

IN VITRO & EX VIVO TESTING



stratiCell
Testing & Beyond

TaqMan Low Density Arrays

Gene expression analysis using TLDA technology

The TaqMan Low Density Array (TLDA) technology is a real-time PCR technology based on microfluidic 384-well cards preloaded with a single TaqMan primer and probe per well. The microfluidic system allows the distribution of reverse-transcribed RNA sample into each individual well, allowing to performed “multiple simplex” analysis from a single sample.

StratiCELL has designed various TLDA arrays focusing on panels of 93 targeted genes, carefully selected and identified as key factors in various skin processes. Discover the standardized TLDA arrays developed by StratiCELL to investigate the efficacy of active ingredients on the main dermo-cosmetic research topics.



Skin research topics	Allocation of the genes targeted in the TLDA	Cell model compatibility*	Number of targeted genes
Screening for Epidermal Benefits	Epidermal biology, cell junctions, barrier, oxidative stress response, antimicrobial response, lipid synthesis and transport, melanogenesis.	NHEK, RHE, RHE-MEL	93
Screening for Dermal Benefits	Extracellular matrix components and enzymes, cell proliferation, oxidative stress response, proteasome, glycosaminoglycans synthesis and elongation, dermo-epidermal junction.	NHDF	93
Sensitive skin & barrier resilience	Barrier function, cell junctions, lipid synthesis and transport, pruritus, inflammation, immune response.	NHEK-Th2, RHE-AD	93
Inflammation	Chemokines and receptors, inflammatory molecules and receptors, innate immune response, inflammatory response.	NHEK, NHDF, RHE	59
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
Glycosaminoglycans	Glycosaminoglycans synthesis and elongation, transferases, metabolism and degradation.	NHDF	93
Melanogenesis	Melanin synthesis, melanogenic factors and signal transduction, melanosome biogenesis-maturation-transport, melanosome transfer, apoptosis.	NHEM, RHE-MEL	93
Wound healing	Extracellular matrix components and enzymes, cell adhesion, inflammatory cytokines and chemokines, growth factors, TGF signaling.	NHEK, NHDF	84
Pollution & detoxification	DNA damage and repair, drug metabolism, oxidative stress and inflammatory responses, autophagy, barrier, melanogenesis, unfolded protein response.	NHEK, NHDF, RHE, RHE-MEL	93
Skin response to micro-organisms	Antimicrobial defences, inflammation, innate immunity, cell signaling, skin barrier and epidermal biology.	RHE colonized by microbial strains	93
Customized array	<i>Tailored to your needs. Contact our experts for testing design.</i>		

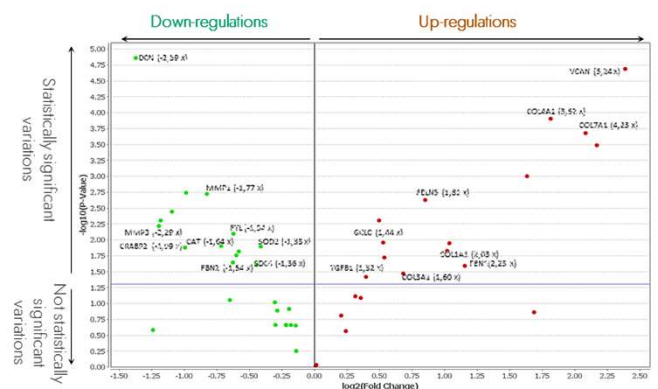
* NHEK : Normal Human Epidermal Keratinocytes - NHDF : Normal Human Dermal Fibroblasts – NHEM : Normal Human Epidermal Melanocytes - RHE : Reconstructed Human Epidermis – RHE-MEL : Melanized RHE – NHEK-Th2 and RHE-AD : Th2-induced NHEK or RHE, respectively.

METHODOLOGY :

- Total RNA extraction and quality control
- cDNA synthesis and quantitative PCR amplification following the TLDA technology procedure
- Comparison to negative controls and normalization to internal housekeeping genes
- Statistical analysis by the $\Delta\Delta Ct$ method

REPORTING :

- Volcano plot representation
- Scientific review of the literature and interpretation of the data on the relevance and role of modulated genes in the skin biology



Volcano plot representation 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.