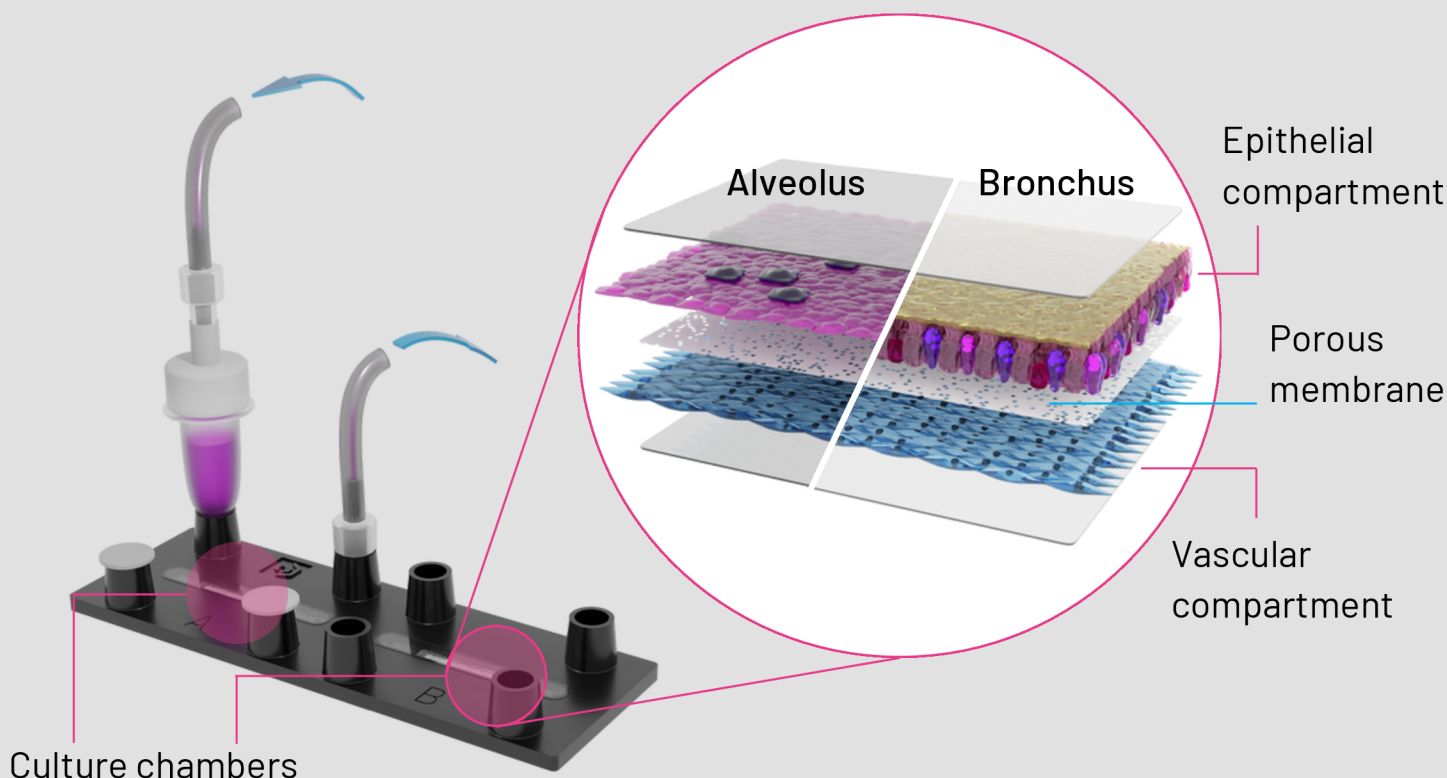


The human respiratory tract is a complex network of upper, lower airways as well as alveoli. In our human, immunocompetent lung models, various types of lung epithelia can be integrated. By introducing air-liquid-interface and dynamic culture conditions, key aspects of human lung physiology can be recapitulated in an *in vitro* setting. These features can advance your studies of human lung biology and the development of new drugs onto a new level.

LUNG ON CHIP



Applications

- / Modelling of inflammation & immune cell recruitment
- / Investigation of barrier functionality
- / Toxicological studies
- / Compound uptake
- / Tracking & analysis of bronchial ciliary movement
- / Mucociliary clearance
- / Lung disease modelling (e.g. infections, fibrosis, COPD, asthma)

Key features

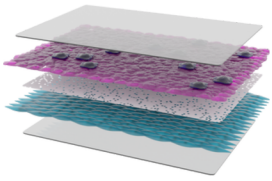
- / Air-liquid compartmentalization
- / Enhanced barrier function under dynamic culture conditions

Characteristics

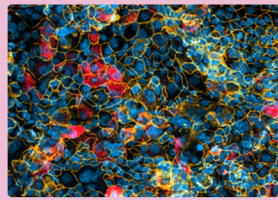
- / Integrated resident/circulating immune cells
- / Various configurations & different cell sources (small airway, bronchus, etc.)
- / Suitable for infection studies

Alveolar lung model

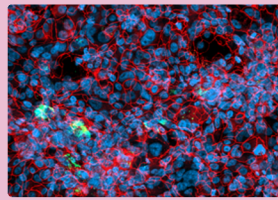
Morphology



Alveolar

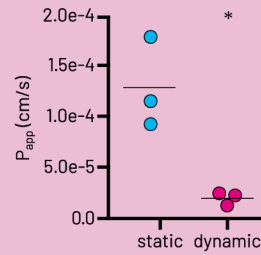


● SP-A
● E-Cadherin

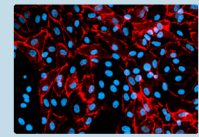


● E-Cadherin
● CD68

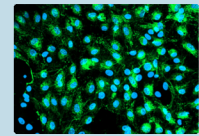
Barrier



Vascular



● PECAM-1

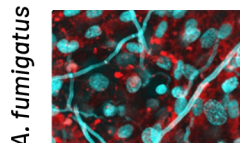
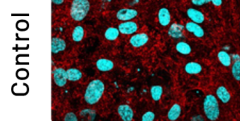


● vWF

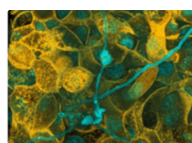
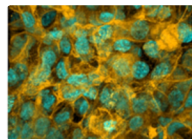
Application

Aspergillosis-on-chip

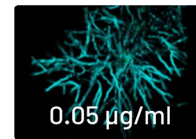
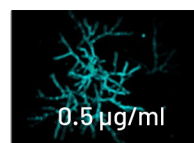
Vascular



Alveolar



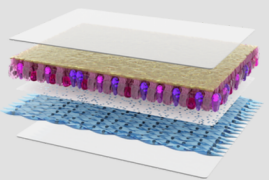
Caspofungin Treatment



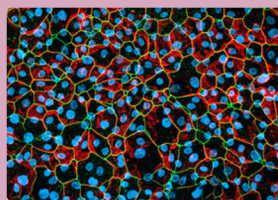
AppNote
Download

Bronchial lung model

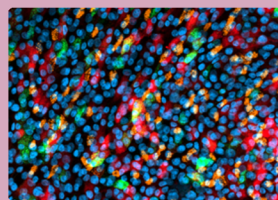
Morphology



Bronchial

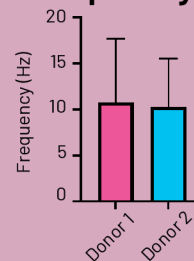


● E-Cadherin
● Zona Occludens 1

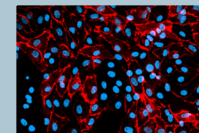


● Acetylated α-Tubulin
● Mucin-5AC

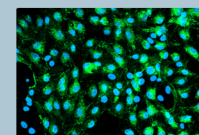
Ciliary beating frequency



Vascular



● PECAM-1

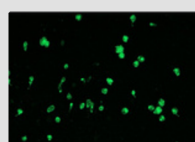


● vWF

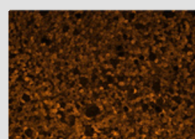
Application

Asthma-like phenotype

Without IL13
"healthy" condition

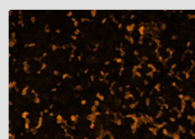
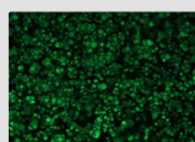


MUC5AC
(goblet)

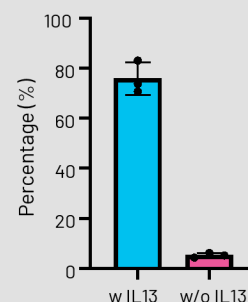


Cilia

With IL13
"asthmatic" condition



Goblet coverage



Cilia coverage

