

zoom



CLINICAL EVALUATION

Radiance &
Trends

BEAUTY TESTING TRENDS

IFSCC Congress 2025
Skin Microbiota
Exclusive Interviews

PRECLINICAL ASSAYS

Focus on sensitivity

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EDITO

Dear readers,

Welcome to this new edition of ZOOM, the Skinobs magazine dedicated to scientific evaluation and testing in the beauty industry. While innovation in cosmetics and personal care is advancing faster than ever, evaluation methods are evolving just as rapidly, combining biology, physics, optics, and data science to measure product performance on skin radiance, skin sensitivity, and overall well-being.

In this issue, our **case study sheds light on skin radiance assessment** by exploring how researchers are scientifically quantifying luminosity and evenness of skin tone. From optical imaging and colorimetric analysis to biophysical parameters like light diffusion and reflectance, radiance is no longer a poetic concept, but a measurable performance indicator.

This transition marks a significant milestone for the industry, connecting the subjective perception of beauty to objective measurement. Beyond light, the study of **skin sensitivity** continues to push methodological boundaries. Novel approaches not only facilitate the assessment of product safety and tolerability, but also deepen our understanding of skin reactivity, a key element of consumer well-being.

This issue also features a keynote presentation and poster presentations on testing from the recent **IFSCC congress in Cannes, where innovations in the field of skin** and skin-related assessment took center stage. This congress revealed a decisive shift toward integrative, ethical, and personalized assessment, from microbiome balance to exposome protection and neurosensory responses. Today, testing is no longer limited to efficacy; it embraces the multidimensional nature of skin and human emotions.

We explore in more detail the rapidly expanding field of **skin microbiome assessment**, an approach whose study is evolving the measurement of the performance of cosmetic ingredients and products. Cutting-edge techniques, omics analysis, from skin collections or more directly in vitro on bacterial strains are now revealing how microbial communities interact with the skin, thus **influencing overall skin health**.

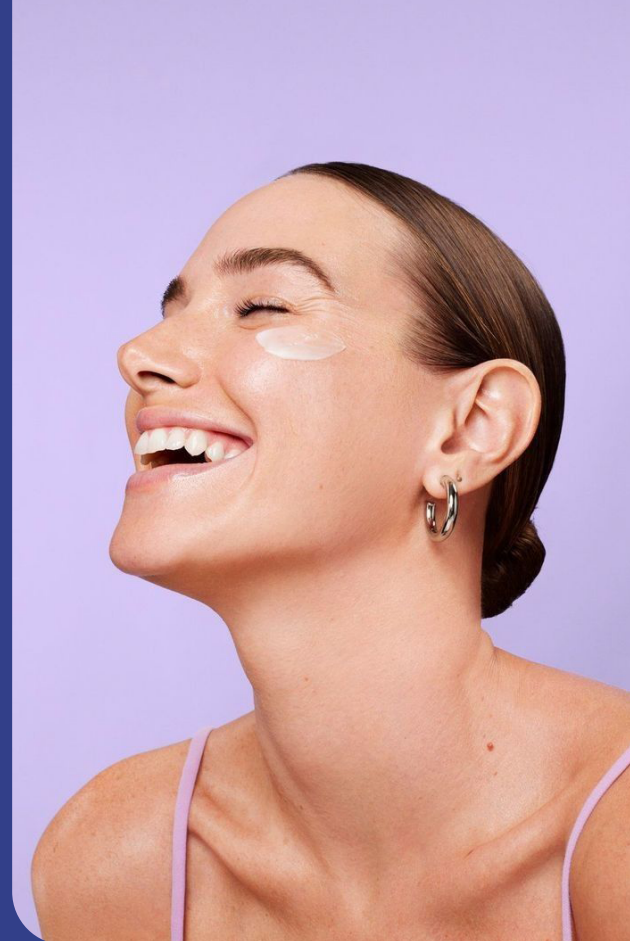
Finally, what are the major trends shaping the **future of cosmetic testing**? AI and machine learning are revolutionizing data analysis, while the personalization of care is pushing laboratories to develop tailor-made protocols. Better informed consumers expect tangible proof of efficacy and safety, a challenge that only the most rigorous tests can meet.

At Skinobs, we believe that understanding these trends is essential for anyone shaping tomorrow's beauty innovations. Our mission remains unchanged: to **inform you about the latest advances, connect you with the most relevant experts**, and help you choose the assessment solutions best suited to your ambitions. This issue of ZOOM is designed to **fuel your thinking and inspire you** in the development of your future products.

We hope this ZOOM will inspire you to look deeper into what defines beauty evaluation, not only in appearance but in measurable, scientifically validated skin health.

Warm regards,

The Skinobs Team



Anne Charpentier
CEO & founder of Skinobs



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Brilliance and luminosity:
a complex assessment
between perception and
physiological characteristics



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35th IFSCC Congres
Emerging Trends in
Cosmetics Evaluation



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science evaluation and
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CLINICAL STUDIES

Brillance and luminosity: a complex assessment between perception and physiological characteristics



How can you tell if a cream that brightens the complexion really delivers on its promises? If a foundation gives you a healthy glow? Or if an ingredient really does even out your skin tone? At a time when scientific proof and performance have become essential requirements in the world of cosmetics and personal care, scientific evaluation of products has never been more important. In contemporary cosmetics, “radiance” has become worldwide one of the most popular claims.

The Korean Wave (Hallyu) has propelled “the ideal radiant complexion” onto the global stage, redefining this claim through an **intricate fusion of skin conditions, healthy appearance and eternal youth**. As if beauty transcends aesthetics, reflecting a holistic philosophy centered on self-care and well-being.

Consumers are increasingly looking for skin that appears luminous, fresh, and vibrant. A **new vocabulary of glow, luminosity, shine, clarity and transparency** now dominates communication around skincare, replacing older narratives focused solely on correction of flaws. Radiance is inherently subjective, shaped by **optical interactions between light and the skin** as well as by perceptual and cultural factors. However, in clinical objectivation studies, subjective descriptors must not only be adapted to the cultural sensitivity of consumers but also be translated into measurable results in order to validate the product’s effectiveness.

Skin radiance is widely considered a key indicator of skin health and, increasingly, of an individual’s overall health. Unlike parameters such as hydration, elasticity or pigmentation, which are well-defined and quantifiable physiological

characteristics, skin radiance results from the interaction of biological, optical and perceptual determinants.

As Mathieu Hébert (Optical Institute Graduate School) noted during the Skin Biology Workshop (September 12; CED-Lyon biopôle), “the radiance is difficult to define in terms of physical measurement even if every expert gives his own definition.

Beauty is perceived in a more integrative way: **it encompasses skin quality, lifestyle, well-being, and emotional balance**. In this holistic vision, radiance embodies both visible proof of skin health and a symbolic expression of vitality. What people expect from radiance-enhancing skincare is not only measurable improvement but also emotional pleasure, sensoriality and an overall boost to their self-esteem.

In contemporary cosmetics, “radiance” has become worldwide one of the most popular claims.

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News



FROM 35TH IFSCC CONGRESS

Cosmetic evaluation, as demonstrated at the 2025 Congress, held in Cannes last September, is undergoing a decisive transformation from traditional endpoints of safety and efficacy towards multidimensional paradigms that integrate consumer-relevant outcomes.

Among these, the measurement of skin radiance has emerged as a **critical frontier**, transcending subjective perception to become a scientifically objectified parameter of **cutaneous vitality**. Advances in vivo methods, combined with:

- **AI-driven imaging,**
- **Multispectral analysis,**
- **Spectral mapping,**
- **Biometric analysis,**
- **Subjects' insights,**

enable precise characterization of luminosity, translucency, and light diffusion within the skin. These methodologies, further supported by holistic in-vivo studies, not only capture radiance as an aesthetic outcome but also correlate it with underlying biological processes such as hydration, barrier integrity, and microcirculatory dynamics.

By anchoring radiance assessment in rigorous experimental frameworks while aligning it with consumer expectations of visible performance, personalization, the field is consolidating its scientific credibility and expanding the evidentiary base of cosmetic claims. Discussions on **climatic adaptation** underscored that radiance is profoundly context dependent. **Pollution, UV exposure, and humidity** levels influence light scattering and translucency. Incorporating regional environmental factors into radiance

testing will be essential for ensuring global relevance of claims, especially in **diverse populations** with variable baseline luminosity. **Full-spectrum** protection against UV, visible, and infrared radiation is crucial not only for preventing cellular damage but also for maintaining optical clarity and preventing dullness.

At the IFSCC congress, radiance unifies disparate research domains under **a framework of measurable, visible, and biologically grounded vitality**. Its integration into testing paradigms not only reinforces the scientific credibility of cosmetic claims but also ensures alignment with consumer expectations of luminosity, health, and well-being. By elevating radiance from perception to quantifiable science, the cosmetic industry signals its readiness to embrace new horizons where biology, technology, and consumer aspiration converge.

THE PERCEPTION OF RADIANCE

Radiance is more than a visual quality; it is also an emotional and social signal. Studies show that a radiant complexion is associated with attractiveness, vitality, and even perceived health. Neuroscience has demonstrated that exposure to radiant skin images can trigger positive emotional responses, linking cosmetics not only to **physical improvement but also to psychological well-being**. This highlights the importance of integrating perceptual and emotional outcomes into skin radiance live evaluations among biometrological assessment. Beyond measurable optical parameters, radiance conveys a feeling of freshness and vitality that resonates deeply with consumers. In an increasingly inclusive world, it should be noted that skin brightness assessment must consider skin types, as it is certain that the results obtained on a European, American, or African subject will not be the same in terms of both results and interpretation. Furthermore, given the importance of global pollution, the measurement of skin radiance should be considered in conditions that mimic consumers' **real lives** in order to both protect and cleanse the skin as effectively as possible from external aggressions.



THE EXPOSOME AND ITS IMPACT ON SKIN LUMINOSITY

The biological and environmental determinants of radiance are now better understood. Skin appearance is influenced by both **intrinsic factors** (genetics, skin structure, pigmentation patterns, vascularization) and **extrinsic factors** grouped under the concept of the exposome. These include sun exposure, pollution, nutrition, stress, and lifestyle habits. Radiance results from complex optical interactions between light and the skin's surface and structures. Parameters such as **epidermal thickness, micro-relief organisation, stratum corneum quality, melanin distribution,**

collagen network organisation in the dermis, microcirculation, imperfections, pore size, and hydration status all affect the way incident light is absorbed, scattered, and reflected. Disruptions in these parameters such as uneven pigmentation, roughness, or redness, reduce the perception of skin tone homogeneity and radiance, creating a duller or more tired appearance. Skincare products claim to improve radiance typically act on one or several of these mechanisms: restoring hydration, smoothing the surface, enhancing microcirculation, or evening skin tone. Some incorporate optical agents to instantly boost light reflection, while others target long-term biological pathways such as melanogenesis or dermal renewal.

RADIANCE ON SKINOBS TESTING PLATFORM

30 in-vivo solutions

99 CRO's in 33 countries

12 study parameters

FROM PERCEPTION TO INSTRUMENTAL MEASURES

The perception of skin tone, its evenness and radiance vary according to culture and individual sensitivity. This assessment depends on our cultural and social preconceptions. Isn't tanning itself subject to relative appreciation depending on the era, social class and culture? For instance, Asian consumers often emphasize transparency and even tone as components of radiance, while Western markets highlight glow and luminous complexion.

The subjective nature of brightness makes it difficult to assess. In studies involving volunteers, descriptors such as 'bright' or 'luminous' must be translated into meaningful and reproducible results. The in vivo assessment of radiance relies on the use of various methodologies:

The combination of these approaches provides a multidimensional assessment of skin radiance and evenness, linking consumer perception to optical reality.

Because of its importance to both consumers and clinicians, methods for

assessing skin radiance have gained increasing attention in cosmetic science and dermatological research. **Traditional approaches, expert visual grading or consumer self-assessment**, offer valuable insights but are limited by subjectivity and inter-observer variability. Advances in imaging and **biophysical instrumentation** now allow for more **objective quantification** of radiance through spectrophotometry, colorimetric analysis, gloss measurements, multispectral imaging, and digital image processing. These tools yield standardized, **reproducible metrics** that can be correlated with physiological parameters such as hydration, vascularization, or microcirculation, thereby bridging perceptual beauty with measurable biology.

A rigorous assessment of radiance requires compliance with scientific standards, the latest technological advances and current regulations. Efficacy studies **must comply with regulations** in force in different regions of the world, with European cosmetics complying with the common guidelines of the Product Information File (PIF). In Europe, in order to validate cosmetic claims, it is essential to comply with six common criteria (legal compliance, truthfulness, supporting evidence, honesty and safety, fairness and impartiality, informed decision-making), although there are specific standards for sensory analysis. Product performance evaluation involves a **multi-sensory, sometimes neurosensory, and holistic** approach, as the impact on quality of life, sensations and feelings can also be objectified.

It is essential for investigators to collaborate closely with CROs to meticulously design protocols, define inclusion criteria, establish measurement timelines, treatment conditions, and select optimal devices. Investing time in briefing these essential elements is never wasted; it ensures the integrity and reliability of the study outcomes.

The concept of radiance has evolved into a key factor of modern cosmetic science. It integrates biological, optical, and perceptual factors, making its evaluation both complex and essential. Clinical assessment of radiance requires a **multi-layered approach: subjective consumer tests, expert visual scoring, neuro-sensory analyses, and instrumental biometrology**.

By combining these methodologies in standardized and reproducible



protocols, researchers can bridge the gap between perception and physiological parameters. This not only enhances the credibility of cosmetic claims but also **provides consumers with scientifically validated products** that improve both appearance and well-being.

Among the neurosensory approach, 2D or 3D skin imaging and optical analysis of its surface are becoming crucial, and various techniques are seeking ever higher resolution, larger measurement areas, and instantaneous, contactless, and direct methods. AI-assisted algorithms and statistics will be the main contributors to the future success of these new technologies. Regardless of the type of measurement, biometric techniques prioritize accurate data acquisition, optimal repositioning, high resolution, fast capture times and automated rotation systems to ensure accuracy.

Among these, skin radiance emerged as a pivotal concept, reframed from a subjective impression into an objectifiable scientific parameter. Radiance served as a unifying lens through which weak signals and future-oriented research trajectories were examined, linking molecular innovation with consumer-centric performance. Radiance is positioned not merely as aesthetic but as a biomarker of skin health.

1. Consumer tests

with self-assessment by subjects reflect users' perception of the product. Participants report their perception of radiance using structured questionnaires and rating scales. These tests capture the subjective improvement consumers expect and are essential for claim substantiation

2. Clinical evaluation by scoring semi-quantitative rating by qualified evaluators. Dermatologists or trained cosmetologists grade radiance using validated scales under standardized lighting and photographic conditions. This reduces, but does not eliminate, subjectivity.

3. Sensory analysis by a trained panel.

4. Neurosensory measurements

capturing unconscious or emotional reactions. Emerging methods such as facial expression analysis, eye-tracking, or EEG measure unconscious reactions to radiant skin. These tools provide insight into the emotional value of radiance and its role in attractiveness and well-being.

5. Biometrological measurement

objective and instrumental measurements of the skin's optical properties. A wide range of optical and imaging devices can objectively quantify radiance.



CLAIMS RELATED TO RADIANCE

Radiance encompasses a wide range of cosmetic claims, reflecting both the optical properties of the skin and its perceived vitality. Common claims include “brightening” or “luminosity enhancement,” which indicate an improvement in skin tone uniformity and a reduction in dullness; “glow” or “healthy-looking skin,” emphasizing the overall visual freshness and vibrancy of the complexion; “even complexion” or “tone correction,” addressing heterogeneities such as pigmentation spots or redness; and “translucency” or “clarity,” referring to the skin’s ability to transmit and reflect light evenly. Other claims may focus on surface smoothness or micro-relief refinement, which improve light diffusion and thus perceived radiance, as well as hydration-related radiance, linking moisture levels to a luminous appearance. More recently, claims have also included emotional or perceptual benefits, such as a feeling of vitality, freshness, or skin “energy,” reflecting the recognition that radiance is both a visual and psychological phenomenon. In clinical evaluation, each of these claims requires specific measurement endpoints—ranging from instrumental optical assessments to consumer perception studies—to ensure reproducibility, scientific validity, and regulatory compliance.



RADIANCE, SOCIAL MEDIA & GEN Z

The concept of “radiance,” usually associated with vitality, health, and personal well-being, is increasingly mediated by social media, particularly among Generation Z. Platforms such as Instagram, TikTok, and Snapchat emphasize visual storytelling, where curated images, filters, and short videos shape perceptions of attractiveness, confidence, and self-presentation. For Generation Z, radiance extends beyond physical appearance, encompassing lifestyle, digital engagement, and consumer practices, with likes, comments, and shares functioning as social indicators that validate certain aesthetic and behavioral norms. Cosmetics play a central role in this construction of radiance, as skincare, supplements, and wellness items are both promoted and consumed through social media channels. Influencer endorsements, user-generated reviews, and viral trends reinforce the idea that radiance and glow can be achieved or enhanced through specific products, creating a feedback loop where personal identity, social validation, and consumption intersect. Understanding this interplay is crucial for examining how digital environments shape youth culture, self-perception, & emerging patterns of consumer behavior.

RADIANCE AND THE ROLE OF EXFOLIATION

Exfoliation is a critical mechanism for enhancing skin radiance, as it removes dead surface cells, smooths micro-relief, and promotes the renewal of the epidermis. By clearing the outermost layer of the stratum corneum, exfoliation improves light reflection and diffusion, leading to a brighter, more luminous complexion. Many cosmetic claims related to radiance specifically highlight “surface refinement,” “glow improvement,” or “skin clarity,” which are directly influenced by exfoliating treatments. Exfoliation can be achieved through physical methods (microbeads, scrubs, or brushes) or chemical agents (alpha- and beta-hydroxy acids, enzymes), each with distinct mechanisms and effects on skin smoothness. Importantly, clinical evaluation of radiance often monitors the impact of exfoliation on parameters such as surface roughness, luminosity, and tone uniformity, using both instrumental measurements and expert or consumer perception assessments. By integrating exfoliation into radiance-enhancing routines, skincare products can provide immediate optical benefits as well as long-term improvements in epidermal health and radiance.





References

Roessle, A., & Kerscher, M. (2025). Objectification of skin glow: In Vivo evaluation of 300 women in relation to age. *Journal of Cosmetic Dermatology*, 24(Suppl. 4), e70373.

Sachdev, M., & Department of Skin Sciences, MS Clinical Research Pvt. Ltd. (Year not specified). Multiparametric composite glow and radiance scale: An objective, scientific assessment tool for skin glow and radiance evaluation. *International Journal of Research in Dermatology*.

Ikeda, H., Saheki, Y., Sakano, Y., Wada, A., Ando, H., & Tagai, K. (Year not specified). Facial radiance influences facial attractiveness and affective impressions of faces. *International Journal of Research in Dermatology*.

Huang, Y.-W., Arkesteijn, W., Lai, Y.-J., & Ng, C. Y. (2024). A comparative study of an advanced skin imaging system in diagnosing facial pigmentary and inflammatory conditions.

Study parameters	Devices & methods
Color by image	Antera 3D, C-Cube Clinical Research, ColorFace
Skin renewal and desquamation	Quantisquame
Full face: overall analysis	ColorFace, Cydolia 3D Acquisition System, DynaCam, HeadScan Dynamics III, HeadScan VO5 – R&D, VISA-CR – Gen 2 and 5, VISIA Complexion Analysis
Skin surface, relief and topography	Epsilon, DermaTOP-HE-60, SpectraCam, Visioscan, MoistureMap MM 100, C-Cube, TiVi 60 Skin Damage Visualizer, Antera 3D, Visia CR, Clarity 3D Mini, Neo Voir II, SIAScope, Videomicroscope, Dermascope, DermLite DL100, Videometer Lab, VEOS DS3, DermaLab Videoscope, SpectraCam, SpectraFace.
Skin radiance measure	GonioLux, Glossymeter, SambaFace, Skin Translucency, SkinGlossMeter
Global aspect and holistic approach	Visual and tactile objectivation with Scoring by experts and using specific scales and photos, Sensory and neurosensory analysis by trained panels or naïve subjects, Emotions evaluation by I.A, Consumer testing

Anne Charpentier,
CEO & Founder of Skinobs

Ilona Salomon,
Communication manager



Radiance assessment with the C-Cube

Pixience - www.pixience.com

Radiance is now a claim that is valued in cosmetics. Combined with radiant, even and luminous skin, it reflects a **healthy and youthful appearance** of the skin. Many products claim to have an action on radiance to fight against dullness, fatigue or even inhomogeneity. Sensitive skin, often prone to redness, dehydration or an altered barrier, shows a lack of radiance more quickly.

This is why it is essential to have a reliable tool to objectively assess the evolution of the complexion on these fragile profiles. Glow is a complex concept to quantify: it depends on how light reflects off the skin, and can be influenced by the environment or lighting conditions. The C-Cube provides a technical answer to this problem. Thanks to its metric and colorimetric calibrations, it guarantees standardized and comparable results over time. Its extreme accuracy (**margin of error of less than 0.1%**) and **regardless of ambient lighting conditions** thus offers reliable analysis without the need for strictly controlled observation environments. The radiance analysis is based on the **L*** parameter of the **L*a*b*color space**, which means the **perceived luminosity** of the skin. The higher the **L*** value, the better the skin reflects light. The C-Cube Clinical Research software calculates a **radiance index**, combining brightness, redness, and homogeneity to accurately reflect overall visual perception. This parameter rigorously quantifies the evolution of radiance, including on sensitive skin that is often subject to opacity. This analysis is essential to measure claims related to glowy, hydrated and radiant complexion. With its objective precise measurements and visual imagery, the C-Cube is a tool of choice for scientifically demonstrating the effectiveness of radiance products.

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TESTING NEWS FOR RADIANCE

Miravex

Antera 3D for sensitive & radiant skin

Miravex - www.miravex.com



Chromophores (Pigmentation & Haemoglobin): Antera 3D precisely quantifies haemoglobin levels revealing redness and inflammation in sensitive skin. For radiance, it measures melanin concentration, ensuring an even tone. This objective data

provides clear evidence of improvement, moving beyond subjective assessment. **Colour:** The Antera 3D analyses skin colour using multi-spectral imaging, providing L*a*b* and ITA values for brightness and skin tone evenness. This objectively assesses overall skin clarity and uniformity, crucial for a radiant complexion. **Topography:** 3D imaging allows to precisely measure skin texture (Ra, Rq), wrinkles, pores and scars. Smooth skin texture contributes to uniform light reflection and a luminous glow.

Syres

Analysis of skin sensitivity in french panel

Syres - www.syres.fr



Syres French panel's skin sensitivity analysis, covering over 20,000 panelists over the last 10 years, shows that **44.8% have sensitive facial skin**, according to the **ARPP definition** (having recently and frequently noticed some signs/discomforts). No significant difference appears

between men and women. Sensitivity is higher in drier skin types and older age groups. A sensitive panelist reports an average of 3.7 discomforts or signs, with **tightness** leading (82.7%) followed by **redness** (68.0%). Younger people show slightly lower sensitivity, while women over 50 with dry to normal-dry skin are most affected. These insights guide targeted product development, **ensuring skincare addresses genuine consumer needs** across diverse skin types and ages.



How Molecularis supports safer cosmetics

Molecularis - www.molecularis.com



Today's beauty consumers expect more than glow—they demand skincare that is **gentle, effective, and above all, safe**. With sensitive skin conditions on the rise, it has never been more important for cosmetic brands to take responsibility and bring **skin-friendly, well-tolerated products** to market.

This shift isn't just a **trend**—it's a **necessity**. **Environmental stress, lifestyle factors, and overuse of active ingredients** are making skin increasingly reactive. Products that once promised **radiance** now risk causing **irritation** if not carefully formulated. The challenge for manufacturers? To deliver **visible results without compromising skin health**.

This is where Molecularis plays a vital role. Based in Germany, Molecularis is a **scientific partner** for cosmetic brands and chemical manufacturer, specializing in **advanced molecular analytics** and **ingredient safety**. Our mission: to help formulators understand how ingredients interact with sensitive skin—and how to create products that are both effective and skin-compatible.

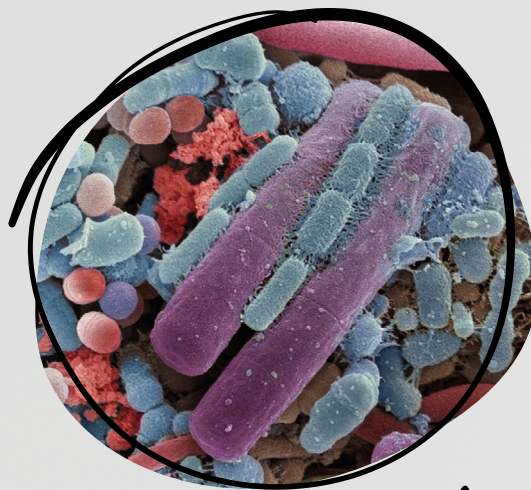
By analyzing biomarkers such as **inflammation levels, skin barrier integrity, and microbiome balance**, Molecularis provides deep insights into a product's tolerability and performance. This empowers brands to make evidence-based decisions and develop formulations that support the skin's **natural radiance—safely and gently**.

In today's market, **skin-friendliness** is more than a quality label. It's a responsibility. With Molecularis as a **scientific ally**, cosmetic brands can rise to the occasion—creating radiant, safe, and trustworthy skincare that meets the needs of a **more conscious generation**.

Lisa Bäumer - lisa.baeumer@molecularis.com



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Interview



Jean Christophe PITTET

Founder and CEO of Orion Concept Technolab

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About Jean Christophe PITTET

Pittet is a seasoned R&D consultant specializing in skin science and dermocosmetic product evaluation. With over 25 years of experience, he founded and led ORION-Concept, a scientific consultancy focused on skin research and cosmetic innovation. Previously, he served as Scientific Director and Deputy General Manager at leading institutes, including the Institut d'Expertise Clinique and Spincontrol, where he oversaw international teams and developed cutting-edge methods for assessing skin tolerance and product efficacy. Holding a PhD in Life and Health Sciences, he has also taught at the university level and trained professionals in skin metrology and imaging. Actively involved in scientific communities, he co-founded the Dermaloire Scientific Interest Group and serves as a board member of the Francophone Society of Cutaneous Engineering and Imaging. A pioneer in biomedical imaging and bioengineering, Jean-Christophe bridges scientific expertise with education to advance dermatological research.

The theme of complexion radiance is the focus of our ZOOM#34 thematic file. How do you think in vivo assessment of this claim has evolved in recent years?

Anyone can easily judge the radiance of a complexion – «healthy glow», «radiant complexion», «fresh complexion»... etc., but precisely defining its components remains a delicate undertaking. Multiples, often depending on the phototype, vary according to the individual interpretation. To objectify this evaluation, a method has been defined in collaboration with Spincontrol (now Eurofins) and L'Oréal (Visual evaluation in vivo of «complexion radiance» using the C.L.B.T. sensory methodology, Musnier et al., 2004). This is based on a visual scale of hues and unstructured sensory descriptors (skin texture, homogeneity, transparency, areas of light reflection). This external visual reference allowed for the calibration of the evaluators, reducing the subjectivity. A **specific adaptation for Asian skin** was made in 2012.

On this basis, an image analysis method was developed, taking up the clinical criteria: distribution of shades according to the areas of the face, skin texture, shine (specular vs. diffuse), transparency and colorimetric homogeneity. Two fundamental dimensions emerged: Clarity, linked to the intensity of the hues (increase in L* in the CIELab space), and Luminosity, dependent on the reflection of light by the skin.

However, one major variable is still little considered: facial expression. A complexion, even a radiant one, can appear dull if the face expresses anxiety or sadness. **AI could offer a new way of integrating these affective parameters**, which are still largely underexplored.

Which in vivo methods do you think are the most suitable: scoring, photos, biometrology, self-assessment, etc.

As mentioned earlier, the published CLBT method provides a solid basis for approaching the evaluation of «complexion radiance». The result of a long process of defining the essential



criteria is based on clinical evaluations carried out by trained judges, capable of perceiving the various parameters with finesse. It allows a certain standardization of the approach. In addition, **calibrated photography** remains a so-called «objective» method, provided that several elements are integrated: color distribution according to the areas of the face, clarity of shades, modalities of brilliance («luminosity»), skin texture, surface homogeneity, among others. Other more secondary parameters can also enrich the analysis. In biometrology, the difficulty persists: no single device can measure all the aspects related to the radiance of the complexion. The devices designated as «radiance-meters» are not enough to capture all its dimensions. One potential solution lies in the **combination of several instruments**, each targeting a key parameter.

Finally, **self-evaluation remains crucial**. It is an essential check to verify the user's acceptance of the result. This principle goes beyond the sole framework of the radiance of the complexion: any cosmetic effect, to be relevant, must be perceived – **objectively or subjectively** – by the consumer. Without this membership, there is no success.

In the end, an integrative clinical approach, capable of encompassing all the parameters defining radiance, remains not only relevant, but essential. Instrumentalist's word!

How would you distinguish between complexion radiance and skin evenness?

As always, we would like to boil down a complex problem to simple things. Homogeneity is clearly an important (essential?) element in the problem of evaluating the radiance of the complexion but cannot define it on its own... A phototype 1, red and scabbed with freckles, could not have a beautiful shine under the pretext of «heterogeneity»? A bit restrictive, isn't it?

This uniformity is even a limitation in some cases depending on the scale of observation: **pinkness on the cheekbones** and protruding regions is often a sign of brightness and «freshness» although creating «color heterogeneities».



In your opinion, what are the essential elements to consider when designing them in vivo study?

My answer will be generic. Depending on the characteristics that we are trying to evaluate in their evolution under the effect of treatment/care, the sample must be selected with particular care. **Too much diversity in the panel** (phototype, skin type, ethnicities, etc.), generally small (25 to 40 on average), will imply a great diversity of response and therefore a great dispersion in these evolutions... Statistical validation will be lost even if the product shows real activity.

The argument is often to be «representative» of a population. Is this reasonable for 30 volunteers? **The homogeneity of the panel** (excluding age) is to be preferred in all cases. For the specific case of radiance, it is necessary to first define what needs to be studied: A «healthy glow» effect, an improved «radiance», a «homogenization» of the complexion...

This will depend on the claims as well as on the formulation and the objective activity of the product on certain skin features. The selection of subjects will be made based on these criteria, which we seek to change under the effect of the product. An obvious choice for some, but unfortunately, I've seen too many anti-wrinkle studies, for example, on subjects... Without wrinkles or too little!

Finally, how do you think AI can bring benefits to this evaluation through the automatic evaluation of photos or algorithms?

AI represents a major methodological lever in the evaluation of complex aesthetic parameters such as the radiance of the complexion, characterized by its intrinsically multi-parametric nature. This phenotype results from the **integration of cutaneous variables** (chromatic distribution, microrelief, specular/diffuse shine, pigmentary homogeneity) and contextual parameters such as facial expressions, which are often ignored.

The main interest of AI lies in its ability to model nonlinear interactions between these multiple dimensions. However, most current implementations remain purely predictive in nature, without shedding light on the underlying mechanisms. A more explanatory approach, based on the analysis of weights, correlations and interaction effects between characteristics, would be necessary for a detailed understanding of the determinants of perceived brightness.

The massive training on generalist databases (representing a very wide inter-individual diversity) also raises questions. A more relevant strategy in a cosmetological context would be to **develop specialized AIs**, restricted to targeted phenotypes (brightness, clarity, uniformity), and then integrate these expert modules into a composite or multi-agent architecture.

In addition, considering micro-expressions, as modulators of the perception of radiance, opens a new path. The **integration of emotional facial recognition** networks into AI models would make it possible to contextualize predictions, considering the cognitive impact of affective states on the perception of skin quality.

Thus, AI, well mastered, could become a powerful aesthetic quantification tool, combining instrumental robustness and perceptual sensitivity.

Let's trust in the future!



About Orion Concept Technolab

Created in 2005, ORION CONCEPT boasts 25 years of expertise in the field of Cosmetology and Dermatology. Expert in image analysis serving the validation of skin care products, her approach is based on support, training and monitoring for your projects.

Its continuous activity in methods R&D gives it an avant-garde vision of advanced techniques and methods for the study of the skin, the implementation of your clinical studies and the validation of the activity of your products.

«Technology and analysis only make sense for one purpose: the objective evaluation of the effect and its visual demonstration»



Interview



Bum Chun Lee Ph.D.
Founder and CEO, HuenSkin Co., Ltd.

www.huenskin.com - epiboost@hanmail.net

About Bum Chun Lee

Dr. Bum Chun Lee is currently working as the R&D Director and the CEO of Hue&Skin Co., Ltd. in Seoul, Korea. He got a Ph.D. in Microbiology and Biotechnology from Kon-kuk University, Korea, and studied obesity as a visiting scientist from Dalhousie University, Canada. He joined Hanbul Cosmetics Co., Ltd. in 1992, and developed Maitake mushroom exopolysaccharide using mushroom fermentation process and got a Dong-Am Great award in 2006. He worked for Hanbul until 2007, moved over to Morechem Co., Ltd. and Ellead Co., Ltd. as Clinical R&D Director, and finally founded Hue&skin Co., Ltd. in 2014. His research is mainly focused on biotechnology application in cosmetics, serving in consulting member of The K Beauty Science in Korea, committee member of Cosmetics and Surfactant in Korean Standard Quality Agency of Korea, IRB Chairman of Korea Dermatology Research Institute and director of Journal of Cosmetic Scientist of Korea.

In your opinion, what are the reasons for Korean consumers' interest in skincare products that target radiance?

Korean consumers' strong interest in radiance-focused skincare is rooted in a combination of cultural values, social trends, and technological advancement. From a cultural perspective, called «**porcelain skin**», flawless skin as clear, smooth and luminous skin has long been associated with health, youth, and refinement in Korea.

This traditional ideal has evolved into a modern beauty standard where radiance is seen not merely as a cosmetic attribute but as a reflection of personal care, discipline, and even social status. From a social and economic perspective, **several factors have accelerated the pursuit of radiant skin**: the rise of high-definition media that reveals even the smallest imperfections, the influence of celebrities and social media influencers, and the competitive job market where appearance often plays a decisive role.

These dynamics have increased consumer willingness to invest in advanced skincare products and treatments. From a technological perspective, Korea's leadership in cosmetic R&D, combined with the integration of dermatological services, at-home beauty devices, and high-performance formulations, has made radiance-enhancing solutions more accessible and effective than ever before.

Moreover, the synergy between K-Beauty and global cultural exports, such as K-Pop, K-Drama, and K-Fashion, has amplified the appeal of “**Korean-style radiance**” to international consumers. Ultimately, radiance is valued because it combines **visible optical qualities**, such as brightness, even tone, and smooth texture, with **intangible perceptions of vitality** and attractiveness. This dual significance explains why Korean consumers consistently seek products that deliver both measurable results and perceptible glow.

Which radiance-related skin signs do you think are most important in Korean beauty?

In the context of Korean beauty standards, radiance is not a single attribute but a multi-dimensional quality that reflects both the optical properties and the overall health of the skin. The most important signs include:

- **Luminosity**: The skin's ability to reflect light evenly, creating a bright and healthy glow without excessive shine.
- **Smoothness**: A refined surface texture that minimizes visible pores, lines, or irregularities, enabling a more uniform light reflection.
- **Even Tone**: Consistent coloration across the face, free from blotches, hyperpigmentation, or redness.

To accurately assess these signs, objective measurements are essential. Instrumental methods, such as **glossmeters**, **chromameters**, and **high-resolution imaging systems**, can quantify parameters like gloss, brightness, transparency, and hydration. These should be complemented by expert visual assessments and structured consumer self-evaluations to capture perceptual dimensions of radiance. Importantly, in Korean beauty culture, radiance is viewed as an **indicator of meticulous self-care and internal vitality**, not just surface appearance. Therefore, evaluation must address both the scientific measurements and the emotional impact the skin conveys.



For Korean skincare, what differences would you make between the different claims related to radiance?

While radiance, gloss, and evenness are often discussed together, they represent distinct yet interrelated dimensions of skin quality: radiance of the complexion: the overall impression of brightness and vitality, perceived as light emanating from within the skin, gloss: surface-level light reflection, producing a smooth and polished look; excessive gloss, however, can be mistaken for oiliness and evenness of the complexion: **uniformity in skin tone and texture, free from visible discolorations, blemishes, or surface irregularities.**

From a dermatological perspective, radiance is a combination of internal luminosity (influenced by skin transparency, hydration, and dermal light scattering) and external uniformity (determined by surface texture and pigmentation patterns). Gloss is a purely surface phenomenon, while evenness requires consistent tone across a larger facial area.

In claim substantiation, each dimension should be evaluated with appropriate instruments, for example, glossmeters for surface shine, chromameters for tone measurement, and high-resolution imaging for texture analysis. By isolating and measuring these attributes separately, it becomes possible to make more precise and credible product claims.

How do you think in vivo evaluation of this claim should be conducted by testers?

In my view, an in vivo evaluation for a radiance claim should be designed to meet both scientific rigor and ethical compliance. From a technical perspective, the study should combine objective measurements, such as gloss, brightness, transparency, and hydration, using standardized devices (e.g., Glossmeter; Delfin, Finland, Skin Glossometer GL200; C+K, Germany, SAMBA FACE; Bosa Nova, USA, skin transparency (TLS 855 Diastron Ltd., UK)) with subjective self-assessments to capture perceived changes. All tests must be performed under **controlled lighting and environmental conditions** to ensure reproducibility. From an ethical standpoint, the protocol should receive prior approval from an Institutional Review Board (IRB) or equivalent ethics committee.

This ensures participant safety, informed consent, and transparency regarding any potential adverse effects. Even for cosmetics, applying internationally recognized guidelines such as ISO 14155 for clinical investigations is recommended to reinforce credibility. Additionally, to increase global applicability, the participant pool should include **diverse skin types and ethnic backgrounds**, reflecting variations in how radiance is perceived and measured. Finally, I believe that the most credible in-vivo evaluation is one that integrates scientific accuracy, participant safety, and regulatory compliance. This approach not only substantiates the claim but also builds trust with **both consumers and the scientific community.**



What in vivo methods do you think are best suited to evaluating in vivo claims relating to the effects of cosmetic products on skin tone?

For skin tone evaluation, the most reliable approach integrates objective instrumental analysis with perceptual assessment. Skin tone is multi-faceted, encompassing brightness, uniformity, and pigmentation balance. To capture these dimensions, I recommend:

- **Instrumental Colorimetry:** Devices such as Chromameter (Konica Minolta, Japan) and Mexameter (Courage + Khazaka, Germany) can quantify melanin index, erythema index, and overall brightness (L* values).
 - **High-Resolution Imaging & Analysis:** Systems like VISIA (Canfield Scientific, USA) or ANTERA 3D (Miravex, Ireland) can objectively assess pigmentation patterns, spot density, and surface texture.
 - **Large-Area Assessment:** Expanding measurement beyond small sample points to analyze broader facial regions, processed with advanced image-analysis software to evaluate tone evenness.
 - **Expert Panel Grading:** Visual grading by trained dermatologists or cosmetologists adds qualitative insight, complementing instrumental data.
- Equally important is ensuring diversity in participant selection, reflecting different ethnic backgrounds and skin types to account for variations in how tone and radiance are perceived.

Additional aspects of skin radiance research that deserve attention

The future of skin radiance research lies in bridging **molecular-level insights** with visible consumer outcomes. Radiance is influenced by **cellular mechanisms** within keratinocytes, melanocytes, and fibroblasts, and understanding these processes can lead to more targeted formulations.

Key research directions include:

- **Biomarker Identification:** Studying melanin regulation, Extracellular matrix (ECM), collagen synthesis, hyaluronan synthase (HAS), and heparin-binding epidermal growth factor (HB-EGF) to establish molecular indicators of radiance.
- **Genomic and Proteomic Profiling:** Mapping mRNA and protein expression changes related to pigmentation disorders, including hyperpigmentation, post-inflammatory pigmentation, and freckles.
- **Advanced Skin Models:** Employing 3D skin culture systems and reconstructed human epidermis to simulate realistic skin environments and study intercellular communication.
- **Translational Correlation:** Ensuring that in vitro findings translate into measurable in vivo results, validated through clinical testing and consumer perception studies.

Ultimately, meaningful innovation in radiance enhancement will depend on an integrated approach, combining rigorous scientific validation, ethical testing, and formulations that deliver **both measurable improvement and perceivable beauty benefits.** Also, I think that skin radiance must be crucial part of “skin quality” parameters, concepts, definitions, measurement and treatment options in cosmetics.

PRECLINICAL ASSAYS

Evaluating in-vitro sensitive skin syndrome: from inflammation pathways to cutting-edge models



It is defined by unpleasant sensations such as **stinging, burning, itching, tingling**, or pain in response to everyday stimuli that are normally well tolerated ⁽¹⁾. And may overlap with features seen in common skin inflammatory diseases such as atopic dermatitis and psoriasis. Physical factors such as UV radiation, temperature changes, or mechanical stress, chemical exposures like cosmetics, water, and pollution are all known contributors. Among these, cosmetic products are frequently cited as triggers, underlining the **importance of evaluating the tolerance of ingredients** and formulations specifically for sensitive skin.

While **2D co-culture systems** are simple and cost-effective, they fail to recapitulate **3D cellular interactions** or the skin barrier function. Consequently, 3D approaches offer more accurately model physiological and pathological skin conditions. Technological advances have made it possible to recreate and study these mechanisms of sensitive skin using in vitro models. Currently,

the disruption of the barrier function, immune activation and neurogenic inflammation have been identified as the three mechanisms potentially involved in the physiology of sensitive skin. In order to develop effective cosmetics or active ingredients, it is crucial to have relevant and predictive in vitro models.

3D reconstructed human epidermis and full-skin equivalents with varying degrees of physiological complexity are commonly used to examine barrier integrity whether there are bioprinted or not, non-vascularized or vascularized ⁽²⁾. While more complex in vitro models have been investigated to recapitulate the **immunological functions of the skin** to model inflammatory skin diseases such as atopic dermatitis and serve as robust platforms for in vitro assays. ⁽³⁾

Particular interest is being paid to microfluidic models commonly known as skin-on-a-chip, which more closely reproduce in vivo physiological conditions, particularly cytokine gradients and spatially organized cellular

interactions. These technological advances offer promising prospects for screening ingredients and gaining a better understanding of their mechanisms of action on the skin ^(3,4).

Moreover, since the importance of **neuro-immune-cutaneous interactions** in the inflammatory response has emerged, innervated models incorporating sensory neurons derived from induced pluripotent stem cells have been developed making it possible to **investigate the neuronal contribution to sensitive skin**. These innervated models provide a unique opportunity to study how sensory neurons release neuropeptides under stimulation, driving inflammation and discomfort, and how active ingredients may modulate these pathways.

The mechanisms of neurogenic skin inflammation represent a process in which the peripheral nervous system plays a central role in initiating and maintaining inflammatory responses ⁽⁴⁾.

SENSITIVITY ON SKINOBS TESTING PLATFORM

9 in-vitro solutions

47 CRO's in 13 countries

8 study parameters

Thus, sensory nerve fibers, in response to mechanical, thermal or chemical stimuli, release neuropeptides such as substance P (SP), calcitonin gene-related peptide (CGRP) and neurokinin A. These mediators act on resident skin cells (keratinocytes, mast cells, dendritic cells) and immune cells, amplifying the inflammatory response and contributing to pathologies such as psoriasis, atopic dermatitis and urticaria (5).

To assess the soothing or protective potential of active ingredients, in vitro assays typically **expose reconstructed skin or cell cultures to controlled irritants** such as pollutants or UV light. The work of testing laboratories today focuses on modelling skin inflammation in order to reproduce in a standardized manner this complex process involving cellular and molecular interactions between keratinocytes, fibroblasts, immune cells and the extracellular matrix.

A reduction or normalization of inflammatory markers may indicate a protective effect. Core mediators include cytokines such as IL-1 α / β , IL-6, TNF- α , and IFN- γ , as well as prostaglandin E2⁶⁻⁷. The Th2/Th17 axis also plays an important role, with IL-4, IL-13, IL-17, IL-22, IL-23, and IL-31 contributing to allergic inflammation, pruritus, and conditions such as atopic dermatitis and psoriasis (3). Additional markers include IL-8 and GM-CSF, which regulate immune cell

recruitment and activation. Barrier and structure-related molecules such as filaggrin, cytokeratin-17, and CD44 provide further insights into epidermal integrity under stress. In more advanced studies, molecules such as TSLP, matrix metalloproteinases, sirtuin-1, and hyaluronic acid fragments are also assessed to capture broader aspects of the inflammatory cascade. The syndrome of Sensitive Skin is often associated with **small fibre neuropathies** involving receptors such as TRPV1 (transient receptor potential vanilloid 1), which respond to heat, acidic pH, capsaicin or histamine (4).

In vitro models provide effective tools to study the **complex interplay between barrier impairment, neurogenic inflammation, and immune responses**. They enable researchers and product developers to assess how ingredients



and formulations influence skin sensitivity, thereby supporting the design of safer and more effective solutions for individuals with sensitive skin.

Anne Charpentier,
CEO & Founder of Skinobs

Mariana Carranca,
InSkin Consulting

REFERENCES

1. Polena H, Fontbonne A, Abrieu E, Lecerf G, Chavagnac-Bonneville M, Moga A, Ardiet N, Trompezinski S, Sayag M. Management of triggering factor effects in sensitive skin syndrome with a dermo-cosmetic product. *J Cosmet Dermatol*. 2024;23(12):4325-4333. doi: 10.1111/jocd.16529
2. Liu X, Michael S, Bharti K, Ferrer M, Song MJ. A biofabricated vascularized skin model of atopic dermatitis for preclinical studies. *Biofabrication*. 2020 Apr 9;12(3):035002.
3. Moon S, Hyun Kim D, U Shin J. In Vitro Models Mimicking Immune Response in the Skin. *Yonsei Med J*. 2021; 62(11):969-980.
4. Guichard A, Remoué N, Honegger T. In Vitro Sensitive Skin Models: Review of the Standard Methods and Introduction to a New Disruptive Technology. *Cosmetics*. 2022; 9(4):67.
5. Choi JE, Di Nardo A. Skin neurogenic inflammation. *Semin Immunopathol*. 2018;40(3):249-259.
6. Boarder E, Rumberger B, Howell MD. Modeling Skin Inflammation Using Human In Vitro Models. *Curr Protoc*. 2021;1(3):e72.
7. He BW, Wang FF, Qu LP. Anti-Inflammatory and Antioxidant Properties of Physalis alkekengi L. Extracts In Vitro and In Vivo: Potential Application for Skin Care. *Evid Based Complement Alternat Med*. 2022; 19:2022:7579572. doi: 10.1155/2022/7579572.



Skin Composition Analyzer

In vivo molecular skin analysis by **Raman spectroscopy**



Molecular Skin
Characterization



Product
Penetration
Studies



Claim
substantiation



New product &
formulation
development



**no reagents or
labelling needed**



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**200+ peer reviewed
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Applications



Personal care
& cosmetics



Ageing
effects



UV-exposure
effects



Product
effectiveness

LATEST TESTING OVERVIEW

Eotech: CBright photo studio: new features to improve your test efficiency

Eotech - www.eotech.fr



On the hardware side, Eotech added a **colour checker** with a retractable support. To meet the demand of many users to make portrait photos, a **rotating mount** allows to rotate the camera from horizontal to vertical orientation. A new **polarizing filter holder** ensures the setting of the state

of light polarization: from parallel polarized to cross polarized light, with intermediate positions, 30°, 45° & 60°. On the software side, the **photo orientation** parameter has been integrated in Revelare. Users have now the possibility to select a **specific area in the picture to set the focusing**. The focus location will be recorded in the database for each panelist and used for all time points. A useful function when your study focuses on a specific part of the face!

Weneos : In-vivo spreading in sun protection testing

Weneos - www.weneos.com



For the first time, robotic spreading on human skin is now a reality in sun protection testing. While application procedures are described in international standards, manual spreading remains a major source of variability and reproducibility challenges, both within and

between laboratories. Until now, **robotic spreading** was only used in in vitro protocols (ISO 23675, ISO 24443). Now, with in vivo robotic spreading, HDRS and other in vivo methods (such as in vivo SPF ISO 24444 and UVAPF ISO 24442) could reach a **new level of standardization**, making test results: **more reproducible, less operator-dependant, easier to harmonize** across laboratories and faster to train for new technicians. A concrete step forward toward more reliable, and more ethical hybrid sun protection testing.

Zurko Research: Scalp Pollution and Cleansing Efficacy: A New Approach to Anti-Pollution Hair Care

Zurko Research - www.zurkoresearch.com

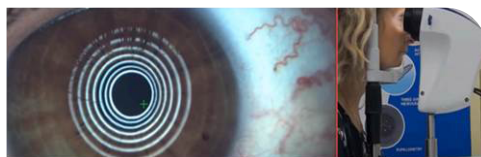


Environmental pollution affects not only the hair fiber but also the scalp, making it essential to evaluate the effectiveness of **cleansing routines**. In a previous study at Zurko Research, we exposed untreated human hair tresses to urban, rural and artificially polluted environments

for 45 days, observing significant structural damage, increased friction, color changes and reduced mechanical strength, especially under high pollution conditions. Building on these findings, we developed a **complementary clinical study** focused on the scalp. Cosmetic-grade carbon particles were applied to healthy volunteers' scalps to simulate pollution, followed by different shampoo or routine applications. Residual contamination was then assessed visually by trained experts. The study revealed marked differences in cleansing efficacy between products, highlighting the need for **targeted anti-pollution strategies** that protect both the **hair shaft and the scalp**. This method provides a safe, reproducible way to test scalp cleansing performance.

CLAIM: Non-invasive ocular tolerance testing for cosmetics

CLAIM - www.aboutclaim.com/home.html



At **CLAIM**, the team has developed an innovative, **quantitative**, and non-

invasive method to assess the ocular tolerance of cosmetic products by evaluating tear film stability. Unlike traditional approaches, this protocol combines clinical expertise with advanced diagnostic technology to objectively measure a product's impact on the eye. Specialized ophtalmological equipment is employed, including a slit lamp, image recording systems, and NIBUT (Non-Invasive Break-Up Time) technology, which projects Placido rings onto the cornea to accurately detect **tear film break-up** without dyes or direct contact. In addition, **lipid layer thickness** and **uniformity** are analyzed, together with fluorescein instillation to observe potential corneal or conjunctival damage. This approach enables robust, scientifically backed claims such as "ocular-friendly", "tear-proof", or "non-irritating to the eyes". Fully compliant with international safety standards and animal testing bans, the methodology provides cosmetic company with accurate, reproducible, and objective data to confidently support the **"ophtalmologically tested"** label.



NovoBliss innovation : Standardizing post-wash cooling with thermal imaging in clinical studies

NovoBliss - www.novobliss.in

NovoBliss Research has developed and internally standardized a **novel methodology** to objectively evaluate the immediate cooling sensation imparted by rinse-off facial formulations using infrared (IR) thermography and non-contact IR thermometry. The research team systematically evaluated **infrared thermometry and high-resolution thermal imaging** across multiple post-wash cooling conditions.

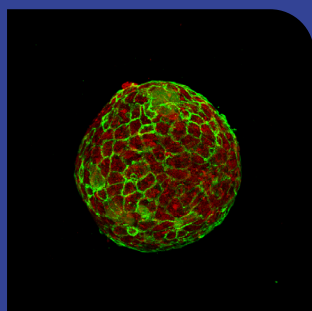
The study led to develop a controlled ambient recovery method that consistently restored skin temperature to baseline levels. High-resolution IR thermography proved superior in **detecting broader, region-specific thermal changes** compared to point-based infrared thermometry.

These findings establish IR thermography as a sensitive, non-invasive tool to evaluate thermoregulatory and sensorial claims. By addressing a key gap in skin testing methods, NovoBliss provides a **dependable and reproducible approach** that improves the accuracy of thermal assessments. This advancement helps support product claims, guide formulation development, and reinforce consumer trust in skincare designed for **sensitive and reactive skin**.



VitroScreenORA®: Dermo Papilla Spheroids: Modeling hair cycle and senescence

VitroScreen - www.vitroscreen.com



VitroScreenORA® (by VitroScreen srl) Dermo Papilla spheroids, based on two micro-physiological systems (non-vascularized DP and vascularized VASC-DP), were applied to study the molecular mechanisms behind **hair cycle regression and hair loss**. Hair regression was induced by sequential exposure to **TGF- β 1** and **FGF-18**, simulating the transition through **catagen** and **telogen** phases. Gene expression changes involving **FGF7, CCND1, and WNT5B** were assessed to confirm the progression of the **hair cycle** phase. A greater **complexity** and **biological relevance** was reached in the **VASC-DP** model, by the introduction of **dermal microvascular endothelial cells** in **dermal papilla compartment**, emulating the **capillary loop** and the follicular metabolism. Immunolabelling for **CD31** and fibronectin (FN) allowed to follow the vascular integrity and ECM remodeling, respectively, while **nanoString nCounter® analysis** characterized

transcriptional signatures with a focus on **WNT signaling**.

Extended culture up to 11 days simulated physiological aging, revealing progressive DP degeneration and increased γ H2A.X expression, indicative of senescence. Treatments with **Minoxidil, Doxorubicin, and Retinol** demonstrated model responsiveness: **Minoxidil** enhanced **endothelial network integrity** and **FN fiber alignment**; **Doxorubicin** induced **structural disruption** and **DNA damage**; **Retinol** partially preserved vascular organization and attenuated senescence markers. These models offer a **physiologically relevant platform** to recapitulate hair cycle dynamics and senescence, enabling mechanistic studies and **screening of therapeutic agents**. The presence of a **vascular network** enhances model fidelity, making it suitable for studying tissue degeneration and regeneration. Overall, the DP and VASC-DP spheroid systems represent valuable tools for understanding hair follicle biology and for the development of personalized treatments.

Valentina Ferron - valentina.ferron@vitroscreen.com

COMPLIFE Group Expertise in post-aesthetic clinical trials

Complife - www.complifegroup.com

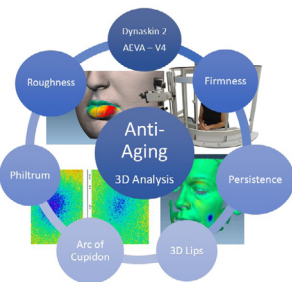


At Complife Group, they bring their unique expertise dedicated to developing standardized clinical protocols for supportive dermo-cosmetic products used post-procedure. **Collaborating closely with leading experts in aesthetic dermatology**, they design protocols that align with actual clinical practices and deliver meaningful, measurable results. **Working hand in hand with top-tier aesthetic medicine centers** equipped with advanced technologies, including non-invasive and invasive-based devices, as well as procedures such as injectables, microneedling, and chemical peels, Complife Group excels.

Based on each product's specific claims, they guide their partners in selecting the most suitable aesthetic procedures and measurement methods. Their approach combines scientific precision with clinical relevance to validate product performance and safety. **Complife Group's expertise ensures clinical testing protocols that set new standards in the field of post-aesthetic procedure supportive dermo-cosmetics.**

IEC France: 3D in-vivo evaluation of anti-aging effects on face and lips using Dynaskin 2 & AEVA-V4 [EOTECH]

IEC France - www.iecfrance.com



IEC France proposes its expertise in highlighting the performance of anti-aging products on the face (cheeks) using Dynaskin 2, which emits a calibrated air flow that causes local deformation.

The various 3D parameters obtained (volume, circumference, depth) provide information on **firmness (during air flow)** and **persistence (after air flow)**. It can also be used to evaluate roughness (LR, Ra, Rz, Rz). The second advantage of Dynaskin 2 is that it combines the above parameters with other **3D analyses of the face** (forehead, crow's feet, nasolabial folds, lips, ptosis).

To obtain more accurate information about the lips, 3D lip analysis is performed, the main parameters of which are lip volume [plump], lower lip volume, and measurement of the arc of Cupidon and Philtrum.



Nevisense: A sensitive tool for skin barrier assessment in cosmetic testing by Scibase

Scibase - www.scibase.com



Nevisense is a non-invasive tool for monitoring skin barrier function with several applications in **beauty, cosmetics, and personal care.**

Its advanced **Electrical Impedance Spectroscopy (EIS)** is emerging as a **powerful technique** for evaluating skin barrier function with **high sensitivity and reproducibility**. Nevisense has been featured in **over 85 studies** to date, providing **quantitative insights** into **hydration status, inflammation, and stratum corneum integrity.**

The **EIS technology** goes beyond **traditional methods** of skin barrier analysis by capturing features of **tissue health and cellular changes**. Methods such as **transepidermal water loss (TEWL)** remain widely used, but their results are influenced by external factors such as **ambient humidity, temperature, or caffeine intake**. EIS measures the skin's electrical impedance, offering a **more robust assessment** of barrier function. Recent comparative studies (e.g. Huygen et al., 2024) have shown **greater sensitivity of EIS** in detecting **subtle physiological changes both in vitro and in vivo** compared to TEWL. Applications of EIS extend beyond basic **skin hydration analysis**. Nevisense has been employed to monitor **inflammatory changes, UVB induced damage, and oxidative stress effects** on the barrier (Hernandez et al., 2019; Rinaldi et al., 2023).

It also supports **longitudinal tracking** of skin responses to topical treatments, providing **objective data on efficacy** (Yayci et al., 2024). With the cosmetic industry pushing for more **robust and evidence-based testing methods**, EIS is increasingly incorporated into **product evaluation** as a **trusted tool for skin analysis**. Nevisense offers a **non-invasive, sensitive, and quantifiable means** of assessing **skin physiology**, enabling researchers to track **subtle changes and treatment effects** with **greater accuracy**. As the field continues to evolve, EIS is emerging as a cornerstone of skincare research with its potential to enhance product development and **improve patient outcomes.**

Sophie Klockhoff - sophie.klockhoff@scibase.com



Microbiopsy and Digital Twins: A new era in skin science by Skin Research Centre

Skin Research Centre - www.hyms.ac.uk/research-centres-and-groups/skin-research-centre



A future where **micron-scale skin samples** create **complex digital replicas** may soon be a reality, thanks to co-emerging microbiopsy and **digital twin technologies**. The recently **FDA-registered Harpera device** collects tiny **skin microbiopsies** near-instantaneously, virtually painlessly and without need for

sutures – far gentler for patients and study volunteers than traditional biopsy. Samples remain stable once encased within the device, enabling **self-sampling from home** before shipping to the lab. This unlocks **skin sampling on a global scale**, across **diverse populations and unlimited locations**. A ‘digital twin’ is created from **real-world data**.

Transcriptomic sequencing of microbiopsies yields up to ~60 million data points/sample, powering **high-resolution models of gene activity**. The value proposition for cosmetics companies engaged in product development is clear, with **unprecedented scientific insight** translating to **commercial advantage**. Scientists will benefit from access to novel databases, and dermatologists can anticipate **earlier detection of conditions, more accurate prescribing and longitudinal monitoring**. Turning big data into insight is no small feat. With bioinformatics and data visualization expertise, the data science partners VISFO translate data into interactive models and dashboards, decoding the **complex molecular portrait of the skin** to predict how its genes might respond to ingredients or treatments.

Personalized insights could be delivered direct-to-consumer: *“Your skin’s collagen-related gene activity is decreased – here are some collagen-boosting treatments best suited to your skin type...”* The rise of digital technology poses new questions about **how products should be tested, approved and regulated**. Global regulators (FDA, EMA) are actively seeking **ethical alternatives to animal testing**, and these technologies could pave the way for **groundbreaking in silico regulatory approvals**. The **convergence of these innovations** is set to **revolutionize skin science**. This approach streamlines innovation and regulatory compliance while upholding higher ethical standards – predicting a future where skincare is delivered in ways that are **as smart as they are kind**.

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Cosderma: Aesthetic medicine at the heart of clinical studies

Cosderma - www.cosderma.com



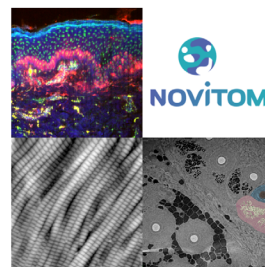
As a 20-years specialist in in-vivo cosmetic clinical studies, Cosderma is marking a new stage in its development by partnering with the YATAI clinic in Wuhan, a leading clinic in high-end aesthetic medicine.

The aim? To enable sponsors to integrate their aesthetic treatment protocols within a **regulated and secure framework**.

The techniques offered include injections, peelings, microneedling and lasers. The objectives may include: treatments on wrinkles, hyperpigmentation, acne, scars, skin rejuvenation as well as hair removal, hair growth... This partnership complements the expertise of the three salaried Dermatologists at Cosderma China, who are qualified to perform clinical evaluations of the subjects’ skin.

Novitom: Advanced 3D imaging for skincare innovation

Novitom - www.novitom.com



Novitom stands out through its **unique expertise in advanced 3D imaging and analytical techniques** to **investigate skin and evaluate skincare products**. By leveraging scientific methods,

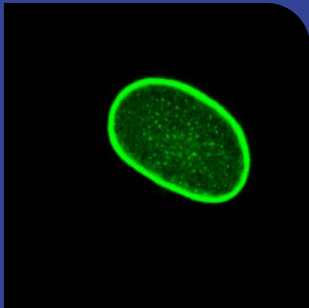
such as 3D microtomography, diffraction, spectrometry, and advanced microscopy techniques, Novitom offers an in-depth look at the skin’s microstructure (e.g. collagen, epidermal lipids) and how it responds to cosmetic treatments.

Novitom provides **customized testing protocols** that go **beyond standard assessments** to support claims about **product efficacy and penetration, without altering samples**. Novitom is a **trusted partner of leading cosmetics brands** for assessing, for example, barrier function, repairing, smoothing, film-forming and restructuring effects.



Dermaproof Asia partners with Transderma Systems to provide innovative claims substantiation in Asia

Dermaproof Asia - www.dermaproofasia.com



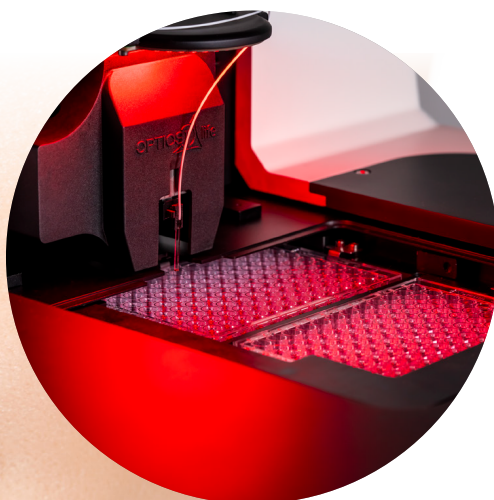
Dermaproof Asia, formerly known as **Spincontrol Asia**, is an independent dermo-cosmetic Contract Research Organization specializing in efficacy testing and tolerance studies, including patch tests, as well as cutaneous, ocular, and oral compatibility assessments. With over 20 years of experience, DermaProof Asia has established itself as a leading laboratory in the field of cosmetic testing across Asia. We are dedicated to delivering high-quality services and continually pursue excellence through training and innovation. Cosmetic manufacturers expect innovative testing methods that can enhance or even replace traditional techniques, driving the demand for advanced, reliable, and ethical alternatives.

For over 20 years, **Transderma Systems** - a French company specializing in ex vivo claim substantiation testing - has demonstrated its expertise in validating innovative evaluation methods for skincare and haircare products, thanks to its dedicated team of engineers and researchers. As a result, both companies have chosen to collaborate by introducing testing methods that remain relatively unfamiliar in the Asian market. One example involves evaluating the repairing or protective effects of hair care products by analyzing the hair cuticle porosity. This method is based on the measurement of the diffusion depth of a fluorescent tracer into hair fibers. Healthy hair typically exhibits low permeability to the tracer, making it an effective indicator of the repairing or protective property of haircare products. They are confident that the new partnership between DermaProof Asia and Transderma Systems will facilitate access to innovative testing methods for Asian cosmetic manufacturers, leveraging DermaProof Asia's strong presence in Thailand. Additionally, it will provide cosmetic companies from Europe and other regions the opportunity to evaluate their formulations on Asian subjects under the specific environmental conditions—such as temperature, humidity, and pollution—that are characteristic of a major Southeast Asian city.

Fabrice Perin - fabrice.p@dermaproofasia.com

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In the cosmetic industry, ensuring product quality and consistency throughout its shelf life is not optional—it is essential. Stability testing, supported by detailed physicochemical analysis, is a fundamental tool to confirm that products remain safe, effective, and aesthetically stable under typical storage and usage conditions. The international standard **ISO 18811:2018** provides structured guidance for implementing stability evaluations with consistency and scientific rigor.

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Stability testing assesses a product's ability to maintain its physical, chemical, microbiological, and functional characteristics over time. These studies help identify the effects of environmental stress—such as light, temperature, and humidity—on product quality. Through these evaluations, manufacturers can establish accurate shelf lives, ensure regulatory compliance, and deliver a reliable product experience to consumers.

Types of Stability Studies

Three main types of studies are commonly performed.

- **Preliminary (screening) tests** are conducted on the bulk formula, usually in inert glass containers, without the final packaging. These early studies help detect visible or measurable instabilities.

- **Accelerated stability testing** is applied to the finished product in its commercial packaging under elevated temperature and humidity conditions. This approach simulates extended storage to predict long-term behaviour.

- Simultaneously, **long-term stability tests** must be carried out under standard environmental conditions, using the final packaging to verify and validate predictions made during the accelerated phase.

ISO 18811 highlights the significance of studying **interactions between the product and its packaging**.

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At **SHAPYPRO**, we offer complete stability and physicochemical testing services, fully aligned with ISO 18811:2018. From formulation development through to regulatory support, our experienced team ensures that your cosmetic products meet high standards of safety, quality, and market readiness through scientifically sound and dependable testing strategies.



THE SCIENCE BEHIND SAFETY

At **SHAPYPRO**, we provide specialised services in applied microbiology, challenge testing, and stability studies to ensure that your products meet the highest standards of quality and safety.



35th IFSCC Congress Emerging Trends in Cosmetics Evaluation



The 35th IFSCC Congress, held in Cannes, France, from September 15-18, 2025, showcased groundbreaking advancements and emerging trends in cosmetic testing and evaluation. This keynote article synthesizes the key themes, innovations, and societal shifts influencing the future of cosmetic science, with a focus on **sustainability, personalization, neuroscience, and technological integration**.

The cosmetic industry is undergoing a paradigm shift, driven by scientific advancements, regulatory changes, and evolving consumer expectations. The 35th IFSCC Congress highlighted the importance of holistic skin health, personalized diagnostics, and sustainable innovation. Among the **68 podium conferences and the 730 posters**, this article explores the dominant trends and the low signals observed during the congress, emphasizing their implications for research, development, and testing strategies.

Across 68 podium presentations and 377 posters devoted to testing, recurrent themes included photoprotection, neuroscience, exposome-related research, microbiome investigations, and “well-aging” strategies. Longevity, sustainability, pigmentation, and neurosensory approaches were also central. The predominance of studies on “**Longevity**” and the microbiome reflects a transition from short-term anti-aging claims to **holistic strategies** that emphasize resilience, regeneration, and microbial balance.

The dominant testing topics addressed at the congress primarily revolve around



longevity and well-aging. The traditional anti-aging paradigm has been superseded by a comprehensive focus on **skin regeneration**, resilience, and repair. Aging is now viewed as a multifactorial process, involving oxidative stress, environmental exposure, and microbiome interactions.

Biomarkers and omics-based technologies, including **genomics, proteomics, and metabolomics**, are used to rigorously evaluate long-term skin health. Furthermore, personalization and advanced diagnostics have emerged as transformative forces, with AI-driven diagnostics, 3D imaging, and microbiome profiling. Hyper-personalization is now attainable via neuroscience-informed predictions, and in-silico modeling alongside artificial intelligence is establishing a new paradigm for assessing efficacy, safety, and regulatory compliance across a broad spectrum of ingredient combinations.

Additionally, the skin microbiome has taken center stage. Research highlights its role in acne, aging, and UV-induced damage. **Prebiotics, probiotics, and postbiotics** are being explored as targeted interventions. Their effects are evaluated with advanced methodologies, including refined skin sampling and multi-omics approaches.

Technological Inspirations & low signals for both in-vitro & in-vivo analysis

The Congress highlighted the diversification of methodologies beyond traditional in-vivo testing.



+370

posters linked
to the testing
field

+50

podium linked
to the testing
field

+20

testing
exhibitors

In vitro, ex vivo, microfluidic and organ-on-chip models are increasingly sophisticated, incorporating vascular, neuronal, and sebaceous components to better mimic physiological reality. In-silico approaches, supported by AI, are emerging for predictive toxicology, efficacy simulations, and cross-population extrapolations. Notably, new ISO standards for SPF evaluation, ISO 2375 (Double Plate Method, fully in-vitro) and ISO 23698 (Hybrid Diffuse Reflectance Spectroscopy), represent a paradigm shift, offering ethical, reproducible alternatives to erythema-based human testing.

Advances in biomarkers and omics (genomics, proteomics, metabolomics, transcriptomics) are transforming mechanistic understanding of skin physiology, enabling precision testing. **At-home diagnostic devices**, smart mirrors, AI-driven probes, dermoscopes, offer scalable, real-time skin evaluations, with implications for both consumer empowerment and clinical validation. Neurocosmetics and the study of the **skin-brain axis** uses testing protocols combining physiological, psychological, and behavioral endpoints. AI is not envisioned as replacing human expertise but rather as augmenting intelligence, standardizing data treatment, and enabling hyper-personalized diagnostic and formulation strategies.

Emerging "low signals" included fascia biology, skin translucency,

What was over represented

Hyper-Personalization
Microbiome
Asian skin & hair studies
Clean Beauty
Consumer
• Perceived efficacy
• co-creation
• Regional adaptation
• Cross-population
• Neuroscience & desires
in-silico prediction for transversal assessment
Skin/Hair/Scalp Health
in-vitro sophisticated models

nail health, and the impact of space exploration on skin physiology. These underrepresented domains may constitute future frontiers for testing. The integration of conversational avatars in consumer testing, multi-pathway mechanistic models, and eco-sustainable photoprotection systems further indicate the field's expanding horizons.

In conclusion the IFSCC Congress 2025 confirmed a profound transformation of cosmetic testing. A convergence of societal expectations, environmental imperatives, and technological innovations is fostering a new evaluation paradigm: ethical, inclusive, and scientifically robust. For scientists in cosmetic evaluation and testing, the message is unequivocal: the future lies in **integrating advanced models, omics-based biomarkers, AI-driven personalization, and environmentally responsible protocols**. This evolution will not only strengthen the scientific validation of cosmetic products but also ensure their alignment with consumer well-being and planetary sustainability.



Watch the post-show webinar replay on the **Skinobs Youtube Channel**

Out of the Box

AI - No worries
No replace Human!
Until Augmented Intelligence

The skin barrier, 2nd skin

Space exploration

What we missed

Male

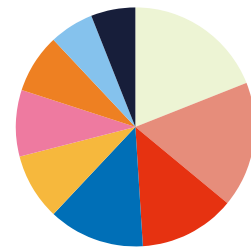
Menopausal

Nails

Child

African subjects

Posters Testing Topics



Sustainability
Hair
Analytical
Neurosensory
Pigmentation
Formulation
Makeup
Longevity
Microbiome

Podiums Testing Topics

Well ageing	17
Microbiome	7
Neuroscience	7
Exposome	7
Photoprotection	5
Health	5
Sustainability	5
Analytical technologies	5
Make-up	5
Personalisation and beauty tech	3
Fragrance	2

NEW TESTING METHODS IN BEAUTY, NEW TRENDS AND INNOVATIVE SOLUTIONS TO EVALUATE IN VIVO COSMETICS EFFICACY: A TECHNOLOGICAL PANORAMA OF NOMAD AND CONNECTED DIAGNOSTIC DEVICES

176

Pascale Barlier¹, Leaticia Leunkeu², Anne Charpentier², Jean-Jacques Servant³

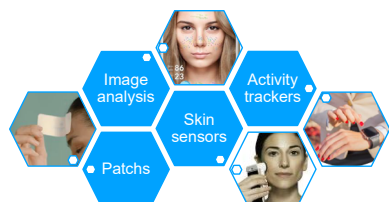
1 Cos&Co SAS, 78000 Versailles, France, 2 Skinobs EURL, 73100 Aix-les-Bains, France, 3 Act4 EI, 49250, Beaufort-en-Anjou, France

INTRODUCTION

In 2025, the beauty industry is evolving significantly in an increasingly connected, digitalized, personalized world. The diagnostic devices allow consumers to access products that meet their exact skin/hair concerns, and their performance needs. This personalized diagnosis is based on high-tech digital evaluation tools, complex data processing and consumers' self-assessment. In these major advances in personalization and beyond optical and physico-chemical measurement technologies, AI plays a leading role in training algorithms from thousands of face photos on the recognition of skin signs.

MATERIALS & METHODS

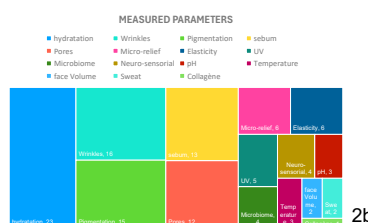
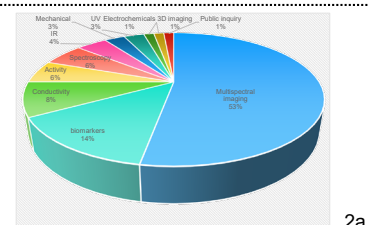
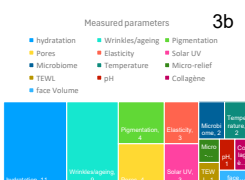
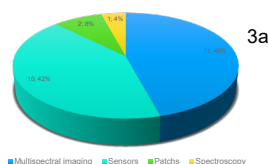
All the research was carried out online by the PRISMA methodology [1] (Preferred Reporting Items for Systematic Reviews and Meta-Analyses). Our approach was structured around a comparative analysis between **diagnostic home-devices** and **biometrological instrumentations** used in Contract Research Organization. This comparison aimed to assess the performance, **reliability**, and **usability** of diagnostic home-devices in comparison to the **gold-standard instruments** (impedancemeter, profilometer, imager...) typically employed in cosmetics in vivo testing laboratories



Our research method allowed us to identify more than 100 potential home-devices worldwide but after an in-depth study of each of them, many are ineligible.

RESULTS

80 systems and devices were identified to be potentially so called "nomad device" using the general criteria and key words described in methods. 52 are home devices, 37 could be used as shop or pro devices, 5 are used as lab systems (figure 2 a). Considering data acquisition techniques, 66% are based on imaging device, in which 40% use Smartphones camera, 19% are exclusively using IOS and 7% are specific imaging devices (figure 2 b). 16% use contact skin sensors, 12% are based on patches and 6% are activity tracker like, Watch, wristband, clothing



After we made the selection of the devices using our objective criteria list, 21 remains. Four technologies remain from the selection (figure 3 a), mainly **Multispectral imaging** (11) based on **smartphones** (7) or **specific camera** (4) and **skin sensors** (10) coupled with smartphones for data processing as well and **Biomarkers** (2), last is **activity tracker** (1). Regarding measured parameters (figure 3 b), most of them are kept in the selection as some devices can still measure more than one parameter as they combine technologies like imaging and sensors or detect more using different illumination

DISCUSSION

The conductivity, spectroscopy, biomarkers and biomechanical technologies and all technologies combined of these nomadic and connected devices are based on technologies and measured parameters that have been used routinely for more than 30 years in testing laboratories: micro-relief, wrinkles, pores, pigmentation, brightness, uniformity, microbiome, protein, free radicals, hydration, sebum, sweat, pH, pigmentation, collagen... The parameters assessed by these new tools are in line with the well-established claims of the beauty industry, such as the study of moisturizing, anti-aging, and sebum-regulating effects, which constitute the current "golden" claims. While the measured parameters remain the same, these devices will expand the scope of claims to include allegations directly related to consumers' lifestyles and real-life conditions. However, we are far from the standardized environmental conditions that represent the rule of laboratories in the data acquisition on subjects with control of subject's conditions, lighting, light environment, temperature and humidity. It can be observed that the conditions of acquisition, the acquisition itself as a dependent subject and the processing of the data show a fragility of this measure.

CONCLUSION

Testing laboratories can remain the reference for these novel home devices diagnostic tools and the guarantors of scientific evaluation on a larger scale. But the use of these mobile devices will be relevant to include the capture of environmental parameters (temperature, humidity, lighting, UV...). From this novel tool panorama, we can imagine the development of diagnostic using smartphones and the adaptation of spectroscopy technologies to standardize lighting. The second way may be based on medical technologies collecting via probes for instantaneous measurement of impedance, fluid, and gas, as well as through patches/swab for skin samples. Subsequently, the sample biomarkers can be analyzed using omics methods. These two paths for home device diagnostic will undoubtedly lead to the use of a futuristic connected mirror to which the cosmetics consumer will connect in his bathroom to make a complete diagnosis of his skin and hair conditions.

REFERENCES: see more in the complete article

- Stretchable, Rechargeable, Multimodal Hybrid Electronics for Decoupled Sensing toward Emotion Detection. Yuan, Yangbo; Xu, Hongcheng; Gao, Libo; Cheng, Huan (2025)
- Metrology and sensors as demo-cosmetic technology opportunities for a change of paradigm. Skin Res Technol. 2020;00:1-9. DOI: 10.1111/srt.12931 - Caroline Bollinger, Tu Anh Duong, Gilles Genain, Nicolas Almaric, Alain Moga, William Richard, Stanislas Vandier

BEHIND THIS POSTER

Because we share the convictions that it's time to promote the **hybrid clinical cosmetic studies**. So, we combined our 3 areas of expertise with Anne Charpentier from Skinobs and Jean-Jacques Servant from ACT4C and our internship Leaticia to produce an overview of nomadic technologies and to have a critical and constructive look at these technologies; Anne having a very international vision of measurement tools; Jean-Jacques having an expert eye on physical measurements and me, having knowledge of the needs of studies on volunteers.



Pascale Barlier
Founder & Director COS&CO.

The cosmetics industry is constantly innovating through increasingly mobile diagnostic applications that are comparable to nomadic bio-metrological tools. In addition, there are some direct physical measurement tools that can be used at home and several skin or hair diagnostic kits enabling them to assess some biomarkers, pollutants or microbiota via self-sampling.

The sector is aware of the importance of understanding its consumers, their desires, their lifestyle, their beauty routine. **Nomadic measurements** are an opportunity to combine data collected in the laboratory with those obtained «at home» to add elements of **characterization of the skin in real situations** but also to access new information in terms of product effectiveness and environmental factors. However, there are some constraints, especially robustness and reproducibility of self-measurements, management of the personal data generated, remote monitoring...The panorama of nomad diagnostic devices is constantly expanding; it is necessary to use these tools in a structured and guided way to generate relevant results.



Anne Charpentier
Founder & CEO Skinobs

The parameters assessed by these novel tools align with well-established cosmetic claims, including hydrating, anti-aging, and sebum regulation claims. While the measured parameters remain unchanged, these devices expand the scope of claims, enabling lifestyle-related allegations to be directly substantiated. At present, though advancements in this field are progressing rapidly, no groundbreaking technological innovation has yet emerged. Instead, there is a predominance of facial and skin analysis tools, alongside a multiplicity of analyzed parameters. **CROs play a pivotal role in validating these tools**, serving as a critical endorsement for their future widespread adoption.

Undoubtedly, future developments in cosmetic efficacy evaluation will be both abundant and transformative. Recent progress in **neurosensory measurements of emotional parameters** opens avenues for diverse study combinations, while the infinite potential of biomarkers offers indices for physical, chemical, and physiological skin changes. This convergence promises a new era of precision in cosmetic science.



Jean-Jacques Servant
Scientific Manager

After having developed methods for high lab standards and widely looking at new technologies, I realized that the need for modern testing approach for the cosmetic industry is getting close to the beauty ones. So many systems, instruments or software dedicated to analyzing face and skin rose up in the last years, that it seemed to me that some of them would meet cosmetic standards. **Miniaturization of sensors, IA, Big Data, networks and connectivity** were the ingredients to produce nomad and home devices. Getting measurement from the "real life", at home would be relevant to complete actual efficacy lab measurements and personal data collection. The next crucial question is how objective these measures can be made by unskilled people.

Nomad devices will never produce the same level of expertise results obtained in CRO's, but they can give complementary measurements through real life, with high frequency and volunteer dependency. This data will produce a **novel knowledge of the skin** though all days, which should meet consumer demand. I had the chance to meet two other experts: Anne Charpentier (Skinobs) for her knowledge of the testing cosmetics market worldwide, and Pascale Barlier for her experience in clinical studies, measurement techniques for cosmetic product performances. We all share our analysis of the potential of portable devices as a new testing approach for the cosmetics industry.



Leaticia Leunkeu
Junior Clinical Project Manager

My initial training was focused on medical devices, but my professional experiences led me to the field of cosmetics, a world I was initially unfamiliar with. Thanks to the Home Devices project, I had the opportunity to discover this environment and find my place in it. What I liked most about this project was **the diversity of the missions** and the autonomy I was able to benefit from throughout.

I particularly appreciated the phase of developing **the selection criteria**, because it required both methodological rigor and a good understanding of clinical issues. This project allowed me to develop my analytical skills, refine my ability to synthesize information and transform documentary monitoring into a usable deliverable. I had the chance to collaborate with recognized experts in the field, to learn from them and honestly, it is priceless.»

Cosmetotest 2025: Advancing Dermocosmetic Testing

On May 14th and 15th 2025, Lyon became the epicenter of scientific exchange in dermocosmetics as it hosted the 4th edition of Cosmetotest. This hybrid symposium convened over 250 international participants, including dermatologists, cosmetic scientists, and testing field stakeholders. Across two intensive days, the event showcased the latest advances in preclinical and clinical testing, highlighting the mechanistic insights and innovative methodologies shaping the future of cosmetic research.

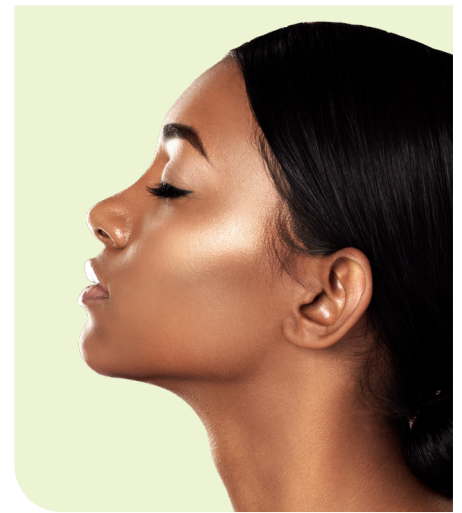
The right connection could change everything, and Cosmetotest was designed to create those opportunities. At Cosmetotest 2025, **exchanges took center stage**, whether through inspiring presentations or in-depth discussions between researchers, brands, laboratories, and instrument manufacturers. The event provided a unique space where science met collaboration, bringing together a **dynamic community** driven by the ambition to advance preclinical and clinical evaluation in cosmetics and dermocosmetics. We warmly thank all speakers, exhibitors, and participants whose expertise and openness made this edition such a **rich and valuable gathering**.

The symposium opened with a session devoted to **pigmentation**, a domain of paramount importance in dermocosmetics development. Speakers presented cutting-edge in vivo assessment tools such as reflectance confocal microscopy, multiphoton imaging, and Raman spectroscopy, enabling precise, non-invasive tracking of melanin distribution and pigmentary changes over time. Beyond imaging, discussions emphasized the identification of novel biomarkers, including melanocyte activity markers, oxidative stress indicators, and inflammatory mediators. Together, these approaches are redefining how efficacy is evaluated in formulations targeting hyperpigmentation and photoprotection.

Building on this, the second session addressed **exposome and pollution**, examining the cumulative impact of environmental stressors on skin structure and function. Researchers highlighted molecular endpoints such as lipid peroxidation products, DNA damage markers, and pro-inflammatory cytokines to quantify the effects of ultraviolet radiation, airborne particulates, and chemical pollutants. Advanced in vitro and ex vivo models, including reconstructed skin and human explants, were discussed as predictive platforms for assessing protective cosmetic strategies. This session underscored the necessity of integrating mechanistic understanding into product development to mitigate pollution-induced aging and barrier dysfunction.

The third session explored **skin vascularization**, a critical determinant of skin vitality and responsiveness. Presentations focused on state-of-the-art imaging techniques, including optical coherence tomography, laser Doppler imaging, and hyperspectral analysis, to quantify microcirculation, vascular density, and tissue oxygenation. By linking these vascular parameters to clinical endpoints such as erythema recovery and skin tone modulation, researchers demonstrated how targeted formulations can enhance radiance, alleviate redness, and improve overall skin appearance. This session highlighted the translational potential of combining mechanistic vascular studies with robust clinical evaluation.

Concluding the scientific program, the final session delved into the **skin microbiome**, a frontier of growing interest in cosmetic science. Experts showcased advanced metagenomic sequencing, meta transcriptomic profiling, and metabolomic analyses to characterize microbial diversity, functional activity, and host interactions. The effects of topical interventions, including prebiotics, probiotics, and bioactive formulations, on microbial balance and skin homeostasis were examined in detail. This session



reinforced the concept that effective dermocosmetics strategies must consider the skin ecosystem holistically, promoting both microbial health and barrier integrity.

Cosmetotest 2025 offered more than a showcase of methodologies; it provided a compelling vision of the future of dermocosmetics research. The symposium demonstrated how **scientific rigor drives product innovation, safety, and efficacy**. Through lively discussion, collaborative exchange, and exposure to emerging technologies, participants left equipped with actionable insights and a deeper understanding of the complex biological underpinnings that define modern cosmetic science.

Looking ahead, the 2026 edition, March 18–19, in Lyon and online will again gather major players in skin, scalp, and hair assessment. It will explore four new themes: exposome impacts, hormonal influence, hydration, and neurocutaneous interactions, continuing to shape the future of dermocosmetic research.



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Interview



G. Philippe Papadimitriou
Cosmetic Consultant

About Philippe Papadimitriou

Innovation, curiosity, and science are the three cornerstones of Philippe Papadimitriou's approach to cosmetics and health. Guided by this ethos, he has led multidisciplinary teams to develop breakthrough formulations, drive market growth, and translate cutting-edge research into consumer-ready solutions. Drawing on extensive academic training in molecular biology, pharmacology, biochemistry, and neuroscience, as well as deep expertise in every stage of product development, including designing (pre)clinical studies, Philippe consistently transforms complex challenges into tangible solutions. With more than 20 years in cosmetology, he serves as honorary Scientific Director at Hormeta and acts as Open Innovator at Cosystems, the freelance entity he founded in 2019.

How does the recent trend toward “longevity” change the current approach to cosmetic care versus anti-aging performance?

It's mostly a matter of definitions. Another way I'd myself interchangeably use for «longevity» is healthy aging, which surely overlaps earlier concepts. There are distinctions nonetheless, based on scientific advances. First, where this may initially diverge from previous strategies lies in a new understanding: that aging in itself, because of nature's imperfection (from an anthropocentric perspective - an arrogant stance, I admit), indeed starts as soon as we are born. Then, and this is what strikes me the most, the recent proposal somehow also expands on the current ones in that it aims at targeting pathways at the root of aging while these are perhaps not -or not yet- associated with visible signs of aging, which somehow subtly goes beyond appearances and beauty.

Aging is at last today shown to mostly be driven by extrinsic conditions affecting (the intrinsic) molecular and cellular processes; we do not age in a linear way with time, and each of us may experience a different pace of aging depending on more or less healthy behaviors and choices over the course of our lifetime. All in all, longevity teaches us we have much more biological leverage than it was previously thought and that we can not only preventively slow but also stop or even reverse aging processes. An exciting consequence is that cosmetics can become biohacking tools of some sort in the light of how skin health is correlated to overall health in a bilateral way according to recent publications. Hacks for skin's healthy aging, locally, and maybe even health (!!).



How can we envision the challenge of evaluating and using innovative technologies to assess this “longevity” performance?

The challenges are legions and this should be met with caution but also stimulation and enthusiasm. First of all, skincare still has to deliver on the visible signs of aging, so tackling any longevity pathway alone may be at times limiting, particularly in the timelines usually associated with cosmetic clinical studies. There was a time, long gone, when in vitro studies were considered somewhat sufficient in the context of active ingredients - now clinical resonance is systematically expected, with associated proven efficacy results, generally vs. placebo. But how does one clinically demonstrate an invisible trait or parameter has been enhanced..? This undoubtedly pushes for more elegant and sophisticated testing.

For the demonstration to go full circle, I would personally suggest, amongst other strategies, thinking about panels' inclusion/exclusion criteria wisely (a «same» Bazin grade 4 wrinkle clearly indicating a different state or pace of aging between individuals in a panel aged 40 to 60 years old, for example), associated with the collection of samples (strips or samples of biofluids) where targeted biomarkers can be traced vs DO. Clinical studies conducted as usual, whatever fancy in vitro data one has accumulated, even if the product still delivers (!), won't be sincerely considered innovative in the field of evidence-based longevity. It's also possible, and I'm somewhat secretly counting on this, that AI allows us to discover, describe and categorize new signs of aging that were so far imperceptible to our eyes and technologies, or such hidden precursors.

In your opinion, what relationship can be seen between the topic of “longevity” and that of epigenetics when it comes to evaluating cosmetic performance?

All cells, including skin cells, need constant monitoring of their own state and environmental conditions in order to best ensure their functions, accurately communicate with their neighbors, by releasing substances or extracellular vesicles, or dictate their own fate. They only do so by producing proteins, mostly transiently. Cell differentiation definitely limits the production of proteins to specific sets and so allows supremely distinct functions between a liver and a eye photoreceptor cell, for example. These clearly share a same DNA but its expressed portion is under the control of epigenetic phenomena and markings. The same happens with aging, which means some physiological properties get lost with time for these cells, under epigenetic control.

Biological clocks based on one much studied epigenetic scheme (DNA methylation patterns) are today's golden standard defining a biological age vs. a chronological age. In other words, within their own suggested metrics, these «clocks» show how gracefully or protected one has aged in terms of molecular mechanisms (pace or state of aging vs. time). Some of them are offered as well-adapted to skin aging. It is however relevant to mention that other age-related epigenetic traits (histone modification patterns and/or typical ncRNAs profiles) have been associated with specific skin-related targets, like collagen for example. As such, epigenetics is a promising way to study longevity. It can provide information for panel selection, be used as target to reactivate some lost physiological functions too (as markings are by definition reversible), and as a reusable method of measure for clinical studies.

Epigenetics is nothing strictly reserved to aging alone though, and epigenetic states and markings -that may be more or less transient- are, too, widely associated with circadian rhythmicity, exposure to existing stressors (UV, pollution, circulating cortisol, infections,...), levels of hormones and/or nutrients or pathologies (diseases or even cancer). In this context as well as in aging, epigenetics inform of the current phenotypic state of a cell...One that does not automatically require correction. This further allows studying skin healthy aging, with an extended,

more holistic view on chronobiology, hormonal levels within the feminine cycle, (peri)menopause, states of mind and emotions or exposure to external conditions (the «exposome» at large, including microbiome-tissue or host interactions).

Finally, in your opinion, what is the new way of considering the expected results of these beauty routines in order to satisfy both the requirements of brands and ingredient manufacturers and the expectations of consumers in terms of instant diagnosis, personalization, etc.?

Longevity, or (again) healthy aging, commands evidence, not just science, and we're today indeed gently moving away from too wide standards or inaccurately-addressed segmentation, understanding with humility we all age at a different pace, following distinct patterns.

This on the one hand opens the stage for data-driven, AI-based recommendations potentially delivering high-precision personalization and, on the other, diagnostic-driven solutions, that may go as far as mimicking or replicating the initial efficacy testing at CROs, but this time done at clinics, points of sale or even at home, on individual customers, at different endpoints, allowing for a beauty routine to be adapted and tailored as time passes.

AI-powered digital twins might also become a new standard for specific skin issues or pathologies, somehow guiding in vitro early work by brands or R&D teams designing active ingredients, or maybe even dictating endusers product's selection individually.

I'm looking forward to seeing how apps, wearables, devices and imaging are going to further devotedly shape all this. Population pyramids are contracting, informing of an aging population trend, associated with lower birth rates. With social media, emotional wellbeing and health/fitness being focus points of cosmetic consumers, my belief is that longevity has only just started.



TOP COSMETICS CLAIMS 2025*

**Skinobs half-year audience report unveils key trends in cosmetic preclinical and clinical claims for the first semester of 2025*

The first half of 2025 brought continued momentum in both preclinical and clinical cosmetic testing. Skinobs' latest audience report, **based on usage data from its testing platform and editorial channels**, provides a comprehensive overview of the **evolving dynamics in claims, methods, and scientific engagement across the beauty industry**.

A GLOBAL HUB CONNECTING COSMETICS EXPERTS WORLDWIDE

With **4,000 searches** from **98 countries** and over **24,700 pages viewed**, Skinobs reaffirms its role as a **leading connector between cosmetics brands and testing laboratories**. The newly launched messaging system recorded **565 direct contact requests**, underlining the platform's value for professionals seeking efficient, targeted collaboration. While France continues to represent most users (60%), growth in Asia and North America points to an increasingly global audience.

PRECLINICAL: 'WELL-AGEING' RISES TO THE TOP

The **Preclinical Testing Platform** saw a noticeable shift in claim searches, with **"well-ageing"** now ranking first—surpassing traditional themes such as **hydration** and **anti-wrinkle**. Other popular claims include microbiome compatibility, skin barrier reinforcement, and wound healing. This reflects the ongoing transition from anti-ageing narratives toward a more holistic

vision of skin longevity and health.

There's growing interest in **mechanistic insights**, illustrated by the rise of claims such as **anti-redness**, **content-container interaction**, and **extracellular matrix support**. Sophisticated biological models, including 3D skin cultures and organ-on-chip systems, are playing a greater role in substantiating these types of claims. These platforms help researchers simulate real-life skin conditions more precisely, opening the door to deeper and more meaningful efficacy evaluations.



TOP 8 CLAIMS

2024 datas

- 1 Hydration
Hydration
- 2 Skin barrier (strengthening)
Well-ageing
- 3 Well-ageing
Anti-oxydant
- 4 Anti-pollution
Anti-inflammatory
- 5 Radiance
Anti-hair loss
- 6 Microbiome friendly
Radiance
- 7 Non-irritating
Smoothing
- 8 Smoothing
Anti-pollution

CLINICAL: DIVERSIFIED CLAIMS AND NEUROSENSORY TESTING IN THE SPOTLIGHT

Clinical evaluation trends show a similar evolution. With nearly **4,800 users** this semester, the **Clinical Testing Platform** highlights a broadened scope of interest: while hydration remains the top-searched claim, **"well-ageing"** surged to third place. Claims like **anti-pollution**, **radiance**, **soothing**, and **repair** also gained prominence, indicating a consumer preference for **comprehensive care** over isolated benefits. Biometrological tests continue to dominate, accounting for a significant share of the clinical studies, but there's now a more balanced distribution with **tolerance testing** and **consulting services**. Neurosensory evaluations, which assess emotional, subjective, and physiological responses to products, are gaining traction. These methods bring a **neuroscientific dimension** to testing, resonating with brands seeking to craft **sensory-rich experiences**.

TOP 10 CLAIMS

2024 datas

- 1 Well-ageing
Hydration
- 2 Hydration
Well-ageing
- 3 Microbiome friendly
Soothing
- 4 Skin barrier (strengthening)
Barrier function
- 5 Wound healing
Anti-pollution
- 6 Anti-redness
Oxygenating
- 7 Content-container interaction
Smoothing
- 8 Anti-wrinkles
Antioxidant

COSMETICS TESTING NEWS: A RISING MEDIA

Celebrating its 10th anniversary, the Cosmetics Testing News continues to grow as a trusted media outlet for beauty professionals worldwide.

With over 26,000 monthly reads and 7,082 subscribers from 94 countries, the platform consolidates its position as the reference source for efficacy, safety, and innovation news in the cosmetics testing space.

The latest redesigned version enhances readability and access to curated, expert-driven content.

A SECTOR DRIVEN BY TRANSPARENCY, AND SCIENTIFIC INTEGRITY

The Skinobs audience report reflects a cosmetics industry in transformation. Testing is no longer a behind-the-scenes technical requirement, it's a central, strategic pillar of product development and marketing. Brands are increasingly expected to deliver proof-backed and inclusive, aligned with a deeper understanding of biology and emotions.

The growing interest in well-ageing, clean beauty, and even oral care efficacy shows that beauty routines are evolving toward full-spectrum well-being. Through its platforms, editorial content, and initiatives like We Are Testing®, Skinobs continues to support professionals in navigating these changes and be real actors of the global market.



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SKIN MICROBIOTA CLAIMS SUBSTANTIATION

Between science evaluation and marketing

The evaluation of the effect of dermocosmetics or active products on the skin microbiota is evolving into more complex models. And yet, these never reach the sophistication of the ecosystem of the bacterial biofilm of the skin. In addition, it is now known that the skin microbiome is subject to intra-individual variations depending on the body areas and inter-individual according to genetic, intrinsic, and environmental factors.

AN ECOSYSTEM LINKED TO THE SKIN HOMEOSTASIS

Healthy skin promotes an adequate balance of the different bacteria present and vice-versa, skin homeostasis involves a diverse and highly controlled microbiome. Sometimes the simple decrease of one species can benefit others, which then become potentially pathogenic. 2D or 3D models including the inoculation of one or more microorganisms, living, or inactivated, allow to progress on specific problems, such as those associated with

dysbiosis such as acne, atopic dermatitis, psoriasis, or scalp disorders... These approaches, which can sometimes be considered «reductionist» as the bacterial ecosystem of the skin is complex, remain unavoidable and contribute to the advancement of knowledge in the fields of skin biology and microbiology.



Cosmetics products should **preserve the bacterial balance of healthy skin** as varied as it may be and allow fragile and injured skin to regain their natural balance. Since the discovery of the intestinal microbiota, the question of the skin microbiota (micro-organisms, bacteria, viruses, fungi, yeasts), is under every lip. 100 trillion of bacteria are living in our bodies and everybody wants to know more about the impact of the cosmetics use on the skin bacteria ecosystem and how these phenomena can be measured?

The microflora is usually subdivided in 2 groups:

- The transient flora, saprophytic and pathogens microorganisms with *Staphylococcus aureus*, *Escherichia coli*, *Pseudomonas aeruginosa* and *Bacillus species*...
- The resident flora, pathogenic and commensal microorganisms with *Proteobacteria*, *epidermidis*, *S. hominis*, *Propionibacterium*, *Corynebacterium*, *Dermabacter*, *Brevibacterium*, *Micrococcus*, *P. aeruginosa*, *Pityrosporum*, *Malassezia*, *Demodex*...

The balance of cutaneous microflora is dependent of the several conditions of its ecosystem: temperature, pH,

hormones, light, UV, lipids, proteins, water... It is **mainly influenced by the genetic, the lifestyle and the diet**. Each person has their own skin flora composition, distributed from the epidermis until the dermis, which is lifelong qualitatively stable, like a **personal microbial footprint**. This skin microflora is fundamental for the skin homeostasis and participates to the immune and barrier functions.

A BIG INTEREST OF THE CONSUMERS FOR THE SKIN MICROBIOME

The consumers of microbiome beauty products believe that the main benefits of probiotic skincare are **balances skin pH, it kills bacteria on skin that causes acne/blemishes, contains live bacteria that fight 'bad' bacteria on the skin, keeps microbiome balanced and creates protective barrier on skin surface**.

Moreover, consumers are gaining interest in the skin microbiome as observed with an increased of 68% average annual growth in product launches with microbiome claims from October 2018 to September 2023 (Innova Market Insights).

Just to remember some definitions, the **skin microbiota** is defined as all the microorganisms present in the skin while the skin microbiome is a characteristic microbial community that occupies the skin and has distinct physiochemical properties. The microbiome does not only refer to the microorganisms concerned, but also encompasses their activity, forming specific ecosystems. **The microbiome** includes genetic material, as well as structural molecules, such as enzymes, membrane lipids or polysaccharides. These two terms, «microbiota» and «microbiome», are not synonymous, since the microbiota refers only to microorganisms, while the microbiome also includes their functional potential.

MICROBIOME CLAIMS, THE ERA OF A NEW REVOLUTION FOR THE COSMETICS?

Currently, the approach of supporting microbiome claims is becoming increasingly important for assets, finished product and brands. Thus, growing the interest of in-depth analysis of the interaction between the product, skin and microbiome and their mechanisms of action. Many testing laboratories (+80 CROs worldwide) are studying these new claims looking in the direction of the metagenomic field. The studies of the cutaneous flora are complex, and it is not always easy to understand its **functionalities and interactions with the skin metabolism**. The first way is to analyse the genome of the bacteria of the skin flora. It is a **living layer of the skin** to be discover like a new continent of the body.

First, we must consider that the skin microbiota does not belong to the epidermis layer of the skin. It is a "foreign" substance of our body:

- acting as a resident of the skin and
- forming a biofilm at the epidermis surface
- maintaining the good conditions of the skin and regulating inflammation,
- protecting the body from the aggressive environmental conditions and various internal stresses.

Various bacteria disorders might be considered as a source of cutaneous dysfunctions like acne, eczema, dandruff or atopic dermatitis modifying this precious balance.

Table 2. Pubmed Search query per year

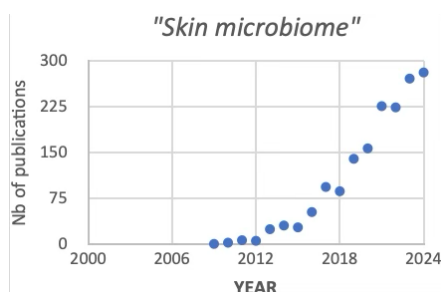


Table 1. Reminder of the International Cooperation on Cosmetics Regulation definitions

Probiotics	Defined as viable microorganisms (active or dormant) added to a cosmetic product and intended to provide a cosmetic benefit to the host at the site of application, either directly or through an effect on the host's microbiome. Active microorganisms are defined as growing organisms that increase in number and/or biomass. Dormant microorganisms do not grow, but retain their metabolic activity.
Postbiotics	Are inanimate ingredients of microbial origin added to a cosmetic product for cosmetic benefit. These components can be cells or cell fractions, a fermentation filtrate, or a metabolite of a microorganism.
Paraprobiotics	A subgroup of postbiotics, are ingredients derived from inactivated probiotic microorganisms added to a cosmetic product with an anticipated cosmetic benefit. Paraprobiotics can be inactivated microbial cells or components of cellular structures, with or without metabolites.
Prebiotics	Are substrates added to a cosmetic product to be used by the host's microbiome, with an expected cosmetic benefit for the host

The cosmetics search for 3 main benefits:

- the rebalancing, pro-biotic, pre-biotic
- the probiotic-like
- the anti-microbial effects.

In a regulatory approach, the first thing is that the personal care targeting the skin microbiota must be safe following the EC 1223/2009. At the European level, the debate on the regulatory status of «microbiotic» cosmetics was initiated in 2018. Work still underway within the International Cooperation on Cosmetics Regulation has resulted in a document on definitions relating to the microbiome in cosmetics (published in June 2022).

Cosmetics and personal care products must include in their formula only **prebiotics, probiotics and postbiotics ingredients** that are not listed on the Annex II of the prohibited substances. Moreover, each brand must assess that the microorganism involved in the formula do not produce any toxin. Claims such as **“Microbiome friendly”, “Respect microbiome”, “maintains the microbiome” or “microbiome safe”** should not be misleading and must not imply that it improves the skin microbiome.

Cosmetics are allowed only to keep the skin healthy and are not allowed to make it healthy or to modify the physico-chemical processes of the epidermis. Personal care, toiletries or cosmetics claiming that they support and protect the skin microbiota are allowed using claims such as supports or protects the microbiota, microbiota friendly.

But these products cannot claim that they stimulate, boost, reduce, or improve the microbiota or its diversity even it is admitted that higher diversity is linked with higher hydration, and less infected skin.



MICROBIOME ON SKINOBS TESTING PLATFORM

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HOW TO EVALUATE COSMETICS ACTIVITY ON THE SKIN OR SCALP MICROBIOTA

Finally, *in vivo* human testing gives a broader view of the microbiome, analysing microbes within their natural context and allowing longitudinal analysis (evaluate the product over time and its impact on the microbiome). Multiple factors are important in the implementation of *in vivo* skin microbiome studies, from study design, sample collection, sample processing and the incorporation of bioinformatics to delineate potential cause/association from sequencing results.

As the important **intra-individual diversity** of the cutaneous flora is also associated with a high level of **inter-individual variability**, study population and study design are of extreme importance.

Sample collection methodologies include **swabbing, tape stripping, biopsies** and now a days companies are even proposing self-sampling at-home collection kits (e.g Sequential; Smart Probes™, Hellobiome...). Protocols focus on comparing skin swabbing of the treated zone and of the non-treated or placebo zone, before and after treatment. Sample processing includes simple quantitative techniques CFU counting, and quantitative methods at molecular level such as **qPCR and rRNA gene sequencing** which is the **most common approach for analysis of composition of microbial communities**. rRNA sequencing is based on high-throughput sequencing of PCR amplicons for prokaryotic communities (16S V4, V1-V3), eukaryotic communities

(18S), fungal communities (ITS2), and archaeal communities (16S V4-V5). While techniques such as PCR provide a fast identification of known sequences, next-generation sequencing (NGS) offers a broader insight since it is a hypothesis-free approach providing a tool to detect novel genes with higher sensitivity. **Shotgun Metagenomics** which includes NGS 16S rDNA or ITS that allow to look at **all the genes of all the microorganisms** in a sample allowing to assess **microbial diversity** and detect the **abundance of species** under different conditions.

While metatranscriptomic sequencing employs various NGS platforms to uncover how genes are activated in response to lifestyle, environment & treatment evaluating the effect of a product on skin-related microbial gene expression. The integration of multiple layers of biological data, including **genomics, metabolomics and proteomics** also known as **multi-omics**, provide a more **comprehensive understanding of how products impact both the human body and its microbiome**. T

o do so, the **exploitation of metadata** to perform bioinformatic/biostatistics analysis to delineate potential cause/association with sequencing results of great importance. For example, HolXplore (Phylogene) which is a complementary analysis of data from meta proteomics experiments, allowing to highlight the biological effects associated with the results. Other suppliers that utilise database for analyses pipeline include Byome Labs, Sequential, BIO-ME and Hellobiome.

Several laboratories have created **in-house certifications** such as “**microbiome-friendly**”, “**respect the microbiome**”, “**kind to biome**” and “**maintains the microbiome**”, to help brands communicate about how their products do not harm the skin microbiome. Each company uses a combination of *in vitro* and/or *in vivo* protocols to mainly ensure that a given product does not have a detrimental effect in skin microbiome.

At the moment there are **no specific global regulations** in place for skincare products or ingredients targeting the skin microbiome, however the cosmetics industry has to follow the regulatory for standard cosmetics regarding safety and claims. Hopefully, one day further regulatory approaches will lay the grounds for to harmonize communication in the novel area of cosmetic science.

COMBINING POINT OF EXPERT'S VIEW ON CLINICAL EVALUATION PERSPECTIVES

A lot has happened since she first wrote about the Microbiome, back in 2012. Small brands have rushed in, large ones, not so much, but there is a lot of activity on the dermo brands front, and the premium consumer side is slowly starting. So why are premium brands so timid in using the Microbiome argument? The Skin Microbiome analysis is still young. It is a discipline that is still in its infancy. Especially in Skin Care. Sampling is still complicated, following up is a nightmare.

Lifestyle impacts the Microbiome as much as genetics does. The liminal nature of the “organ” complicates matters a great deal. So, yes, there are a lot of claims, many of them implying things that we just cannot be sure of. Yet. What we need, before we speak with the consumer, is industry-wide guidelines and consensus. If understanding what is happening on the skin with the **microbiome analyse remains complex despite** the presence of excellent testing labs in the space, one thing would help a great deal: understanding the impact of the products before they are formulated.

Let's make it routine to test the raw materials for their microbiome impact before the regulator makes us. Skin is a rather hostile environment, salty, dry, and poor in nutrients. Certain parts remain however moist and lipid rich propitious to bacteria blooming.

As the skin matures with age, notably during puberty where hormones are kicking-in and triggering a cascade of physiological and physical transformations, the **skin microbiome is constantly evolving** until adulthood. On average, a person has around 1,000 species of bacteria on their skin offering a variety of distinct ecosystems, which create conditions that favor different subsets of organisms.

Researchers have uncovered extensive **communication between bacteria, skin cells and immune cells**. These interactions have been described in plethora of physiological functions as in skin barrier reparation, limitation of trans-epithelial water loss and defences against infections. Deciphering the role of skin bacteria functions is a tremendous work and this domain remains however poorly understood.

Functional analysis and deciphering mechanisms of actions of bacteria / microbes are a prerequisite to better understand their role and activities. Skin is an accessible and untapped reservoir to dissect and improve the **comprehension of host- microbiome interactions**.

Furthermore, an extensive analysis of the skin and its microbiome via specific protocols using mass spectrometry proteomics and dedicated bioinformatics pipelines are keys to both decipher functional correlations and mechanisms of actions between skin and its microbiome.

For optimum beauty products results, every cosmetics product should follow the approach of fostering the **natural homeostasis of skin and hair** instead of imposing additional stress with aggressive chemicals. This is achieved best by exclusively high-quality ingredients that enhance the microbes dwelling on the skin.

The skin's microbiome differs significantly between the various body parts. To make sure a product does not harm the microbiome, some testing laboratories have developed different standards: face and body; scalp; infant skin; private parts; foot....

Also, cosmetics claims that are attributed to microbiome skin or scalp care can be easily assessed by using **classical biometrological methods** objectivating **pH balance, Hydration, Barrier fonction, Trans Epidermal Water Loss, blemishes, irritation, inflammation, sebum and lipids, Skin turn-over and desquamation, sensitivity, or dandruff**.

The Skinobs Clinical Testing platform allow you, for free, to easily find all methods selecting a specific claim. The beneficial anti-ageing effects of probiotics are now widely reported.

A recent study has proved their significant anti-ageing effect by increasing the skin water content, the skin elasticity, the skin gloss and decreasing transepidermal water loss as well as the wrinkle depth. The analysis on skin microbiome performed by PCR technology could be a valid support for objectifying the action of probiotics.

THE FUTURE OF SKIN MICROBIOTA EVALUATION

There is no ideal composition of the skin microbiota as people are living in different ecosystems and have various lifestyles. Scientists agree that among the **huge inter- and intra-individual variation**, a wide variety of microbiota species assure a good health. This bacteria ecosystem synthesizes a myriad of elements which have an important metabolic activity for our skin health.

It could be necessary to protect, to rebalance and activate it on the cosmetics side. Simply said the aim for personal care could be to reduce the "bad" bacteria and protect the "good" ones! But the notion of "bad" or "good" is relative depending of the physiological state of the skin. Now things are not so simple!

In 2025, the beauty industry is evolving significantly in an increasingly **connected, digitalized, personalized world** where social networks impact the beauty routines. In response to the expectations of these new consumers searching for "microbiome activity", cosmetics brands are developing personalization by specific microbiota analysis essential for the microbiota centric product recommendations.

With the advent of digital technologies, the miniaturization of measurement tools, A.I and data analysis, this «personalization» of "microbiota" cosmetics care is reaching sophistication thanks to the development of swabbing and analysis. It is regrettable, however,



that the data collected so far are generally on **Caucasians populations**, even if specific developments are made on specific ethnic groups, particularly Asians. The need for inclusivity in the beauty world is there and the approach to skincare targeting the microbiota should follow this global trend.

Regarding the in vitro evaluation, the development and use of **3D skin models** could offer invaluable insight into how cosmetics affect the skin microbiome in a controlled, replicable environment, deepening our understanding of host-microbe interactions at the skin.

In conclusion, the microbiota will play a key role in the cosmetics of tomorrow. We move towards **personalized and preventive cosmetics**. Claim substantiation will evolve with the regulation and the products development. We must keep in mind the **diversity and the balance of the skin flora** in the future developments of actives and personal cares. May be one day we should measure their impact of on the microbiota before launching the products on the market.

Anne Charpentier,
CEO & founder of Skinobs

Main references

- Kromidas, L. et al. *Skin Microbiome- and information Guidance for the Personal Care Industry*. IFSCC. 2024; 27(1):71-81
- Mim MF et al. *The dynamic relationship between skin microbiomes and personal care products: A comprehensive review*. Heliyon. 2024 Jul 13;10(14):e34549.
- Van Belkum, A. et al. *Being friendly to the skin microbiome: Experimental assessment*. Front. Microbiomes 1:1077151.
- Kong H. H et al. *Performing Skin Microbiome Research : A Method to the Madness*. J. Invest Dermatol. 2017; 137:561-568
- Yamamoto, I. et al. *Developing an In vitro Culture Model for four Commensal Bacteria of Human Skin*. AATEx. 2024; 29(1):1-7
- Leng, J. et al. *At-Home, Self-sampling of the skin microbiome: development of an unsupervised sampling approach*. Microbiology Society. 2025
- Carvalho MJ, et al. *Skin Microbiota and the Cosmetic Industry*. Microb Ecol. 2023 Jul;86(1):86-96.
- Cosmed: <https://www.cosmed.fr/cosmetiques-et-microbiome-un-cadre-reglementaire-en-construction/>

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Technologic inspirations

The rise of IA and connected Beauty

These innovations in the field of testing for cosmetics contribute to greater scientific credibility, ensuring that cosmetic claims are supported by objective, quantifiable physiological evidence. As biomarker-based evaluation continues to evolve, it is shaping a new era of precision skincare, where formulations are not only tailored to consumer needs but also scientifically validated for enhanced efficacy and safety. The ideal scenario arises when the societal and cultural imperatives of a market intersect with scientific and technological advancements, enabling significant progress that benefits consumers, society, and industry stakeholders alike. This dynamic has defined the cosmetics industry since its inception, making it both an inspiring and enthusiastic field of innovation.

1. The skin-brain approach: a scientific and sensory revolution

Today, the skin is recognized as a neurosensory interface, incorporating scientifically validated strategies to optimize both well-being and cosmetic efficacy. The bidirectional connection between the cutaneous nervous system and the brain highlights the **influence of sensory stimuli** on the skin's biological and emotional responses. Neurocosmetics specifically target cutaneous receptors involved in sensory perception by **modulating key neurochemical mediators** such as dopamine, oxytocin, and endorphins.

This regulation contributes to emotional well-being by reducing oxidative stress and inflammation induced by environmental and psychological

factors. This approach is now fully integrated into cosmetic formulation and evaluation, leveraging advancements in neuroscience, biotechnology, and artificial intelligence. The efficacy of neurocosmetics is assessed through a combination of physiological (heart rate, skin conductance, EEG), psychological (implicit perception, questionnaires, emotional response), and behavioral (facial and gestural expression) measurements. These multi-criteria analyses enable a comprehensive evaluation of a product's impact on both perception and subjective experience.

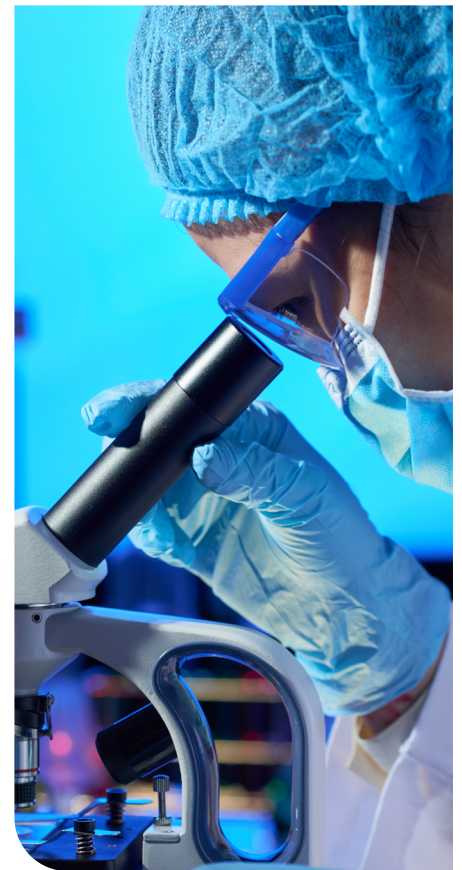
2. Holistic, emotions and neurosensory studies

We are seeing an increase in the importance of the “well-being” claim. This trend reflects a broader and growing shift towards a more **holistic approach to skincare**—one that prioritizes overall wellbeing and mental balance, rather than focusing solely on addressing the visible signs of aging or skin imperfections.

The demand for beauty routines that act holistically is helping to develop new tests based on neuroscientific approaches. A very strong trend towards measuring emotions using neurosensory analysis is now on every lips.

3. Biomarkers and omics analysis

In 2025, advancements in skin biomarker analysis through advanced skin sampling are revolutionizing cosmetic science, enabling a deeper understanding of cutaneous physiology and product efficacy at the molecular level. Cutting-edge multi-omics studies allow for comprehensive profiling of skin conditions facilitating their identification of molecular signatures. The innovations in **omics technologies**



(genomics, transcriptomics, proteomics, and metabolomics) and in non-invasive optical techniques such as LC-OCT, Raman spectroscopy, electron or confocal microscopy are driving the evaluation of the performance of highly targeted skincare with unparalleled precision.

4. Advancements in at-home skin diagnostic tools

These intelligent devices leverage cutting-edge advancements in artificial intelligence (AI), optical imaging, spectroscopy, and biosensors, ensuring an increasingly accurate and reliable assessment of skin parameters. By 2025, the rise of **at-home skin diagnostic** technologies is transforming clinical testing by enabling real-time, highly precise analyses on a significantly larger subject pool compared to traditional biometrological studies conducted in laboratories.

Devices such as smart mirrors, smartphone-compatible probes, and portable dermoscopes provide instant diagnostics, while integrated applications offer personalized recommendations.



5. AI and sensor-based technologies

High-resolution 3D scanners, multispectral imaging, and polarized light spectroscopy enable the quantification and visualization of key physiological parameters such as hydration, pigmentation, wrinkle depth, sebum levels, and scalp health.

Additionally, **smart patches and microfluidic sensors** assess barrier integrity by detecting physiological variations before and after product application. Machine learning algorithms, utilizing vast data sets, enhance automation and the scalability of analyses, significantly expanding the scope and accuracy of evaluations.

6. New ISO and better ethics for SPF determination

The assessment of Sun Protection Factor (SPF) has progressed significantly with the introduction of alternative methods to in vivo testing, ensuring enhanced safety, efficacy, and regulatory compliance. Until December 2024, SPF evaluation relied on in vivo erythema-

based trials, raising ethical and methodological concerns. In response, ISO standardized two methodologies: the **Double Plate Method (DPM - ISO 2375)** and **Hybrid Diffuse Reflectance Spectroscopy (HDRS - ISO 23698)**. The DPM offers a fully in vitro approach, utilizing robotic application and treated polymer double plates to replicate UV filter absorption, ensuring reproducible and standardized results.

Meanwhile, HDRS integrates in vivo and in vitro assessments through diffuse reflectance spectroscopy (DRS), quantifying UVA absorbance (320-400 nm) on human skin with and without sunscreen application. By mathematically hybridizing in vitro UVB absorbance with in vivo UVA data, HDRS provides a comprehensive, standardized UV protection profile.

7. The booming of in-vitro assays

In response to evolving beauty market, in-vitro assay have advanced to include a wide range of tests such as in-silico, in-vitro, and ex-vivo. These tests evaluate various aspects like safety, stability, ecotoxicity, biodegradability, microbiology, content-container interactions, UV protection, and efficacy.

For efficacy assessment, this progress is driven by a **deeper understanding of skin biology** and the discovery of biomarkers, alongside innovations in assay optic and dosage methodologies and IA applications.

These platforms now allow for testing not only on cells but also on **3D skin models and organ-on-chip systems, incorporating microfluidic technology to replicate live skin with added complexity, including melanocytes, neurons, capillaries, sebaceous glands, and hair.**

This technological evolution allows for a more accurate representation of skin reactions, which not only improves the accuracy of the tests, but also their variety, as these improved models provide more complete and reliable data.

8. In-silico analysis: a predictive paradigm

In-silico testing revolutionizes cosmetic science by using artificial intelligence (AI) and molecular modeling to predict ingredient safety, efficacy, and formulation stability. These methods assess toxicological risks (irritancy, sensitization) and **simulate biomolecular interactions**, including microbiome effects.

For efficacy, in-silico models quantify biological pathways involved in aging, inflammation, oxidation, and hydration, predicting effects on key biomarkers like collagen and hyaluronic acid.

Supported by regulatory agencies (REACH, SCCS) and the OECD, these methods integrate omics data (genomics, proteomics, metabolomics) and advanced neural networks, enhancing product safety, preclinical screening, and regulatory compliance.

Anne Charpentier,
CEO & founder of Skinobs

Main references

Scientific events: IFSCC Congress Barcelona 2023 - Brazil 2024, 2024 SFC Scientific meetings - Cosmetotest
Beauty shows and meetings: in-cosmetics Global, Korea, Asia, Latina, HPCI India
Technical seminars: Mintel, Euromonitor
Exchanges with testing experts, consultants and Skinobs' partners around the year

Skinobs White Paper

DIVE INTO THE 2025 GLOBAL EVOLUTION OF COSMETIC TESTING

This white paper published by Skinobs, is not just another market report. It's a strategic deep dive into the scientific, cultural, and technological shifts that are transforming how cosmetic products are evaluated and validated worldwide.



What's inside

01 Cultural influences on cosmetics industry

The next frontier in beauty is cultural intelligence, where tradition, innovation, and identity converge to shape global cosmetic trends.

02 Societal and scientific transformations influencing testing needs

The beauty industry is undergoing a profound transformation, propelled by scientific advancements, and evolving consumer expectations.

03 Technologic inspirations: the rise of AI and connected beauty

These cosmetics testing innovations enhance scientific credibility by backing claims with objective, measurable evidence.



Download the Skinobs White Paper for free

Stay tuned! Updates from testing labs

Byome Labs

BYOME LABS has closed its first €3.6 million fundraising with Paris Business Angels, Angels santé and esteemed partners. This support will enable the launch of BYOME DERMA pilot projects by late 2025, a solution that makes skin microbiome analysis more accessible. Thanks to a quick sample collection, antigenic strips developed in collaboration with Institut Pasteur, and an AI algorithm created with dermatologists. In under five minutes, we generate an accurate microbiome profile and personalized product recommendations. This innovation addresses a major issue: up to 70% of cosmetics are discarded annually due to poor skin compatibility. BYOME DERMA helps reduce such waste by guiding consumers toward better-suited products through scientifically grounded data. Want a glimpse of the first BYOME DERMA models? Visit Byome Labs at Cosmetic 360 (Oct 15-16, Paris).

Cliantha

Cliantha Research Limited, a global CRO with operations in India, the U.S., and Canada, is redefining Atopic Dermatitis (AD) research—a chronic skin condition marked by pruritus, xerosis, and erythematous lesions. Dermatologist-led studies utilize clinical scales (IGA, EASI, SCORAD, DLQI) and grading for erythema, pruritus, desquamation, and lichenification, combined with advanced instrumentation such as corneometry, TEWL, sebum analysis, ultrasonography, and histopathology for precise efficacy evaluation. «At Cliantha, we merge clinical expertise with cutting-edge technology to bring meaningful advancements in dermatology research,” says Dr. Simran Sethi, Senior Director. Operating under USFDA, EMA, Health Canada, and CDSCO standards, Cliantha also specializes in Early/Late Phase Trials and BA/BE studies, delivering scientifically validated data to enhance brand credibility and accelerate therapy development. For collaboration, contact Dr. Simran Sethi: ssethi@cliantha.com

Courage & Khazaka

TopiPen® - investigate different aspects around sun protection. The most economical solution for everyone who is looking for quick and accurate in vivo tests of sun protection products. The TopiPen® system consists of 3 powerful DRS-probes containing one LED in a specific wavelength range (UVA, UVB and BLUE light) each. The LED-light is coupled to a sophisticated fibre optic. Light is emitted and the remission detected by a photodiode.

Supported by SPF-FlowPro, a sophisticated application to measure the respective protection factors. The system is a complete C+K development based on our almost 40 years of experience leading the field of skin testing equipment.

- TopiPen® A 340 – high power, non-invasive UVA LED



- Screening DRS UVA PF
- Potential “1-LED-HDRS”
- Homogeneity of sun screen application

TopiPen® B 310 emitting UVB light

- First trials show good correlation with SPF
- Perfectly suitable for before/after measurements, e.g. water-, sand-, sweat resistance
- Potential intrinsic protection, e.g. after intake of specific nutrition contributing to UV-B protection
- Homogeneity of sun screen application

TopiPen® BLUE (440 nm):

- unique probe extending the DRS principle for SPF and UVA-PF from UV to blue (high energy visible light, HEV)
- supporting the “blue light protection” trend claim by assessing the blue light attenuation

The system is coming out soon – stay tuned

Contact us for more information.

www.courage-khazaka.de

Dr. Goya Análisis

Dr. Goya Análisis’ clinical research model uniquely integrates a CRO with a Medical and Aesthetic Center under the same business group, allowing seamless collaboration among project managers, medical and aesthetic specialists, aestheticians, beauty center staff, and technical and recruitment teams. This structure ensures efficient, high-quality study execution, cost optimization, and faster time to market. With over 40 medical specialists across multiple fields, our organization can manage complex studies while maintaining the highest standards. We employ state-of-the-art technology, including advanced ultrasound for fat and microcirculation analysis, detailed dermal evaluations (DEJ, SLEB), Rx and Qx assessments, and 3D imaging systems such as AEVA and VISIA. Our free e-CRF platform ensures transparent and efficient data management. Key advantages include diverse volunteer recruitment for representative study data, accelerated study timelines, optimized operational costs without compromising quality, and tailored solutions aligned with sponsor objectives. This integrated approach positions us to deliver reliable, high-quality clinical research across multiple disciplines.

Imasens

IMASENS has developed a comprehensive and innovative approach to assess the effectiveness of cosmetic products by combining professional expertise with consumer perception. Analysis by beauty experts: Trained aestheticians examine the skin of volunteers before and after product use. Their professional assessment allows them to detect visible changes, such as hydration, firmness, or skin radiance. Spontaneous feedback from a consumer panel: Simultaneously, a naïve panel of 60 individuals is asked to view photos of these volunteers (before/after) without knowing the test conditions. Their task is to evaluate the product's effect based on subjective criteria, such as overall appearance or perceived age. This dual assessment enables IMASENS to correlate clinical observations with real consumer perception. The result provides a complete view—both scientific and emotional—of the benefits delivered by the product. This enhanced approach helps build solid, convincing, evidence-based marketing arguments to showcase skincare products to both the public and professionals.

Pixience

Pixience enhances its C-Cube Clinical Research offering with new automated hair analysis functionalities. In addition to automatic density detection, the system now includes automatic detection of hair diameter and length, for faster, more reproducible and objective assessment. These developments open up new prospects for clinical studies targeting hair loss, regrowth or densification effects. By combining high-resolution dermoscopic imaging, artificial intelligence segmentation and standardized images, the C-Cube is a complete solution for scalp and hair efficacy analysis. These developments further enhance the C-Cube's versatility for clinical trials focused on scalp health, hair loss or the efficacy of innovative hair care products.

Xenometrix

Xenometrix's core competencies include developing Ames mutagenicity test kits, S9 preparations, micronucleus test systems, and kits for detecting endocrine active chemicals, thus enhancing drug or chemical development. They offer full-thickness or dermatomized ex vivo human and animal skin explants in various sizes, disks or squares. Xenometrix has published numerous scientific papers and is cited in over 100 publications. Recent studies evaluate Nitrosamines' mutagenicity using miniaturized Ames tests, proving effective for chemical risk assessment. Additionally, studies demonstrate how volatile compounds, such as nitrosamines, can be safely tested with Xenometrix's two miniaturized assays which are based on different technologies. The new "MacroAmes1 Penta 3" kit in Petri dishes streamlines Ames testing with essential, quality-controlled components for OECD TG 471 compliance, excluding minimal glucose plates, offering significant cost and time savings (inhouse quality control). A Certificate of Analysis for Ames tester strains, S9, and positive controls is included with the kit.

Europe
1680 methods / 336 laboratories

Asia
984 methods / 125 laboratories

North America
474 methods / 74 laboratories

South America
459 methods / 18 laboratories

Africa
239 methods / 6 laboratories



Active ingredients from idea to market

SYNTIVIA
Creative Molecules

Extraction
& Design

Preclinical
studies

Regulatory
docs

Biological
screening

Clinical
test

Marketing
support

SYNTIVIA

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IBERIC BEAUTY MARKET

The Iberic beauty industry combines Mediterranean heritage with cutting-edge dermocosmetic innovation, making it one of Europe's most dynamic markets. Rooted in natural ingredients like olive oil and botanicals, yet propelled by tech-driven personalization and pharmacy-led skincare, Iberia is a hub of both tradition and science. Sustainability, minimalist routines, and strong expertise in sun protection are setting benchmarks beyond its borders. From indie clean brands to global leaders like ISDIN and Natura Bissé, Iberia's market reflects a balance of authenticity, efficacy, and lifestyle-driven beauty.

Testing in Iberia on skinobs.com

For Preclinical Assays

- 524 solutions
- 235 study parameters
- 19 services providers
- 72 supports

For Clinical Evaluation

- 293 solutions
- 204 claims
- 21 services providers
- 45 device manufacturers

Pharmacy-Led Beauty & Dermocosmetics Leadership

Iberia is globally recognized for its strong pharmacy channel, where dermocosmetic products dominate. Brands like ISDIN and Cantabria Labs leverage pharmacist trust and medical endorsement, making "pharmacy as beauty hub" a defining feature of the market.



Mediterranean Lifestyle as a Global Export

Iberic beauty is anchored in the Mediterranean way of life: olive oil, botanicals, diet, and wellness rituals. This trend is not just local heritage—it's increasingly positioned as an exportable lifestyle brand, giving Iberic companies cultural authority in natural beauty.

Indie & Digital-First Brands on the Rise

Iberia has seen a boom in independent, online-native beauty brands such as Freshly Cosmetics and Rowse. These brands are agile, consumer-centric, and sustainability-driven, reshaping how beauty is marketed and distributed in Iberia and abroad.

Key numbers of the beauty market

5th

largest beauty market
in Europe

EUR **9** billion

value of the beauty and
personal care sector in 2023

5.2%

compound annual growth
rate from 2024 to 2030

DECODING IBERIC POPULAR PRODUCTS



SUN PROTECTION & DERMOCOSMETICS

“High UV protection, dermatologist-recommended.”

This cult sunscreen embodies Spain’s global leadership in dermocosmetics. Its water-based texture proves that effective sun protection can also feel weightless and invisible. The claim of “dermatologist-recommended” is real: Fusion Water is prescribed and trusted across pharmacies and clinics worldwide.



MINIMALIST & NATURAL LOOK

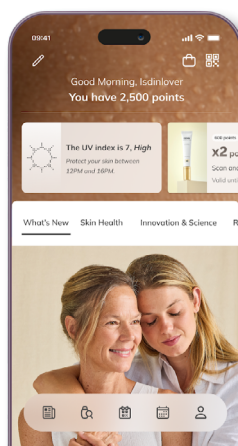
“Enhances natural beauty, simple routines.”

Rowse strips skincare back to the essentials: multipurpose plant oils designed for face, body, and hair. The claim of “minimalist care” connects with Spain’s cultural preference for a fresh, natural look—proving that less can indeed be more.

NATURAL INGREDIENTS & MEDITERRANEAN HERITAGE

“Formulated with natural extracts” / “Inspired by Mediterranean botanicals.”

Mattarrania illustrates Spain’s deep connection to its land: 100% organic skincare built around olive oil from Aragón. Here, the claim of “natural extracts” is not a trend but a tradition: Mediterranean botanicals used in their purest form to deliver simple, effective, and eco-conscious care.



PERSONALIZATION & TECH-DRIVEN BEAUTY

“Customized skincare, smart beauty tools.”

Spain is pushing the boundaries of personalized beauty. Natura Bissé merges luxury facials with virtual reality experiences, while ISDIN uses AI to analyze your skin and recommend routines. The claim of “personalization” reflects a national shift toward high-tech, tailor-made beauty care.

HYDRATION & SKIN BARRIER SUPPORT

“Deep hydration, barrier-repairing formulas.”

Endocare’s regenerative creams put hydration at the service of skin health. The claim here goes beyond moisture: with patented technologies, these formulas aim to repair and reinforce the skin barrier—a cornerstone of Spanish dermocosmetic science.



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asia



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ASIAN BEAUTY MARKET

The Asian beauty industry is globally renowned for its cultural influence and leadership in cosmetic innovation. Rooted in centuries-old traditions such as green tea, ginseng, fermented rice, and medicinal herbs, yet fueled by cutting-edge skincare technology, Asia has become a global powerhouse. Trends like K-Beauty and J-Beauty have shaped international beauty routines, blending wellness-driven rituals with either minimalist or multi-step approaches depending on consumer needs.

Testing in Asia on skinobs.com

For Preclinical Assays

- 655 solutions
- 224 study parameters
- 58 services providers
- 71 supports

For Clinical Evaluation

- 356 solutions
- 202 claims
- 84 services providers
- 59 device manufacturers

Tradition & Innovation Leadership

Asia leads in beauty innovation, driven by South Korea and Japan. The market thrives on combining traditional knowledge with advanced R&D. Brands such as Shiseido, Sulwhasoo, and Laneige merge ancestral ingredients with high-tech formulations, reinforcing Asia's role as a global center of excellence.



Asian Lifestyle as a Global Influence

Asian beauty is deeply anchored in holistic wellness traditions, from herbal medicine to mindfulness rituals. What began as local heritage is now a worldwide lifestyle export, giving Asian companies cultural authority in natural and preventative skincare.

Tech-Enabled & E-Commerce Power

Asia is the world leader in beauty-tech integration. From AI-powered skin diagnostics and AR try-on apps to personalized product recommendations, technology is central to the consumer journey. Platforms like Tmall, Shopee, and TikTok Shop amplify the reach of both heritage brands and indie newcomers.

Key numbers of the beauty market

1st

largest beauty market
worldwide

EUR 210 billion

value of the beauty and
personal care sector in 2023

6.5%

compound annual growth
rate from 2024 to 2030

ASIAN BEAUTY FOCUS: K-BEAUTY, J-BEAUTY & C-BEAUTY



K-BEAUTY

Philosophy: Constant innovation, hybrid textures, and multi-step routines. K-Beauty is playful, sensorial, and trend-driven.

Global Influence: Introduced BB creams, sheet masks, and cushion compacts. Now leading with skiminalism (fewer steps, smarter formulas).

Cult Product: Laneige Water Sleeping Mask — a global bestseller that embodies K-Beauty's focus on hydration, innovation, and fun textures.



J-BEAUTY

Philosophy: Less is more. J-Beauty emphasizes gentle formulations, long-term results, and “quiet luxury.”

Global Influence: Popularized cleansing oils, essences, and simple yet effective routines.

Cult Product: Shiseido Ultimune Serum — an icon of J-Beauty, focused on strengthening skin's defenses and promoting lasting radiance.



C-BEAUTY

Philosophy: Fast-paced, e-commerce powered, and influencer-led. C-Beauty thrives on affordability, eye-catching design, and viral marketing.

Global Influence: Platforms like Tmall and Douyin are turning local launches into overnight sensations.

Cult Product: Perfect Diary Animal Eyeshadow Palette — went viral on social media, showing how C-Beauty brands leverage speed and storytelling to dominate the digital space.



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22-23 OCT
Booth 652



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INDIAN BEAUTY MARKET

The Indian beauty industry is thriving, emerging as one of the fastest-growing markets globally. Fueled by a rising middle class, increasing disposable incomes, and a growing awareness of personal grooming, this sector has seen exponential growth in recent years, becoming one of the most dynamic sectors in the country's economy. With innovations in skincare, cosmetics, and haircare, along with a strong influence of e-commerce and social media, the market is setting new benchmarks. Key trends such as the demand for natural and organic products, the surge in male grooming, and the integration of technology in beauty services are reshaping the landscape.

Testing in India on skinobs.com

For Preclinical Assays

- 71 solutions
- 65 study parameters
- 9 services providers
- 53 supports

For Clinical Evaluation

- 248 solutions
- 202 claims
- 12 services providers
- 33 device manufacturers

Sustainability & Clean Beauty

Eco-consciousness has moved from niche to mainstream. Indian brands like Juicy Chemistry and Earth Rhythm are championing recyclable packaging, waterless formulas, and cruelty-free commitments. With regulators also pushing for sustainability, "clean beauty" is becoming an industry standard, not just a trend.



Ayurveda & Ingredient-Led Authenticity

Indian consumers are rediscovering their roots, with Ayurveda and natural actives like turmeric, neem, and ashwagandha taking center stage. Brands such as Forest Essentials, Biotique, and Mamaearth are thriving by blending traditional wisdom with modern formulations. The claim of "authentic ingredients" is shaping both local and global product launches.

Holistic Wellness & Self-Care Integration

Beauty is no longer just skin-deep. Indian consumers are embracing routines that nourish body, mind, and spirit. From aromatherapy to gut-health-focused skincare, self-care has become a mindful ritual. Beauty now supports mental and emotional well-being—not just aesthetics.

Key numbers of the beauty market

4th

largest beauty market
in the world

EUR 28 billion

value of the beauty and
personal care sector in 2023

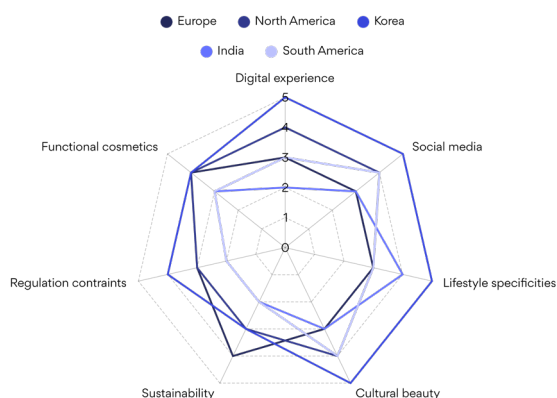
10.8%

compound annual growth
rate from 2024 to 2032

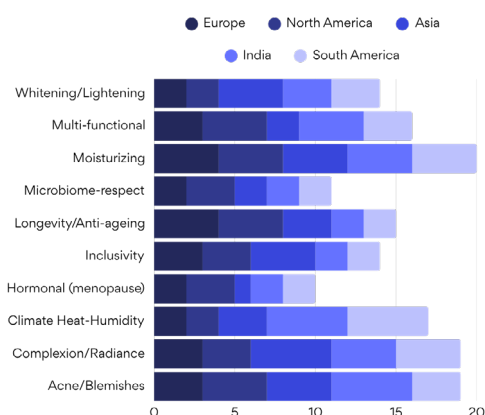
Skinobs Global Reference for Cosmetic Evaluation Trends

For the past two years, Skinobs Barometers have been presented as a comprehensive overview of the key drivers shaping the field of cosmetic evaluation worldwide. Each topic is assigned a score ranging from 0 to 5, reflecting its significance within the industry. These barometers synthesize insights from discussions with key professionals: protocol and methodology experts, regulatory affairs specialists, scientific communication leaders, consultants, and Skinobs platform users.

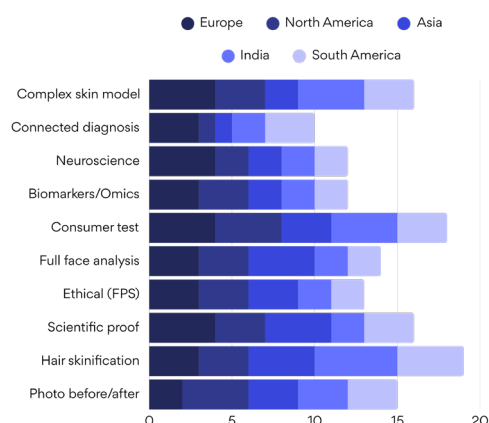
Testing overall factors by continents



Testing claims by continents



Testing technological factors by continents



This includes peer-reviewed articles in professional journals, official corporate communications from leading brands, and the latest scientific publications.

By combining expert perspectives with empirical data, Skinobs Barometers deliver an evidence-based reflection of the current directions in cosmetic evaluation.

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asia

WEBINAR

ASIAN TESTING TRENDS

13 Nov. 2025
9:00 AM [CET]
3:00 PM [Bangkok]

**Register
for free**



inovapotek
PHARMACEUTICAL RESEARCH
AND DEVELOPMENT

DermaProof Asia
EFFICACY AND SAFETY TESTS OF DERMAL COSMETICS

**we are
testing***
by skinobs

COSMETICS TESTING NEWS

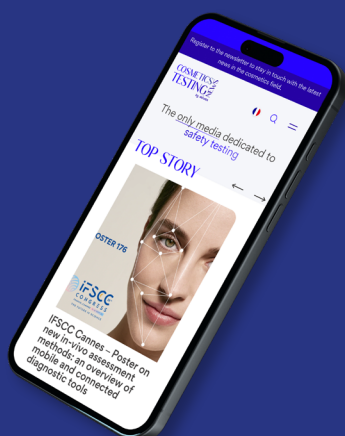
10 Years with a New Platform for a New Era

This year marks a meaningful milestone for the global cosmetics testing community: *Cosmetics Testing News* is celebrating its 10th anniversary.

What began in 2015 as a modest digital news feed founded by Anne Charpentier, CEO of Skinobs, has evolved into a unique, authoritative, and independent media outlet entirely dedicated to cosmetic product testing.

Over the past decade, the publication has become an essential reference for professionals who want to stay informed about every dimension of testing, from preclinical assays to clinical trials, from regulatory evolutions to scientific innovations shaping the future of beauty evaluation.

Today, more than 7,300 professionals across over 50 countries rely on *Cosmetics Testing News* as their trusted, daily source of information, a vibrant community of formulators, toxicologists, brand owners, lab managers, regulatory experts, and innovators all united by a common goal: to make cosmetic products safer, more effective, and more scientifically validated.



A Decade of Sharing What Matters Most

From day one, the mission has been clear: to offer reliable, independent, and specialized reporting on all aspects of cosmetic testing. Over the years, the publication has covered everything from safety and tolerance to efficacy, microbiology, and ecotoxicology. Readers have come to rely on its coverage of new testing methods, expert insights from Skinobs, interviews with labs and innovators, and a global perspective on evolving evaluation practices.



This 360-degree view of the field has helped make *Cosmetics Testing News* a daily companion for formulators, toxicologists, brand owners, lab managers, and regulatory professionals alike, all united by the goal of making cosmetic products safer, more effective, and more scientifically grounded.

Looking Ahead: A New Experience Coming Soon

As part of its 10th anniversary, the team behind *Cosmetics Testing News* prepared a major update. To stay aligned with the evolving needs of its global audience, the platform was fully redesigned to offer a more seamless, intuitive experience.

Readers can now expect:

- A fresh, modern design for better readability
- Smarter search and navigation to find key content faster
- A clearer structure to surface what matters most
- Refined editorial focus on the latest in efficacy, safety, tolerance, microbiology, ecotoxicology, and innovation

The new site is available at news.skinobs.com

As *Cosmetics Testing News* enters its second decade, its editorial team reaffirms the publication's founding principles: independence, scientific rigor, and global collaboration. The platform will continue to act as a bridge between researchers, laboratories, brands, and regulatory bodies, encouraging dialogue and progress in a sector that never stops evolving.

With new partnerships, deeper coverage, and upcoming editorial initiatives, *Cosmetics Testing News* aims to further expand its role as the reference hub for everyone dedicated to the science of testing and validation in cosmetics.

“We’ve always believed in helping professionals find trustworthy, useful information quickly,” says founder Anne Charpentier.

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Upcoming events

Meet the team around the world in 2025 and 2026, to exchange about your preclinical and clinical testing projects.



October
22-23



November
4-6



January
27-28



March
18-19



April
14-16



May
19-20



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cosmetotest

The International Symposium on Preclinical
and Clinical Testing in dermocosmetics

Lyon & Hybrid

18-19 March 2026

EXPOSOME

Skin & Hair

.....

HORMONES

Skin & Hair

.....

HYDRATION

Skin & Scalp

.....

SKIN & BRAIN



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