

IN VITRO & EX VIVO TESTING



stratiCell
Testing & Beyond

Skin Ageing

Combined *in vitro* testing for full objectivation

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 ingredients have proven their efficacy to prevent or reduce the resulting wrinkles, loss of elasticity, inflammatory or oxidative states.

StratiCELL offers an extensive range of *in vitro* assays to explore the anti-ageing properties of dermo-cosmetic active ingredients and skin care products. Both functional efficacy testing and gene expression analysis are available to offer full objectivation.



Testing Methods

CELL SYSTEMS*	CHALLENGES	TESTING METHODS
OXYDATIVE STRESS		
NHEK, NHDF, RHE NHDF	UV-A +/- Urban Dust None	<ul style="list-style-type: none"> Quantification of Reactive Oxygen Species (ROS) production Heme Oxygenase 1 : gene expression and protein quantification
EXTRACELLULAR MATRIX REMODELING		
NHDF	None	<ul style="list-style-type: none"> Detection and quantification of extracellular matrix components by immunostaining and/or ELISA : Collagen, Hyaluronic Acid, MMP, Fibronectin and Elastin. <i>On-demand detection of new biomarkers.</i> Quantification of the enzymatic activity of MMP-1 by ELISA
NHDF	UV-A	<ul style="list-style-type: none"> Quantification of extracellular matrix components by ELISA : pro-MMP-1 and pro-Collagen-I
ex vivo explants	None	<ul style="list-style-type: none"> Detection and quantification of ECM components by immunostaining: Collagen, Elastin. <i>On-demand detection of new biomarkers.</i>
HYPERPIGMENTED AGE SPOTS		
RHE-SL(-SPOTS)		<ul style="list-style-type: none"> Quantification of total melanin content after total melanin extraction, or based on <i>Fontana-Masson</i> histological images High resolution dermoscopy images and pigmentation parameters (L*a*b coordinates)
AUTOPHAGIC FLUX		
NHEK, NHDF	None	<ul style="list-style-type: none"> Quantification of LC3B turnover (in the presence/absence of a lysosomal inhibitor) by immunostaining
GLYCATION		
NHDF	Glyoxal	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Bromo-deoxy-Uridine incorporation assay
INFLAMMATORY RESPONSE		
Please refer to StratiCELL Technical Sheet Acute Inflammation.pdf for full list of challenges and testing methods.		



Gene expression analysis

CELL SYSTEMS*	CHALLENGES	TESTING METHODS
NHDF	None	<ul style="list-style-type: none"> RT-qPCR : TaqMan Low Density Array (TLDA) to study the expression of 93 genes involved in the dermal biology, ECM remodeling and ageing process (see TLDA referred as “dermal benefits”)

* NHEK : Normal Human Epidermal Keratinocytes - NHDF : Normal Human Dermal Fibroblasts – RHE : Reconstructed Human Epidermis
RHE-SL-SPOTS : Melanized RHE Solar Lentigo with isolated pigmented spots