

# BIOHIVE

Innovations

Human iPSC-Derived  
Skin Organoid Platform

**6,000+**  
ORGANOIDS  
PRODUCED

**50+**  
ENROLLED  
PATIENTS

**8+**  
INDICATIONS

**Cécile Nait, PhD – Co-founder & CEO**

**BioHive skin organoid platform** *(Non-confidential)*

[www.biohive-innovations.com](http://www.biohive-innovations.com)

# The challenge — today's models fall short

## Simplified models

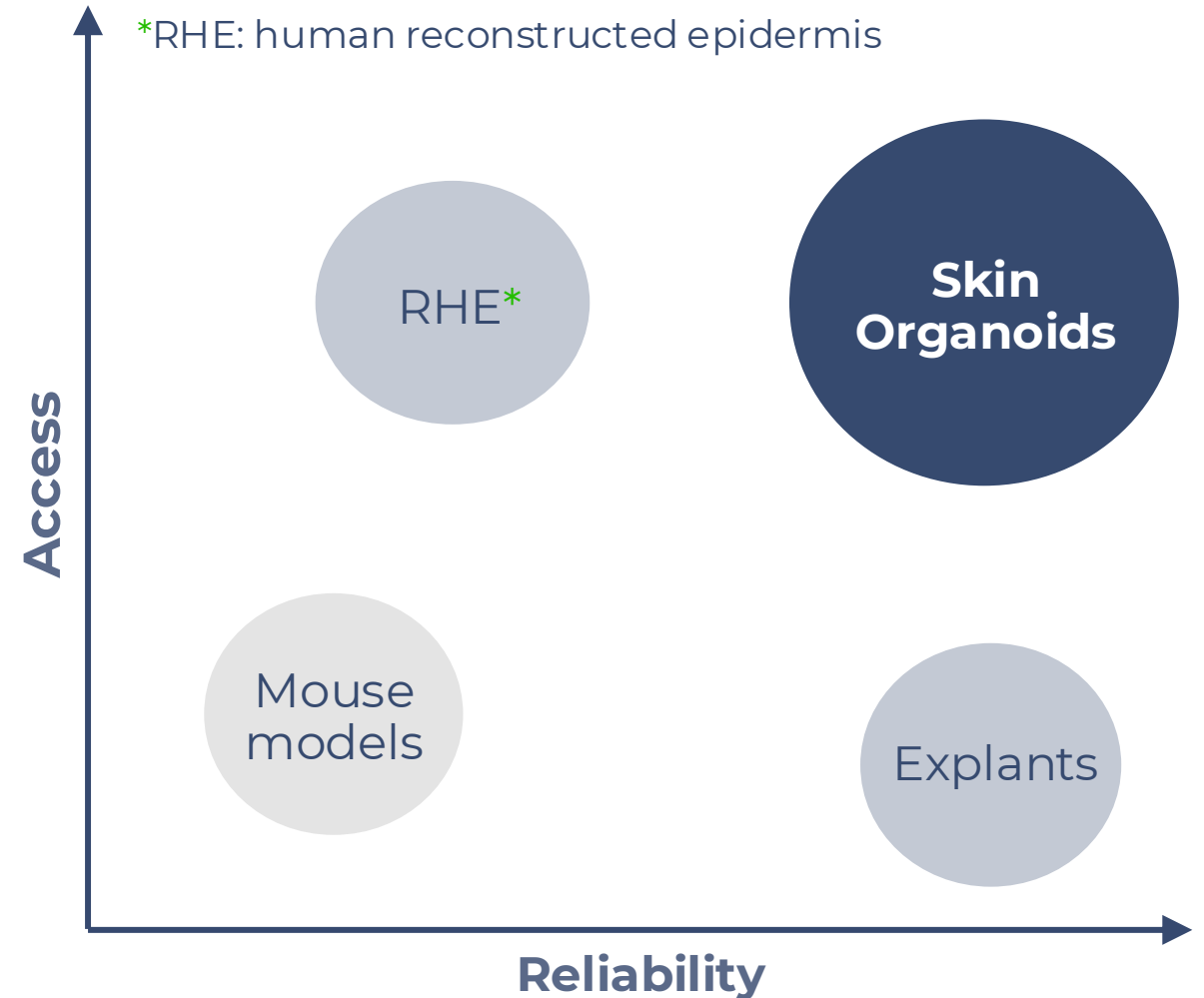
- Physiologically incomplete
- Poor in vivo prediction

## Human biopsies

- High costs. Limited supply.
- Uncontrollable variability.

## Add diversity?

- Ethnicity, pathologies, inflammation
- no current model can cover it all.



# What is a BioHive skin organoid?

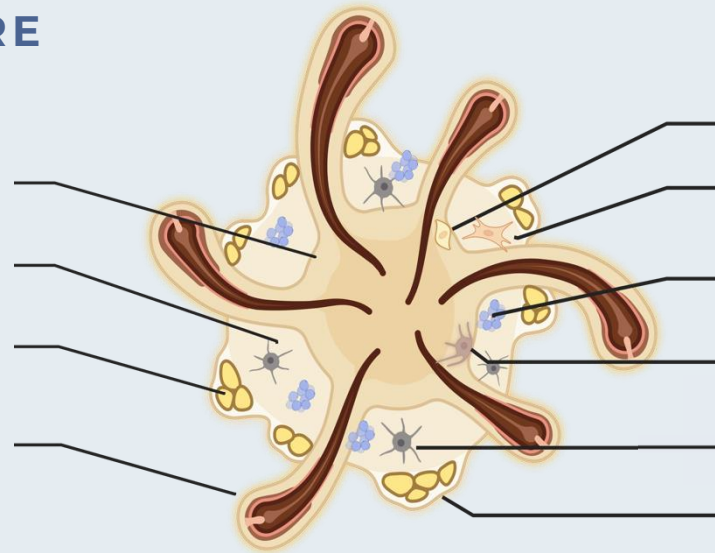
## Skin Organoid:

Lab-engineered cellular model, **derived from stem cells**, that reproduce the structure and function of the skin.

*Organoid size= 0,5cm*

## STRUCTURE

Epidermis  
Dermis  
Hypodermis  
Hair Follicle



## CELL TYPES

Keratinocytes  
Fibroblasts  
Sebocytes  
Melanocytes  
Neurons  
Adipocytes

Physiologically relevant

**10+**  
VALIDATED  
APPLICATIONS

Scalable production

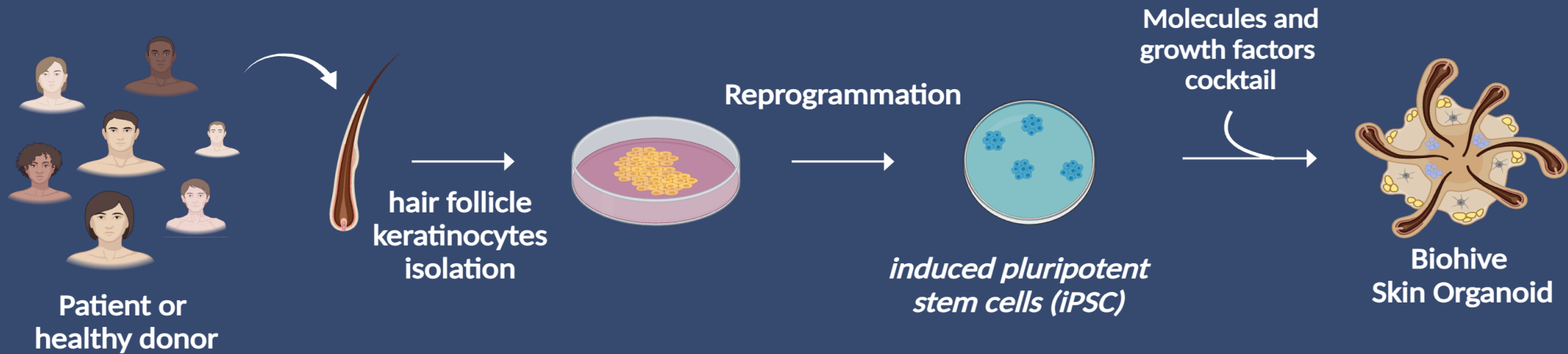
**6,000+** ORGANOIDS  
PRODUCED  
∞ PRODUCTION

Highly reproducible

**>80%**  
REPRODUCIBILITY

# One hair, Any patient, Any skin type.

## WORKFLOW:



## BIOHIVE BIOBANK

### Area of interest :

- Hidradenitis Suppurativa
- Atopic Dermatitis
- Androgenetic Alopecia
- Alopecia (Areata, chemical, etc.)
- Rosacea
- Vitiligo
- Prurigo Nodularis
- Epidermolysis Bullosa
- Pigmentary disorders: XP · NF

**50+** ENROLLED DONORS/PATIENTS

**6+** SKIN TYPES  
(DISEASES & ETHNICITIES)

# Next-gen models & ongoing biobank

## BIOHIVE MODELS:



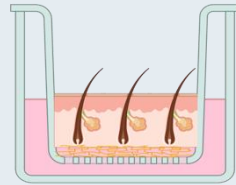
### Round

*Complete skin architecture*

**Epidermis, dermis, hypodermis, hair follicle**

**Available**

### Air-Liquid Interface

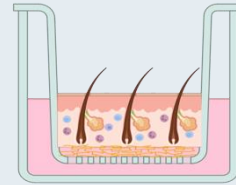


*Barrier function modeling*

**Topical testing, permeability**

**Available**

### Immunocompetent

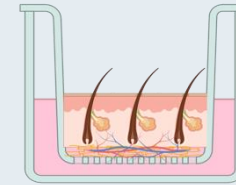


*Macrophages, DC, T-cells*

**Immune-skin crosstalk**

**In Development**

### Vascularized



*Perfusable capillary network*

**Systemic drug delivery & vascular-skin system**

**In Development**

## BIOBANK ENRICHMENT ON-GOING:

Androgenetic Alopecia ; Alopecia Areata ; Prurigo Nodularis; Vitiligo ; Xeroderma Pigmentosum

## CUSTOM MODELS & TESTS ON DEMAND:

Any donor. Any skin type. Any condition.

# BioHive applications:

## Disease modelling & Patient stratification:

### SCIENTIFIC FOUNDATION

#### Hidradenitis Suppurativa

**Academic project:**  
Patient organoid with g-secretase mutation - HS-like morphology & HS-cytokine signature

*Disease modelling & drug testing proof of concept*

### PHARMA VALIDATED

#### Atopic Dermatitis (AD)

**Laureate of the Sanofi iDEA-TECH program:**  
SO-AD - patient derived AD-immunocompetent skin organoids for drug screening

*30 AD patients enrolled  
iPSC-derived macrophages*

### PLATFORM VERSATILITY

#### HESIA — Alopecia

**First standardized, in vitro platform for androgenetic alopecia** - Applications : target identification ; drug screening ; patients responders profiles

*Minoxidil validation ; Follicular structure, growth dynamics*

**From patient samples to validated disease model:  
cohort design, biomarker & target identification**

Patient Stratification & Repositioning

Preclinical Drug Screening & Efficacy

# BioHive applications:

Disease modelling

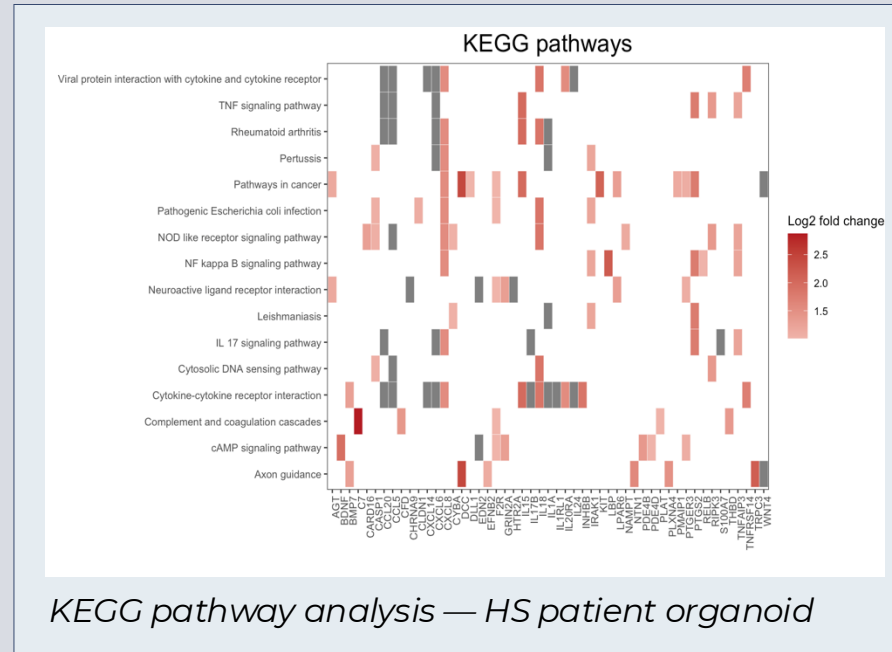
## Preclinical Drug Screening & Efficacy

**Compare candidates head-to-head on matched cohorts for faster decision making:**

- **Ranking molecules for faster decisions**
- **Standardized readouts** : RT-qPCR · RNAseq · IHC · cytokine profiling
- **20+ reference molecules** validated
- Results delivered **in 6–10 weeks**
- **NAM-compatible:** FDA Modernization Act

**From hit validation to candidate selection:  
faster go/no-go decisions on human disease tissue**

*By transcriptomics analysis:*

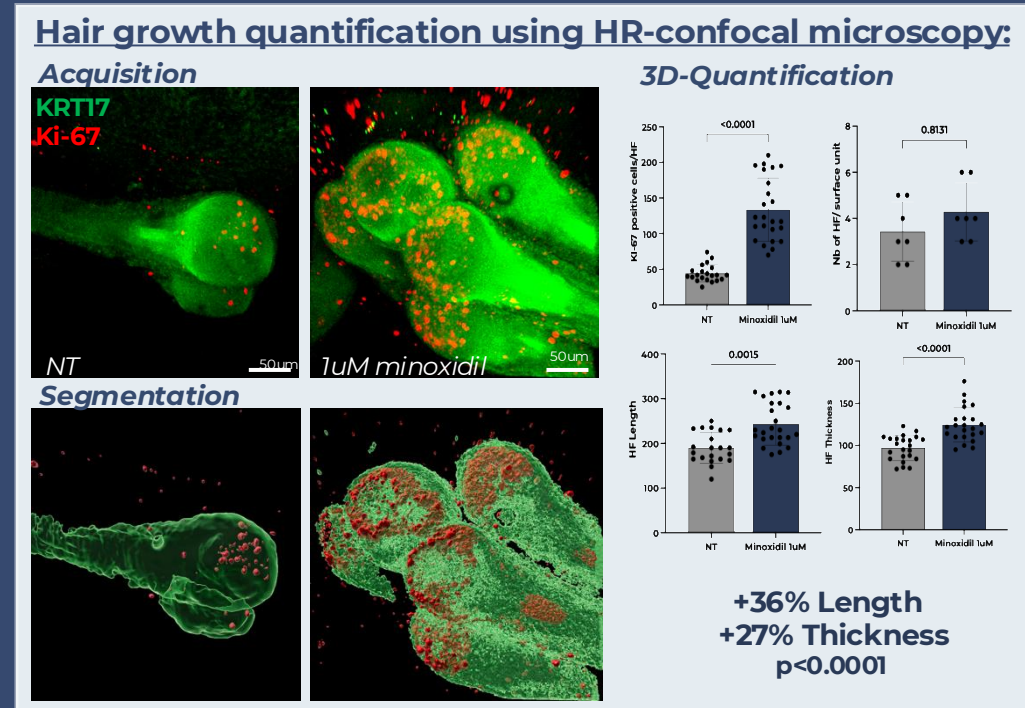


Clinical prediction & Repositioning

# BioHive applications:

## Clinical Prediction & repositioning:

- **Test drug efficacy across stratified patient cohorts**  
*from a single readout to a full responder profile*
- **Unlock therapeutic repositioning opportunities**  
*test existing compounds on new patient profiles and identify responder populations*



**From patient diversity to responder prediction:  
de-risk your clinical program**

# A clear roadmap for working with BioHive:



## 1. Initiation

- Define study scope with your R&D team
- Rapid access to patient samples via hospital partners or biobank
  - Organoid batch production

→ **Fast setup and patient relevance**



## 2. Partnership

- Research collaboration (co-publication, co-funding)
  - Service projects with **defined deliverables**
- Licensing / exclusivity on models

→ **Flexible models tailored to your needs**



## 3. Deliverables

- Patients cohort stratification
  - List of candidates for **therapeutic target**
- Responder/non responder analysis
  - Scientific report + results presentation

→ **Robust, actionable data for your pipeline**

# BIOHIVE

Innovations

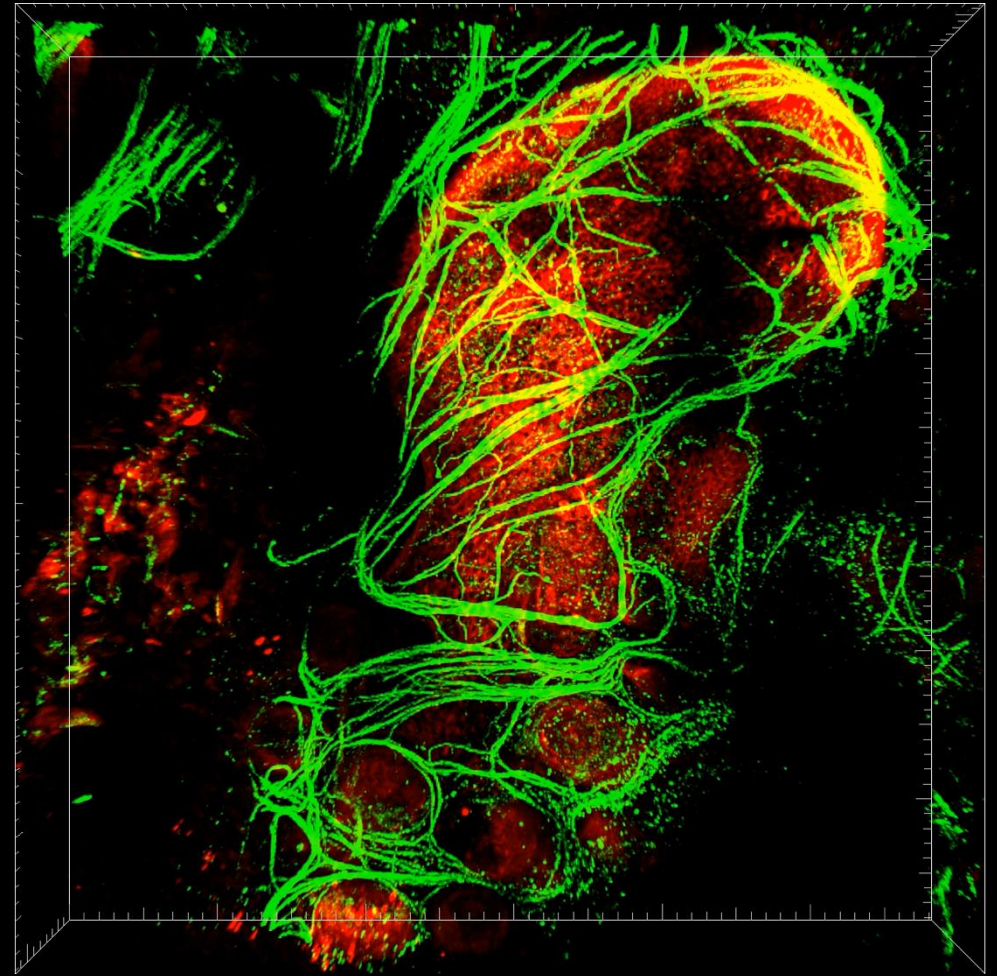
**The future is organoid**

**Meet us at BIO 2026  
French Pavilion – Booth #3325  
Business France**

**BOOK A MEETING**

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www.biohive-innovations.com

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**NEURO-SENSORIAL SYSTEM IN SKIN ORGANOID**  
3D reconstruction (High resolution confocal imaging)  
Neurons – TUJ1  
Epiderm & Hair follicle - ECAD