

zoom #13

BY SKINOBS



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The developments of the cosmetics regulation on claim substantiation is worldwide moving rapidly. Its latest changes in Europe (July 2019) impact the practice of the testing to evaluate the personal care activities on the skin and the hair. To increase its knowledge of testing, Skinobs will follow the next **IFSCC congress** in Milano, the **Cosmetic360** and the **JP Marty Days** in Paris. In this Newsletter we are glad to present a focus on the objectivation of the **anti-pollution and regenerative claims**. Then we will present you the latest innovations of our partners: Cerco, CIDP, Dermatec, Eurofins, I.E.C, Intertek, Microfactory, Pixience, VitroScreen,

Happy reading!
Anne Charpentier, CEO

What's inside ?

Skinobs "Clinical" platform is an international platform helping cosmeticians to **find the right tests and the best partners to substantiate their claims**. It is a unique database giving technical information on the methods and tests for more than 60 claims. It enables each user to **contact directly the testing labs** by selecting them from the results list and send everyone automatically a request for information. **Each lab responds directly**, and Skinobs does not take any commission for putting people into business contact. All the details about the testing services and methods: **What devices, what country, what subject type...** are validated one by one with all the stakeholders.

Log in now for free access to the search or send us your specific request directly at contact@skinobs.com. We will be happy to provide you special advice. Just let us know what testing you need, and we'll **help you to find the right ones!**

Accelerate your search on Anti-wrinkles effect:

For testing the Anti-wrinkles effect you find in the results search:

+20 Methods

+ 40 Testing labs

+ 30 countries



Discover
240 tests
60 claims
75 testing labs

Statistics of Skinobs traffic

+1000
USERS*

*Since Jan. 2019

+12%
SESSION*

*session in July 2019 compared to July 2018

8
MINUTES*

*average session lasting Jan. 2019

+280
SESSIONS*

*in July 2019

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TESTING TRENDS IN ANTI-POLLUTION CLAIMS

Our first review of the Anti-pollution objectivation was written in April 2017 on the occasion of the Anti-pollution workshop by Karl Lintner at in-cosmetics in London. Two and a half year later, the testing protocols:

- Are more and more standardized but in situ protocols still offer the real conditions.
- Polluted boxes appear for both ex-vivo and in-vitro assays,
- The “omics” are the latest trends with the genomic, proteomics, metabolomics analysis ...

Today, majority of pollutants which impact the good condition of the skin are found in air which is composed of **two main types of primary pollutants**: Particulate matter, and gases [O3, CO2, CO, SOx, and NOx] named volatile organic compounds (VOC). Water, soil and food pollution can also affect the skin.

What are the various effects of the pollutants on the skin physiology?

One of the effects of air pollution combined with ozone and UV rays on skin is the generation of free radicals and the consequences of inflammation. The endogenous stress can induce an increase in the formation of glycated products with AGE production which affects the quality of the extracellular matrix.

The Chronic stress induces skin disorders such as: dermatitis, sensitivity, dehydration, pigmentation disorders. Chemical pollutants particles release toxic compounds that may damage the skin on a deeper level.

- **Short-term**: Accumulation of toxins, alteration of the barrier function, a decrease of the skin resistance to UV, proteins lipids, and DNA oxidation, Modification of the [acid] pH, inflammation, occluding of the pores, dehydration, lack of oxygen, decrease of the cell turnover, depletion of antioxidants, sebum overproduction.
- **Long-term**: wrinkles, age spots, acne, dull and sagging, sensitivity

A WORD OF EXPERT



Virginie Coutraud
Scientific Director
INSTITUT ESTHEDERM & ETAT PUR
Groupe Naos

Considering the skin as a true ecosystem in constant interaction with its environment allows us to better understand its evolutions. While the impact of **UV radiation** on the skin has long been evident to the entire population. The study of the impact of pollution is more recent and continues to increase. Cosmetics incorporate the discourse on **certain parameters of this exposome** in their functionality either as a protective shield, as a restorative product or strengthening the **skin's natural defenses**. The tests available to become more and more precise about the polluting source, thus measuring the different impacts on the skin and the effectiveness. The anti-pollution claim becomes generic and encompasses elements that may be different from one product to another.

These skin damages are summed up in few words: Aging, Dark spots, and Sensitivity including multi-factorial consequences in the Stratum Corneum and the epidermis and dermis layer: DNA damages, Protein carbonylation, Enzymatic alteration, Inflammation, Oxidation, Lipids metabolism, Cell metabolism, Dermis structure.

What are the clinical tests available?

Finally, the “anti-pollution” activities have 3 main objectives:

- **The skin detox** with a curative action: Cleansing, Detoxifying, Exfoliating, Purifying, Oxygenizing
- **Rebalance** the skin with a curative action: Soothing, Moisturizing, Nourishing, pH-regulator, Sebo-regulator, Complexion, Microcirculation, Anti-aging, anti-sagging
- **Protect and isolate** the skin with a preventive action: Anti-UV/IR/Anti-blue light, Antioxidant, Anti-free radicals, Anti-particles, Barrier integrity, Anti-inflammatory, Anti-spot.

Beyond the use test and the scores by experts, we have identified the few following methods. Before any chemical analysis, specific sample of the skin are implemented: stripping, swabs or glass sticks.



Protection action

- Heavy metal analysis, Syntivia, Zurko research, CIDP...
- Particles visualization mimicking PM deposit and confocal microscopy or image analysis by Cerco, CIDP, Intertek, BIO-EC, Proderm, PhD Trials...

Antioxidant

- Lipidic peroxidation [SQ-OOH, MDA, vitamin E] by Lipotype, Synelvia, Proderm, Eurofins...
- Genomics, proteomics, metabolomic by Phylogene, Oxiproteomics

Detoxifying

- Oxygenation Measure of transcutaneous partial pressure of O2 by Cerco and Eurofins
- Molecular composition by FibroTX [Tap-Eotech] or Raman confocal spectroscopy

Skin complexion and radiance

- GlossyMeter [C+K], Goniolux [Orion], Samba [Bossanova tech], SkinGlossMeter [Delfin], C-Cube [Pixience].

Inflammation

- Colour measurement by spectrophotometry.
- Sensitivity with the Neurometer [Eurofins]

The new digital technologies combine the ultra-personalization trend with the geo-tracking, the AI and algorithms. They will certainly influence the future of the new anti-pollution and the development of such cosmetics.

Blue Light Protection Testing by Eurofins Cosmetics & Personal Care



Research has found that exposure to blue light may not only be the adverse results of oxidation and inflammation but also affects the **cell circadian rhythm**. Thus, causing more stress and hence accelerated aging. In this context, many companies are developing products that claim HEV blocking capability.

Eurofins has created a new method for the **HEV blocking testing** which exposes a test product, applied to **PMMA plates**, to a predetermined HEV filtered light dose based on the amount of HEV light an individual can receive. Combined to this method, Eurofins proposes also different approaches to evaluate the **anti-blue light protective effect** at the level of the skin. www.eurofins.com/cosmetics/

REGENERATIVE CLAIMS & TESTING?

The regenerating cream used, sometimes in night care, **revitalizes, replenishes and restructures** the skin. Regenerating the skin stimulates **cell renewal** and physiological metabolisms, promotes **the production of collagen and hyaluronic acid**; and also improves **intercellular exchanges, cellular oxygenation, function barrier**. Deep stimulation of skin mechanisms becomes visible on the surface of the skin. Regenerated skin is hydrated, smoother, more uniform, firmed, toned, unless wrinkles, the complexion is radiant. She looks younger, like a baby one (more or less!).

What are the methods available to assess the exfoliating effect?

The database of the in human efficacy testing, skinobs.com lists more than 30 methods, in addition to others methods which are consumers testing, clinicians scorages and sensory analysis.

STUDIED EFFECT	AVAILABLE METHODS
> Epidermis renewal	Quantitative and/or Visual: QuantiSquame (Monaderm), Choride Dansyl test
> Surface visualization and Microrelief network	Quantitative and/or Visual: Derma TOP-HE-60 (Eotech), SpectraCam (Newtone Technologies), C-Cube (Pixience), Visioscan and MoistureMap MM 100 (C+K), Tivi 60 Skin Damage Visualizer (Wheelsbridge) Semi-Quantitative and/or Visual: Antera 3D (Miravex), Visia CR (Canfield), Dermal TorqueMeter (Diastron), Clarity 3D Mini (BTBP), Neo Voir II (C-Lab Co), SIAScope (Medxhealth) Qualitative and/or Visual: Videomicroscope (Hirox), Dermascope (Dino-lite), DermLite DL100, Videometer Lab, VEOS DS3 (Canfield), DermaLab Videoscope (Cortex)
> Structure visualization	Quantitative and/or Visual: LC-OCT (Damae), OMT (Jenlab), Raman spectroscopy (RiverD) Semi-Quantitative and/or Visual: Antera 3D (Miravex), Confocal microscopy (Mavig, Michelson), Dermascan, Dermcup
> Barrier function by TEWL	Quantitative: Aquaflux (Biox) Vapometer (Delfin), Tewameter (C+K), Dermalab-TEWL (Cortex)
> Protein of the Stratum Corneum	Quantitative: SquameScan (Heiland), FibroTX (Eotech)
> Collagen content	Quantitative: Dermo (Varennes) Semi-Quantitative and/or Visual: SIAScope (Medxhealth)
> Molecular content	Quantitative and/or Visual: LC-OCT (Damae), Sonde Raman (Horiba Jobin), FibroTX(Eotech), Raman spectroscopy gen2-SCA (RiverD), Genomic, metabolomic, proteomic (Syntiva, Phylogene)
> Thickness	Quantitative and/or Visual: LC-OCT (Damae), Sonde Raman (Horiba Jobin) Semi-Quantitative and/or Visual: Scanner: DUB*SkinScanner 50/22 (Eotech), Ultrasound WED-2018 (Wed), Vivascope (Mavig), Vivosight (Michelson)
> Softness	Quantitative: Frictiometer (C+K), Tribologie (Ecole Centrale)
> Hydration	Quantitative and/or Visual: Corneometer and MoistureMap(C+K), DPM 9003 (Nova Tech), Moisturmeter SC/D/epiD (Delfin), Dermo (Varennes), Espilon (Biox), DermaLab (Cortex)
> Oxygenation	Quantitative: Periflux (Perimed)
> Translucence	Quantitative: TransluDerm (Orion)
> Firmness	Quantitative and/or Visual: Dynaskin (Eotech/Orion), SkinFlex (Orion), Ballistometer (Diastron), Cutometer, Cutiscan and Indetometer IDM800 (C+K), Elastimeter and SkinFibroMeter
> Gloss	Quantitative and/or Visual: ColorFace (Newtone technologies), Goniolux (Orion), Skin GlossyMeter (C+K), SkinGlossMeter (Delfin), GPI150 (Seelab), Samba & Salsa (Bossa Nova Vision), Dermalab Gloss (Cortex)

The protocol design should follow as much as possible the normal conditions of use and respect the inclusion criteria of the usual consumers of the product. The renewal of cells and the regeneration of the global metabolism of the skin is a natural process. **The revitalizing and regeneration** of the skin can be measured by many devices. Each testing lab is able to give you the best advice and offer a personalized protocol depending of the active and ingredients, the formulation, the treatment conditions and the targeted consumers.

IEC: In vitro and in vivo approach for anti-pollution effect



The anti-pollution efficacy of cosmetic ingredients can be evaluated in preventive and/or curative with **in vitro methods** on cell line exposed to stress induced by cigarette smoke compounds.

Under the **conditions of a use-test** performed in a polluted environment in China, the efficacy of a cosmetic product is established when maintaining the pH, strengthening the skin barrier [TEWL], improving the complexion's radiance [Goniolux 4D, C-Cube]. More specific protocols are proposed such as **skin surface samples to measure heavy metals** and sebum lipids [fatty acids, squalene, triglycerides...]. www.iecfrance.com

Anti-pollution efficacy by CERCO



Air pollutants induce cellular hypoxia, slowed skin metabolism and harmful chemical reactions: **the complexion becomes dull, the skin dries out, skin aging begins prematurely.** It is therefore necessary to minimize direct contact between skin and pollutants and to rid the skin of these toxic particles.

Several in-vivo approaches are possible:

- Assess the shield action of products, assess the **antioxidant power** or quantify the **heavy metals** on the skin
- Objectivate the **cleaning or depolluting power** of products through image analysis or by following the acceleration of stratum renewal
- Track **transcutaneous oxygenation**

www.cercotests.com/fr

Partners key figures

5

DERMATEC is one of the 5 divisions composing CPP initiatives

15

worldwide clinical labs by EUROFINS Cosmetics & Personal Care

27

people totally dedicated to clinical studies in INTERTEK

80%

is the percentage of the cost reduction of testing using the SMART-PORE

400

anti-wrinkles studies within 10 years by CERCO

2015

The year CIDP's latest subsidiary, CIDP Singapore, was created

4500m²

of lab surface around the world by IEC

Regenerating testings by Skinobs



27 METHODS



40 LABS



IN 26 COUNTRIES



2D Cells | 3D Cells | Skins Models | 3D Print

This portal dedicated to pre-clinical testing is currently under development. You will find your testing partners for the safety and efficacy assays.

[Pre-register on www.skinobs.com](http://www.skinobs.com)

Read the latest news on cosmetics testing.
www.skinobs.com/news

Anti-pollution efficacy by Eurofins Cosmetics & Personal Care



Oxidative stress caused by air pollutants leads to cellular dysfunctions and skin damages. In **in vivo anti-pollution** test was performed to identify protective actions of Deschampsia antarctica aqueous extract combined with vitamin C.

The test studies the impact of urban polluted air on **squalene oxidation** in treated skin. Skin swabs are performed on subjects living in an urbanized area and squalene peroxide (SQOOH)/squalene skin ratio is monitored during the skin treatment period. Pollutants concentration is monitored by air probes. With this pioneering testing method, the efficacy of anti-pollution cosmetics can be clinically evaluated, in vivo. www.eurofins.com/cosmetics/

Objectively substantiate the anti-pollution claim by CIDP



CIDP has engineered a unique **Controlled Pollution Exposure System (CPES)** to evaluate the effect of air pollutants on the skin. Clinical studies to evaluate the photo-pollution on skin using the CPES can be set up at **CIDP Singapore and CIDP India**. These centres have access to a wide panel of both female and male Chinese and Indian subjects, trained staff in the **visual scoring** of erythema and pigmentation, **swab sampling and tape stripping**, as well as **analytical laboratories partners** with skin biomarkers analysis capabilities. CIDP India also conducts **real-time outdoor pollution studies** and standard protocols measuring:

- Biochemical parameters with biomarker analysis (oxidized squalene, MDA and carbonylated proteins).
- Biophysical parameters with analysis of wrinkles, firmness, etc. www.cidp-cro.com

In vivo Raman reveals the composition of the skin barrier by Dermatec



Pr Manfait, former head of a CNRS Research Unit at the Pharmacy School of Reims, works together with Dermatec. He has specifically developed in vivo Raman confocal spectroscopy that enables the **acquisition of molecular images at a cell/tissue level** and provides valuable information on the skin hydrolipidic film. Using **non-invasive measurements**, in vivo Raman microspectroscopy allows to characterize molecular structure and to highlight the **reinforcement of the skin barrier function** of a cosmetic product following a mechanical stress (i.e. stripping). It also enables to follow the restoration of skin barrier on **impaired skin**, like those suffering from Atopic Dermatitis. Thus, it makes possible to measure the **stratum corneum thickness**, the **skin hydration** and the lipid and **protein molecular markers**. www.dermatec-lyon.com

Phylogene: A comprehensive « free of hypothesis » analysis of the effects of cosmetics against pollution.

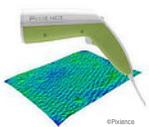


With the "omics" and bioinformatics analysis, Phylogene offers a broad and « **free of hypothesis** » evaluation of the effects of cosmetics on the skin and its microbiota which can be evaluated after sampling of a challenged skin within a pollution model:

- Evaluation of the effects by nanoLC-MS/MS **proteomics, phosphoproteomics** and complementary bioinformatics analysis with CORVALID™.
- Evaluation of **abiotic stresses** (UV, blue light, pollution) complementing the above approach by RedOxMics™ analysis.
- QPCR (targeted) quantification of major genera / species of the microbiotas.

- Comparative **metagenomic study** of the microbiome by NGS sequencing 16S rDNA and / or ITS.
- Comparative functional **metaproteomic study** of the microbiota and the skin by nanoLC-MS/MS proteomics and data complementary bioinformatic analysis by HolXplore™. <http://www.phylogene.com>

Pixience introduces C-Cube QuickScale: A new software for skin and hair image analysis



Radiance, redness, pollution amount, micro-relief isotropy, phototype, dryness or hair density are just some of the **16 criteria** you can easily measure, in real time, at the touch of a single button with C-Cube QuickScale. Relying on the acclaimed image quality and reliability of the C-Cube digital camera, it may be the most versatile, and most easy-to-use, skin and hair analysis tool. Designed for **efficacy testing**, QuickScale produces accurate measurements to backup product claims, and never seen before illustrations for your scientific or marketing material. www.pixience.com

Skinobs Partners of this ZOOM#13



Efficacy of your hair products with Intertek



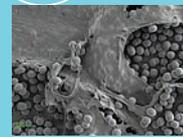
Test the efficacy and safety of your hair care products by measuring :

- the **anti-dandruff efficacy** implementing a clinical scoring performed by our trained and accredited expert technicians,

- the **re-densifying/anti-hair loss efficacy** by analysing the photos by manual or automatically counting). We carry out on-site applications thanks to our **specially equipped technical rooms** with shampoo stations. Finally, our **network of professional hair stylists** is also available to advise, supervise, implement and/or evaluate your professional products.

www.intertek-france.com/etudes-cliniques

VitroScreen celebrates 10 years' research on skin microbiome



VitroScreen has started working on **Microbiome in 2009** defining experimental conditions adapted to individually grow

different **bacterial strains on 3D skin models**. We have succeeded in modeling skin microbiome-bacterium specific behaviors based on long term colonization of fully viable 3D skin models: our goal was to guarantee **reproducible experiments** and robust results. Today our Microbiome Research Unit has developed new technologies and experimental approaches and we are proud to share our expertise and scientific approach with companies that need to explore in depth **host responses** to products and ingredients treatment and to correlate them with clinical investigation findings that mainly focus on bacteria.

www.vitroscreen.com

A predictive and fast screening in-vitro test by Microfactory



Microfactory is a start-up that leverages over 20 years of research in microfluidics with a mission to create a

new standard for cosmetic performance evaluation. The company targets the cosmetic market by developing the SOD4-Bio system: a predictive and fast screening in vitro test for the assessment of cosmetics' efficacy. **Our disruptive innovation is what cosmetics' manufacturers** are waiting for: Reliability increased by 25%, **costs reduced by 80%** and production increased 20-fold. A true revolution in the field. Thanks to Microfactory, 10.000 new cosmetics will be commercialised each year instead of only 500. www.microfactory.eu

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