skinobs
Testing Sourcing for Cosmetics

NEWSLETTER #17 - 10/2020

IMAGE : FREEPIK.COM

ZOOM BY SKINOBS #17

édito

The last quarter of a memorable year, during which each structure managed with agility to meet the commitments made and to get organised with the new constraints linked to this unprecedented health crisis. **Preclinical CROs continue** their development, new structures emerge and a dynamic network for innovation is maintained. The clinical CROs have mostly adapted to more **«contactless» practices**. An energetic cohesion of the testing field is palpable, certain that changes are possible and that they will allow the players in the sector a constructive deployment of their activity. In this newsletter we will **focus on the nail evaluation and propose a discussion on in vitro testing**. Then we will present you the latest innovations of our partners: Cerco, Eotech, Eurofins, I.E.C, Microfactory, Newtone, Phylogene, Validated Claim Support, Grupo Investiga, Pixience, Datacapt, Vitroscreen and Phenocell. **Next January**, we will be glad to meet you for real and answer your questions about testing at the next **Cosmet'agora**. Booth 64

Happy reading

Anne Charptentier, CEO

Testing Platforms: 2 Bridges to Accelerate your Product Development

These 2 unique tools summarise the state of the art in the classical and innovative methods to objectivate the beauty care products using either in vitro or in vivo testing. They also detail the testing, independently and comprehensively, giving technological information, locating the suppliers on a world map. With several filters such as **technological level, results types, assay support types,** or mechanism of action types, they optimise the testing sourcing. Our approach has always been collaborative, integrating information from all stakeholders to build a **useful and easy-to-use database** for all cosmeticians. In 2 clicks, each login (which are distinct) enables the testing expert to find the right CROs for a panorama of claim substantiation for:

- **Preclinical assays:** stability, composition, biodegradability, ecotoxicity, microbiology, interaction content containers, safety, efficacy and UV tests;
- **Clinical evaluation:** tolerance, scores, consumer tests, sensory analysis, biometrological objectivation,

Let ask specific requests and give us your feedback at contact@skinobs.com.

Statistics of the platforms traffic

+ 112%	6	+ 10,600	+ 130%
USERS*	MINUTES*	PAGES VIEWED*	SESSIONS*
* from July to September 2020 vs 2019	* average session lasting since July 2020	* from July to September 2020	* from July to September 2020 vs 2019

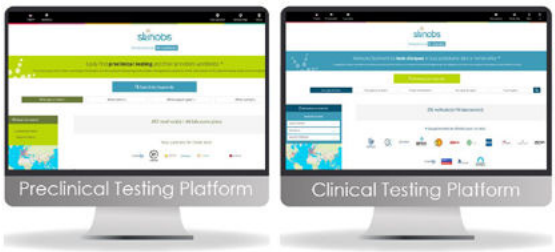
Accelerate your search on **slimming Testing**

For **in vivo tests** you find in the result search:

+ 15 Methods	+ 46 Testing labs	+ 21 Countries

For **preclinical tests** you find in the result search:

+34 Tests	+ 14 Testing labs	+ 5Countries



Discover
580 Methods
38 Skins mechanisms
84 CRO's

Discover
181 Claims
340 Methods
110 CRO's

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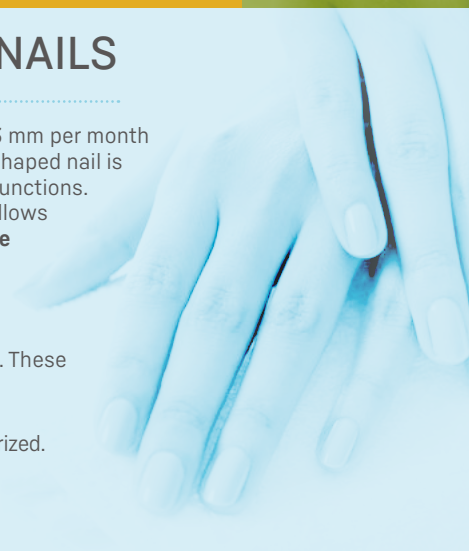
CLINICAL EVALUATION TO THE **END OF THE FINGERNAILS**



Nails of a composition similar to that of hair does not grow and do not fall out! They grow steadily from 2 to 3 mm per month for those of the hands, with a slowing of their growth speed at the end of life. The rounded, or rather square-shaped nail is a keratinized terminal skin appendage; it is a **hard and insensitive** part of the finger that performs several functions. Slightly bulging and translucent, **it protects the vulnerable** end of the **fingers from shock and cold** and allows precisely gripping of small objects. The nail tool **grips, pinches, scrapes,** but, above all, it ensures **a tactile sensitivity** and communicate one's social status as a cosmetic organ. Healthy nails have a smooth, pink, and translucent ungual surface, both hard and supple.

Composition: From Ungual Bed to Lunula

Nails are made up of a protein called keratin, which is continuously produced by certain specialised skin cells. These cells produce and store keratin, then they die and harden.

- **Ungual bed:** epidermis under the nail,
- **The nail matrix:** visible part, appears under the visible epidermis at the nail base, whose deep layer is highly vascularized.
- **Ungual or paronychium bulge:** a fold of skin that surrounds the nail on each side,
- **Cuticle or eponychium:** at the base of the nail, it protects its end against germs.
- **The lunula:** white part in the shape of a half-moon.

A 3 layers structure

The nail's unique properties, particularly its thickness and relatively compact construction, make it a formidable barrier to the entry of topically applied agents. In total, the human nail plate thickness is approximately 0.5 mm for fingernails and up to 1.3 mm for toenails:

- **The dorsal layer** is a dense, hard outer layer of cornified keratin only a few cells thick (approximately 200 µm).
- The **intermediate layer** of softer keratin constitutes roughly 75% of the plate's thickness.
- Below that is the **ventral layer** of soft keratin a few cells thick that connects to the nail bed below.

What claims can be measured from the effect of nail products? Whether it is varnished, base, cream, handling treatment is mostly related to improving:

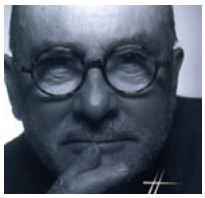
- **their appearance:** smoother, more regular nails, nails hydrated, less dull.
- **their biomechanical properties:** fortifies, nourishes, hardens and strengthens their resistance, improves brittle, soft, fragile, split or damaged nails.
- their growth,
- their appearance: long hold, shiny effect, resistance to wear.

Overall, nail products gather a myriad of claims. **Skinobs' Clinical Testing platform database** includes more than **36 biometrological assessment methods**, including clinical scorching assessments, consumer and self-assessments, or sensory analysis tests.

NAIL SURFACE
Anti-striae
AEVA-HE, Dermatop-HE (Eotech), DigiCam (Newtone Technologies), Visiocan VC 98 (C+K), Antera 3D (Miravex), C-Cube (Pixience)
Shine
DigiCam (Newtone Technologies), Skin GlossyMeter (C+K), SkinGlossMeter (Delfin),
Long lasting, durability
Mexameter® MX 18, Colorimeter (C+K), SkinColorCatch (Delfin), TiVi 70 Skin Colour (Wheelsbridge), **C-Cube (Pixience)**, Chromameter (Minolta), **SpectraCam (Newtone)**
Shine, quality, transparency
Digicam (Newtone), Epsilon (Biox), Dermatop-HE (Eotech), Visiocan (C+K), C-Cube (Pixience), Antera 3D, TiVi80, and all other dermascopes...
All claims
Visual and tactile objectivation, Sensory analysis, Emotions evaluation by I.A., **Consumer testing**

NAIL STRUCTURE AND COMPOSITION
Moisturizing, anti-dryness
MoistureMap, Corneofix, Tewameter Nano (C+K), Epsilon (Biox), Moisturemeter SC (Delfin), Opto-Thermal Transient Emission Randiometry [OTTER],
Shifftness, strenghtening, resistance, flexibility
Nail Strainstress meter (C+K),
Barrier function
Tewameter® TM 300 and Nano (C+K), Aquaflux (Biox), Evaporimeter, Vapometer, Dermalab, Nail pH...
Thickness
Dubskin-scanners and Dermatop-HE (Eotech), Ultrascan (C+K), LC-OCT, Antera 3D, Sonde Raman, Vivascope, Vivosight, TiVi80, Dermascan...
Quality and Composition
LC-OCT (Damae), Sonde Raman, Raman spectroscopy gen2-SCA, Epiffluorescence Microscop, Genomic, **metabolomic and proteomic analysis (Phylogene)**

A WORD OF EXPERT



JEAN-CLAUDE LE JOLIFF

President of the Cosmetotheque

www.cosmetotheque.com

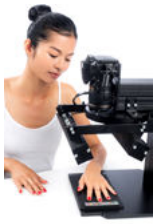
A contributor to Chanel's famous **black-red nail polish** during a major experiment of serendipity, Jean-Claude knew the varnishes, a complex make-up product, right down to the tip of his fingernails.

Their tolerance is studied, the irritating power analysed and often little found, as for allergies it is most often a contact allergy that was due to formaldehyde traces in the formulas. Beyond colour, **the sovereign property of the varnish is its hold**, which is long and resistant to all the daily, repeated, and varied tasks of the hands.

The varnish-holding tests were inspired at the beginning by the metrological measurements carried out by **car paints with drying and scratch tests,** but very quickly the tests evolved into the in-situ ones, allowing to account for real life whether it is semi-permanent or long-lasting varnish. Testing protocol has been put in place to objectivate their **flexibility, hardness, resistance to wear, flaking, the shine remanence, and the ease of their make-up removal.** More specific things are doable around the nail such as measuring microcirculation by periunguale capiralloscopy.

The evolution of nail polishes that we would like **greener** in their mode of production, has allowed the arrival of **hybrid varnishes, the watery varnish** remaining the quest for the holy grail, to always move towards more ecology; but it hasn't been done yet!

All in one solution by Newtone for hand back skin and nails analysis



© Newtone

Image acquisition and analysis of nails and hand back skin is often a challenge for laboratories. To address this challenge, Newtone has developed **DigiCam, a high-resolution image capture device** dedicated to hand skin and nails.

Images of hands and nails can be achieve using several supports (single hand, both hands, single finger). Image acquisition software enables **perfect repositioning over time**. Images are provided in both **cross polarized and parallel polarization**, enabling analysis of nails and hand back skin color component, homogeneity and gloss. Metric measurements can be provided as well for nails growth measurement. **The devices can be rented all over the world**. Renting comes will full Newtone package including technical training, support all along the study and quality control and image analysis, using specific analysis algorithms developed by Newtone. Hand skin and nails care products as well as nails make up products performance are now easy to address and assess. Claims are easily substantiated. www.newtone.fr

Corporate and testing sheet: https://skinobs.com/instrumentation.php?id=124

STRATEGIES FOR IN VITRO TESTING

As a constant question for all active ingredients or personal cares, talking about testing is a continuum in each step of the product development. The cosmeticians will have to precisely define the global context of its testing looking at the following points: the **nature of the products,** the **goal of the assay**, the **studied claims** and the linked mechanism of action, the **type of the results,** the **regulation constraints**.

For preliminary testing (toxicology and safety), in silico, in tubo, in vitro and ex vivo are the more commonly used and help progressively to have **robust alternatives to animal testing.**

What really boosts the use of in-vitro tests for efficacy validation ?

1. A limitless choice of biomarkers

The numerous choices of hundred biomarkers can provide an almost infinite variety of assays **on the cellular mechanism of the skin or the hair.** For example, to study the regenerating effect, you can select among various biomarkers such as Collagen IV, VII, XVII, Elastin fibres and structure, Corneodesmosin, Cytokeratins, Fibronectin, Integrins, Kallikreins, Lipids peroxidised, Lumican, Perlecan, Psoriasin, Sirtuin... the list is not comprehensive, and almost every month there is a new publication highlighting the interest of new biomarkers.

2. The Various Choice of Analysis Methods

After choosing the biomarkers, the claim objectivation can be founded on several **quantitative and visual analysis methods** with the more common ones such as **gene expression, morphology and histology, proteic and metabolic analyse (Elisa, Western Blot...) and the multi-omics techniques.** A special comment for the multi-omics techniques which can provide untargeted studies offering a starting review of its performance potential.

3. The infinite variety of assay supports

For in vitro assays there are significant distinctions between tests **on human monolayer cells** (primary or lines) commonly used for hydrophilic substances and assays **on 3D reconstructed skin models, skin explants and 3D skin bioprint** that can be used for lipophilic products.

Monolayer cell tests have become a routine with a choice of a multitude of primary cells provided from various skin types and ages: keratinocytes, fibroblasts, melanocytes, sebocytes, adipocytes and the opportunity of monoculture or coculture supports... Then, the wide selection of **reconstructed skin models is fantastic** (baby skin, altered skin, ageing skin...) with epidermis model or fullthickness skin model. Most of the CRO's can buy the standard cells or skin models can offer their own in-house models or can also develop specific ones with various characteristics dedicated to special objectivations. To give the best predictive results, they offer **sophisticated supports** for the various claims and functions of the skin, hair, glands, cornea, or mucosae...: integrating capillaries, melanocytes, neurons, sebocytes...

Are in vitro assays more than trends ?

Beyond the assay duration that everybody would like longer, 3D skin models and ex vivo testing **present undeniable benefits** through: the **multiple varieties of robust** supports, the **standardised assay conditions**, the **combination of assays** with multiple action mechanisms, an **ethical alternative** to human experiments, the **quantitative and illustrative** results.

Finally, almost all the safety and claims substantiation **is now in vitro compatible** with reliable assay protocols and robust results interpretation. The UV protection is also a wide range of in vitro tests giving research perspectives on the classical anti-UVA and anti-UVB Index but also on the blue light, and infrared protection.

The cosmetic world needs testing alternatives especially in toxicology, **to replace animal testing** that are just not anymore ethically acceptable. For efficacy objectivation, these methods represent often quicker, cheaper and a reliable proof of concept as predictors of efficacy in humans. The preliminary discussions with each CRO's to design the protocol is crucial to select the best analyses adapted to the searched biomarkers.

These methods can be considered as a **fantastic value for the beauty care** and actives development and a great contribution to the constant innovation on their performance. They remain an **irreplaceable component** of the working tools in the skin and hair field.

Review and new research areas by Vitroscreen

© Vitroscreen

On October 1st **VitroScreen** has been invited to contribute to the scientific program of SWISS **SCC** virtual event: *Between Societal and respect for the skin.*

A lecture entitled « Le microbiome cutané: Review and new research areas" has been presented by Marisa Meloni, Founder and CEO.

She has focused on the **individual unicity of skin microbiome** and how the scientific community needs to move from a research based on **microbiome description** to a deeper investigation to understand the **complexity and unicity** of this very specialized microenvironment. Examples of the interest to adopt an **histo-morphological approach** to identify bacterial distribution on 3D reconstructed skin models have been presented. **www.vitroscreen.com/WEBOLD**

Corporate and testing sheet: https://skinobs.com/preclinical/labo.php?id=198

Your cosmetic claims on skin explants with Phylogene

© Phylogene

There are no doubts that cosmetics are revolutionizing youth perception by constantly innovating in formulation or adding new active ingredients. At Phylogene we are part of this revolution. Our **mass spectrometry-based proteomics** has been **predictive for anti-aging** cosmetics and successfully integrated in processes for claims substantiation in **skin regeneration on explants**. Testing cosmetic formulations on skin explants, assessing the activated pathways, as well as relative quantification of proteins production with your regeneration formulation is possible with mass spectrometry proteomics and associated bioinformatics. Your skin regeneration claim is possible with Phylogene. **www.phylogene.com**

Corporate and testing sheet: https://skinobs.com/preclinical/labo.php?id=222&lang=en

in vivo/in vitro correlation on antiperspirant evaluations by Microfactory

© Microfactory

Microfactory has just completed the first part of its in vivo/in vitro correlation on antiperspirant efficiency evaluations.

The SOD4 technology characterised the efficacy of **5 antiperspirants in a single blind study**. In association with a Parisian CRO, these predictions were confirmed by gravimetry, the current method of in vivo testing.

Our technology measures the **pressure required to expel the clots formed** during the sweat/antiperspirant contact in the microfluidic synthetic pores.

The results of the in vivo and in vitro tests are consistent, **SOD4 represents a predictive and economical alternative** to human antiperspirant efficacy evaluations. **www.microfactory.eu**

Corporate and testing sheet: https://skinobs.com/preclinical/labo.php?id=266&lang=en

Partners key figures

1
day of high-speed screening by **MICROFACTORY.**

10
years of experience in topological measurement of hair by **EOTECH.**

11
years in microbiota studies by **VITROSCREEN.**

25
years of safety tests and claim support by **ALLERGISA GROUP.**

75%
of time gain in your clinical studies by **DATACAPT.**

100
and more hydro-alcoholic gels tested since March by **EUROFINS.**

100%
of customers recommend **PHENOCELL**, for personnalized R&D solutions.

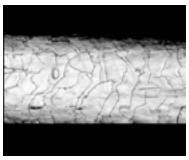
+ 110%
subscribers in 6 months to the Linkedin page by **CERCO.**

10 200
square feet of customized laboratory by **VALIDATED CLAIM SUPPORT**.

350 000
analysed skin images by **NEWTONE**.

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

Ex-vivo hair testing by Eotech


© Eotech

Among the physical properties which describe **the hair, its surface** at the microscopic level shows small scales that affect the hair appearance. Hair with a shiny aspect has a smooth surface, well-shaped, where the scales are slightly raised and more spaced.

The hair surface topology is measured to evaluate **smoothing** or **sheathing** or even **restorative effects**.

According to a well-defined protocol we are doing these hair relief measurements thanks to an interferometric microscope technique **on treated and not treated hair samples**.

It quantifies the decrease of variables like the roughness parameters Rz and Ra as well as the parameter Lr which reflects the surface complexity. www.eotech-sa.com

Corporate and testing sheet: https://skinobs.com/labo.php?id=88

Objectivation of skin aging by IEC

© IEC

For studies on the mechanical properties ***[firmness, elasticity, tensing effect, tonicity]*** of the skin and subcutaneous tissues, IEC can combine different methodologies with **[Cutometer®]** and without contact **[Dynaskin Dermatop EOTECH and/or SkinFlex ORION CONCEPT]** in particular for immediate effects. These measurements, correlated with skin aging, are closely related to the **tactile clinical evaluation** of trained assessors.

These studies can be carried out on **Caucasian** [France: Lyon, Saint Etienne / South Africa: Cape Town with a photo aged panel] and **Asian** [China, Singapore, Korea] subjects. www.iecfrance.com

Corporate and testing sheet: https://skinobs.com/labo.php?id=7&lang=en

A complete custom tailored GCP by Validated Claim Support

© Validated Claim Support

Validated Claim Support is a privately held Claim Support Laboratory that was developed to provide **ethical and transparent clinical support services**. FDA Registered and Inspected in August 2020, VCS has a completely custom tailored GCP focused Quality Management system designed to help meet and exceed client expectations from a customer service standpoint. VCS is designed as an alternative to the "CRO Status Quo" and can help you to **differentiate your skincare and personal care products** in an ever-competitive international marketplace. Don't just state your claims... Validated them! www.validatedcs.com

Corporate and testing sheet: https://skinobs.com/labo.php?id=222

Eurofins-Dermscan quantifies the performance of nail care

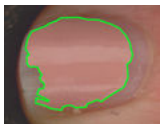
© Eurofins

In adults, a healthy nail is hard, tough, transparent and has a smooth surface. Many products (creams, oils, masks, enamels) aim to promote nail growth and strengthen its hardness.

- **Clinical scoring** remains a standard for evaluating the appearance and health of the nail (brittle, soft, split, etc.),
- **Image analysis** on photographs in standardized light makes it possible to follow the speed of growth,
- **Panelists** can appreciate the penetration and the drying time
- **Biometrological measurements** of color [C-Cube; Spectrophotometer], hydration [MoistureMeter D], TOWL [Aquaflux], brightness [Glossymeter], thickness [DermaScan C; DubSkinScanner], hardness [TA-TX, Nail StrainStress Meter NM 100] are also available. www.eurofins.com/cosmetics/

Corporate and testing sheet: https://skinobs.com/labo.php?id=26

Pixience Innovates with An Objective Measure Of Nail Polish Resistance by Pixience


© Pixience

Nail polish resistance over time is usually evaluated with consumer testing and questionnaires, which are hardly reliable and very subjective.

C-Cube Clinical Research is an imaging technique perfectly suited to capture a single nail's image, and precisely measure **the surface area of remaining polish over time**, thus providing an objective assessment of the product's resistance.

With its 16x12mm field of view, the C-Cube fits most nails, and ensures calibrated magnification, sharpness, and of course colors, which allows for an accurate analysis of **color change over time**.

It's a scientifically relevant, standardized and innovative tool for measuring nail polish resistance. www.pixience.com

Corporate and testing sheet: https://skinobs.com/instrumentation.php?id=107

Long lasting of varnish by CERCO

© CERCO

The main concern when a consumer uses a **polish** is **its long wear**; there are different ways to assess it: **by clinical scoring, by image analysis** and supplementing its metrological measurements by **self-assessment.**

The prolongation of the wear of a varnish, thanks to a topcoat can also be evaluated in the same way.

To this can be added the measurement of **shine or the matte effect** of a varnish or topcoat.

Improvement in nail hardness can also be measured in-vivo with a dedicated system. www.cercotests.com

Corporate and testing sheet: https://skinobs.com/labo.php?id=10

Acne & Pigmentation claim validation with innovative ethnic-specific assays by Phenocell

© Phenocell

Improve your screening and objectivation for **acne and pigmentation** with Phenocell's assays. Our leading-edge in-vitro platform allows for **ethnic-specific validation** (African, Asian and Caucasian) **on sebocytes and melanocytes**. Long time considered as difficult to obtain, Phenocell's sebocytes and melanocytes from induced **Pluripotent Stem Cells** disrupt the objectivation field with cost-efficient and highly relevant solutions for all your objectivation needs in acne, hyperseborrhea and pigmentation.

- Ethnic-specific claim validation
- Acne, oily skin and pigmentation leading-edge bioassays
- **100% of customers** recommend Phenocell, your trusted partner for personnalized R&D solutions

Learn more today on **www.phenocell.com/objectivation**

Corporate and testing sheet: https://skinobs.com/preclinical/labo.php?id=215

How to evaluate the integrity of the nail, by Allergisa

© Allergisa

The Transonychial Water Loss (TOWL) is widely used in the Allergisa's labs to quantify the water content of nails, using the Tewameter® Nano. The structure of the nail plate also limits the passage of water and it is expected that a damaged nail will be more permeable to water. With this technique man can study **the occlusive power, the barrier function** with **the integrity of the keratin** and also the major recovery of **cracks and flaking**. Allergisa's team also evaluates the biomechanical properties using the Instron machine to measure the strain stress, the strength and the elasticity of nails. As many claims, associating different parameters study and the consumers' perception is the best solution. **www.grupoinvestiga.com**

Corporate and testing sheet: https://skinobs.com/labo.php?id=48

Take your clinical trials to the next level with Datacapt

© Datacapt

Datacapt is an **all-in-one, intuitive and easy-to-use** eCRF solution that allows you to collect, store and analyse all your clinical data with a unique interface.

You can **build your trials in minutes** without any code, import templates and save time.

Our solution allows you to reduce the time for the elaboration and the implementation of a trial by as much as 50%. It also allows a reduction of about 75% of the time related to the **verification, correction and export of collected data.**

Secure and fully compliant, Datacapt allows you to improve your quality and meet your deadlines! **www.datacapt.com**

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