

# GENE EXPRESSION by TaqMan Low Density Array technology



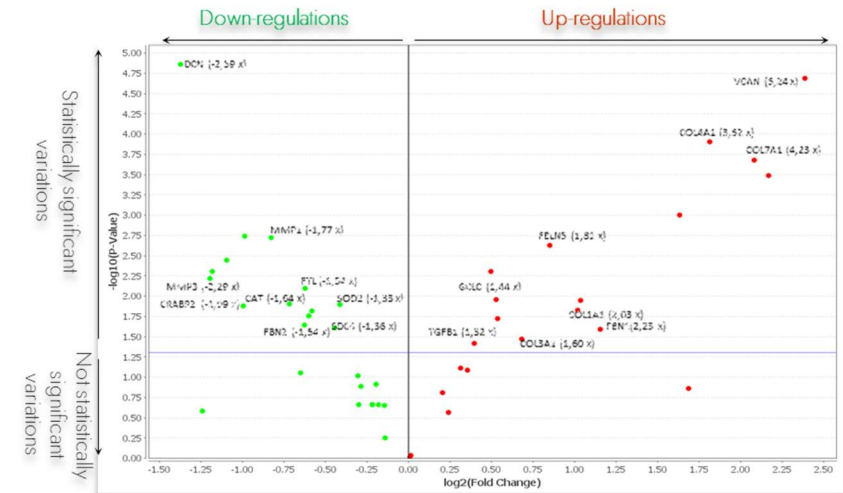
Analysing **gene expression changes** using RT-qPCR *TaqMan Low Density Arrays* (TLDA) offers the advantage of focusing on panels of 45 to 93 targeted genes, carefully selected and identified as key factors in various skin processes. Discover StratiCELL's standardized TLDA arrays to investigate the efficacy of active ingredients on the main dermo-cosmetic research topics.

Resarch Topic	Gene transcripts	Cell model compatibility*	Number of targeted genes
Epidermal barrier & homeostasis	Epidermal biology, cell junctions, barrier, oxidative stress response, antimicrobial response, lipid synthesis and transport, melanogenesis.	NHEK, RHE, RHE-MEL	93
Melanogenesis	Melanin synthesis, melanogenic factors and signal transduction, melanosome biogenesis-maturation-transport, melanosome transfer, apoptosis.	NHEM, RHE-MEL	93
Dermal biology, re-modeling & ageing	Extracellular matrix components and enzymes, cell proliferation, oxidative stress response, proteasome, glycosaminoglycans synthesis and elongation, dermo-epidermal junction.	NHDF	93
Wound healing	Extracellular matrix components and enzymes, cell adhesion, inflammatory cytokines and chemokines, growth factors, TGF signaling.	NHEK, NHDF	84
Inflammation	Chemokines and receptors, inflammatory molecules and receptors, innate immune response, inflammatory response.	NHEK, NHDF, RHE	59
Glycosaminoglycans	Glycosaminoglycans synthesis and elongation, transferases, metabolism and degradation.	NHDF	93
Sensitive skin & barrier resilience	Barrier function, cell junctions, lipid synthesis and transport, pruritus, inflammation, immune response.	NHEK, RHE	93
Pollution & detoxification	DNA damage and repair, drug metabolism, oxidative stress and inflammatroy responses, autophagy, barrier, melanogenesis, unfolded protein response.	NHEK, NHDF, RHE, RHE-MEL	93
Epidermal lipids & corneocyte lipid envelope	Ceramide and long-chain ceramide metabolism, cholesterol and fatty acid metabolism, regulation of lipid homeostasis, corneocyte-bound lipid envelope.	RHE	45
Skin response to micro-organisms	Antimicrobial defenses, inflammation, innate immunity, cell signaling, skin barrier and epidermal biology.	RHE colonized with microbial strains	93
Customized array	<i>Tailored to your needs. Contact our experts for testing design.</i>		

\*NHEK : Normal Human Epidermal Keratinocytes - NHDF : Normal Human Dermal Fibroblasts  
RHE : Reconstructed Human Epidermis  
NHEM : Normal Human Epidermal Melanocytes - RHE-MEL : Reconstructed Human Epidermis including NHEM

## METHODOLOGY and REPORTING:

- Total RNA extraction and quality control by capillary electrophoresis
- cDNA synthesis and quantitative PCR amplification following the TLDA technology procedure
- Statistical analysis : data analysis by the  $\Delta\Delta Ct$  method, by comparison to negative control(s) and normalization using internal housekeeping genes
- Reporting on gene transcripts that are statistically up and down-regulated, compared to negative control(s), and their relevance on the skin biology : list of gene and volcano plot



**Volcano plot** illustration of gene expression modulations: negative logarithm of the p-value on the y-axis, and the logarithm with base 2 of the fold change between the test conditions on the x-axis. Genes with fold increase (red dots) or decrease (green dots) lie on both sides of the vertical threshold line. Gene symbols and fold changes are given for significant results.

Relies on StratiCELL' strong expertise to interpret the outcoming data with regards to dermo-cosmetics benefits !!