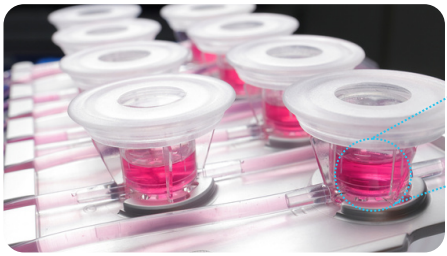
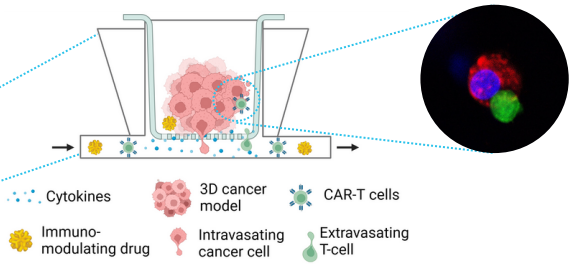
REACT4LIFE

mirroring human complexity

IMMUNE ON CHIP

The success of immunotherapeutic approaches is intrinsically tied to reliable, predictive, and reproducible preclinical models to mimic the interaction among immune cells and cancer cells. Immune-On-Chip is a fully humanized MIVO®-based platform to culture 3D human tissues and circulating immune cells in vitro/ex vivo under in vivo-like fluid-dynamic conditions, enabling the immune-tumor interplay and improving the testing of novel immunomodulating agents.





FEATURES

Highly Flexible Co-cultures: Culture different immune cells and 3D tumors for insights into cellular interactions and immune responses.

3D Tumor Microenvironment: Replicate tumor heterogeneity hosting 3D cancer matrixes or patient biopsies, providing enhanced insights.

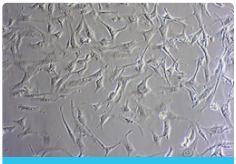
Multi-Organ Connection: Investigate immune responses in multiple tumor sites.

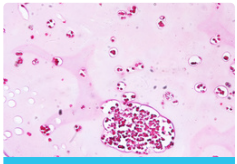
Easy & Rapid Adoption: Accelerate your research by swiftly adopting this advanced technology.

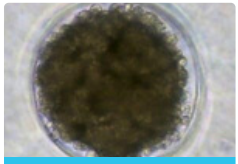
Optical Transparency: Monitor real-time immune cell infiltration and responses.

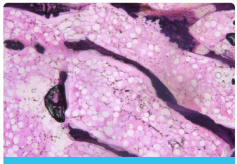
Tailored Fluid Dynamics: Customize fluid flow conditions to optimize immune cell circulation and drug diffusion.

TISSUE MODELS COMPATIBILITY


2D Cells Monolayer


Matrix based tumor models


Spheroids, Organoids


Patient derived biopsies

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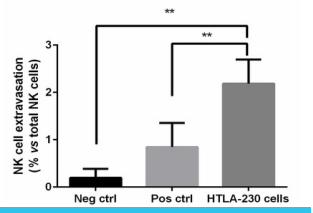
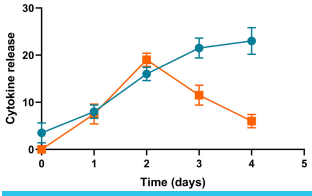
APPLICATIONS

- DRUG SCREENING
- CELL MIGRATION AND INVASION
- CAR-T, NK BASED CELL THERAPY
- AUTOIMMUNE DISEASE
- PERSONALIZED TREATMENTS
- VACCINE DEVELOPMENT
- TRANSPLANTATION STUDIES
- T CELL SIGNALING RESEARCH

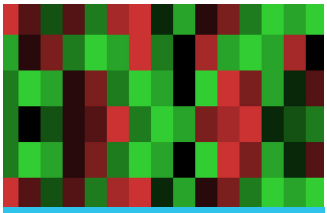
POSSIBLE READOUTS



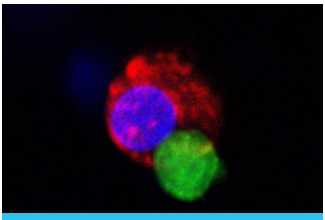
Cells Extravasation



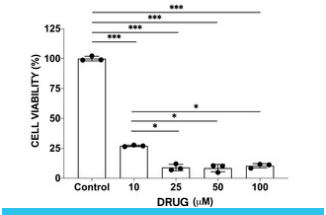
Cytokine Release



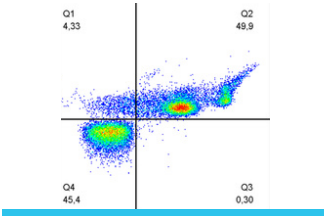
Omics Studies



Immune cells infiltration



Drug Efficacy



Phenotype Cells Characterization

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