

HYDRATION & BARRIER FUNCTION

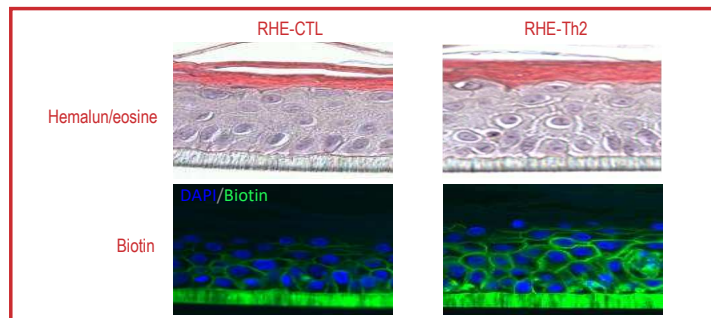


Skin is a chemical, physical and immune shield that protects us against aggressions from our environment (light, pollution, temperature, pathogens, etc.), and prevents loss of body water. The hydric barrier function is mainly ensured by the semi-permeable *stratum corneum* and hydrolipidic film, while intercellular tight junctions seal epidermal cells to form an efficient physical barrier. Water retention is also ensured by the extracellular matrix of the dermis.

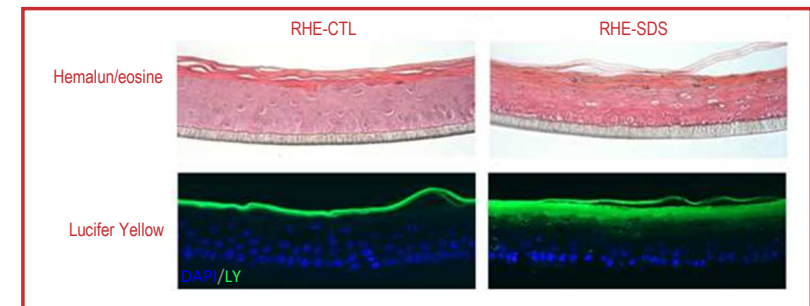
In order to address the efficacy of dermo-cosmetic ingredients to modulate those different barrier aspects, StratiCELL has developed specific and adapted *in vitro* skin models and assays to drive your innovation.

CONTEXTS	MODELS*	CHALLENGES	ENDPOINTS
EPIDERMAL LIPIDS	RHE	No challenge	<ul style="list-style-type: none"> Expression of 93 genes playing key roles in the metabolism, regulation of homeostasis of ceramide, cholesterol, fatty acid and corneocyte-bound lipid envelope (see TLDA referred as “epidermal lipids & corneocyte lipid envelope”)
EPIDERMAL STRUCTURE	NHEK	No challenge	<ul style="list-style-type: none"> Detection and quantification of epidermis structure components by immunostaining : Aquaporin-3, Caspase-14, Claudin-1, Cytokeratins, Desmoglein-1, Involucrin, Tight junction protein-1 Expression of genes playing key roles in the epidermal structure by RT-qPCR
	RHE	SDS	<ul style="list-style-type: none"> Histological analysis by Hemalun/Eosin staining Trans-epidermal out/in Lucifer Yellow diffusion assay
	RHE	Th2-type cytokines	<ul style="list-style-type: none"> Histological analysis by Hemalun/Eosin staining Trans-epidermal in/out Biotin diffusion assay
EXTRACELLULAR MATRIX REMODELLING	NHDF	No challenge	<ul style="list-style-type: none"> Quantification of extracellular-matrix components by ELISA: pro-collagen-1, MMP-1, Hyaluronic Acid Detection and quantification of extracellular-matrix components by immunostainings: collagen-1, collagen-3, elastin Activity of MMP-1 Expression of 93 genes playing key roles in glycosaminoglycans synthesis, metabolism and turn-over (see TLDA referred as “glycosaminoglycans”)

*abbreviations: NHEK : Normal Human Epidermal Keratinocytes - NHDF : Normal Human Dermal Fibroblasts - RHE : Reconstructed Human Epidermis



Disrupted epidermal barrier induced in Reconstructed Human Epidermis (RHE) treated Th2-type cytokines (Th2) or not (CTL).



Disrupted epidermal barrier induced in Reconstructed Human Epidermis (RHE) treated with SDS (SDS) or not (CTL).