



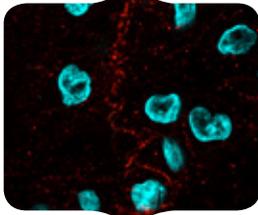
"La Maddalena di Monreale" C. Civalli - 1470

PASSION
FOR SKIN
HEALTH
AND BEAUTY

VitroScreen

excellence in *in vitro* science

IN VITRO EXCELLENCE AND NOT A SINGLE *IN VITRO* TEST



VitroScreen does not simply deliver a test, but a completely new and different approach to safety and efficacy testing, leading to a strong weight of evidences. Being a flexible, reactive and pro-active partner open to innovation challenges, VitroScreen supports the Customer's management teams in formulation, Research & Development, marketing and communication, offering a unique expertise in the use of 3D Human skin models.

VitroScreen strongly believes that cosmetic claims can be substantiated, better understood and presented, by using **alternatives to conventional cell cultures and to Humans**

3D Human skin models represent the new millenium reference in life sciences and their wide use will change the way to model, refine and support **cosmetic product efficacy** by:

- 1 being complementary to clinical evaluation;
- 2 adding value to direct and indirect consumer communication with deeper, stronger and more robust evidences of product efficacy, corroborated by morphological data;
- 3 providing the mechanism of action and strong scientific evidences that cannot be obtained with clinical approaches, either for practical or ethical reasons;
- 4 performing screening and comparing products with reproducible results during the development;
- 5 applying Quality Assurance principles throughout each study and research project, guaranteeing secured information management and providing the Customer with robust reporting documents.

COSMETICS CLAIM SUBSTANTIATION

VitroScreen has performed a selection of efficacy models based on 16 years' expertise on 3D skin models and scaffold-free micro tissues, to better meet Customers' requirements, allowing to implement *in vitro* science at all steps of product development.

SCREENING

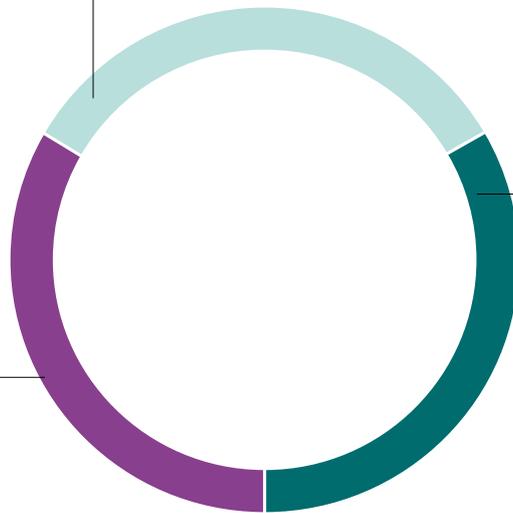
- Screening for actives and formulations on 3D tissues and μ -tissues.
- Proof of concept for basic skin properties.
- Expedite the R&D with medium throughput screening.

PARTNERSHIP IN RESEARCH

- To develop new concepts and new biological models with passion, expertise and commitment to support Customers' innovative challenges.

MECHANISM

- To define products' mechanism of action.
- To support specific claim in homeostasis and stress models.
- Robust weight of evidences for technical scientific files.
- Complementary information to clinical findings.



SCREENING

AGING AND PHOTOAGING

- ANTI SUN BURN
- DNA DAMAGE / REPAIR
- ANTI-OXIDATIVE STRESS
- TANNING ACTIVATOR
- ANTI DARK SPOT-DEPIGMENTANT

SKIN BARRIER

- ANTI REDNESS, SOOTHING
- MOISTURIZING BY WATER FLUX RESTORING, COUNTERACTING EPIDERMAL DRYNESS
- FILM FORMING, SURFACE EMOLLIENT,
- RE-EPITHELIZING, TIGHT JUNCTIONS STRUCTURING
- ANTI-SCARE, BARRIER RESTORING

MICROBIOTA

- ANTI-BACTERIAL
- MICROBIOMA MODIFICATION
- POSITIVE EFFECT ON INNATE RESPONSE
- BIOMARKERS VALIDATION (FOR ALL CLAIMS)

MECHANISMS

ENVIRONMENTAL STRESS AND UV

- ANTIPOLLUTION
- COUNTERACTING HYPOXIC STRESS
- INFLAMMAGING
- UVA & UVB DAMAGES
- IMMUNO-SUPPRESSION
- PHOTO-ALLERGY
- ANTI-OXIDATIVE STRESS: multiple options
- COUNTERACTING PHOTO-AGING
- DNA METHYLATION

MOISTURIZATION

- EXTREME DRYNESS CONDITIONS
- DAMAGES INDUCED by AGE RELATED DRYNESS
- EVERY DAY LIFE MOISTURIZING
- SHIELD EFFECT against WATER LOSS
- FILM FORMING

AGING TARGETING DERMAL MATRIX

- RE-PULPING
- ECM production, increase elastine and collagens fibers network on μ -dermis
- ATROPHY
- ANTI STRIAE DISTAENSE

- WOUND HEALING: repairing scars
- ACNE LESIONS: reducing inflammatory status, enhancing skin physiological defence, counteracting dermal matrix degradation
- FILLER: BIO RESTRUCTURING

TARGETING MICROBIOTA

- MICROBIOTA MODIFICATION
- MODULATING SKIN INNATE RESPONSE
- "ANTI-BACTERIAL" (strain according to the sponsor). Interference with bacterial proliferation, adhesion, growth and biofilm formation
- BIOFILM MODEL: capacity in counteracting bacterial adhesion and in reducing the biofilm matrix formation
- EFFICACY OF PROBIOTIC/PREBIOTICS to enhance skin auto defence against pathogens or having an antibacterial activity and also increase barrier efficiency in counteracting *S. aureus* colonization and biofilm production
- COMPETITION between reconstituted microbiota represented by *S.epidermidis* against *S.aureus*

DERMATOLOGICAL

- ATOPIC SKIN: TSLP pathway
- PSORIASIS MODEL - INFLAMMATORY pathway

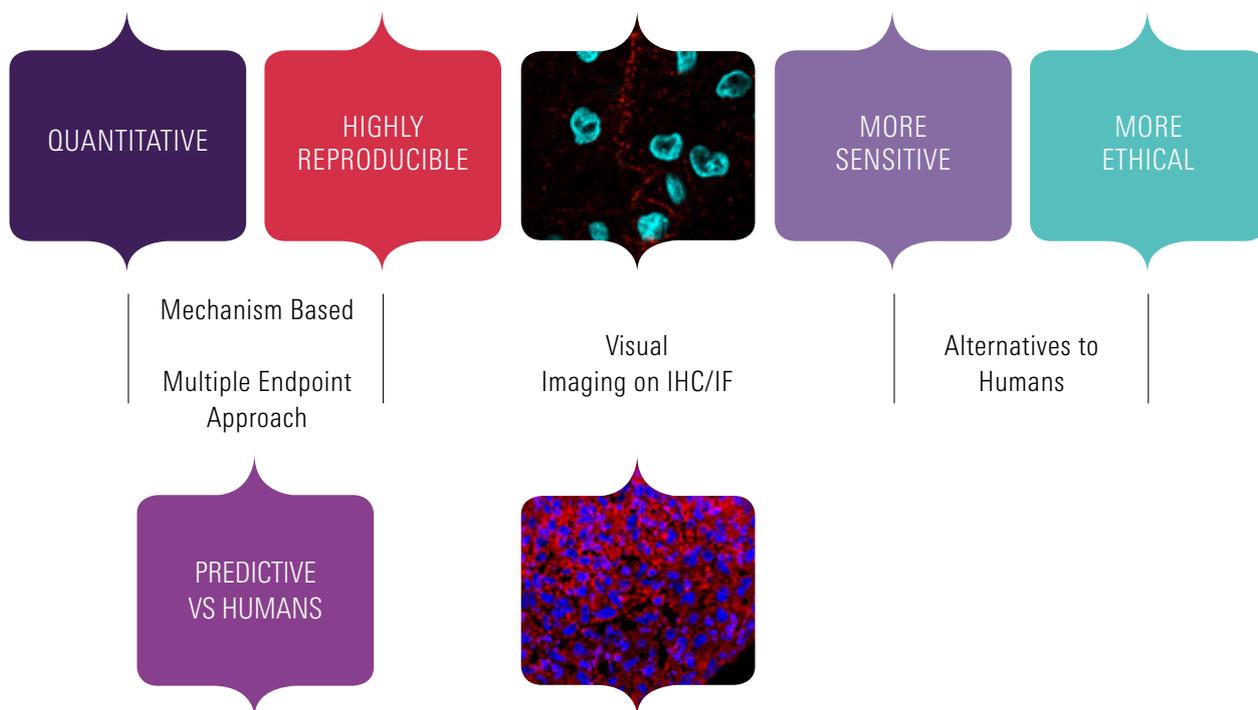
ADIPOSE TISSUE on μ -ADIPE MODEL

- ANTICELLULITIS, LIPOLYTIC, REDUCING INFLAMMATION
- FIBROTIC ADIPOSE TISSUE

CUSTOMIZED RESEARCH

BASED ON *IN VITRO* SCIENCE, INSPIRING INNOVATION, DELIVERING VALUE

SAFETY ASSESSMENT STRATEGIES



VITROSCREEN TOXICOLOGY PLATFORM

Quantitative and robust information on 3D Human tissues are predictive of human response and can be used to generate a robust weight of evidences. The Multiple Endpoint Approach (MEA) leads to **the new safety concept: the BIO-COMPATIBILITY**.

- 1 Skin, eye, mucosae irritation potential after acute and long term exposures for rinse-off and leave on product, on functional or lesional skin, coherently with the Customer's brand image;
- 2 Sensitive skin, baby skin and high mildness claims where a specific evaluation is requested according to EU Directive (dedicated protocols);
- 3 Interference with the resident eco-flora and the microbiota;
- 4 *In vitro* toxicology based on validated Alternatives (either GLP or non GLP) for ingredients: screening and regulatory classification for skin and eye irritation, sensitization potential and percutaneous absorption;
- 5 Definition of customized prediction models based on *in vivo* reference, either classified as irritant or not well tolerated, that guarantee higher prediction vs human data.



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