



Human-relevant models for skin and lung

Animal-free in vitro and ex vivo testing.

An independent French contract research organisation.

Sophia Antipolis, France · founded 2018 · contact@pkderm.com



Testing is moving to human tissue

Regulation and science are pushing the same way

Animal testing is banned

for cosmetics in the EU under Regulation 1223/2009, and restricted elsewhere.

Animal models predict poorly

for skin and lung. Species differences in barrier, metabolism and immunity are well documented.

Regulators now accept NAMs

New Approach Methodologies, when the method is justified and the data is sound.

PKDERM measures efficacy and safety on human tissue, without animals.

What PKDERM is

- Independent French CRO, founded in 2018 in Sophia Antipolis.
- Self-funded and revenue-generating. No external investors.
- Two European patents. Over 30 peer-reviewed publications.
- EUR 565k of competitive public funding: ANR, Bpifrance, ERDF.
- Clients in cosmetics, dermatology, pharma, chemicals and medical devices.



Two organs, one provider.

One platform, four levels

The same compound can be followed all the way up

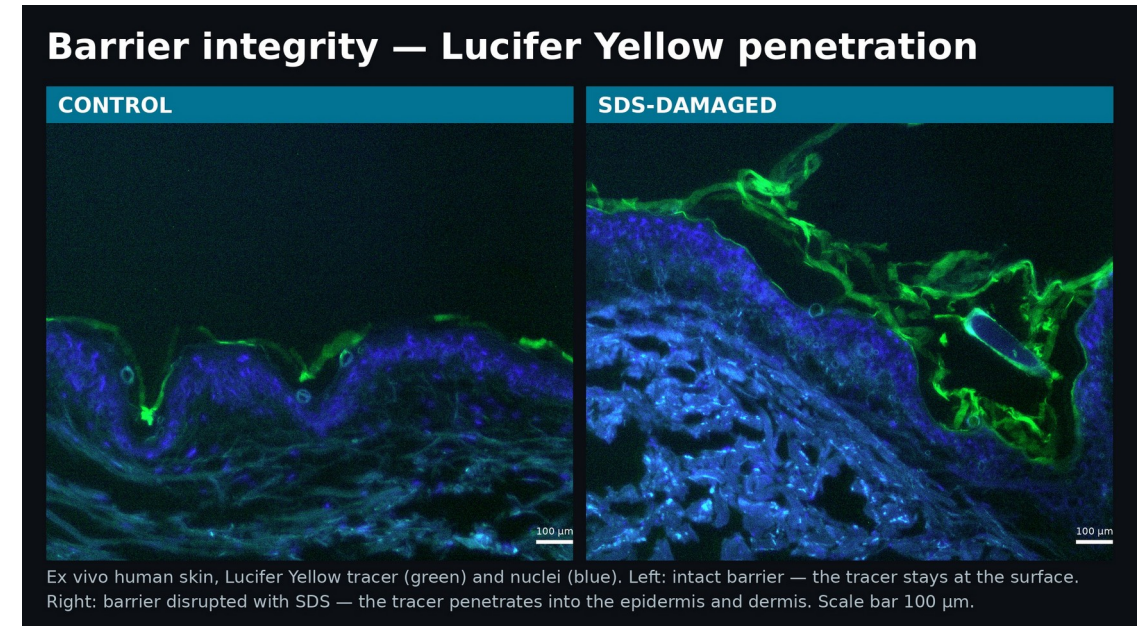


Increasing physiological relevance →

Skin penetration, and damaged skin

Our speciality

- OECD-aligned Franz cell testing on human skin.
- Barrier integrity checked by TEWL before dosing.
- Mass balance: tape stripping, epidermis, dermis, receptor fluid.
- Quantification by LC-MS/MS or scintillation counting.
- Barrier disrupted by tape stripping, abrasion, microneedling or SDS — always against the intact control from the same donor.



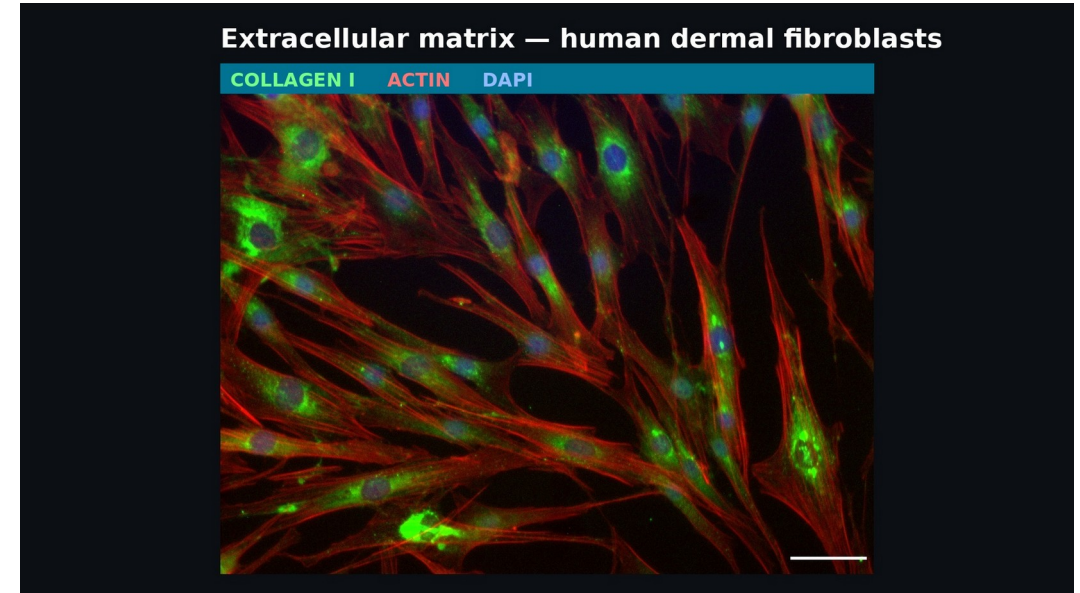
Lucifer Yellow. Left: intact barrier. Right: barrier disrupted with SDS.

Characterised in Barthe M. et al., Front. Med. 2024;11:1481645.

3D and 2D skin models

Including induced disease models

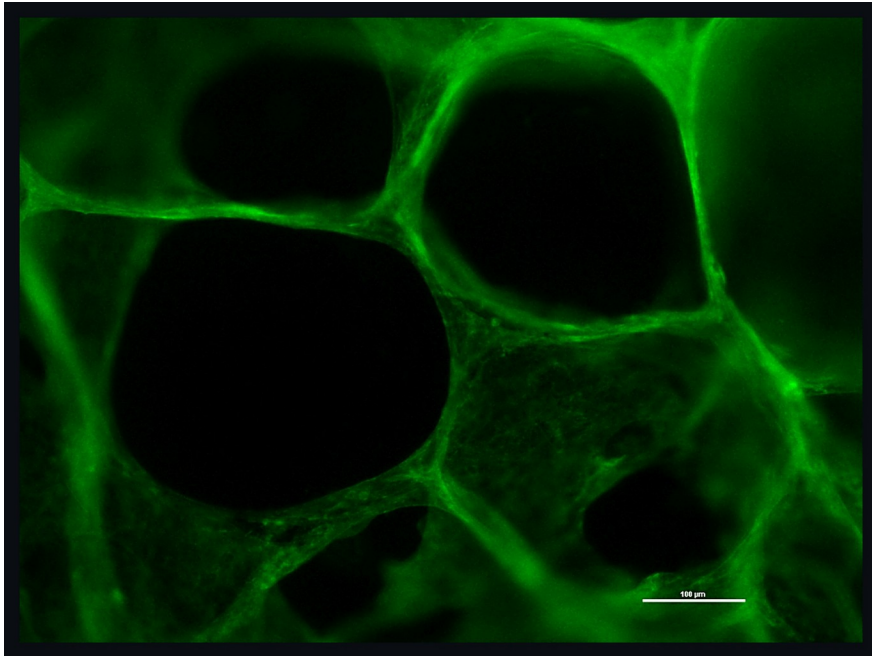
- Reconstructed epidermis, full-thickness T-Skin, EpiVaginal mucosa.
- Primary keratinocytes, fibroblasts and melanocytes.
- Atopic dermatitis and psoriasis induced, with paired untreated controls.
- Endpoints: inflammation, pigmentation with instrumental colour, collagen I and III, elastin, FLG, IVL, LOR, TEER, HAS2.
- Whole-transcriptome RNA-Seq with our partner GENXMAP.



Collagen I, actin and DAPI in human dermal fibroblasts.

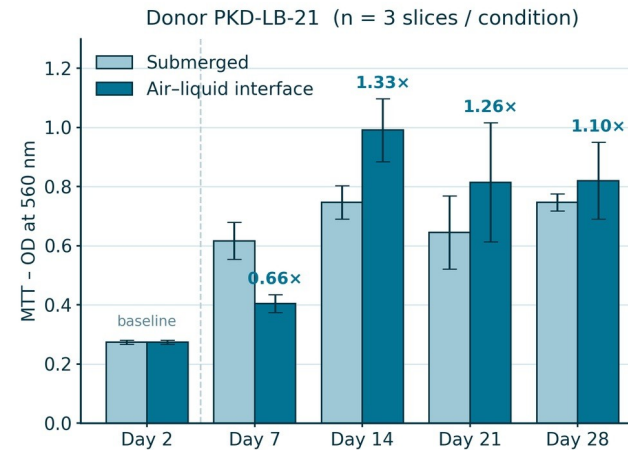
Human precision-cut lung slices

Twenty-eight days, in both culture formats

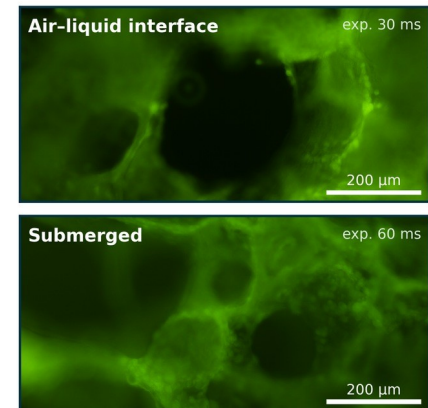


Calcein-AM at Day 28.

Air-liquid interface sustains viability to Day 28



Live/Dead - Calcein-AM, Day 28



MTT, paired slices from the same punch. ALI exceeds submerged culture from Day 14 onward.

- 300 μm slices from tumour-free human lung resections.
- Viable to Day 28 in both submerged and air-liquid interface culture.
- Repeated dosing and chronic disease protocols become possible.

Fibrosis and inflammation

Pharmacologically tractable readouts

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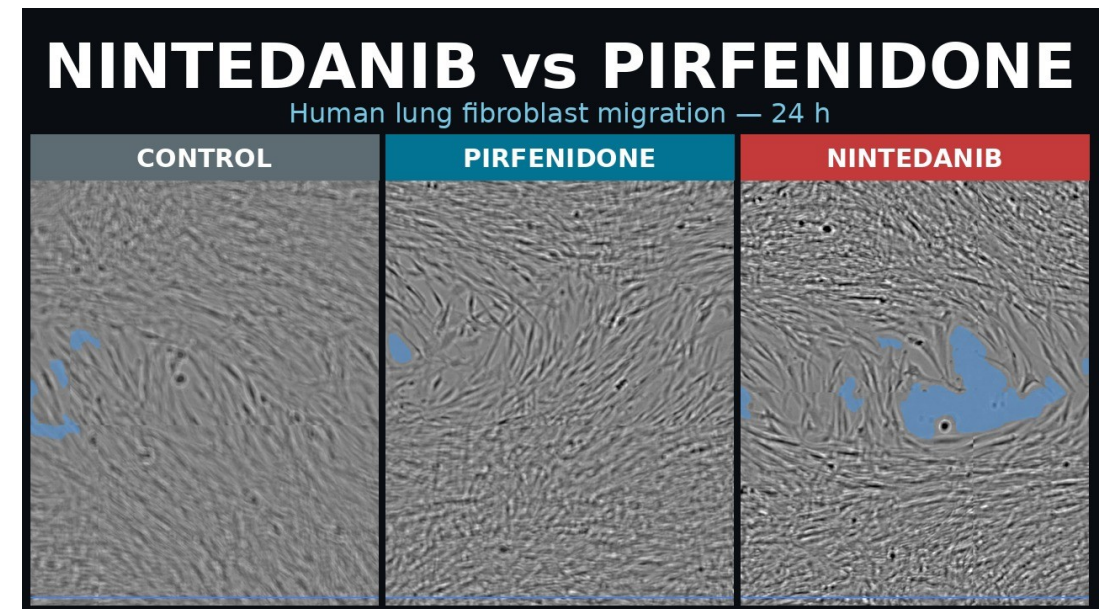
donors induced LRRC15, 3.2 to 19.3-fold

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donors induced IL-6, IL-8, TNF- α and TSLP

61–77 %

of LPS-induced IL-8 blocked by dexamethasone

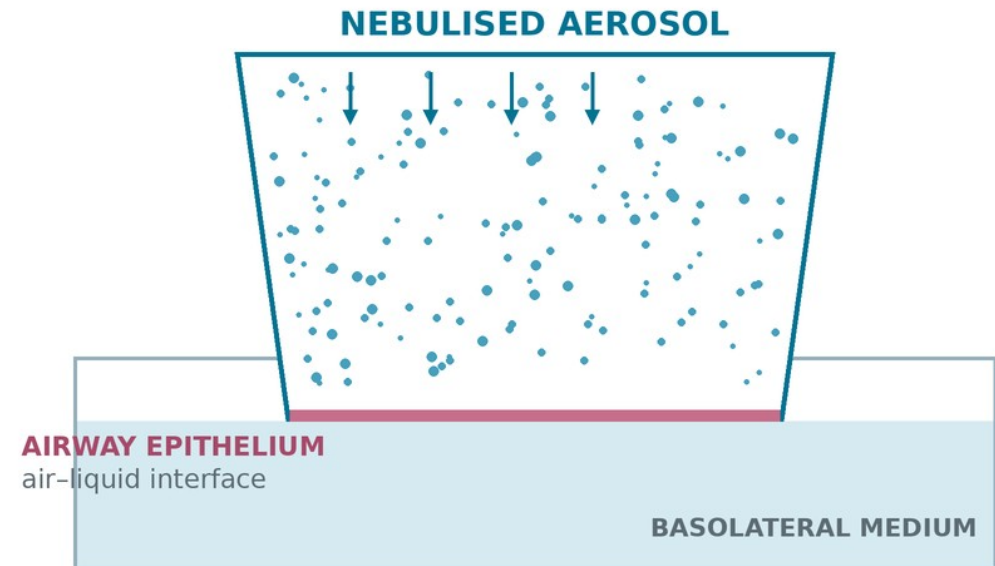


Human lung fibroblast migration over 24 h.

Aerosol delivery — patented

Inhaled products tested the way they are delivered

- Nebulised onto reconstructed human airway epithelium at the air-liquid interface.
- Not pipetted into the medium.
- European patent EP-4186547.
- Calu-3 completes the range for inflammation and SARS-CoV-2 work.



The evidence behind the models

Patents

EP-3922714 — 3D skin model of coronavirus infection
EP-4186547 — in vitro airways nebulization assay

Publications

Over 30 peer-reviewed papers, a dozen since 2018.
Front. Med. 2024 • JID Innovations 2026 • Cell Rep. Med. 2026
pkderm.com/publications

Public funding

ANR-21-CE34-0016 • Bpifrance • ERDF SUD004993
ANRT CIFRE industrial PhD 2020/0804

Partners

GENXMAP • CHU de Nice and its biobank
IPMC (Université Côte d'Azur / CNRS)

What we are looking for in Japan

Joint R&D

Co-development of human tissue models for specific indications: pulmonary fibrosis, airway inflammation, compromised skin barrier.

Technical alliance

Inhaled products dosed with our patented nebulization assay. Complementary to organoid, MPS and in silico platforms.

Contract studies

Japanese companies replacing animal tests with human-relevant methods.

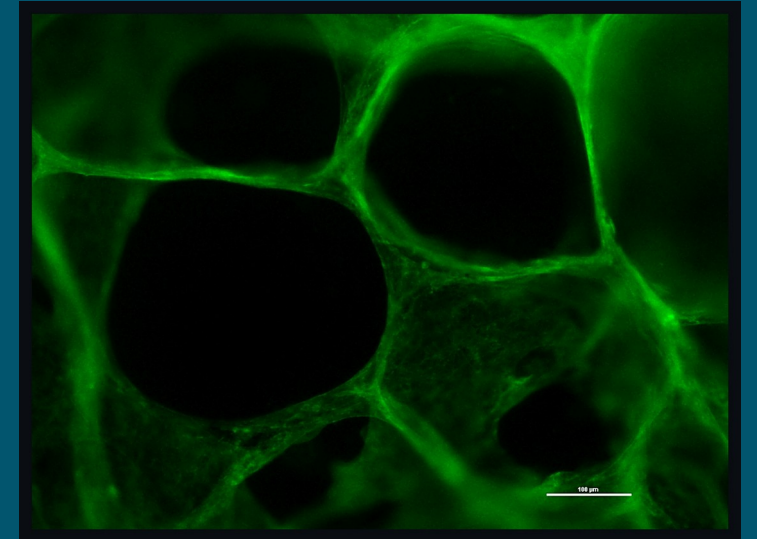
We are not raising capital. PKDERM is self-funded and profitable.



Let us talk

Dr Hanan Osman-Ponchet — Founder, CEO & CSO
contact@pkderm.com · pkderm.com

PKDERM SAS · 80 Route des Lucioles, Espaces de Sophia, Bâtiment N, 06560 Valbonne, France



Meet us at BioJapan 2026 — Pacifico Yokohama, 7-9 October — EU-Japan Centre booth B-06