



Skin, Hair, Nail Testing Platforms

ZOOM #25

BY SKINOBS

edito

Skinobs is glad to bring you some fresh news of testing experts for the Beauty Industry. Skinobs will organize next December the second edition of the FOCUS-Live free webinar dedicated to the skin microbiota with the participation of evaluation experts sharing their vision and their latest innovations on this topic. For this 25th ZOOM edition, we will share with you information about **suncare evaluation claims** and we are happy to give you the latest news of our partners: **Courage+Khazaka, Ellead, Intertek, Newtone Technologies, Pixience, CIDP, HelioScreen, Orion Concept, Phenocell, Zurko Research.**

Happy reading !

Anne Charpentier, CEO

WHAT'S INSIDE THE BOX

Skinobs platforms are today **2 international databases** renowned as a reference in the testing field of actives and personal care. It represents, with users from 93 nationalities, a **unique tool for clinical and preclinical testing** giving crucial and qualified information. You can retrieve classical or innovative tests that are continually updated with the latest instrumentation and methods, connected to the testing laboratories around the world.

To help you to save time in your evaluation projects, you can find at the same place, dozens of information!

1. Do you know that you can directly find in each **company corporate sheet**:

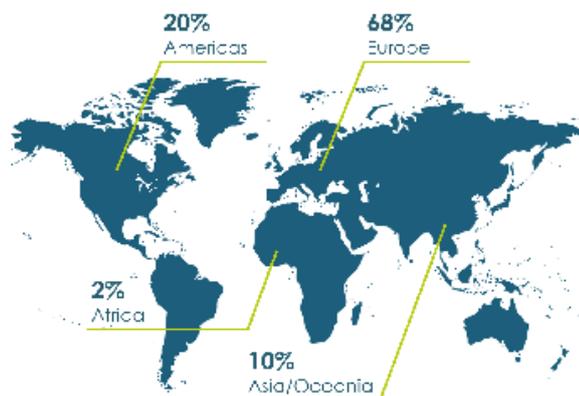
- Their activity summary and their contact
- Their list of tests
- Their latest articles published in the news feed

2. Do you know that you can follow your **personal search history** selecting in the top right menu. It's very easy to retrieve all your search results and the methods and testing laboratories found for each project.

3. Do you know that you can **directly contact each test supplier** and get a direct answer from them.

Log in now, www.skinobs.com for free to access the search or send us your specific request directly at contact@skinobs.com. We will be happy to provide you special advice to help you in your evaluation projects.

WHERE ARE THE USERS FROM ?



Since 1st January 2022

6 000
USERS

+67 000
VIEWED PAGES ON
THE PLATFORMS

7 400
USER SEARCHES ON
BOTH PLATFORMS

+33%
VIEWED PAGES
VERSUS 2021



892 Methods

49 Skins mechanisms

176 CRO's

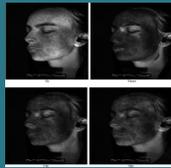
403 Methods

188 Claims

161 CRO's

WWW.SKINOBS.COM

Spreading Homogeneity and Lasting of UVA Suncare by Newtone Technologies



Scientists from Newtone Technologies, a Qima Life sciences company, develop **high performance algorithms for skin image analysis**. Sun protection being a major topic in cosmetics,

they developed algorithms to measure the **spreading homogeneity and lasting over time** of UVA protection skincare products. Using dedicated digital imaging and specific optical solutions such as ColorFace® or UV-Cam® (polarized UVA lighting modality), UVA absorbing products presence over the full face can be followed-up, under all possible protocols. Moreover, Newtone development team is able to develop **specific optical and algorithmic solutions to measure these in vitro**. UVA absorption evolution overtime can be valorized and illustrated in an innovative way using full face continuous color mapping, perfectly reflecting image analysis results, using Newtone Smart-Mapping®.

www.newtone.fr | Corporate and testing sheet : <https://skinobs.com/instrumentation.php?id=124>

C-Cube 3, Clinical Evaluation of Sun Protection Products by Pixience



Specialized in skin and hair imaging for **10 years**, the C-Cube 3 Clinical Research edition by Pixience allows you to evaluate the effectiveness of your dermocosmetic products. In order to test your

sun protection products, the C-Cube 3 calculates **the parameters of pigmentation and erythema** of the skin. It also provides a report with very high-quality illustrations and accurate measurements.

- Pigmentation: phototype (ITA angle); pigmentation index & homogeneity; color measurement
- Erythema: erythema index & homogeneity; color measurement

As always, remember that you can also outsource your data analyses to us through Pixience Cloud.

www.pixience.com | Corporate and testing sheet : <https://skinobs.com/instrumentation.php?id=107>

From Metrology to Expertise... By Orion Concept



Calibrated photography and its quantitative analysis remain very popular in the objective approach to the effectiveness of a skincare product. If the offer of analysis of these images is wide, the transition from

quantified parameters to the validation of product claims remains the business of less common expertise... The effect is reflected in the evolution of certain parameters but not necessarily the other way around. This is where the expertise comes in for the expected answer: «**is the claim proven?**». Through **its experience of more than 25 years**, Orion Concept offers you to **certify the proof**, where the measurement and analysis tools give «parameters» not always only linked to the action of a product. «See to understand, show to convince»

orion-techno-lab.com | Corporate and testing sheet : <https://skinobs.com/instrumentation.php?id=89>

THE CHALLENGES OF THE SUN CARE IN-VIVO EVALUATION

The sun protection objectivation subject represents a complex issue between in silico, in-vitro, in-vivo and hybrid methods at least as important as the challenge of the formulation itself.

A complex environment of tests

Technically, it seems important to **increase the reproducibility and the accuracy** of the in vivo testing by implementing systematic control testing and audit of the global process. The gap between standardised application versus **real-life conditions of use** may also be deeply studied including **anti-salt, anti-sweat, or anti-sand** claim substantiation. In real use conditions, the performance of sun care is impacted by other criteria such as wrinkles, skin locations, sweat, hair, application procedures and quantity.

Could we open the field of the claim substantiation with the objectivation of all the **various damages that UVB, UVA, Blue Light, Infrared** may cause? Beyond anti-sun spectrum objectivation, and index determination, can we evaluate complementary **photo ageing** performances such as antioxidants, anti-free radicals, anti-ageing, anti-dark spots...?

A wide range of methods

Nowadays, there are different sunscreen testing procedures for claiming the Sun Protection Factor: (SPF), UVA Protection Factor (UVAPF), Critical Wavelength (CW), Water Resistance (WR)... Fortunately, mainly according to ISO (International Organization for Standardization), standards are available to harmonize these methods worldwide.

For the in-vivo UV SPF and UVA-PF, there are 28 methods available on the Clinical Testing Platform and connected with more than 76 CROs in the world.

- **SPF** according to ISO 24444
- **UVAPF** according to ISO 24442
- **WR procedure** according to ISO 16217
- **WR percentage calculation** according to ISO 18861

Up to now, the SPF value given on the bottle of each sun protection product must be determined by the generation of sunburns at the back of at least 10 volunteers. This is not only invasive but also time consuming since volunteers must come back after 24h for evaluation of the minimal erythemal dose.



Hybrid assays that started few years ago and that are under ISO validation offer new opportunities of evaluation.

On the **ethical point of view**, the application of erythema on the subjects which causes skin damages doesn't seem to be a long-term solution for UVB assessment. Fortunately, the **HDRS method** or in-vitro method should propose a **new perspective** within the next years.

- **In-Vivo/In-Vitro Hybrid** Diffuse Reflectance Spectroscopy SPF – UVAPF according to ISO 23698 (under validation).

This **new hybrid measurement principle** combines spectroscopic in vivo and in vitro data (HDRS - hybrid diffuse reflectance spectroscopy). The ISO technical committee TC 217 (Cosmetics) is simultaneously working on a new ISO norm for the HDRS method. Courage+Khazaka company has developed a new system to measure **UV reflectance in vivo directly on the skin**, which uses UV-LED technology and a sensitive spectroscopic system. The UV-dose applied does not cause sunburn and the SPF is determined based on the measured light attenuation of the sunscreen.

In conclusion, the Beauty and dermocosmetics sectors can expect that both worldwide **industries and regulatory authorities** harmonise the reference methods all over the world and continue with the labelling rules. It will guarantee the appropriate respect of the **human health** (nano, endocrine disruptor...) and **the sustainability for the nature** (ecotoxicity testing, coral protection) while keeping the evolution of the high performance of the sun protection products with all the complementary functionalities the consumers can expect.

SPF Result in 10 minutes*, Sophisticated, High-end LED-HDRS in-vivo SPF Measurement System by Courage+Khazaka



As there is the need for alternative non-invasive SPF testing methods C+K has developed a compact device for in vivo SPF determination via hybrid diffuse reflectance spectroscopy (HDRS).

Advantages:

- non-invasive and safe application (low effective UV-dose)
- easy measurement procedure
- cost and resource effective (measurement time per product 5 min without product application)

Currently, our system as well as other alternative SPF measurement methods are put to the test in an international ring-study (www.alt-spf.com). Hopes are high that it can replace the current invasive method.

*DRS measurement (w/o application of product)

www.courage-khazaka.de | Corporate and testing sheet : <https://skinobs.com/instrumentation.php?id=80>

Sandblasted PMMA Plates SB6 and Molded PMMA Plates HD6 for In-vitro Sunscreen

From our knowledge and expertise in the in-vitro sunscreen testing field, HelioScreen provides **reproducible PMMA plates** recognized worldwide for the in vitro sun protection evaluation with:

- Molded PMMA Helioplate HD6,
- Sandblasted PMMA Helioplate SB6.

The characteristics of these substrates, topography, roughness and transmission, are in total compliance with all **international standards and methods** such as:

- ISO 24443:2021 for in vitro UVA-PF and Critical Wavelength assessment,
- FDA rev. 2011 for in vitro Broad Spectrum determination,
- Boots Star Rating system rev. 2011 for in vitro UVA:UVB ratio assessment,
- ISO/CD 23675 for in vitro SPF Double Plate method,
- ISO/CD 23698 for Hybrid Diffuse Reflectance Spectroscopy (HDRS).

www.helioscreen.fr | Corporate and testing sheet : <https://skinobs.com/preclinical/labo.php?id=201>

Spotlight on Photobiology Studies at CIDP Group



With the increased awareness of the necessity to protect against harmful effects of UV rays, controls are led to ensure proper testing and compliance on SPF label claims. With more than **12 years' experience in photobiology** studies (SPF, UVA, water and very water resistant, sweat, sand, friction and rubbing resistance), CIDP conduct these tests in accordance with ISO [24444, ISO 24442, ISO 16217, ISO18861], COLIPA or FDA guidelines. Our affiliates in **Mauritius and Brazil** also offers the possibility of **testing in real life** but controlled conditions with natural sunlight.

www.cidp-cro.com | Corporate and testing sheet : <https://skinobs.com/preclinical/labo.php?id=204>

SUN CARE TESTING VIA IN-VITRO METHODS

First, it is interesting to consider **what criteria mainly influence** the performance of UV protection products: composition, repartition, photostability, absorbance and distribution of the inorganic and organic filters, galenic (spray, compact powder, oil, cream...), properties to form a stable, homogeneous, and resistant film, pleasant to apply.

Among all the available in-vivo methods, the In-Vitro SPF is strongly required by the industry and governmental organizations delivering results equivalent to the In-Vivo SPF according to ISO 24444 method. As evidence, the degree of protection should be measured **using standardized, reproducible testing methods** and take **photo-degradation** into account as recommended by the European Commission.

What are **the main points of vigilance**: The control of the **topographic parameters of the substrates**, **the temperature** of the interface substrate/sample, the homogeneous and reproducible spreading, the **drying step**, the acquisition of the initial UV absorbance spectrum by a spectrophotometer (including specific calibrations), two UV absorbance measurements to calculate the final in-vitro SPF.

On the Preclinical Testing Platform of Skinobs, cosmeticians and evaluation experts can retrieve, for free, 16 specifics in-vitro tests provided by 30 Croc around the world. Other specific photo-aging effects can be found by selecting specific claims. The main studies are:

- **UVAPF - CW** according to ISO 24443
- **SPF** according to ISO 23675
- **Quantification and stability analysis of UV filters**

UV filters can lead to a **partial or complete loss of their effectiveness** or even to a **possible transformation into a hazard substance** and undesirable by-products. Laboratories work to anticipate **physical and chemical degradation** of raw materials based on photodegradation and new criteria (chemical and toxicological). However, it has been demonstrated that



some **skin reactions** due to photoallergic contact are caused by using many **commonly organic sunscreens**.

Different instrumental techniques are used to analyze the UV filters: NMR spectroscopy, Raman spectroscopy, gas chromatography/mass spectrometry, high-performance liquid chromatography/UV detector.

Oxidative stress assays offer a complementary approach of sun care performance. Solar radiations penetrate the skin, and their energy is absorbed by constitutive molecules, with consecutive damages like **oxidation and inflammation**.

Evolution brought effective defences such as pigmentation to quench radiations, antioxidation, and clearance processes. However, an excess of sun exposure disrupts those self-defences, leading to **uncontrolled reactive** production, DNA damages, proinflammatory response and microbial dysbiosis. Many of these mechanisms can be evaluated with controlled radiations on 3D skin models studying various biological markers and cell signalling pathways (ROS, Nrf-2 activation, heme-oxygenase [HO-1] expression, caspase-3 activation, microbiota...

Nowadays, there are different sunscreen testing procedures for claiming the Sun Protection Factor: (SPF), UVA Protection Factor (UVAPF), Critical Wavelength (CW), Water Resistance (WR)... Fortunately,

SKINOBS NEXT EVENTS

COSMET'AGORA CONFÉRENCE EN COSMÉTOLOGIE
Cosmet'Agora 2023
Les 10 et 11 janvier 2023
à l'Espace Champerret
de 9h30 à 18h00
15^{ème} ÉDITION

in-cosmetics®
global
28-30 March 2023
Barcelona, Spain

NEW YORK CHEMISTS SUPPLIERS' DAY
SAVE THE DATE FOR 2023
SUPPLIERS' DAY 2023
MAY 2-3, 2023
JACOB K. JAVITS CONVENTION CENTER
NEW YORK CITY

cosmetotest
Cosmetic Testing Symposium
25&26 May 2023
Lyon
Cosmet' in Lyon avec Skinobs skinobs

NEWS

Read the latest news on cosmetics testing. Subscribe to the free online Newsletter.

www.skinobs.com/news

Ellead Conducts the Clinical Evaluation and Ex-vivo of UV Induce Skin



UV exposes that cause extrinsic aging not only cause **skin erythema and pigmentation**, but also cause various skin events such as skin aging by reactive oxygen species (ROS). Ellead has been performing various efficacy evaluations using UV-induced skin events. Evaluation of **skin soothing efficacy** by inducing erythema through UV exposure to the skin, or evaluation of **skin pigmentation improvement** using pigmentation by artificially tanning the skin is classical evaluation method. Recently, Ellead has been conducting

skin antioxidant evaluation by collecting stratum corneum of the skin from UV exposed skin [fig 1.]. That is a non-invasive method for measuring carbonylated protein caused by the product of oxidative stress found in the stratum corneum of the skin.

www.ellead.com/eng/1 Corporate and testing sheet : <https://skinobs.com/labo.php?id=72>

Studies Hand in Hand with Cosmetics brands by Zurko Research



Established in 2005, Zurko Research is a Spanish CRO specialized in vivo and in-vitro testing of the safety and efficacy of cosmetic products. Their additional lines of business include testing of Medical Devices and Biocides. They can also provide Regulatory Support if you wish to register your product in the EU or any other part of the world. Their services offer is based on the following key pillars:

- Designing tailor-made protocols
- Maximum quality throughout our work chain
- Fast response, both in executing and sending reports

To carry out studies, they have professionals with a proven scientific and technical background, as well as a wide range of clinical specialists such as dermatologists, ophthalmologists, pediatricians, gynecologists, stomatologists, dentists...

www.zurkoresearch.com | Corporate and testing sheet : <https://skinobs.com/preclinical/labo.php?id=223>

Total Quality Assurance for your Sun Protection Products by Intertek

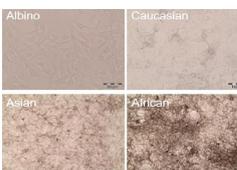


With greater consumer awareness and regulations governing products claiming **SPF (Sun Protection Factor), tanning, water-resistance and skin lightening** properties, robust testing helps to ensure that products work well and comply with regulatory requirements. Intertek offers study and trial services, backed by years of UV skin study exposure experience and state-of-the-art equipment. In combination with our solar vitro test partner HelioScreen, we are proud to offer our clients a **full range of sun care services**: Sun Protection Factor studies, SPF Testing, Water Resistance, UVA Protection studies, Water Resistance

testing, Skin Tone Lightening studies, Self-Tanning, Sunless Tanning testing.

www.intertek-france.com | Corporate and testing sheet : <https://skinobs.com/labo.php?id=29>

Cost-efficiently Identify Pigmenting/whitening Agents with an Innovative High-Throughput Screening Approach by Phenocell



Ethnicity-specific claims have become paramount to product adoption in key EMEA markets. Quantifying cell pigmentation with traditional methods, such as melanin extraction, is time consuming. Taking advantage on recent advances in **pluripotent stem cell biology and flow cytometry automation**, our R&D Team has developed a simple and straightforward in vitro assay using **melanocytes derived from human induced**

pluripotent stem cells (iPSC) and high-throughput flow cytometry to screen and classify molecules/compounds according to their ability to modulate pigment production. The platform has been validated in a variety of melanocytes from African, Caucasian or Asian genetic background and yielded confirmed Hits.

www.phenocell.com | Corporate and testing sheet : <https://skinobs.com/preclinical/fabsup.php?id=32>

Skinobs map:
a worldwide view
of your testing
partners



Large and rich know-how of the clinical testing market dominated by the European leadership

Skinobs has carried out since the beginning of the year 2022 a study on the global market of clinical studies dedicated to the Beauty Industry.

We wanted to bring a unique and global panorama on the current drivers of a **specific but global market** about the clinical testing. This concerns **skin, hair, scalp and nail about efficacy, safety & tolerance, consumer tests and the sensory analysis.**

The beauty market represents a total of **228 billion€** in 2021. However, the Covid-19 had a huge impact on this market which led Asia to lose some market share (to Europe). We can observe a **dynamic but resilient market** as after a big drop in 2020, it bounced well in 2021.

The clinical testing market is influenced by the main **trends of the Beauty market** that we summarize in 4 points: Cultural evolution, Sustainability and social responsibility for the consumers, Regulation constraints around the world, Environmental and life-style changes.

Expectations of the clinical evaluation experts

Most of the evaluation managers* work **with five or more testing laboratories** to conduct their tests. Mainly implemented in France, Europe but also in North America and China for about 30%. For the sourcing of the new testing laboratories, clinical expert managers mainly use their **business contact, but also the Skinobs platforms** or read scientific reviews to find a testing lab.

The evaluation managers select their CRO based on the following criteria: **claim, cost, devices and type of subject**. The top 3 claims where experts spend the most time looking for a test is: **anti-aging, the moisturizing, sensitive skin claims.**

Panorama of the clinical tests worldwide

Europe is the major test partner, with 50% of the global distribution on its soil. We can note that a major part of the Testing laboratories owns one center, whereas only 3% of them have more than five centers. About the **measurement devices, Europe is also the leader** as we can count 66 companies on the continent.

Two main trends drive the sector

The first one is the importance of the **proof and evidence** of the claims. The main reason is the regulation that obliges all beauty companies to demonstrate the tolerance and substantiate all the claim of the product that are launched. The second trend is linked to the technology environment with the **imaging of AI evolution** and the need of nomad tests.

To buy the full report (62 pages and Appendix 70 pages) with a personalized debriefing, please contact Ophélie at orebillard@skinobs.com

CONTACT US

contact@skinobs.com | www.skinobs.com

14 avenue de Verdun
73100 Aix-les-Bains - FRANCE

