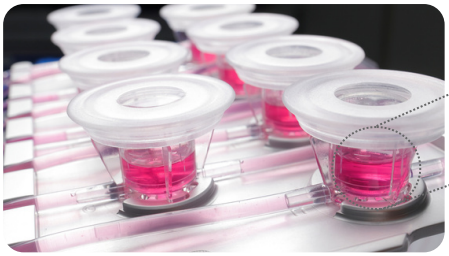
REACT4LIFE

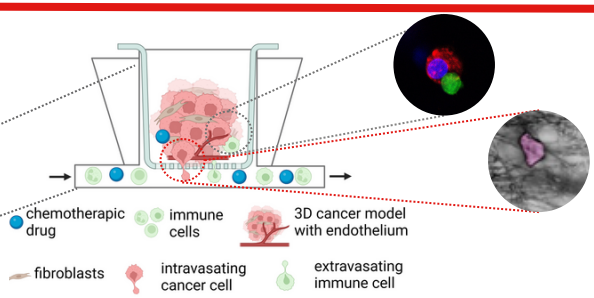
mirroring human complexity

CANCER ON CHIP

An advanced organ-on-chip platform for studying the complex and dynamic interplay between human cancer cells and tumor microenvironment (TME).

Cancer on Chip is a MIVO®-based platform that allows a more accurate and efficient approach to investigating the mechanisms behind cancer biology and testing new therapies.





FEATURES

Highly Flexible Co-cultures: Combine tumor cells with endothelial or immune cells, gathering insights into cellular interactions.

3D Cancer Tissue Compatibility: Maintain tumor heterogeneity within a 3D environment.

Multi-Organ Connection: Bridge primary tumor to metastatic sites, mirroring real-life scenarios.

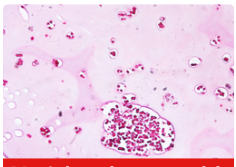
Easy & Rapid Adoption: Accelerate your research outcomes by quickly adopting a new technology.

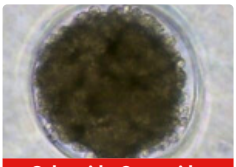
Optical Transparency: Monitor tumor cell infiltration and mass regression in real-time.

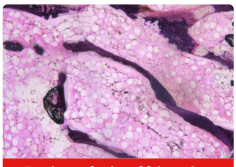
High Modularity of Fluid Flow: Deepen circulating tumor cell survival under highly adaptable fluid flow conditions.

CANCER TISSUE MODELS COMPATIBILITY


2D Cancer Cells Monolayer


Matrix based tumor models


Spheroids, Organoids


Patient derived biopsies

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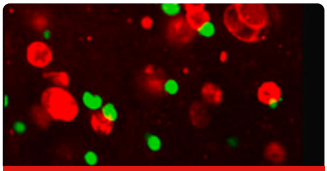
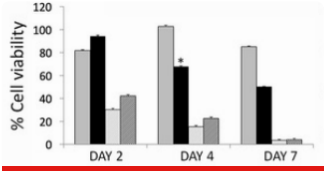
APPLICATIONS

- DRUG SCREENING
- CANCER CELL MIGRATION & INVASION
- IMMUNOONCOLOGY
- METASTASIS STUDY
- PERSONALIZED TREATMENT
- THERAPEUTIC RESISTANCE
- RARE CANCER MODELING
- CELL SIGNALING STUDIES

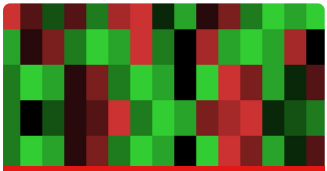
POSSIBLE READOUTS



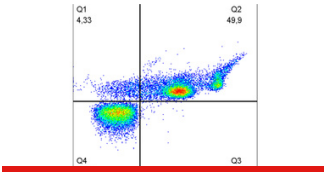
Cancer Cells Extravasation



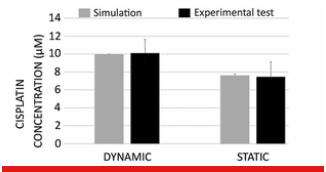
Cell Viability



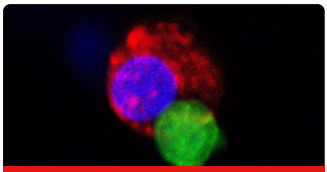
Omics Studies



Phenotype Cells Characterization



Drug Efficacy



Immune cells infiltration

REFERENCES

Marzagalli M et al, Front. Bioeng. Biotechnol. 2022
A multi-organ-on-chip to recapitulate the infiltration and the cytotoxic activity of circulating NK cells in 3D matrix-based tumor model

Vitale C et al, Cancers 2022
Tumor Microenvironment and Hydrogel-Based 3D Cancer Models for In Vitro Testing Immunotherapies

Zimmer J et al, Frontiers in Immunology 2021
Recent 3D Tumor Models for Testing Immune-Mediated Therapies

Marrella A et al, Altex 2020
3D fluid-dynamic ovarian cancer model resembling systemic drug administration for efficacy assay

Marrella A et al, Front. Immunology 2019
Cell-Laden Hydrogel as a Clinical-Relevant 3D Model for Analyzing Neuroblastoma Growth, Immunophenotype, and Susceptibility to Therapies

Cavo M et al, Sci Rep. 2018
A new cell-laden 3D Alginate-Matrigel hydrogel resembles human breast cancer cell malignant morphology, spread and invasion capability observed "in vivo"