

IN VITRO & EX VIVO TESTING



stratiCell
Testing & Beyond

Wound Healing

Combined *in vitro* testing for full objectivation

Wound healing is a complex physiological process requiring a sequence of molecular and cellular events, categorized into the following phases: exudative (inflammatory), proliferative, and maturation with extracellular matrix remodelling.

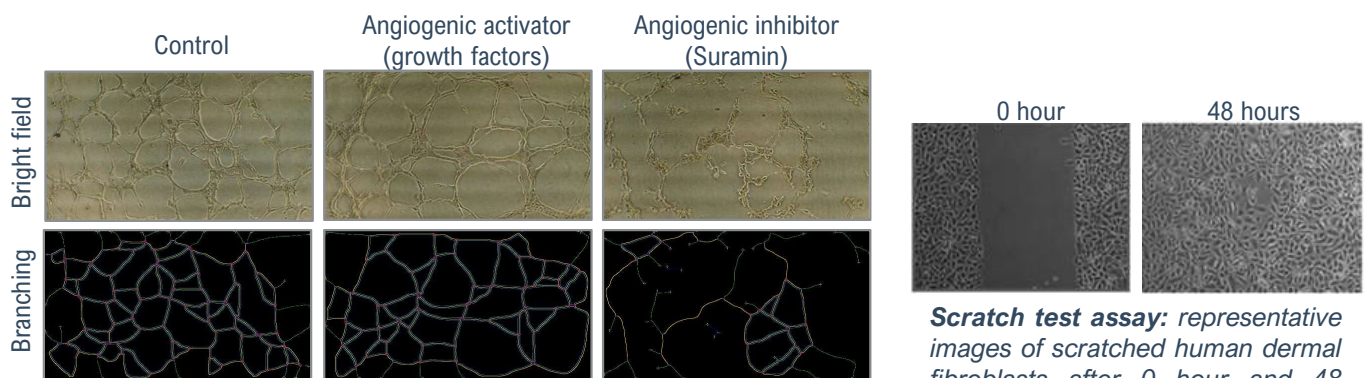
StratiCELL evaluates *in vitro* the wound healing properties of dermo-cosmetic active ingredients and skin care products, by both functional assays and gene expression analysis.



Testing Methods

CELL SYSTEMS*	TESTING METHODS
CELL PROLIFERATION & MIGRATION	
NHEK or NHDF	• Determination of cell proliferation and/or migration by scratch test assay: images and quantification
NHEK or NHDF	• Determination of cell proliferation by Bromo-deoxy-Uridine incorporation assay
ANGIOGENESIS	
HUVEC	• Determination of HUVEC proliferation by Bromo-deoxy-Uridine incorporation assay
	• Endothelial Cells Tube Formation Assay (ETFA)
EXTRACELLULAR MATRIX REMODELLING	
NHDF	• Detection and quantification of extracellular matrix components by immunostaining and/or ELISA: Collagens, Hyaluronic Acid, MMP-1, Elastin
	• Quantification of the enzymatic activity of MMP-1 by ELISA

* HUVEC : Human Umbilical Vein Endothelial Cells - NHDF : Normal Human Dermal Fibroblasts - NHEK : Normal Human Epidermal Keratinocytes



Scratch test assay: representative images of scratched human dermal fibroblasts after 0 hour and 48 hours of re-colonization.

ETFA: representative bright field and branching images of tube-like structures formed by HUVEC seeded on a reconstituted basement membrane, and treated with angiogenic activator (growth factors) or inhibitor (Suramin), compared to non-treated HUVEC (Control). Branching images are used for mesh areas and tube length measurements.



Gene expression analysis

CELL SYSTEMS*	TESTING METHODS
NHDF or NHEK	• RT-qPCR : TaqMan Low Density Array (TLDA) to study the expression of 84 genes involved in the cellular healing processes (healing regulation, ECM remodelling, inflammation, growth factors and cell signaling)

* NHEK : Normal Human Epidermal Keratinocytes - NHDF : Normal Human Dermal Fibroblasts