatment** modeling and therapeutic efficacy evaluation.
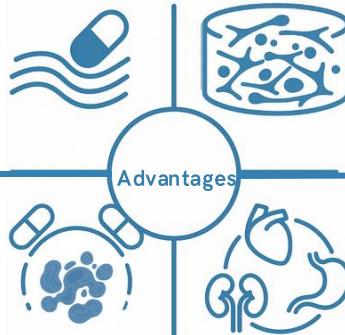
D0   D3   D7   Viability Test

Live Dead

250 um   200 um
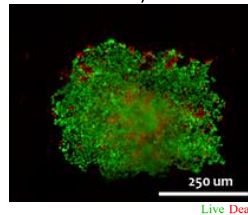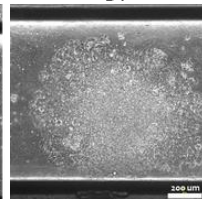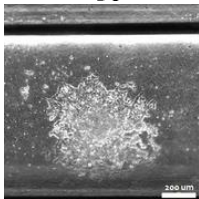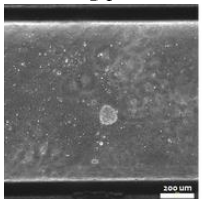
Cellentia

◄ CTC-derived tumor organoid (Colon cancer) within microfluidic chip.

Realistic Drug Kinetics - Simulates Dynamic Blood Flow & Sustained Release
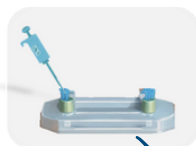
Native-Like 3D Cell Environment

Advantages

Real-Time Drug Resistance Tracking

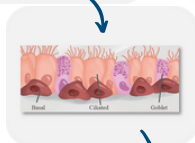**In Vivo-Like Model for Tumor Drug Discovery**

Human Organ Modeling
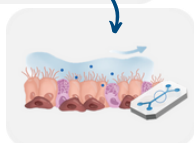## Human-Relevant Preclinical Models– Accelerating IND/CMC Readiness

Cell Seeding on Chip
Spatially patterned, dynamic tissue models.

Cell Culture and Functional Differentiation
Sustain long-term cell interaction under flow, mimicking in vivo microenvironments.

Inhaled Drug Delivery in Cancer Models
Simulate aerosol drug flow in tumors for dynamic distribution & real-time evaluation.

High-Throughput Imaging & Phenotypic Profiling
Chip-Based Phenotyping Platform Aligned with FDA NAMs

Integrated with ImageXpress for Spatially-Resolved Imaging
High-throughput chip imaging with Molecular Devices automated cell capture for fast, scalable data with minimal manual input.
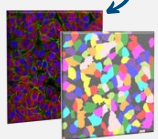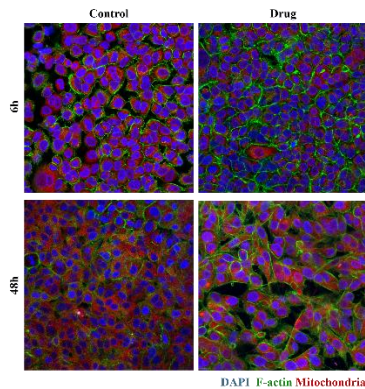
Image Analysis for Evaluation of Cell Morphology and Behavior
Chip-compatible Cell Painting boosts phenotype screening, revealing dynamic toxicity and MoA beyond 2D cultures.
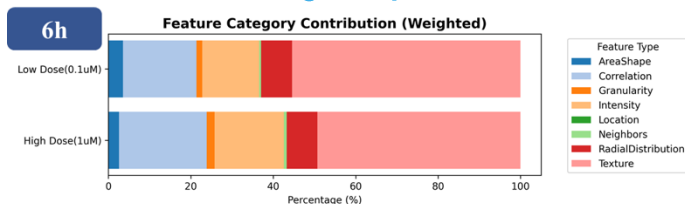
Predictive AI
Accelerating Cancer Drug Development via AI-Driven Predictive Toxicology

AI-Enhanced Painting Analysis for MoA & Toxicity Prediction

6h

Feature Category Contribution (Weighted)

Low Dose(0.1uM)

High Dose(1uM)

Percentage (%)

Feature Type
- AreaShape
- Correlation
- Granularity
- Intensity
- Location
- Neighbors
- RadialDistribution
- Texture

Control Drug

6h

48h

DAPI F-actin Mitochondria

Traditional toxicity assays take over 48 hours and often miss early drug resistance or off-target effects. Our platform delivers results 8× faster, detecting subtle cell changes in 6 hours. AI uncovers complex cell patterns, detecting drug responses and resistance early for faster, safer oncology screening.