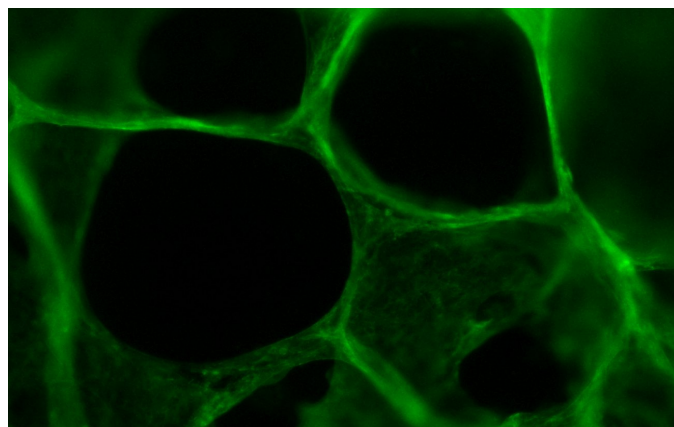


FOUR HUMAN LUNG MODELS

- 1 · hPCLS** 300 µm precision-cut slices of human lung. Native three-dimensional architecture and full cellular diversity, resident immune cells included. Cultured submerged or at the air–liquid interface.
- 2 · Lung fibroblasts** Primary human lung fibroblasts in 2D. The simpler, higher-throughput tier for antifibrotic screening, proliferation and migration.
- 3 · Calu-3** Human airway epithelial line for inflammation assays and mechanistic work on SARS-CoV-2, alongside our patented 3D skin model of coronavirus infection.
- 4 · 3D EpiAirway** MatTek EpiAirway reconstructed human airway epithelium at the air–liquid interface, dosed as an aerosol under our patented in vitro airways nebulization assay.

PATENTED — AEROSOL NEBULISATION

Aerosol dosing on reconstructed human airway epithelium, under our patented **in vitro airways nebulization assay** (EP-4186547). Inhaled products tested the way they are delivered.



Calcein-AM staining of viable alveolar structure at Day 28

KEY RESULTS

- 28-day window** Both submerged and air-liquid interface culture sustain metabolic activity for 28 days, comparable across three donors. Activity rises 2-4 fold from Day 2 and plateaus from Day 14.
- Fibrosis** A pro-fibrotic cocktail induces COL1A1, COL3A1, FN1 and LRRC15. LRRC15 induced in 6 of 6 donors, 3.2 to 19.3-fold.
- Antifibrotics** Nintedanib reduced COL1A1 induction in 4 of 5 donors tested.
- 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.
- Steroid response** Dexamethasone suppresses 61 to 77% of LPS-induced IL-8.

METHODS AND READOUTS

Preparation Low-melting agarose inflation, 8 mm punches, 300 µm slices on a Compresstome VF-300-0Z	Culture DMEM/F-12, submerged or ALI on inserts, 37 °C and 5% CO ₂ , medium renewed three times a week	Readouts RT-qPCR against GAPDH · MTT viability · calcein-AM live–dead imaging · histology · confocal 3D reconstruction
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DISEASE MODELS

Pulmonary fibrosis Pro-fibrotic cocktail, ECM gene panel, antifibrotic screening with reference compounds	Airway inflammation TLR3 and TLR4 stimulation, cytokine panel, corticosteroid arms	On request Other inductions, repeated dosing and marker panels designed with you
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WHY PKDERM

Animal-free by design. An independent French CRO built entirely on human-relevant in vitro and ex vivo models. Two patents held by PKDERM, including the in vitro airways nebulization assay (EP-4186547). Contributor of the human PCLS work in Matralis et al., Cell Rep. Med. 2026;7:102778, on an inhaled antifibrotic candidate; author of presentations and posters at AIT, AdebioTech, LIVE and ESTIV, as well as webinars. The air–liquid interface 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.

Donor-to-donor variability is the dominant source of variance in this model and is addressed by paired-slice designs rather than by pooling.

WHAT YOU RECEIVE

Study protocol Agreed before start, with acceptance criteria stated up front	Data and report Full data set, quality-control records, and a report written for your file	Scientific support Discussion of results and advice on the next study, included as standard
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