



**MONASTERIUM
LABORATORY**
A **QIMA** Life Sciences Company

All about
skin and hair
bioscience!

**State-of-the-art technology and expertise
for all your pre-clinical, mechanistic, and
clinical needs in dermatology research.**

- ▶ Pre-clinical Research
- ▶ Clinical Research
- ▶ Education



Atopic Dermatitis



Monasterium Laboratory

Skin & Hair Research Solutions GmbH

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Founder & CEO: Prof. Dr. Ralf Paus

www.monasteriumlab.com

"We combine
our unique expertise,
our project design creativity,
and our passion to advance
our clients' success in
delivering novel and game-
changing skin and hair
research solutions"

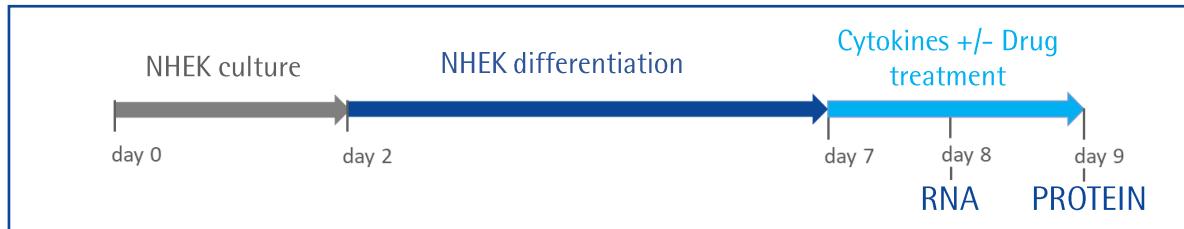
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For enquiries, please contact:

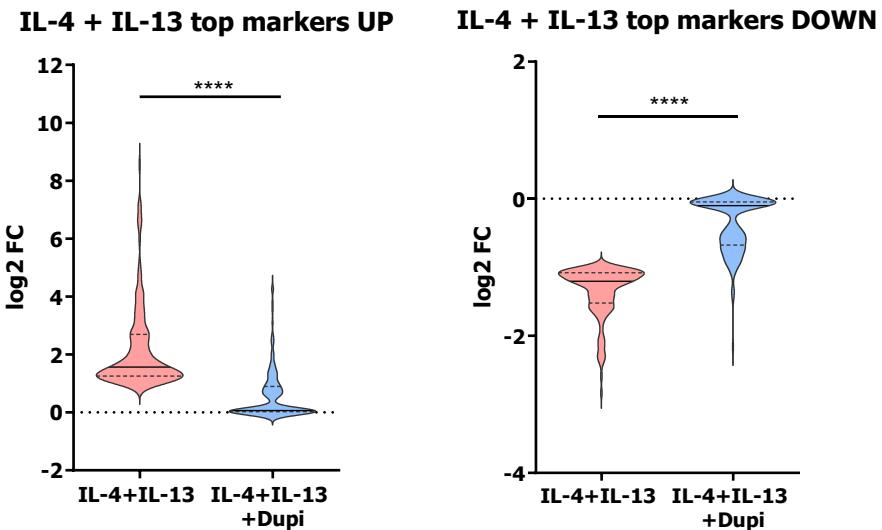
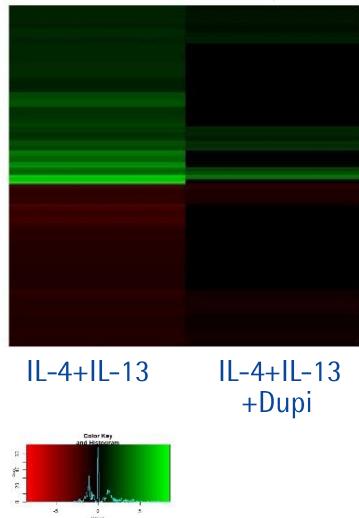
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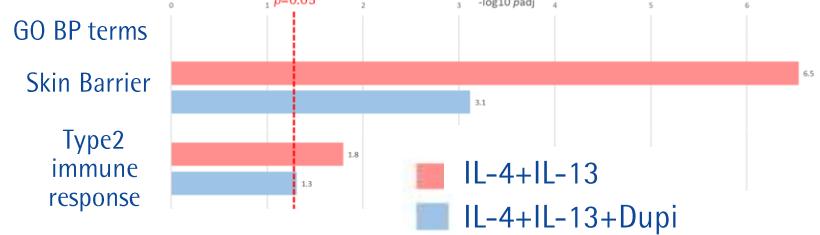
Modeling atopic dermatitis-like responses in primary epidermal keratinocytes *in vitro*



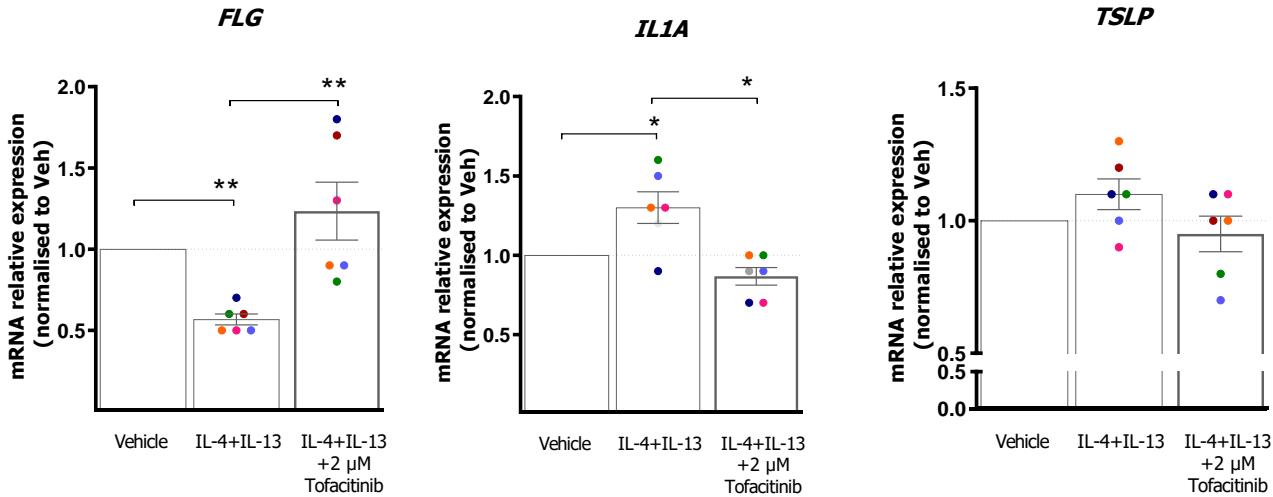
Study Example: Dupilumab (Dipi) inhibits transcriptional changes induced by IL-4+IL-13



Gene expression analysis can be complemented by protein analysis (Western blot, FACS, immunocytochemistry)



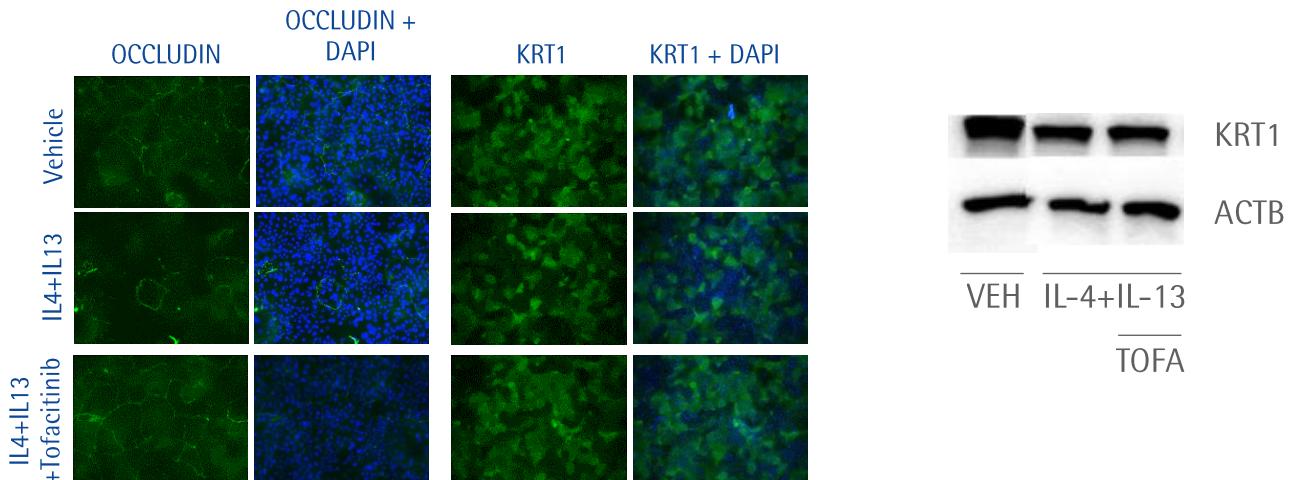
Study Example: Tofacitinib counteracts transcriptional changes on atopic dermatitis associated parameters



FLG: Filaggrin, TSLP: thymic stromal lymphopoietin.

Modeling atopic dermatitis-like responses in primary epidermal keratinocytes *in vitro*

Study Example: Tofacitinib inhibits skin barrier impairment induced by IL-4+IL-13

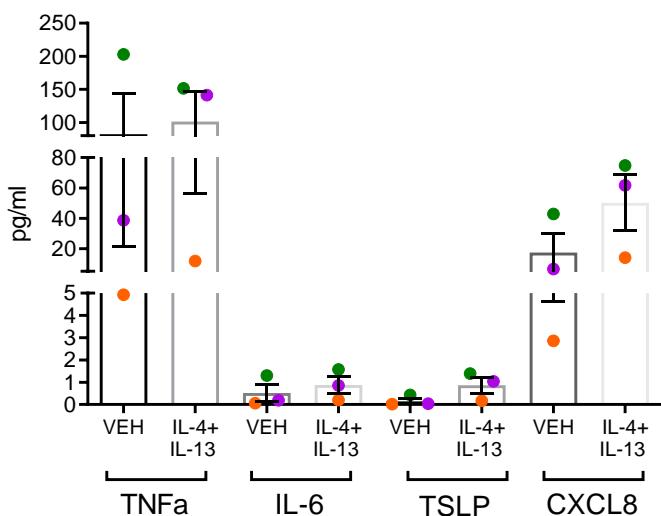


Gene and protein expression analysis on keratinocytes can be complemented by measurements of cytokine/chemokine release into the medium

Tofa:
Tofacitinib, i.e.
JAK signaling inhibitor

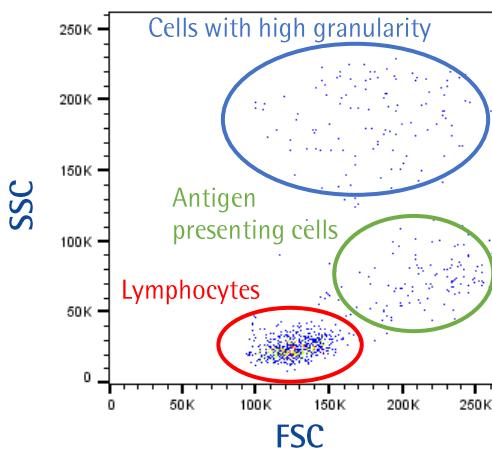
Our models can be utilized also to identify new pathways involved in atopic dermatitis as well as investigating modes of action

IL-4+IL-13 stimulation also induces the release of cytokines and chemokines by primary epidermal keratinocytes

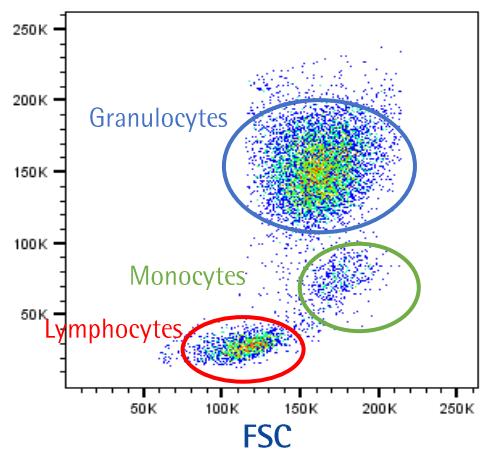


In vitro studies on immune cells isolated from skin or blood also available

FACS analysis of CD45+ cells from human skin

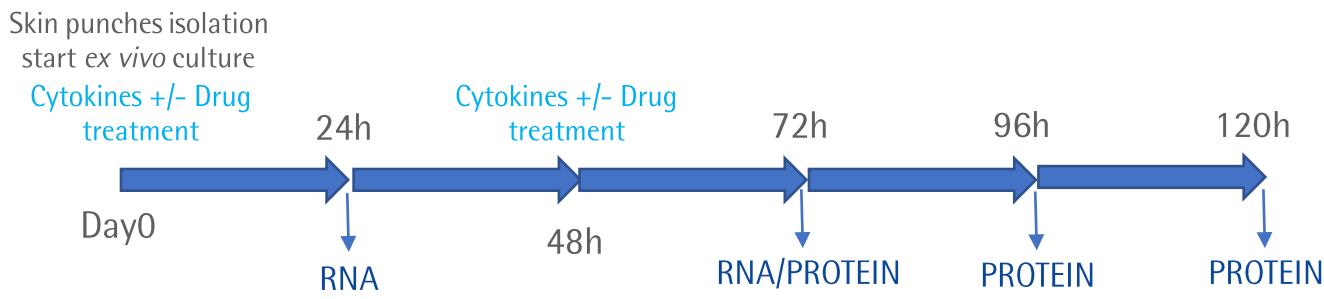


FACS analysis of CD45+ cells from human whole blood

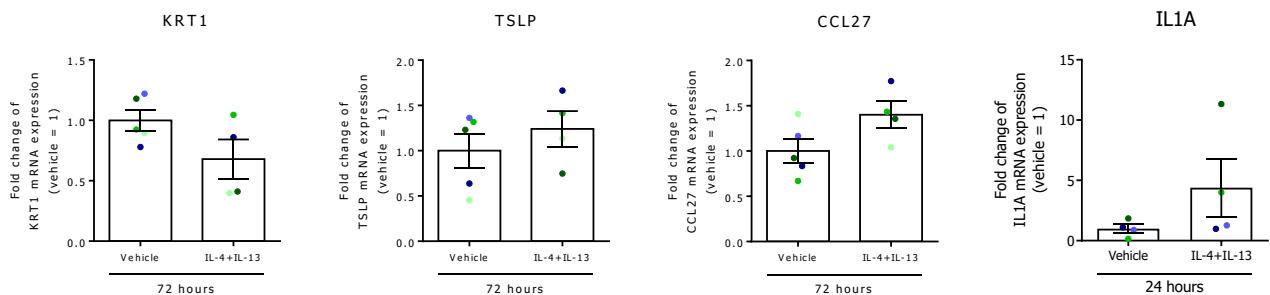


Blood and skin from HEALTHY INDIVIDUALS and atopic dermatitis PATIENTS

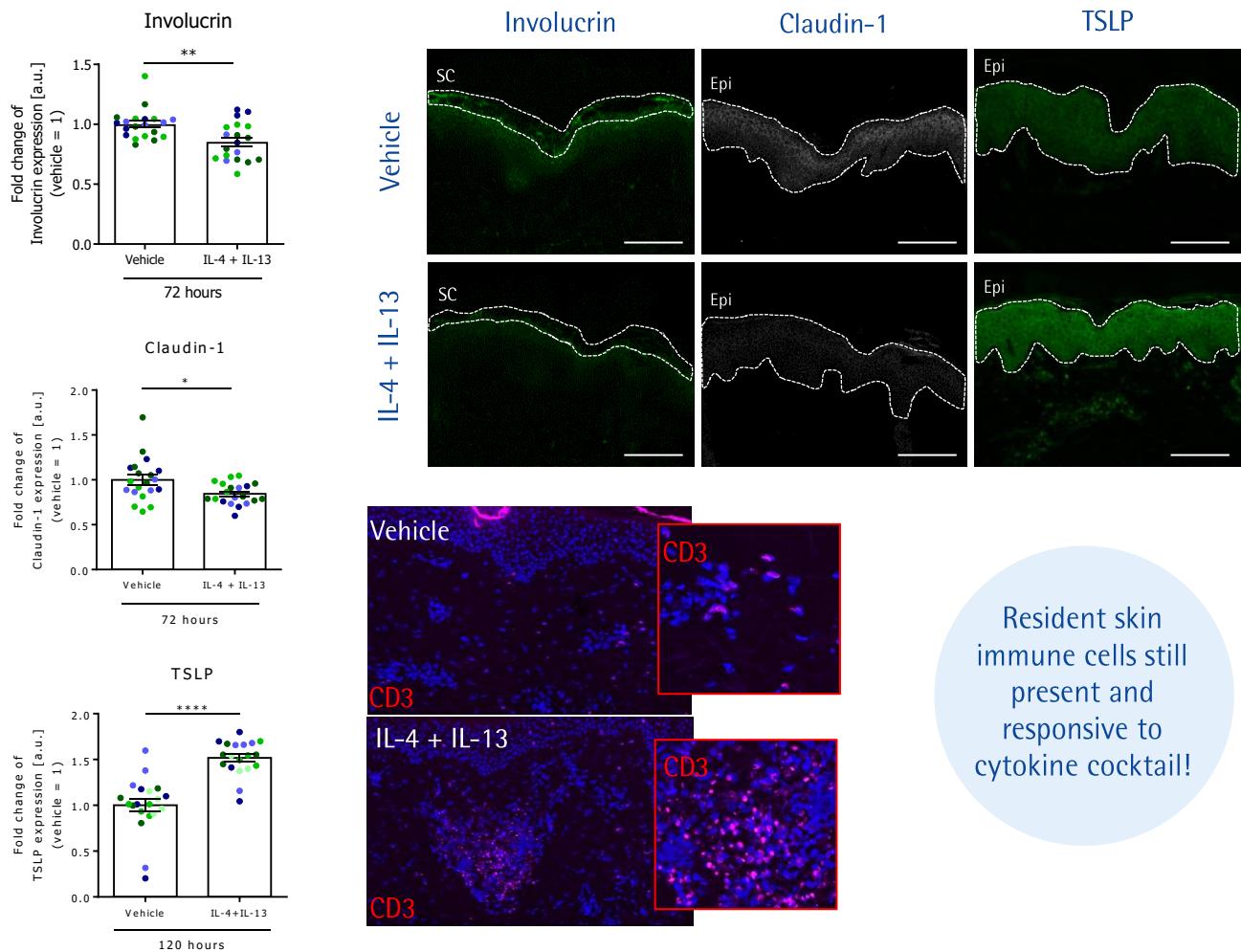
Modeling atopic dermatitis-like responses in human HEALTHY skin ex vivo



IL-4+IL-13 stimulation induces gene expression changes associated with skin barrier impairment and pro-inflammatory responses

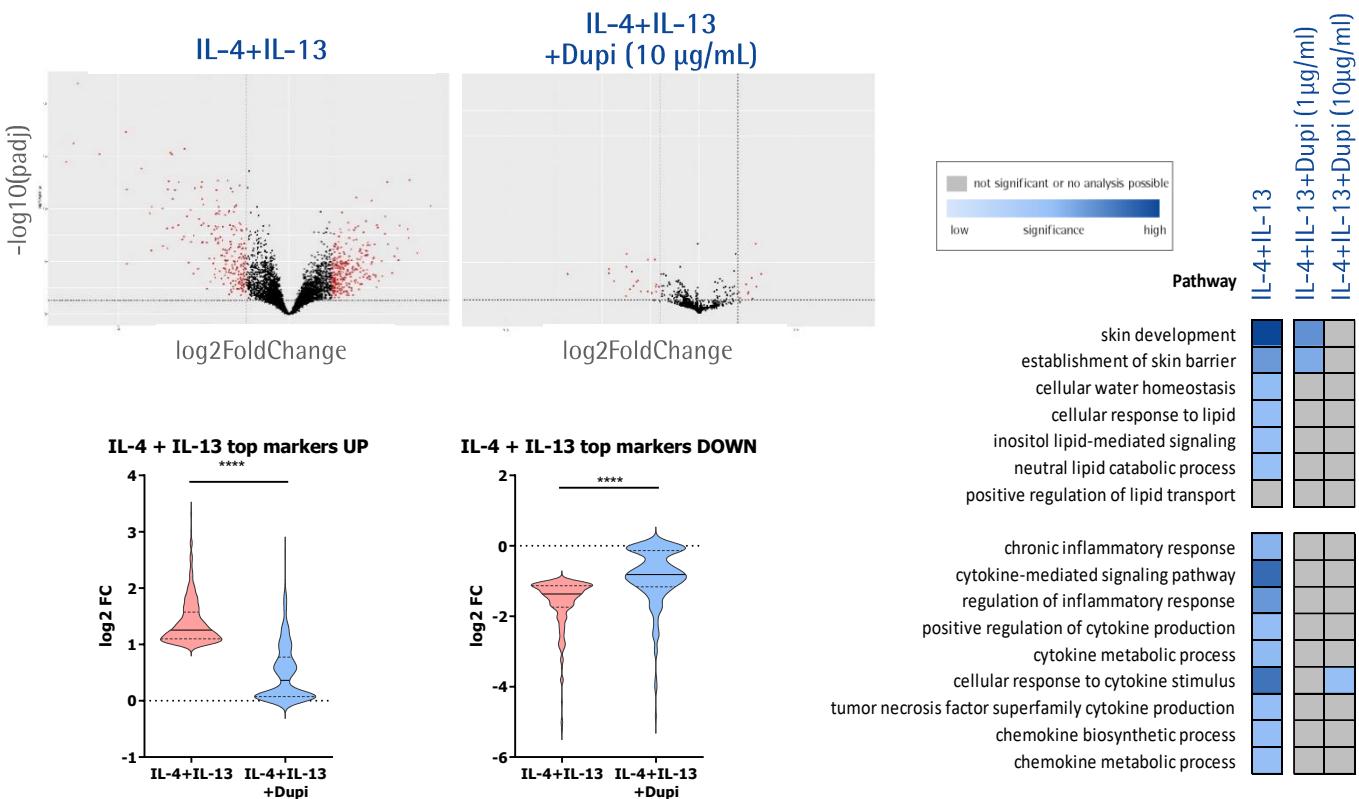


IL-4+IL-13 stimulation impairs skin barrier, induces pro-inflammatory responses, and expansion of resident cells



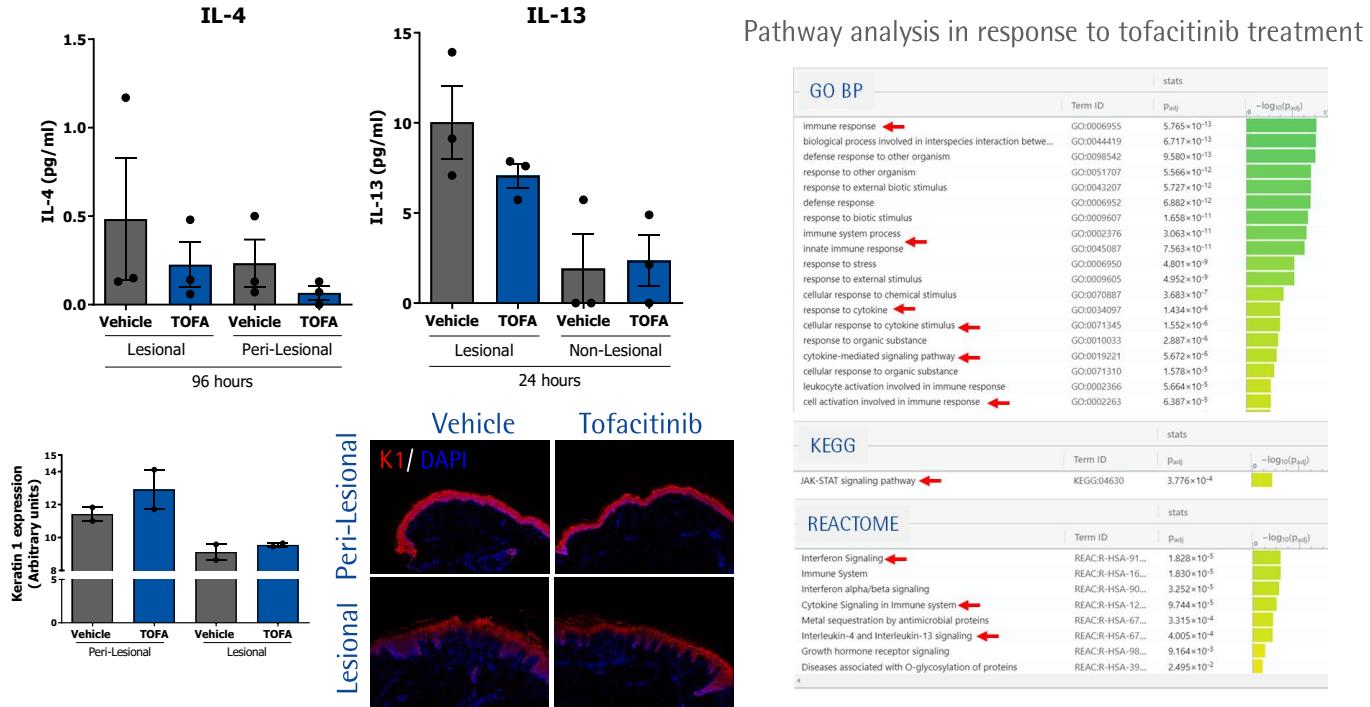
Modeling atopic dermatitis-like responses in human HEALTHY skin ex vivo

Study Example: Dupilumab (Dipi) inhibits transcriptional changes induced by IL-4+IL-13

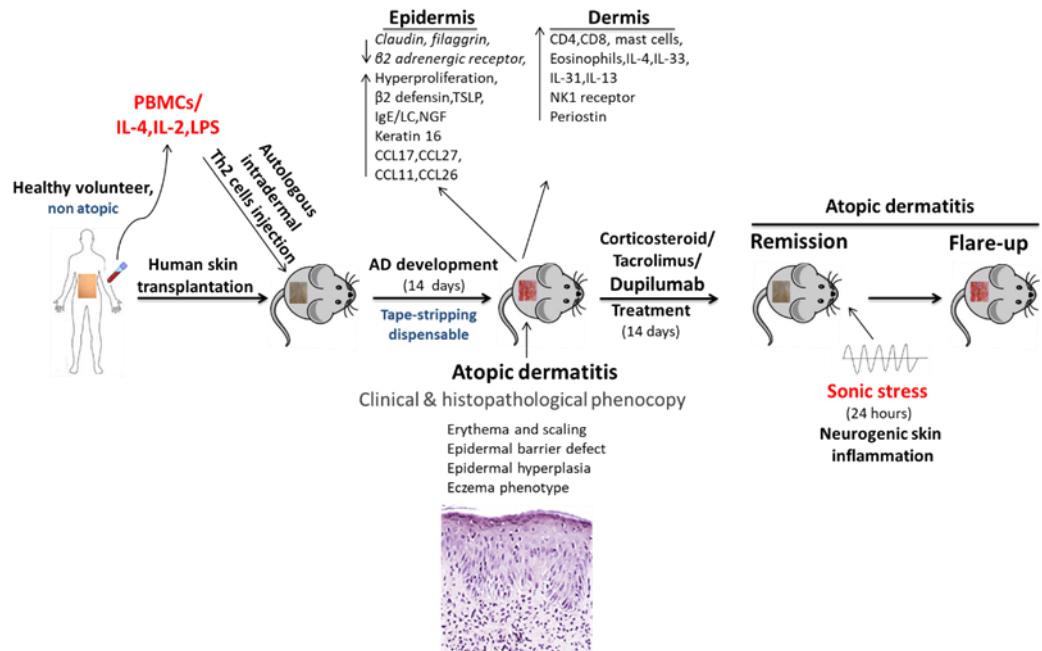


Investigating the effect of a drug on lesional skin from atopic dermatitis patients ex vivo

Study Example: Tofacitinib reduces cytokine release, up-regulates skin barrier-associated markers, and ameliorates phenotype in lesional skin from selected patients

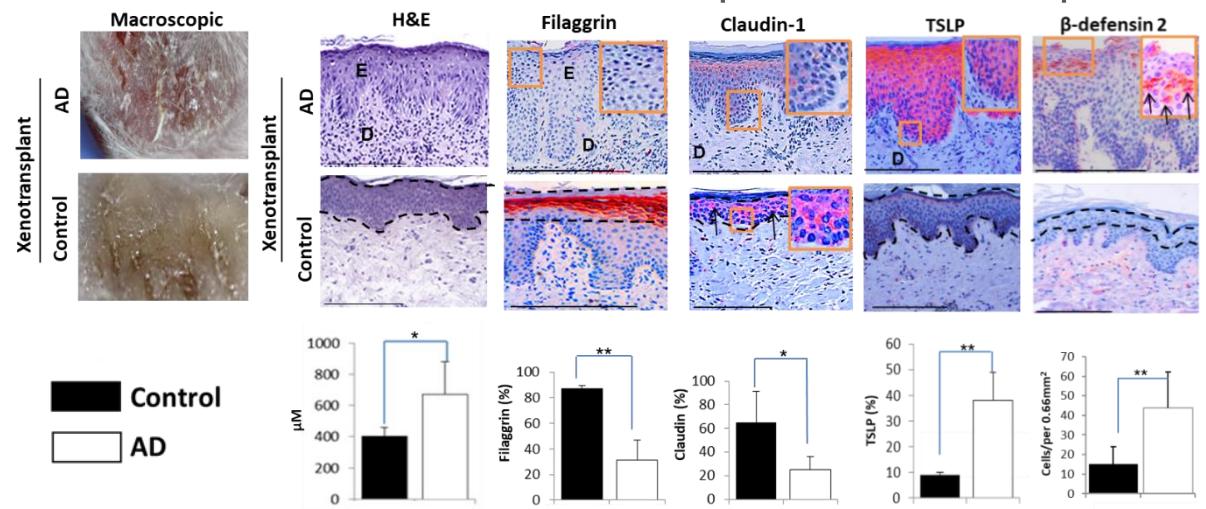


Investigating the effect of a drug on inhibiting atopic dermatitis-like phenotype *in vivo*: Humanized mouse model

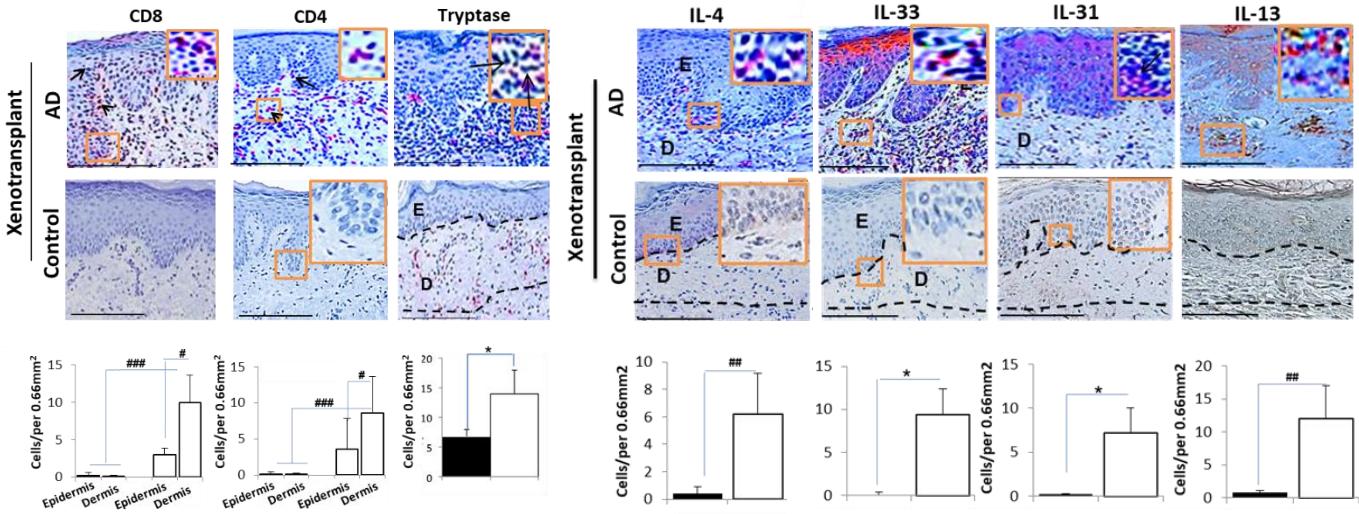


Experimental setup and read-out parameters can be customized

Epidermal barrier impairment

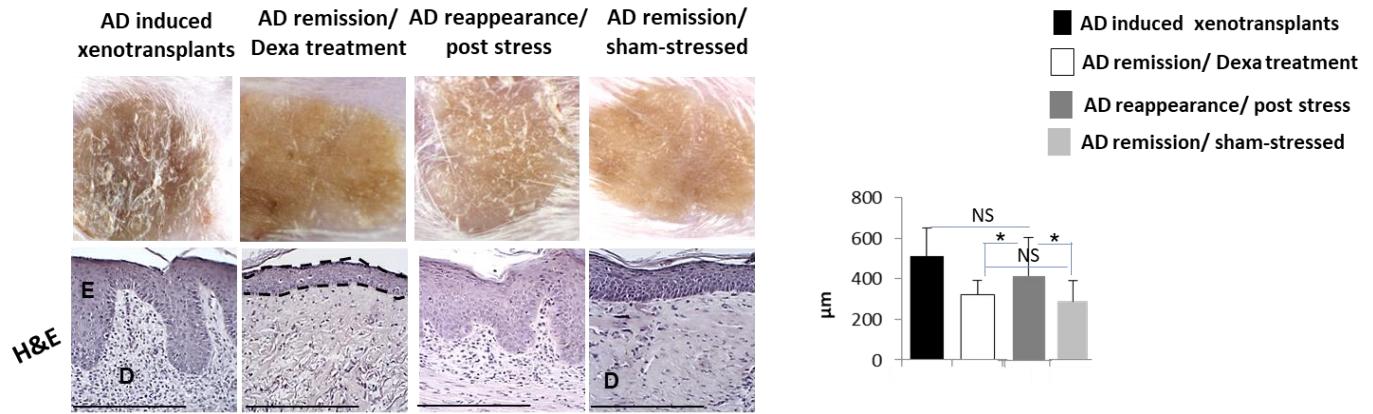


Atopic dermatitis-like immune phenotype and response

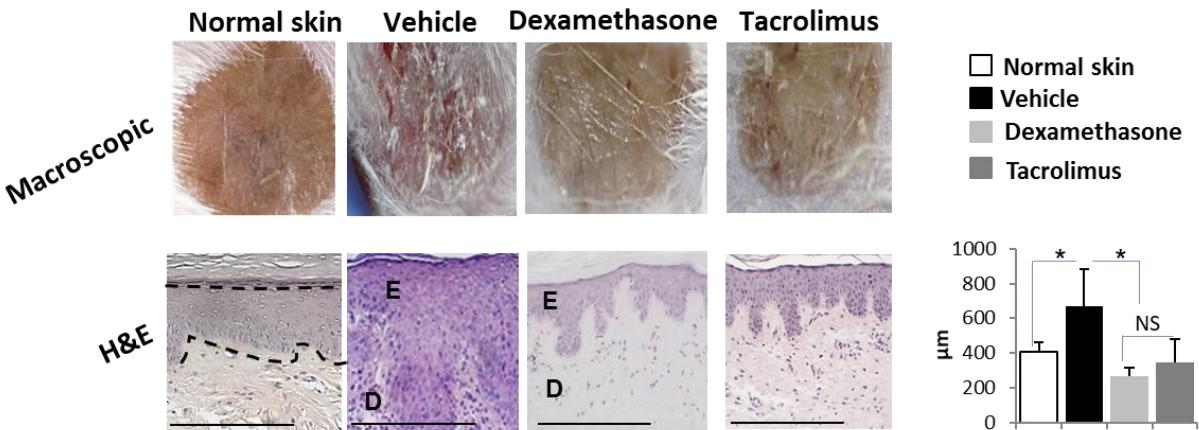


Investigating the effect of a drug on inhibiting atopic dermatitis-like phenotype *in vivo*: Humanized mouse model

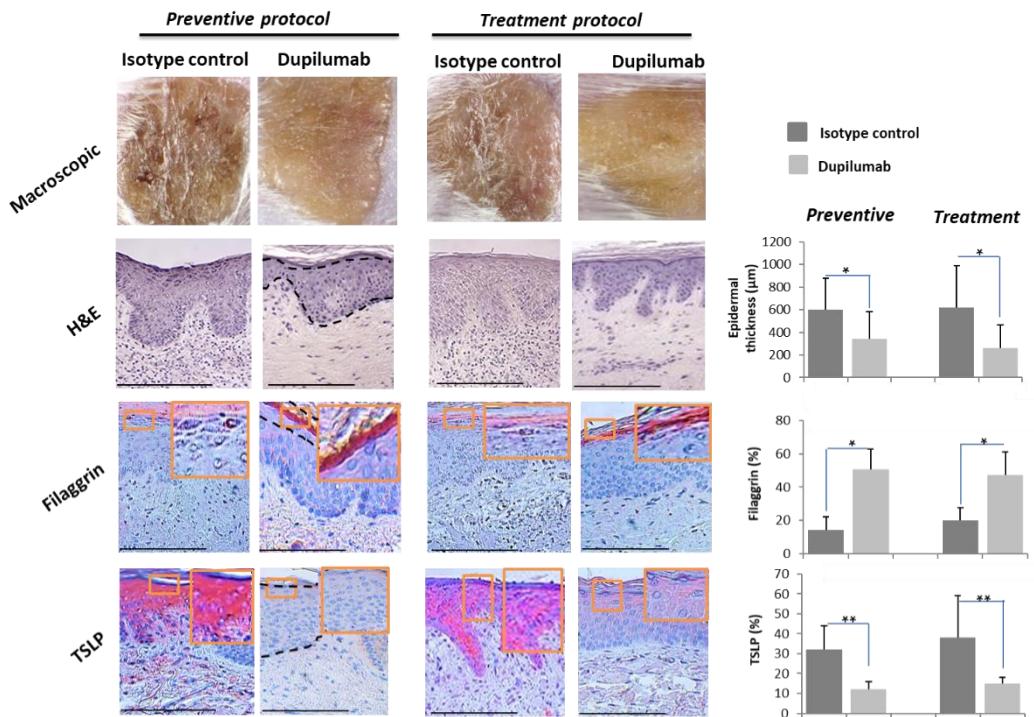
Relapse of lesions after stress induction



Amelioration of disease after treatment with dexamethasone, and tacrolimus



Prevention and rescue of diseased phenotype with Dupilumab



WHY US?



**MONASTERIUM
LABORATORY**

A QIMA Life Sciences Company

Great network of dermatologists and plastic surgeons collecting samples from healthy and diseased skin

Our vision is to provide our clients and partners with the highest quality research in investigative dermatology and trichology – from basic science to translational applied and contract research of high relevance for clinical applications.

World-class scientific leadership & international team

Clinically-relevant ex vivo and in vivo models

Strong academic background & publication record

What we can do for our clients:

- Conceptualize & build proof-of-concept studies
- Carry out full service portfolio for pre-clinical skin & hair research (*in vitro/ex vivo* assays, and humanized mouse models)
- Investigate side effects in the skin or hair follicle
- Establish novel cutting edge methodologies and techniques
- Design tailor-made & customized assays for all needs
- Identify, characterize, or validate novel targets and therapeutics for skin & hair disorders
- Discover mechanistic action stories, biomarkers & predictors of response
- Conduct investigator initiated skin & hair clinical trials
- Provide access to human healthy & diseased skin and hair specimen
- Prepare comprehensive project reports & manuscript drafts

Investigative dermatology:
Acne Vulgaris, Atopic Dermatitis, Psoriasis, Alopecia Areata, Androgenic Alopecia, Hidradenitis Suppurativa, Vitiligo, Chronic Itch, Prurigo Nodularis, etc.

Biobank:
Full access to skin & hair samples (patients & healthy subjects)

Exceptional state-of-the-art research technology

We are supported by world-wide recognized experts in dermatology:

Alfredo Rossi, Amos Gilhar, Désmond J. Tobin, Erwin Tschachler, Falk G. Bechara, Francisco Jimenez, Kristian Reich, Mauro Picardo, Thomas Luger, Tiago R. Matos, Vinzenz Oji, Athanasios Tsianakas and many more!