Filling the gaps: A lung-on-chip for R&D and preclinical studies

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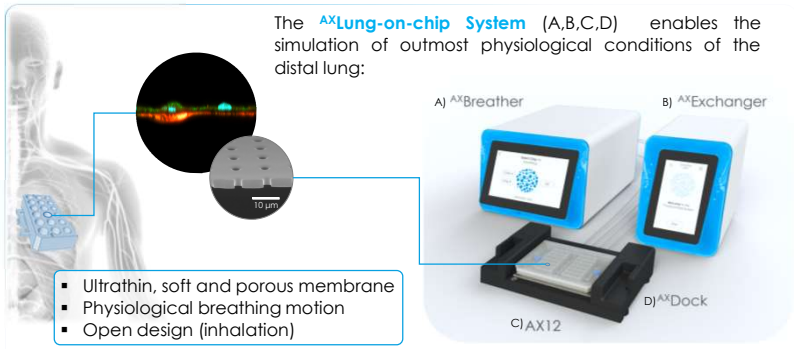
Mimicking the distal lung



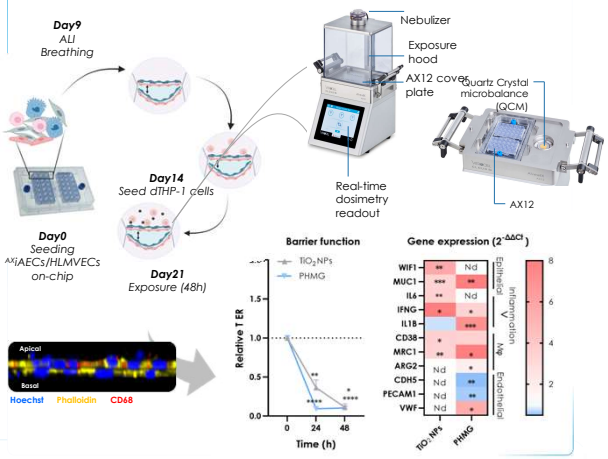
The AXLung-on-chip System (A,B,C,D) enables the simulation of outmost physiological conditions of the distal lung:

- Ultrathin, soft and porous membrane
- Physiological breathing motion
- Open design (inhalation)

Here, we present its wide range of applications covering inhalation toxicology, molecule safety and efficacy testing and evaluation of clinically relevant endpoints.

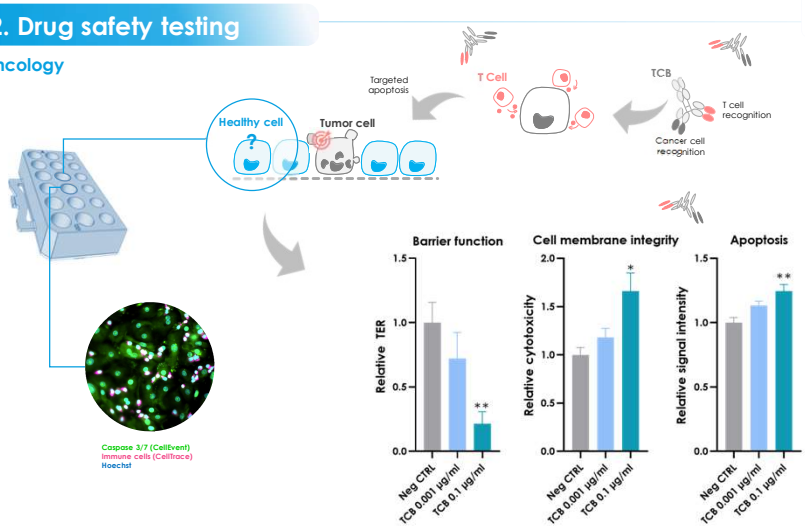
1.Inhalation toxicology

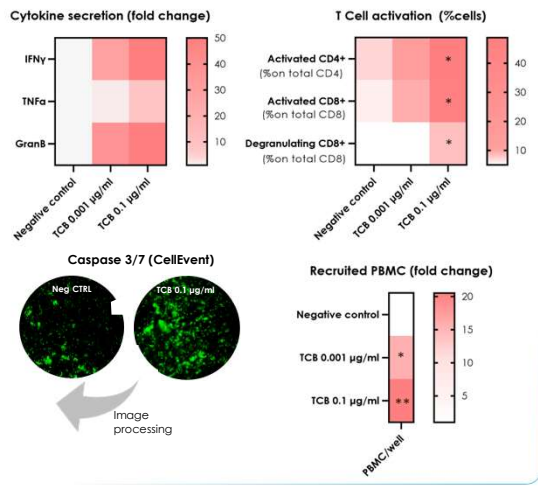
Occupational (TiO_2 NPs) vs toxic exposure (PHMG)



2. Drug safety testing

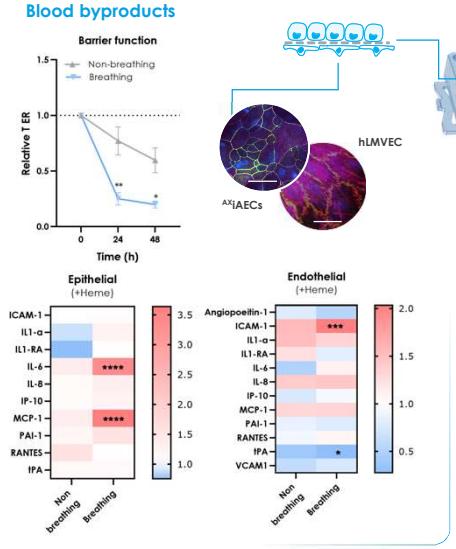
Oncology



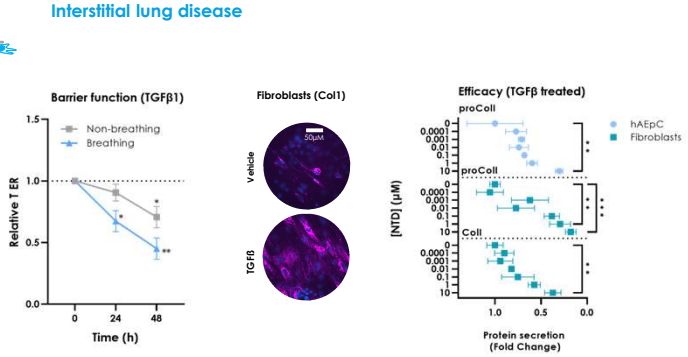


3. Efficacy modelling

Blood byproducts



Interstitial lung disease



Conclusions

Altogether, our data lays out the predictive capabilities of the AXLung-on-chip System for inhalation toxicology studies within physiological conditions, drug safety (TCB) and efficacy testing (NTD) and identification of therapeutic targets (Heme-injury model).

Abbreviations
AXiAECs: AlveoliX© immortalized alveolar epithelial cells **AXhAEpC:** AlveoliX© primary alveolar epithelial cells **TCB:** T Cell Bi-specific antibody

References:
Sengupta et al, Frontiers in toxicology (2022) | Sengupta et al, Frontiers in Pharmacology (2023)

Aknowledgments
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