



Human tissue that keeps its native three-dimensional architecture and its full cellular diversity, resident immune cells included. For pulmonary fibrosis, airway inflammation and inhaled products.

SERVICES

Fibrosis

A pro-fibrotic cocktail induces COL1A1, COL3A1, FN1 and LRRC15 — LRRC15 induced in 6 of 6 donors, 3.2 to 19.3-fold. Antifibrotic screening against reference compounds.

Inflammation

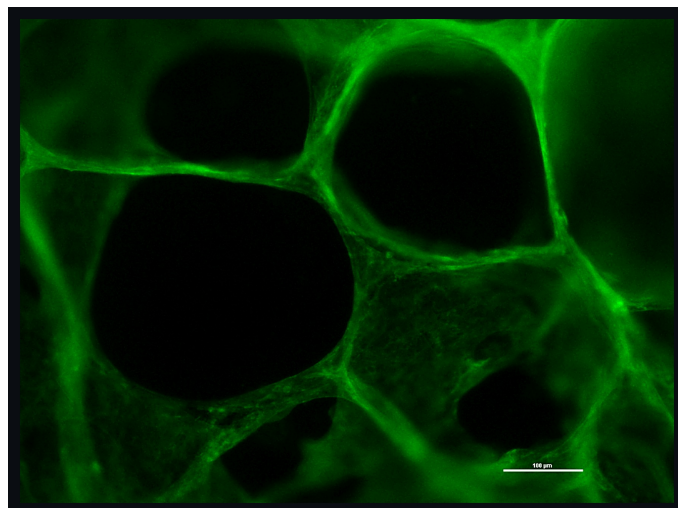
LPS and Poly I:C induce IL-6, IL-8, TNF- α and TSLP in 6 of 6 donors with no loss of viability. Dexamethasone suppresses 61 to 77% of LPS-induced IL-8.

Inhaled products

Aerosol dosing onto reconstructed human airway epithelium at the air-liquid interface, under our patented in vitro airways nebulization assay.

Migration

Scratch assay on primary human lung fibroblasts in ibidi culture-inserts.



Calcein-AM: alveolar walls still viable four weeks after slicing.

BIOLOGICAL MODELS

hPCLS

300 μ m slices of human lung, submerged or at the air-liquid interface

Fibroblasts

Primary human lung fibroblasts, 2D, higher throughput

Calu-3

Airway epithelial line, inflammation and SARS-CoV-2 mechanistic work

3D EpiAirway

MatTek reconstructed human airway epithelium, dosed by aerosol

TWENTY-EIGHT DAYS, WHICHEVER WAY YOU DOSE

Submerged culture is usually limited to 7-14 days. Across three donors, our slices stay metabolically active for 28 days in both submerged and air-liquid interface culture, with comparable values at every timepoint. The two formats are complementary: submerged for test items in solution, air-liquid interface for nebulised or aerosolised items applied to the apical surface. Both support repeated dosing over at least three weeks.

READOUTS AND TECHNIQUES

Molecular

RT-qPCR · whole-transcriptome
RNA-Seq

Imaging

Histology · immunofluorescence · IHC ·
live-cell imaging

Quantification

ELISA and multiplex · proteomics

WHY PKDERM

Published work. PKDERM contributed the human precision-cut lung slice work in Matralis A.N. et al., *Cell Reports Medicine* 2026;7:102778, on an inhaled antifibrotic candidate. European patent EP-4186547 covers our in vitro airways nebulization assay. The platform is co-funded by the European Union (ERDF, Provence-Alpes-Côte d'Azur Programme 2021-2027), with lung tissue supplied by hospital and biobank partners.