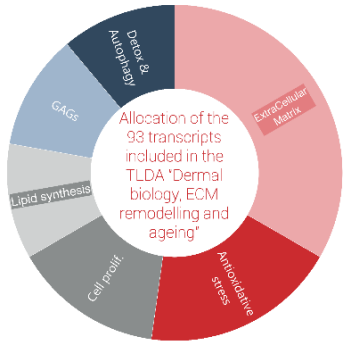
SKIN AGEING

Skin ageing is a complex and multi-factorial process that leads to deep changes in the skin structure and function. Beside the intrinsic and inevitable chronic ageing, the extrinsic ageing of skin is caused by external aggressions such as excess of solar radiation and pollution. Multiple dermo-cosmetic actives have proven their efficacy to prevent or reduce the resulting wrinkles, loss of elasticity inflammatory or oxidative states. Discover the extensive range of assays offered by StratiCELL to explore cosmetic ingredients and formulations with anti-ageing properties, including both functional efficacy tests and gene expression analysis.

CONTEXTS	MODELS*	CHALLENGES	ENDPOINTS
INFLAMMATORY RESPONSE	NHEK	Phorbol diester	• Quantification of cytokines release : IL-1-alpha, IL-6, IL-8, TNF-alpha
	NHEK	TNF-alpha	• Quantification of cytokines release : CXCL5, MCP1
	NHEK	UV-AB	• Quantification of cytokines release : IL-6, IL-8, TNF-alpha • Activation of the NFkB transcription factor
	NHDF	UV-AB	• Quantification of cytokines release : PGE-2
	RHE	Urban Dust	• Quantification of cytokines release : IL-1-alpha, IL-8
OXYDATIVE STRESS (UV stress)	NHEK or RHE NHDF NHDF NHEK, NHDF or RHE	UV-A +/- Urban Dust None UV-A	• Quantification of Reactive Oxygen Species (ROS) production • Heme Oxygenase 1 : gene expression and protein quantification • Intracellular ATP content by bioluminescent luciferase-based assay • Expression of genes playing key role in anti-oxidative stress
OXIDATIVE STRESS (InfraRed stress)	NHDF	InfraRed	• Quantification of Reactive Oxygen Species (ROS) production
EXTRACELLUAR MATRIX REMODELLING	NHDF	None	• Detection and quantification of extra-cellular matrix components (collagen's, hyaluronic acid, MMP's and Elastin) by immunostaining and/or ELISA • Quantification of MMP-1 activity
AGE SPOTS	RHE-SL(-SPOTS)	Melanogenic factors	• Quantification of total melanin content after total melanin extraction, or based on Fontana/Masson histological images • High resolution images and pigmentation parameters (ITA and PI) by *in vitro* adapted-dermoscopy
AUTOPHAGIC FLUX	NHEK or NHDF	None	• Quantification of LC3B turnover (presence/absence of lysosomal inhibitor) by immunostaining or western blotting
GLYCATION	NHDF	Glyoxal	• Quantification of Advanced Glycated End products (AGEs) by ELISA • Detection and quantification of Carboxy-Methyl-Lysine (CMLs) or Receptors of AGEs (RAGE) by immunostaining
CELL PROLIFERATION	NHEK or NHDF	None	• Cell proliferation by BrdU incorporation • Cell proliferation and/or migration by scratch test
SENESCENCE	NHDF	H2O2	• Senescence-Associated-beta-galactosidase activity

***abbreviations:** **NHEK :** **N**ormal **H**uman **E**pidermal **K**eratinocytes - **NHDF :** **N**ormal **H**uman **D**ermal **F**ibroblasts – **NHEM :** **N**ormal **H**uman **E**pidermal **M**elanocytes - **RHE :** **R**econstructed **H**uman **E**pidermis – **RHE-SL-SPOTS :** Melanized **RHE** **S**olar **L**entigo with isolated pigmentated **spots**

In support to those functional studies or as a screening tool, StratiCELL has also designed a **TaqMan Low Density RT-qPCR 93 genes Array** to study the expression of key genes involved in the dermal biology, ECM remodelling and ageing process.



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