IN VITRO & EX VIVO **TESTING**

stratiCell
Testing & Beyond

Acne-prone skin

Two *in vitro* models to objectivate anti-acne activity

Acne is a common inflammatory skin condition involving epidermis and pilosebaceous units. Increased sebum production by sebocytes and the consequent *Cutibacterium acnes* dysbiosis are considered as crucial factors in the development of acne. This anaerobic bacterium of the cutaneous flora feeds on excess of sebum that release short-chain fatty acids responsible for the local inflammatory state and acne spots. Local anti-acne treatments targeting the microflora and/or the production of sebum can reduce and prevent acne spots.

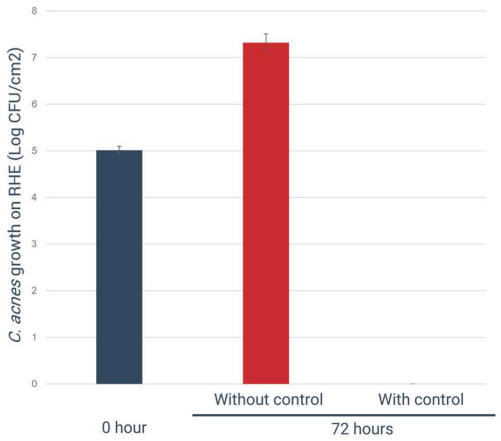
StratiCELL offers two *in vitro* models and associated assays to fully objectivate the efficacy of dermo-cosmetic active ingredients on both aspects: a 3D reconstructed epidermis colonized by a living acneic *C. acnes* strain on one hand and the lipid production by derived human sebocytes on the other hand.

3D model

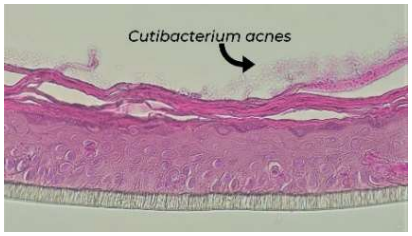
RHE-CA : **R**econstructed **H**uman **E**pidermis topically colonized by an acneic living strain of ***C**utibacterium **a**cnes* (phylotype IA1).

Testing Methods

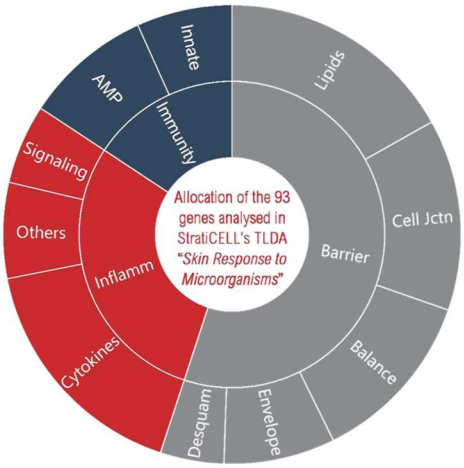
1. *C. acnes* growth on top of RHE by Colony Forming Units counting (CFU).
Positive control : *C. acnes* growth inhibitor.



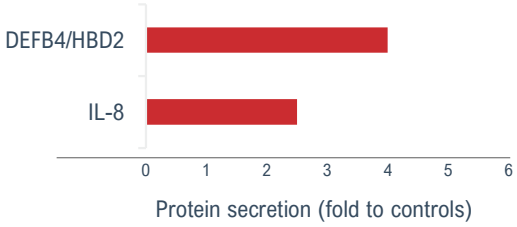
2. Morphological analysis of RHE-CA after Hemalun/Eosin.



3. Skin response to *C. acnes* colonization by **gene expression (RT-qPCR)** : individual TaqMan assays or 93 genes TaqMan Low Density Array (TLDA – "Skin Response to Microorganisms").



4. Skin response to *C. acnes* colonization by **quantification of secreted proteins** (ELISA).



3D model

iPSC-SEB : monolayer **SEB**ocytes cell line derived from human **i**nduced **P**luripotent **S**tem **C**ells, induced by testosterone for lipid production.

Testing Methods

Quantification of lipid production by Nile-Red staining.
Positive control : finasteride.