

The logo for Gaiker, featuring the word "Gaiker" in a large, white, sans-serif font.

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MEMBER OF
BASQUE RESEARCH
& TECHNOLOGY ALLIANCE

A background network diagram consisting of white nodes connected by thin white lines, set against a dark blue gradient background. The nodes are arranged in a complex, interconnected pattern, resembling a molecular structure or a data network.

In vitro studies Dermocosmetics

GAIKER Technology Centre has **30 years of experience** working with *in vitro* models to support **R&D and marketing claims**.

Our know-how and **high quality standards** (we can work under GLP requirements) allow us to offer companies a wide range of **tailor-made** dermocosmetic studies. We work with ***in tubo* assays, cell cultures** (keratinocytes, dermal fibroblasts, immune system cells), **3D models**, and ***ex vivo* human skin explants**.

We have **very well equipped labs** (cell cultures, molecular biology, proteomics, genomics, and microbiology) with **cutting-edge equipment** such as: Scanning Electron Microscope (SEM), Confocal Microscope, Cell Bank, Biofilm Reactor, Flow Cytometer, Franz Cells, UPLC...



ABOUT US

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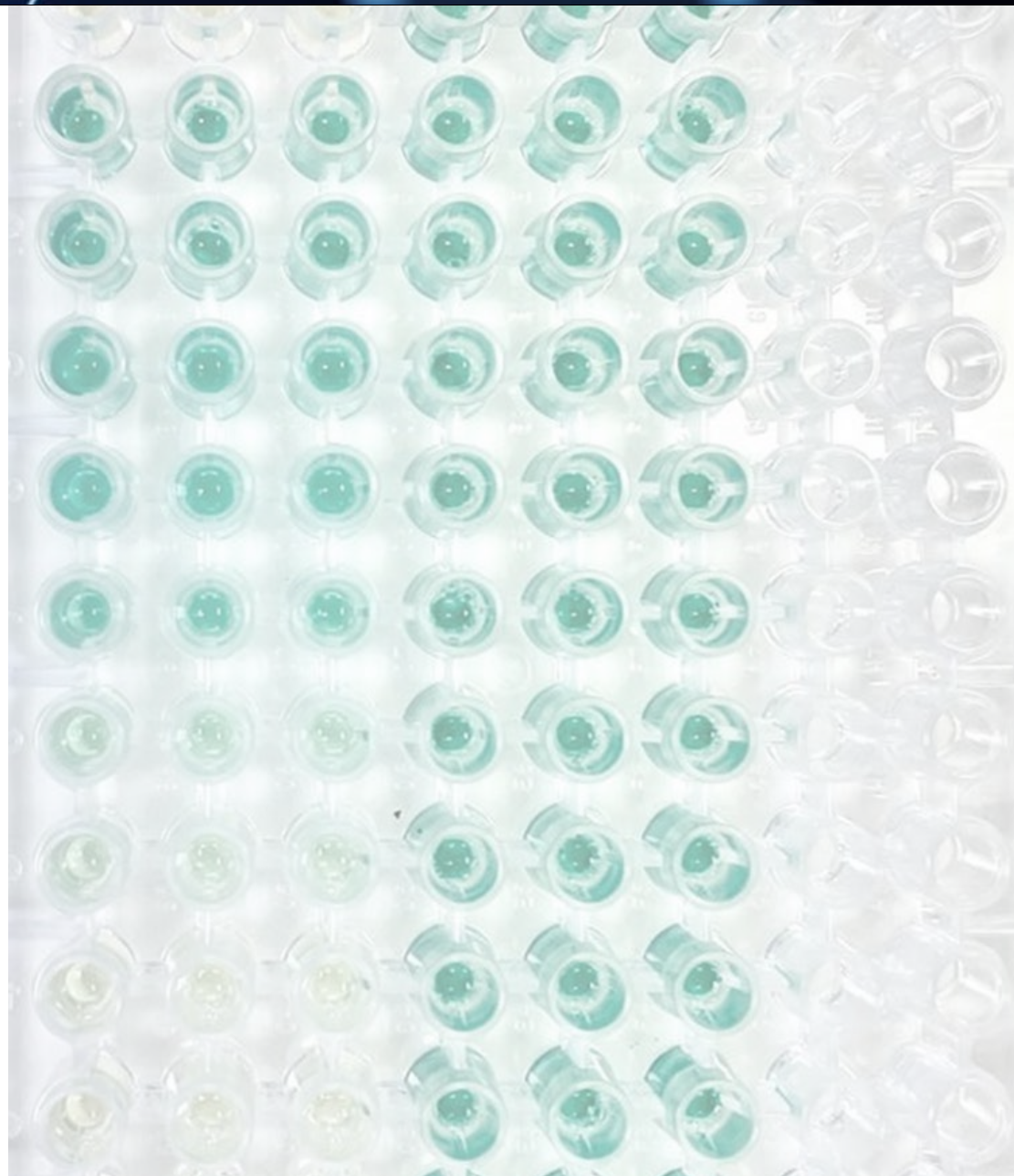
- **SAFETY TESTS**
- **EFFICACY TESTS**
 - Microbiome (16S Metagenomics) & Acne
 - Antioxidant & Protection Against Urban Dust
 - Inflammation, Atopy
 - Skin Ageing
 - Pigmentation & Skin Photoprotection
 - Wound Healing & Regeneration
 - Active Penetration

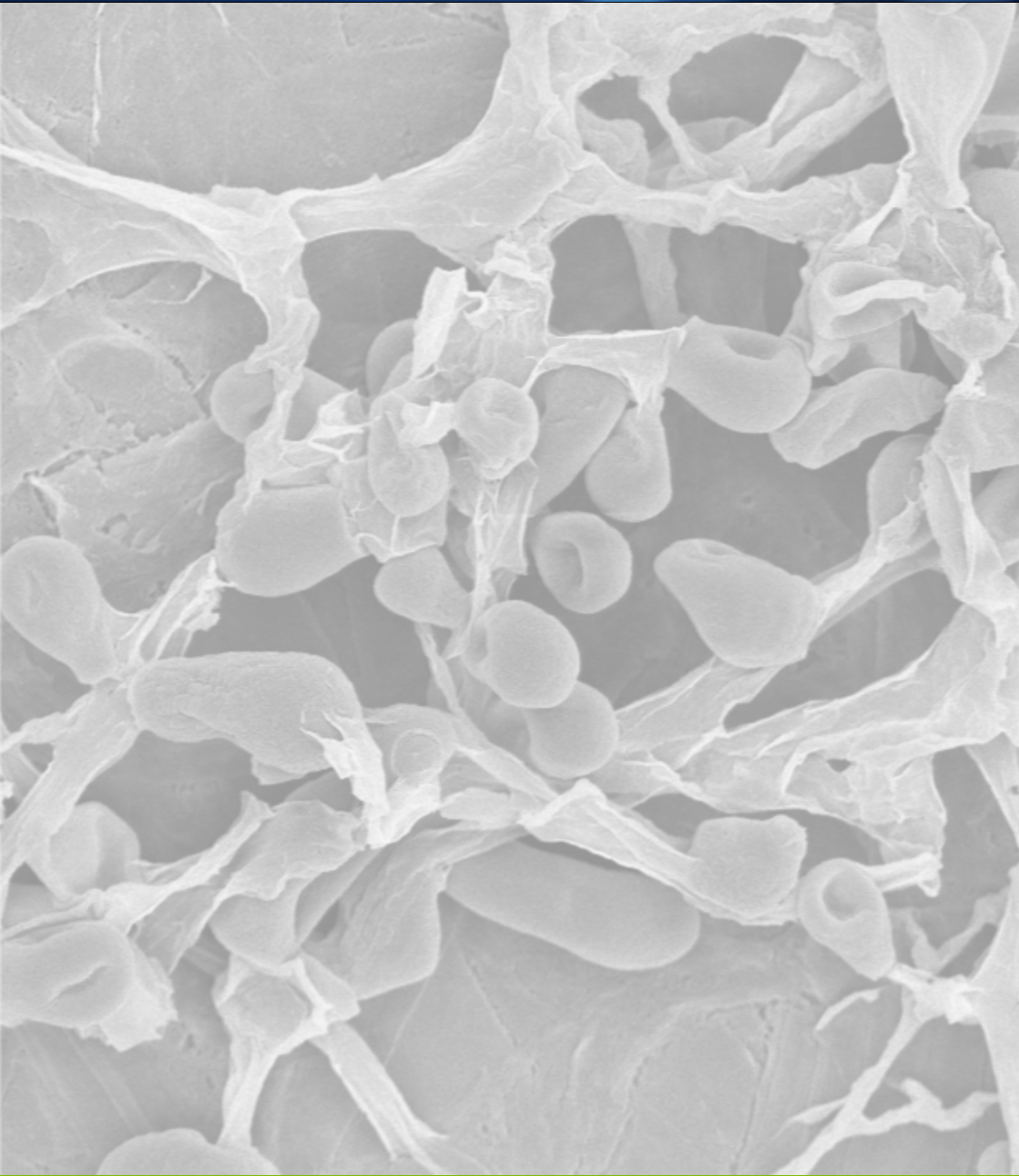
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OUR SERVICES

- **CYTOTOXICITY**
- **PHOTOTOXICITY (OECD 432)**
- **IRRITATION AND CORROSION**
 - Skin irritation (OECD439)
 - Eye irritation
 - Vaginal irritation
 - Oral irritation
- **SENSITIZATION (OECD 442C, 442D, 442E)**
- **SKIN CORROSION (OECD 431, OECD 435)**
- **DERMAL ABSORPTION (OECD 428)**
- **MUTAGENICITY & GENOTOXICITY**
- **ENDOCRINE DISRUPTION**
- **ECOTOXICITY**





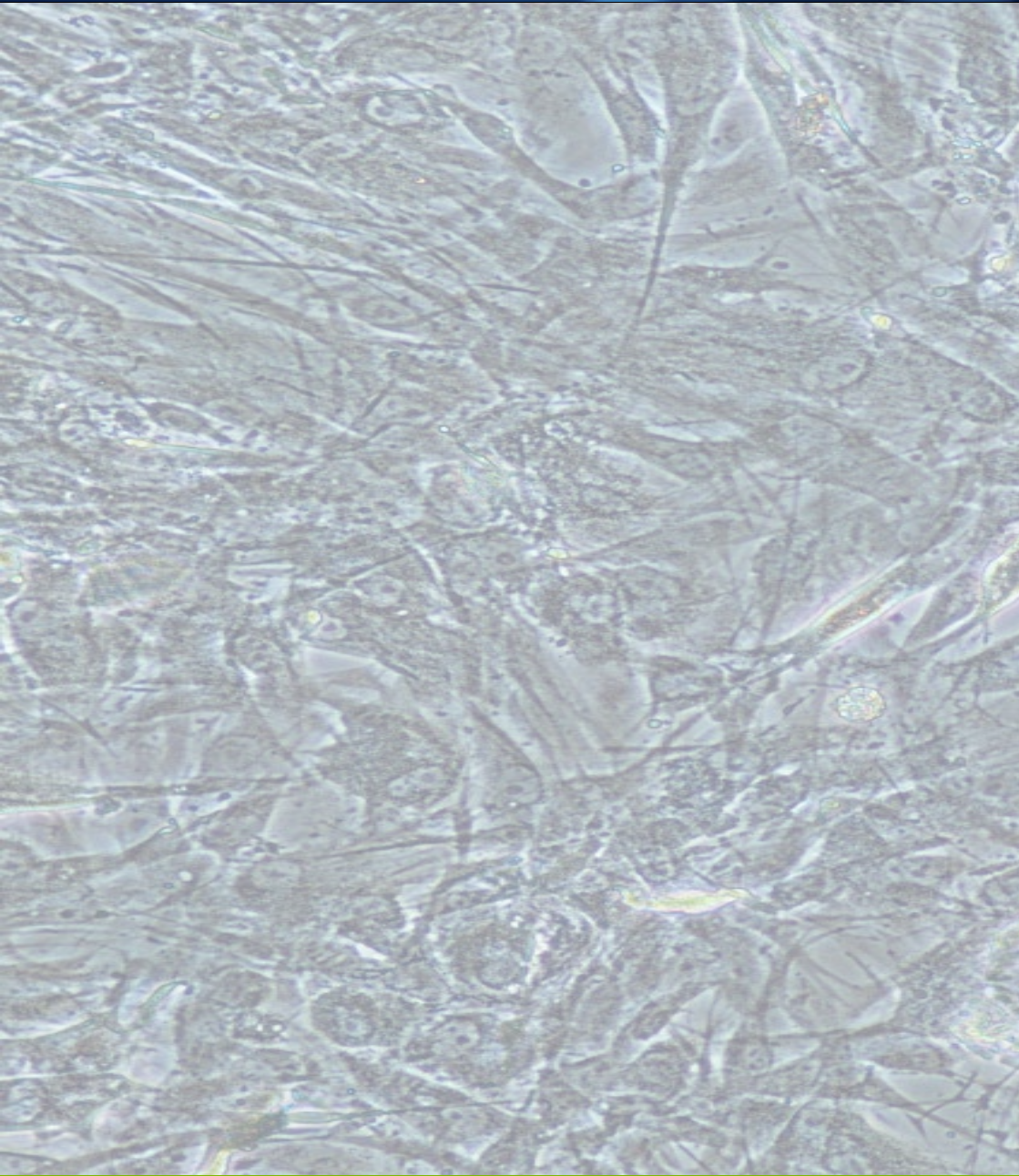
MICROBIOME (16S Metagenomics) & ACNE

- Determination of **antimicrobial activity** against species of dermatological interest: *C.acnes*, *S.epidermidis*, *P.aureuginosa*, *S.aureus*....
- *Ex vivo* studies in skin explants with microorganisms
- Bacterial studies with **visualization** using electron microscopy (SEM)
- Development of **biofilms** in reconstituted epidermis or human skin. Visualization by confocal microscopy
- Microbiome analysis (Sequencing of 16S rDNA)

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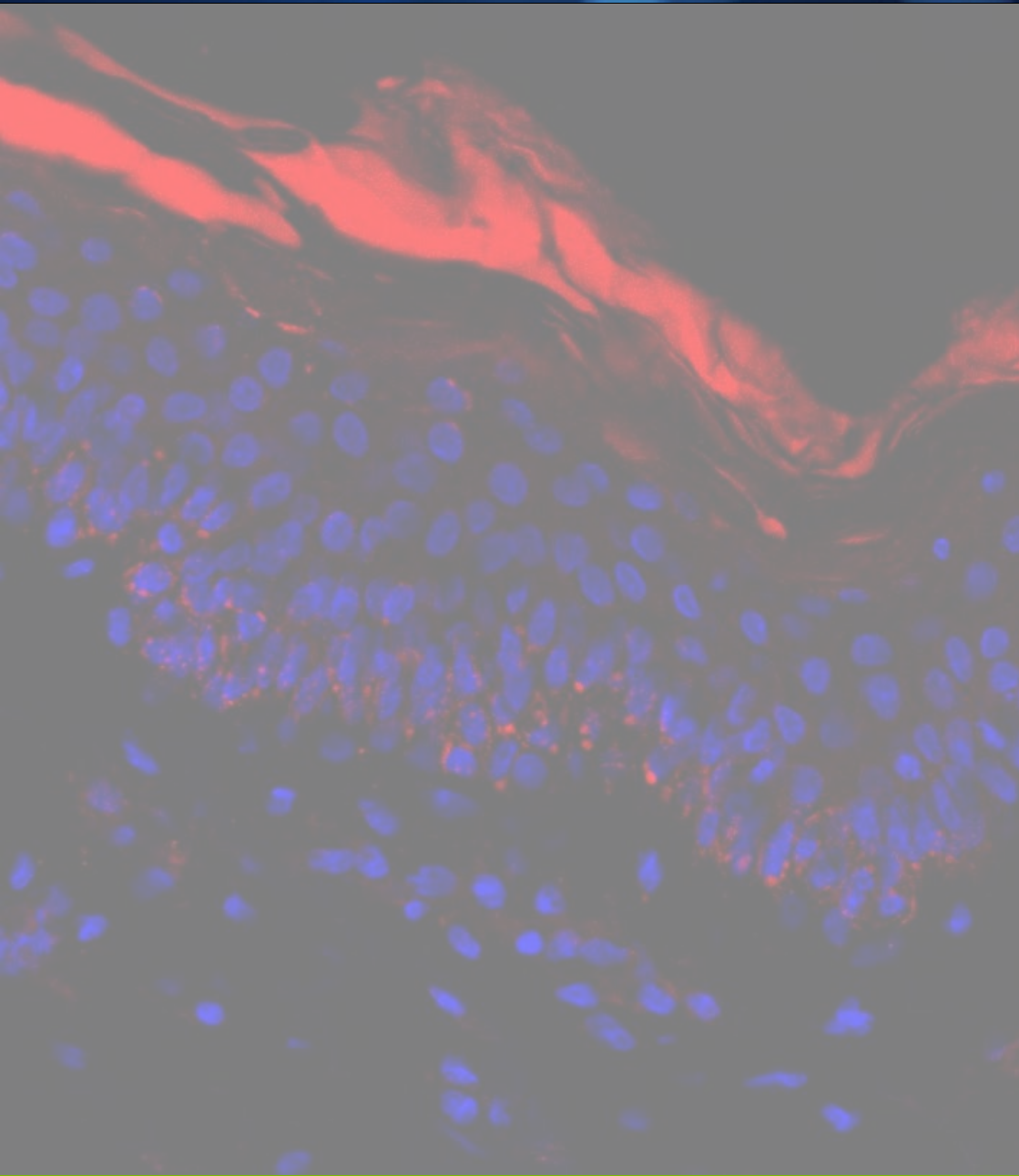
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EFFICACY TESTS



ANTIOXIDANT & PROTECTION AGAINST URBAN DUST

- *In tubo* efficacy: DPPH Assay, FRAP, TRAP, etc.
- Glutathione: Determination of GSH (reduced) and GSSG (oxidized) levels via ELISA
- Gen expression of genes involved in the cellular mechanisms against oxidative stress (SOD1, SOD2, CAT...) via rtPCR
- Oxidative stress: ROS determination
- Protection against urban contamination: Cytoprotection, oxidative stress, inflammation, apoptosis or gen expression after URBAN DUST exposure



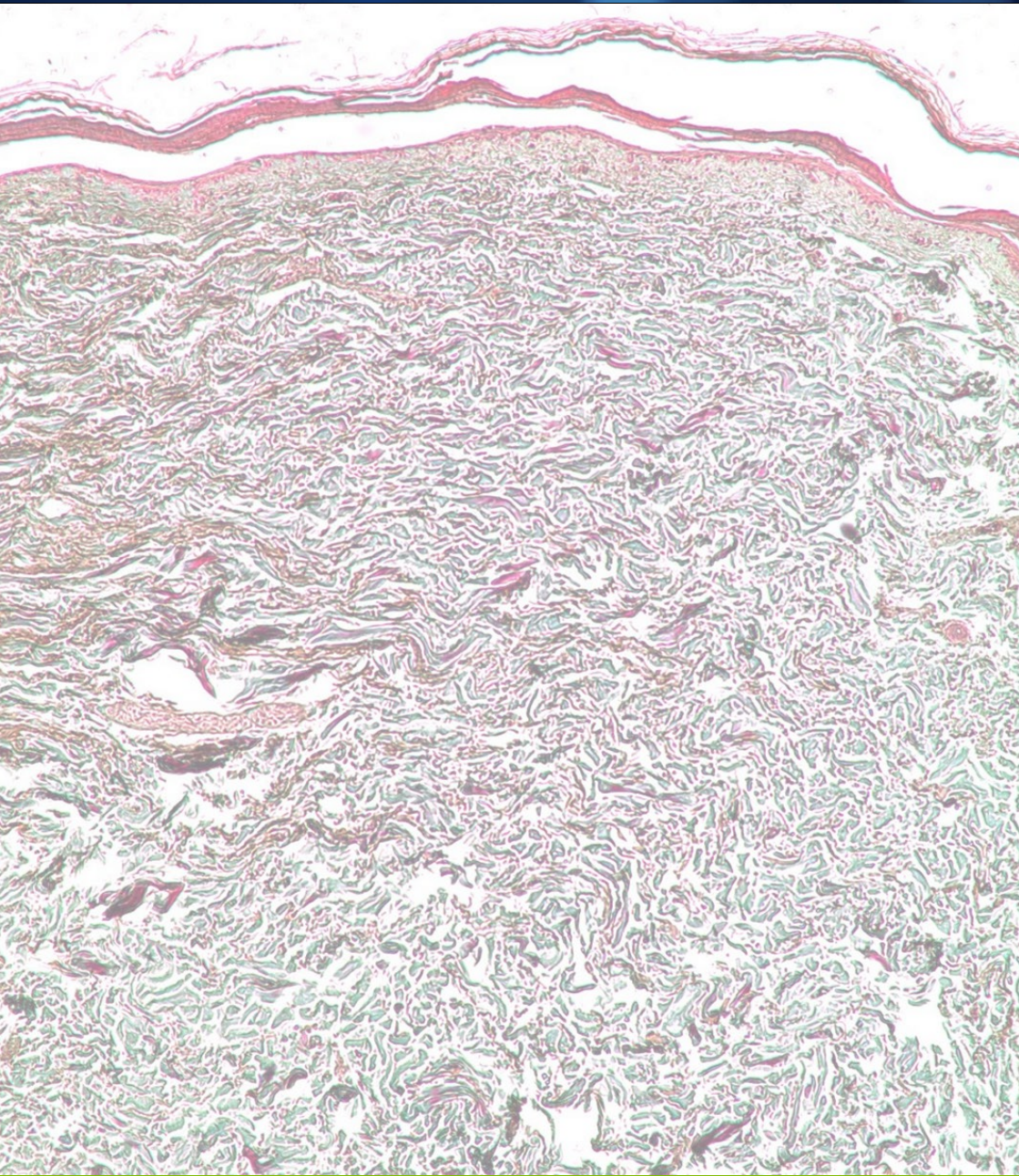
INFLAMMATION, ATOPY

- *In tubo* determination of Kalikrein inhibition
- Determination of inflammatory, proinflammatory and antiinflammatory cytokines
- *Ex vivo* studies on **inflamed** human skin (sensitive skin)
- *Ex vivo* studies on human skin with **dermatitis**
- *Ex vivo* studies on **irritated** human skin

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EFFICACY TESTS



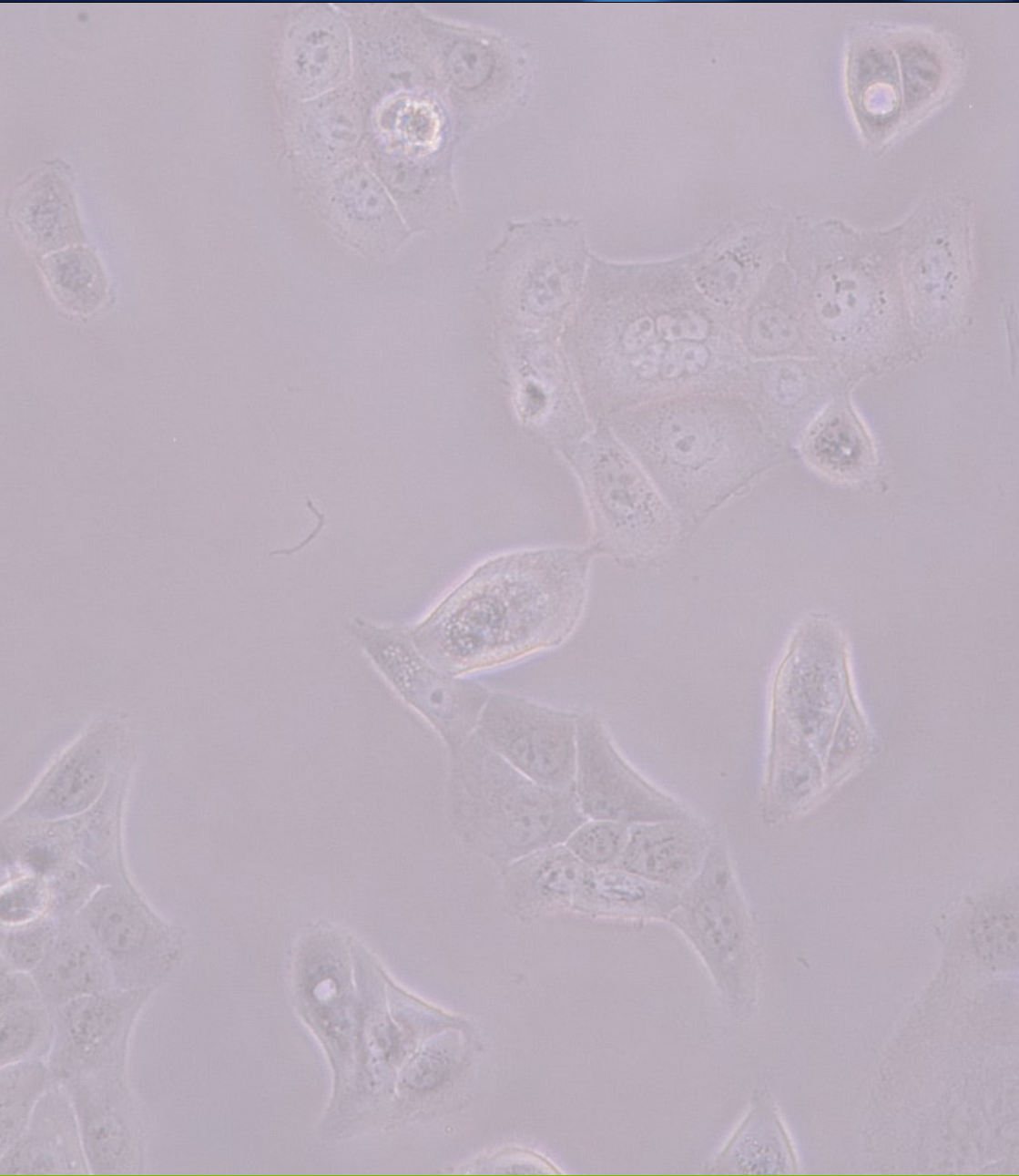
SKIN AGEING

- *In tubo* assays:
 - Antiglication activity, Lipooxygenation
 - Hyaluronidase/Collagenase/Elastase inhibition
- Collagen, elastin and hyaluronic acid synthesis
- Skin hydration: Biomolecule level determination
- Cellular senescence: Shortening of telomeres by qPCR
- Cell proliferation
- ATP synthesis
- *Ex vivo* studies on aged or photo-aged human skin
- Histological studies of the skin condition
- Gene expression

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EFFICACY TESTS



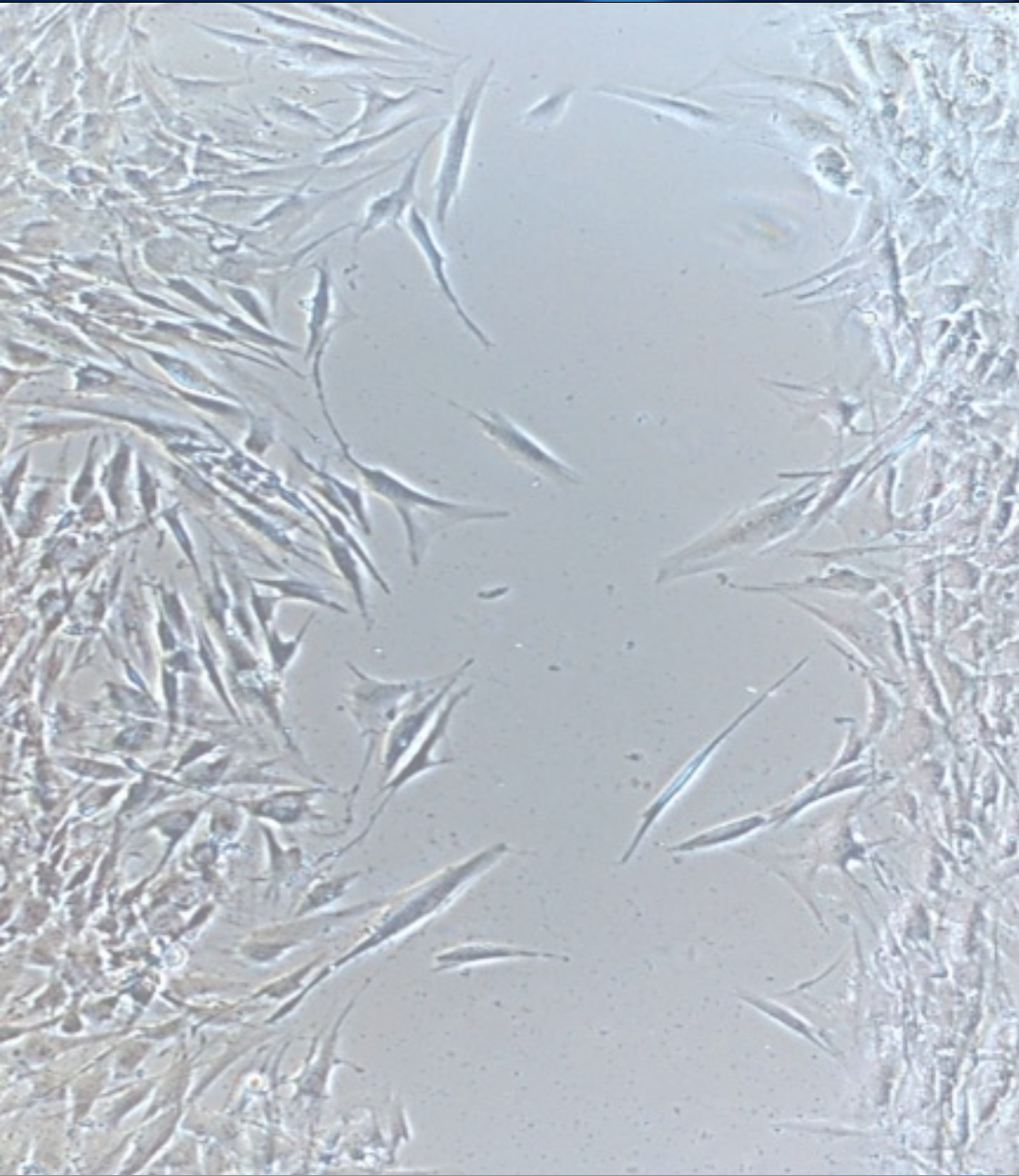
PIGMENTATION & SKIN PHOTOPROTECTION

- *In tubo* determination of tyrosinase inhibition
- Melanin quantification
- Tyrosinase activity in melanocytes
- Advanced Glycation End products (AGEs) determination via ELISA
- Gene expression: melanogenesis (TYR, NQO1, TYRP-1...)
- DNA damage: thymine dimer determination, γ H2AX phosphorylation
- DNA protection/repair
- Ex vivo studies on sunburned human skin

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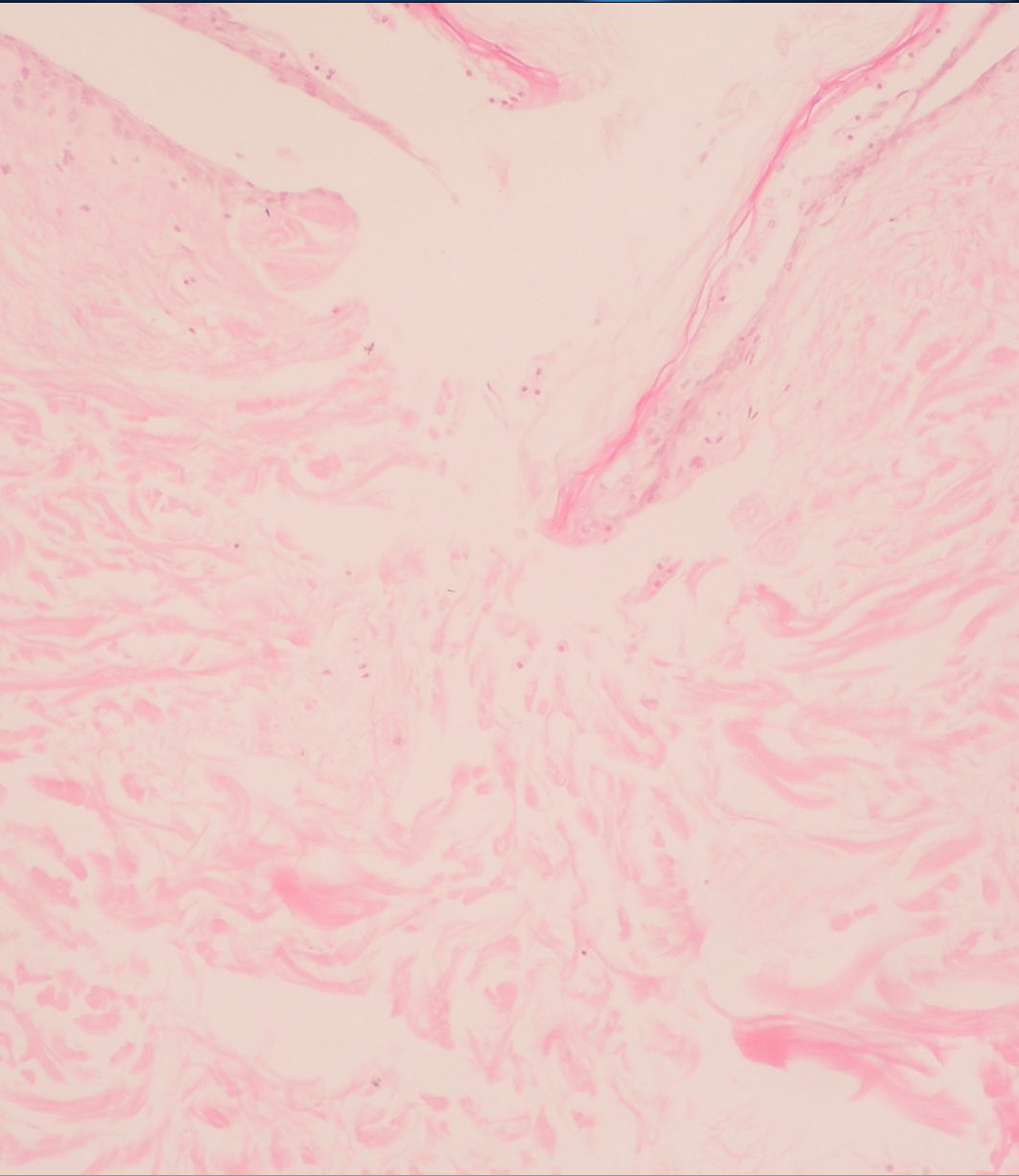
WOUND-HEALING & REGENERATION

- Cell proliferation (MTT, BrdU)
- Scratch assay (Wound healing assay)
- Cell activation: ATP synthesis, mitochondrial membrane potential and cell cycle
- **Anti stress:** Determination of stress mediators
- *Ex vivo* studies on human skin with **ulcerations, chemical burns, open wounds**

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ACTIVE PENETRATION

- Skin absorption studies in **human skin explants** coupled with different active quantification methods like liquid chromatography, or UV-Vis absorption spectroscopy
- **Histological studies** of fluorescently labelled molecular penetration in skin. Immunostaining.
- Delivery system **comparative studies** in skin

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