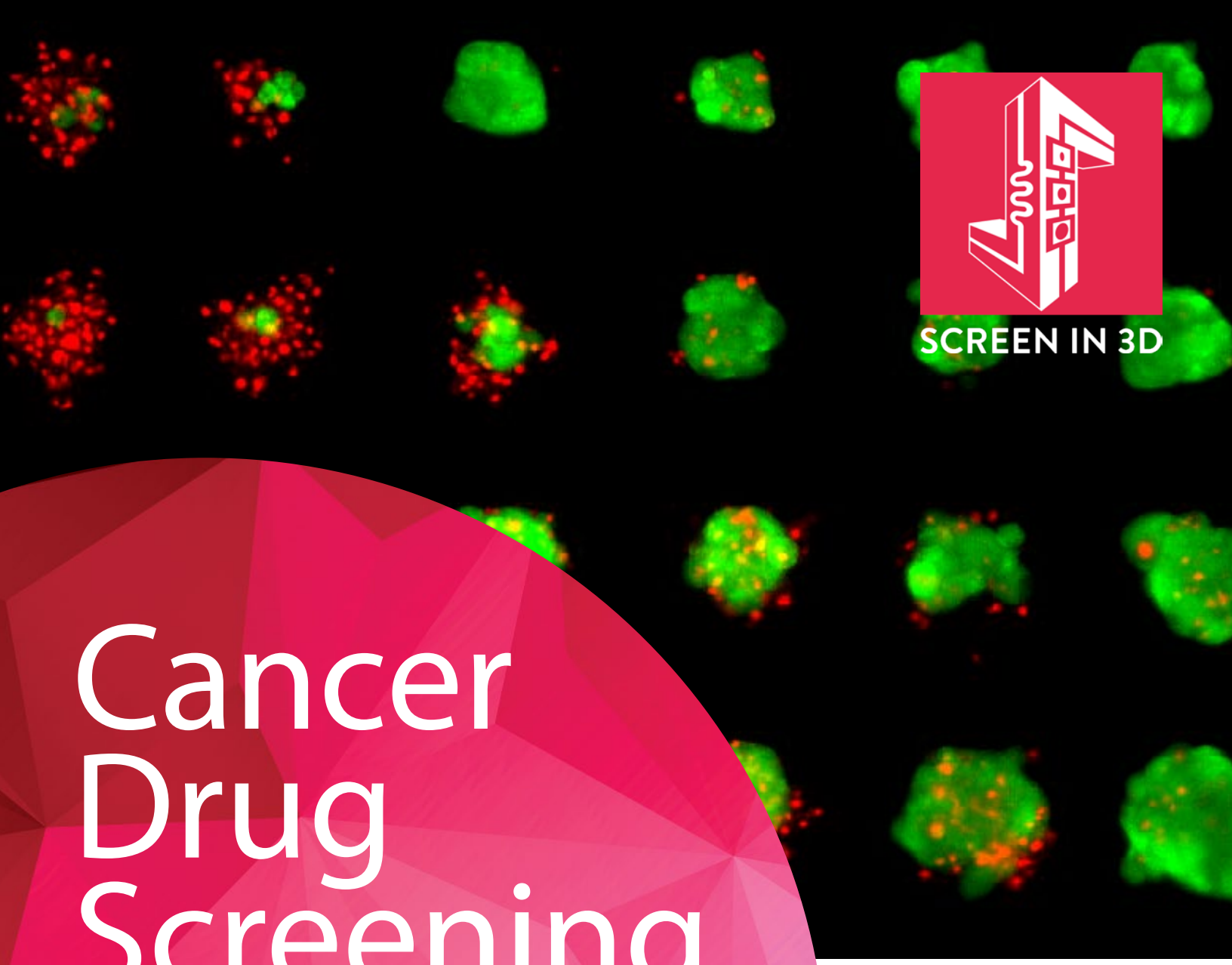


SCREEN IN 3D

Cancer Drug Screening & Profiling

CUSTOMIZABLE
POWERFUL
PRECISION
DRUG EFFICACY TESTS

- 3D & Co-Culture
- Miniaturization
- Combination studies

SCREEN IN 3D

INTRODUCTION

The challenges in developing successful anti-cancer treatments is not just limited to the discovery of new drug therapies. Intra-patient tumor heterogeneity, rapid development of drug resistance/tumor relapse and adverse drug reactions post treatment pose enormous challenges. Therefore, there is immense need for *ex vivo* platforms that facilitate precision medicine and combinatorial studies on patient tissue.

In recent years, microfluidic technologies have emerged as important tools in cancer research and drug discovery. These platforms show great promise in various applications, including rapid genome sequencing, drug activity profiling, and assessing changes at the molecular level post drug treatment.

ScreenIn3D services employ proprietary microfluidic technology together with robust cell assays to help drug developers produce more effective oncology treatments tested on human cancer tissue, maximizing the numbers of screens that can be performed on the limited amount of patient-derived tumor samples.

WHY USE SCREEN IN 3D SERVICES

ANIMAL FREE
Advancing physiological relevance

COST EFFECTIVE
20x more efficient screening

COMBINE
Facilitating combination therapy

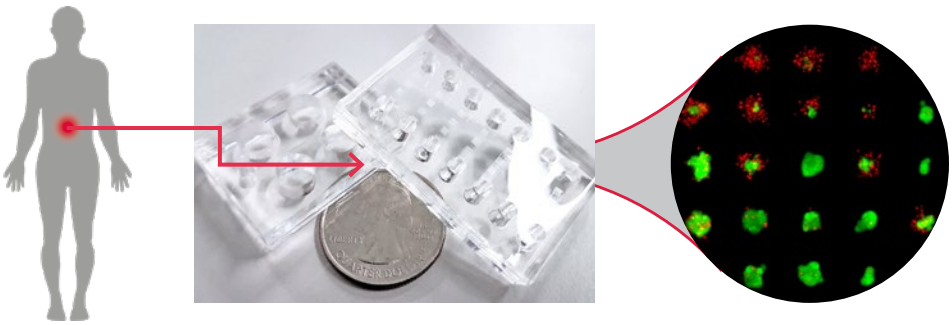
PERSONALIZE
Faster results for precision medicine

DESIGN
Mitigating risks for clinical trials

OUR "ONCOSCREEN" SERVICES

MICROFLUIDIC TECHNOLOGY
↓
COMPLEX *IN VITRO* MODELS
and/or
PATIENT BIOPSY
↓
MICRO-TUMORS
↓
IN VITRO DRUG EFFICACY

ONCOSCREEN

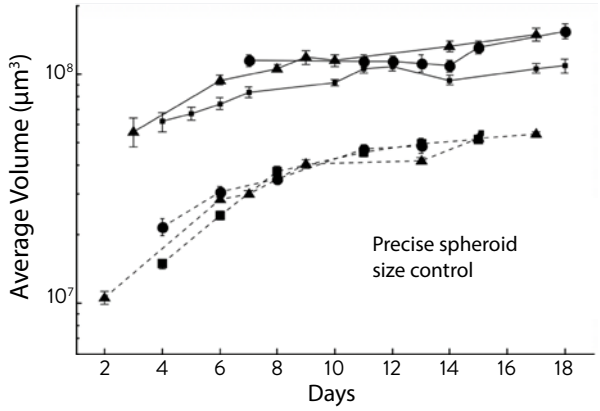


- **20-fold increase** in screening capabilities using **human biopsy tissue**
- **Quantifiable** tests of drug efficacy (IC50)
- Screening of human biopsy tissue in 1-3 weeks **(feasible clinical times)**
- Continuous **label-fee readouts** of spheroid condition in addition to standard readouts
- Spheroid culture using **perfusion** and **shear stress–free** conditions
- **Quicker results** than with costly animal models

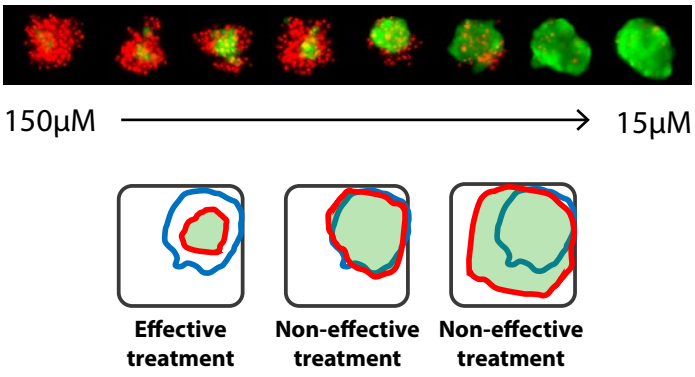
OUR SERVICE OFFERS MULTIPLE END-POINTS

We offer multiple end point measurements to assess tumoroid growth, health and drug effects, in addition to immunofluorescence, supernatant analysis and tissue retrieval post treatment.

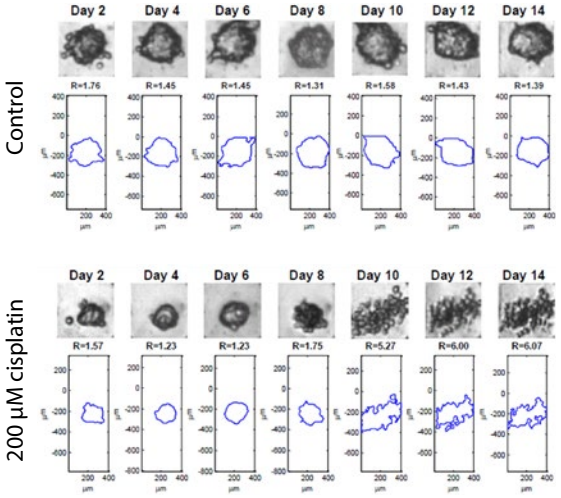
1. TUMOROID GROWTH

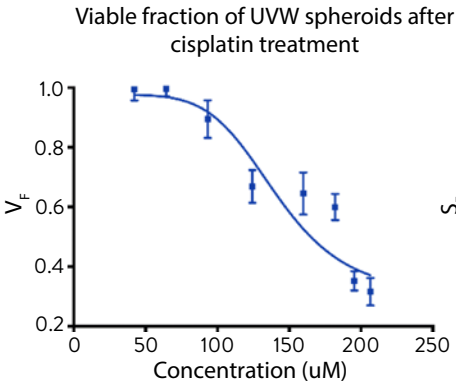


2. VIABILITY (LIVE/DEAD CELL STAINING)

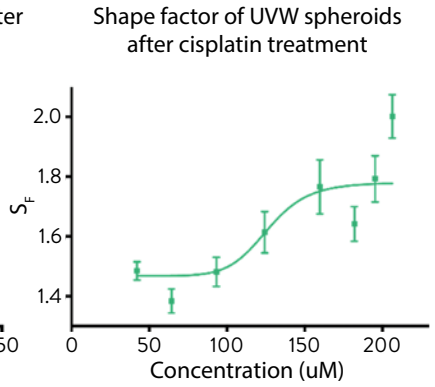


3. ASSESSMENT OF 3D STRUCTURE PHENOTYPE AND RESPONSE TO DRUGS





	VF - UVW - Cisplatin
EC50	= 141.6



	SF - UVW - Cisplatin
EC50	= 126.4

Example of assessment of tumoroid size and volume shrinkage post drug exposure using custom software image analysis tools.

VALIDATED TUMOR MODELS

IN VITRO DISEASE MODELS

- Primary lines
- Organoids
- Cell lines
- Tissue fragments

PATIENT DERIVED TUMOR MODELS

- Ovarian cancer
- Prostate cancer
- Lung cancer
- Breast cancer
- Pancreatic cancer
- Colorectal cancer
- Glioblastoma

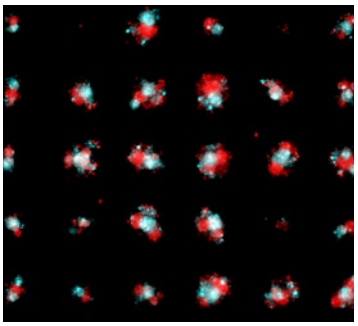
MODELS UNDER DEVELOPMENT

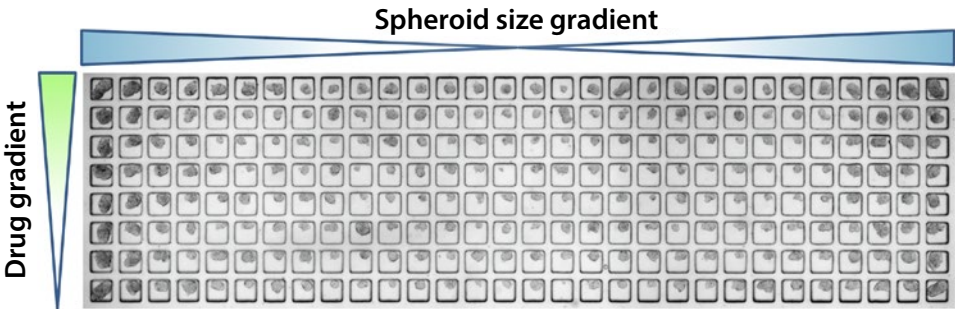
- Immunotherapy models
- Complex multi-culture models
- Patient derived tissue models

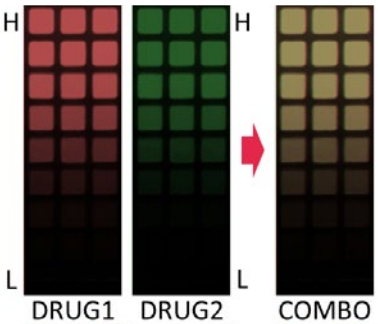
SCREEN IN 3D

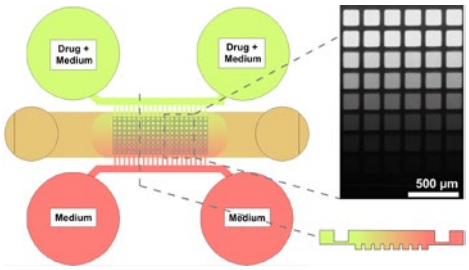
OUR MICROFLUIDIC TECHNOLOGY ALLOWS

- As few as 10K cells generate up to 100 tumoroids
- Co-culture of multiple different cell lines
- Cost-effective screening: up to 8 concentration points per device (single and combinations)
- Combinatorial tests - Radio-chemo
- Long term culture of 3D multicellular tumoroids
- Tumoroid retrieval for off-chip post-processing
- Choice of tumoroid size









SETTING UP SERVICE PROJECT

1. CHOOSE MODEL TYPE

- Cell lines (standard)
- Primary lines
- Patient derived tumor models

2. CHOOSE ASSAY TYPE

- Drug(s) to be tested
- Radiotherapy
- Immunotherapy
- Combinatorial study

3. INDICATE END POINTS OF INTEREST

- Tumoroid shrinkage
- Live-Dead/viability
- Biomarker/Immunofluorescence
- Cytokine profiling
- Assess apoptotic events

4. RECEIVE RESULTS

- Detailed report
- Raw and processed data
- Interpretation of results
- Follow up studies

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