

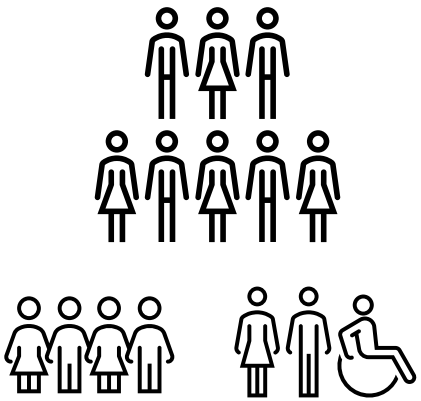
Organoids, Digital Twins and Synthetic data

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Types of data

In vivo – human

- Clinical studies
- Real-world data



In vivo – animal

- Small animals
- Large animals



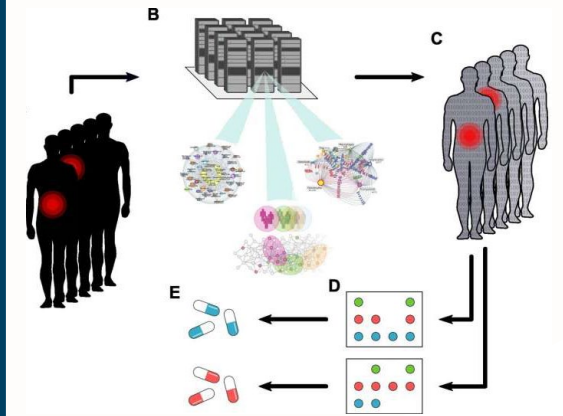
In vitro

- Chemical testing
- Cell culture work
- Organoids
- Organ-on-chip

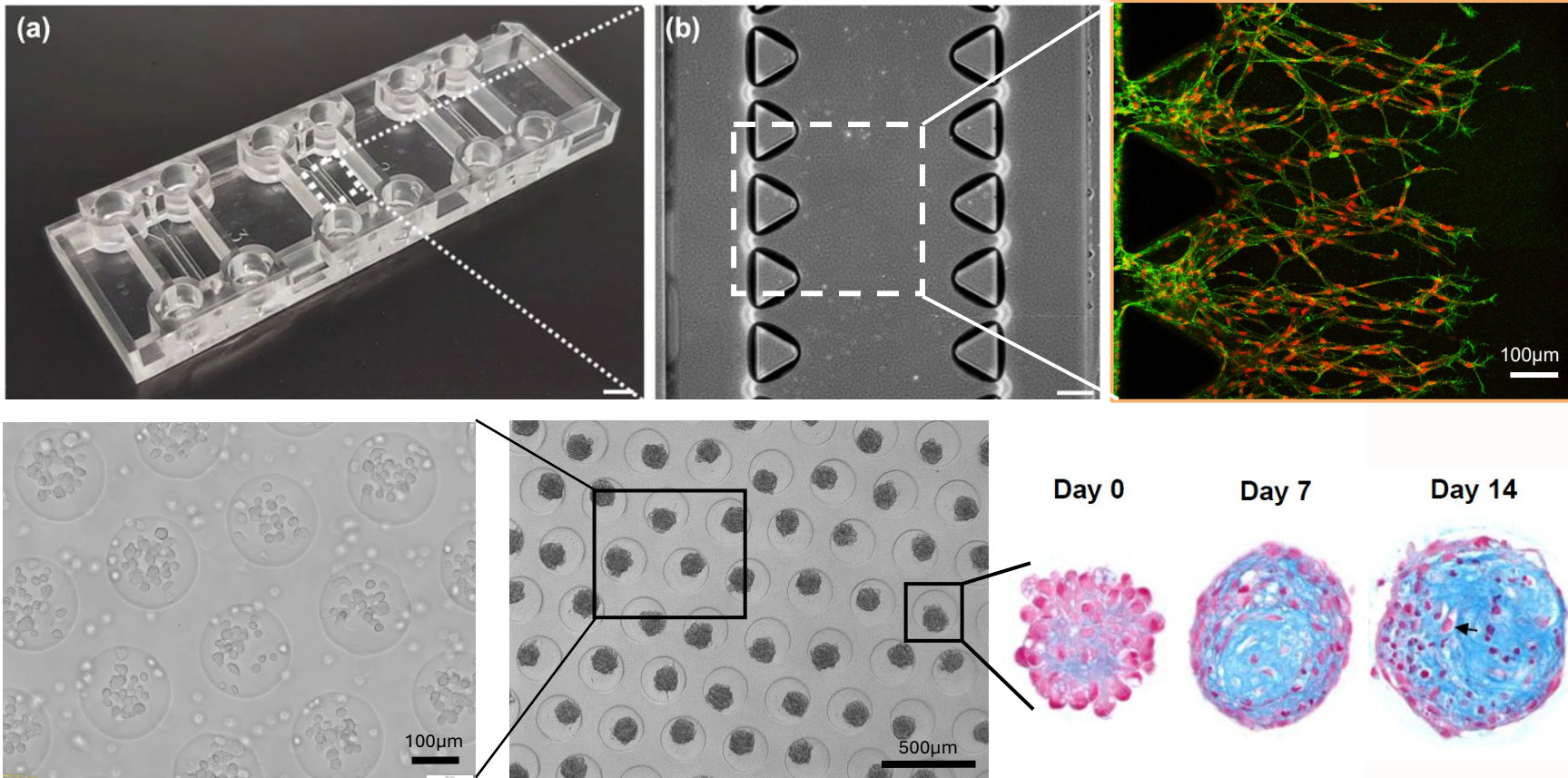


In silico

- Synthetic data
- In silico trials
- Digital twins



Organoid / organ-on-chip



Purpose

- Drug screening
- Drug repurposing
- Patient specificity

Advantages

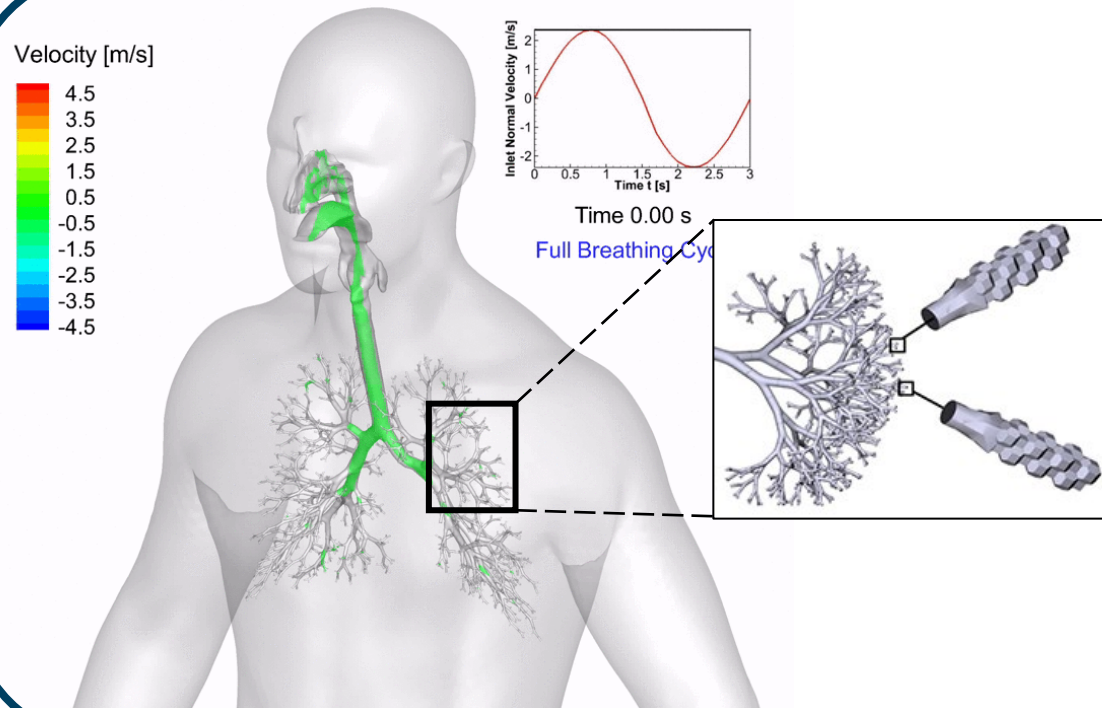
- Human-relevance
- Controlled environment

Challenges

- Reproducibility
- Standardization
- Automation
- Cost

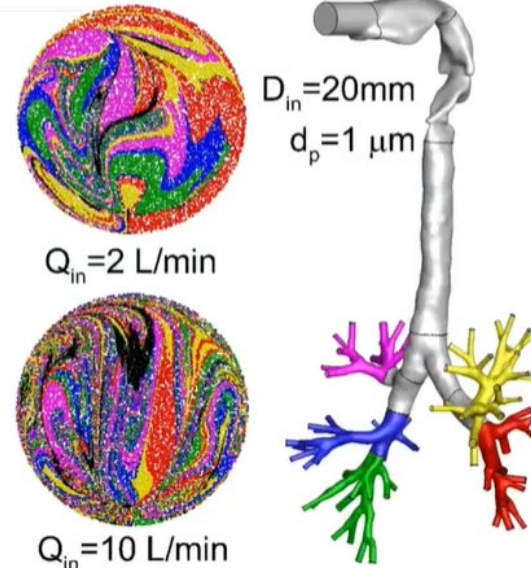
Digital Twins / Computer modelling & simulation

In vivo – human



In vivo – animal

In vitro



In silico

- Integrate data from various sources
- Integrate data across scales
- Personalise predictions
- Perform in silico trials