

## MODELS AND STUDY DESIGN

|                                |                                                                                                                                                  |
|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Reconstructed epidermis</b> | Validated commercial reconstructed human epidermis (RhE) models, including MelanoDerm pigmented epidermis, cultured at the air–liquid interface. |
| <b>Full-thickness skin</b>     | T-Skin and equivalent full-thickness reconstructed models, with keratinocytes and fibroblasts.                                                   |
| <b>Vaginal mucosa</b>          | EpiVaginal reconstructed vaginal-ectocervical tissue, for feminine care and intravaginal products.                                               |
| <b>2D cell cultures</b>        | Primary human keratinocytes, fibroblasts and melanocytes.                                                                                        |
| <b>Disease models</b>          | Atopic dermatitis and psoriasis induced on reconstructed models, with paired untreated controls.                                                 |
| <b>Barrier integrity</b>       | TEER measured on 3D models before and after treatment.                                                                                           |
| <b>Treatment</b>               | Applied topically to the model surface, or supplied in the culture medium. Vehicle and dose–response designs supported.                          |
| <b>Controls</b>                | Positive and negative controls on every plate, with acceptance criteria agreed before start.                                                     |



Reconstructed tissue models in culture inserts

## WHAT WE MEASURE

|                                      |                                                                          |
|--------------------------------------|--------------------------------------------------------------------------|
| <b>Inflammation</b>                  | Cytokine and inflammatory mediator release                               |
| <b>Barrier &amp; differentiation</b> | FLG, IVL, LOR · TEER · Lucifer Yellow penetration, imaged and quantified |
| <b>Matrix remodelling</b>            | MMPs · collagen I and III · elastin                                      |
| <b>Hydration</b>                     | HAS2 and hyaluronic acid                                                 |
| <b>Pigmentation</b>                  | Melanin, melanogenesis markers, instrumental colour (ITA°)               |
| <b>Wound healing</b>                 | Re-epithelialisation and repair kinetics                                 |
| <b>Transcriptomics</b>               | <b>Whole-transcriptome RNA-Seq</b> — beyond a pre-selected marker panel  |
| <b>Supporting</b>                    | Histology and immunostaining · ELISA and multiplex · qPCR                |

## INDUCED DISEASE MODELS

Pathology is induced on the reconstructed model and your product is tested against paired untreated and untreated-induced controls, so the effect is measured on diseased tissue rather than on healthy skin.

|                                                                             |                                                                   |                                                                           |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|
| <b>Atopic dermatitis</b><br>Barrier and inflammation endpoints, FLG and IVL | <b>Psoriasis</b><br>Hyperproliferation and inflammatory mediators | <b>On request</b><br>Other inductions and marker panels designed with you |
|-----------------------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------------------|

## REGULATORY SAFETY TESTING — AVAILABLE ON REQUEST

Validated OECD methods run alongside efficacy work when your file requires them. Animal testing for cosmetics is banned in the EU under Regulation 1223/2009; these are the accepted replacements.

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|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| <b>OECD TG 439</b><br>In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method | <b>OECD TG 442D</b><br>Skin Sensitisation: ARE-Nrf2 Luciferase Test Method (KeratiNoSens) | <b>OECD TG 442E</b><br>Skin Sensitisation: dendritic cell activation (h-CLAT) |
|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|

TG 442D and 442E address key events 2 and 3 of the skin sensitisation adverse outcome pathway and can feed a defined approach under OECD Guideline 497.

## WHY PKDERM

**Animal-free by design.** An independent French CRO built entirely on human-relevant in vitro and ex vivo models. Barrier and damaged-skin endpoints characterised in Barthe M. et al., *Systematic characterization of the barrier function of diverse ex vivo models of damaged human skin*, Front. Med. 2024;11:1481645. Holder of European patent EP-3922714 on the use of a 3D skin model to assess treatment of SARS-coronavirus skin infection. Contributor of the human precision-cut lung slice work in Matralis A.N. et al., *Cell Rep. Med.* 2026;7:102778, on an inhaled antifibrotic candidate. The same compound can be followed from 2D cultures through 3D models to ex vivo human skin explants and IVPT.

## WHAT YOU RECEIVE

|                                                                                                 |                                                                                          |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| <b>Study protocol</b><br>Agreed with you before start, with acceptance criteria stated up front | <b>Raw and processed data</b><br>Full data set, calculations and quality-control records |
| <b>Study report</b>                                                                             | <b>Scientific support</b>                                                                |