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## World class news for the beauty and cosmetics industries



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Anne Charpentier (En/Anne-Charpentier-304/)

## Anti-pollution claims (1/2): Which clinical tests?

Anne Charpentier (Photo: Central Plaza, Hong Kong - by Jason Wong, via Unsplash)

10 January 2023

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**One of the effects of air pollution on skin — combined with ozone, UV-rays and the Blue Light — is the generation of free radicals and consecutive inflammatory reactions in the long-run. The oxidative stress generally causes a decrease of the natural antioxidant protection and finally reduce the performance of the skin barrier leading to skin damages such as aging, spots and sensitivity, due to multiple disorders in the Stratum Corneum, Epidermis and Dermis (DNA damages, protein carbonylation, enzymatic alteration, inflammation mediators, oxidative, etc.).**

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The oxidation phenomena can be considered in two stages:

- ▶ **Short-term** : more toxins, barrier function disorders, low skin resistance to UV, changes in the pH, proteins and lipids, DNA oxidation, Inflammation, pore occlusions, low rate of hydration, oxygen, cell turnover, and sebum increase.
- ▶ **Long-term** : wrinkles, age spots, acne, dull and sagging, sensitivity

## Associated claims & clinical testing methods

Personal care products or ingredients claiming anti-pollution effects have three main goals:

- ▶ **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 radical, Anti-particles, Barrier integrity, Anti-inflammatory, Anti-spot.
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Two major testing options exist to implement the conditions of the pollution :

► **The standardized polluted environment.** Different testing laboratories (CIDP, proderm, Eurofins...) have developed special polluted boxes to recreate the pollution conditions for in-vitro, ex-vivo or in-vivo testing. Each of them uses specific pollutants (UV, ozone, particles, cigarette smoke...). The control and the measurement of the pollutants during the test is a key element of its reproducibility.

► **The in-situ pollution environment** in a polluted city is reserved for the on human testing, as it seems more difficult to submit cells and models to day life normal pollution.

The “**anti-pollution**” performances of personal care can be studied in three ways, depending on the test : **preventive or curative efficacy, short or long-term action, real life condition or controlled pollution conditions.**

For a specific “Anti-pollution” claims we have identified the following methods. Before any chemical analysis, specific sample of the skin can be implemented using stripping (caution to the potential adhesive interaction), swabs or glass sticks as removal tool:

► **Protection performance:** Heavy metal analysis (Lead, Iron Chromium) Syntivia, Zurko research, CIDP... or particles visualization mimicking PM deposit by Eurofins, CIDP, Intertek, BIO-EC, Proderm, ...



► **Antioxidant :** Lipidic peroxidation (SQ-OOH, MDA, vitamin E) by Proderm, Eurofins... or Transcriptomic and proteomic by Phylogene, Oxiproteomics, or Molecular content : SquameScan, or fibroTX (Eotech), Raman spectroscopy.



► **Detoxifying :** Oxygenation Measure of transcutaneous partial pressure of O<sub>2</sub> by Eurofins and PHD Trials.

► **Skin complexion and radiance :** CorlorFace and SkinCam (Newtone technologies), Goniolux (Orion), Skin GlossyMeter (C+K), SkinGlossMeter (Delfin), Samba & Salsa (Bossa Nova Vision), Antera 3D (Miravex),

► **Inflammation :** Colour measurement by spectrophotometry, dosage of the biomarkers (IL-1 dosage), Transcriptomic (Phylogene, Oxiproteomics) ...

► **Skin Structure, visualization, and quantification :** LC-OCT, Multiphotonic, confocal microscopy, Raman spectroscopy...

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**A boutique style industry event  
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## LATEST NEWS



(en/stoelzle-masnieres-parfumerie,21437)

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**Glassmaker Waltersperger invests in new production capacity (en/glassmaker-waltersperger-invests,21417)**

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(en/fully-redesigned-refillable-glass,21431)

**Fully redesigned refillable glass airless solutions for Stella McCartney (en/fully-redesigned-refillable-glass,21431)**

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(en/faiveleytech-celebrates-the,21435)

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(en/univar-expands-in-beauty-with,21432)

**Univar expands in beauty with acquisition of Turkish distributor, Kale Kimya (en/univar-expands-in-beauty-with,21432)**

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(en/european-luxury-sector-impatient,21429)

European luxury sector impatient for return of Chinese tourists (en/european-luxury-sector-impatient,21429)

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Anne Charpentier (En/Anne-Charpentier-304/)



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Anne Charpentier is the founder and CEO of Skinobs.com (<https://www.skinobs.com>) the very **first web platform dedicated to *in vivo* efficacy cosmetics testing**.

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Skinobs (<https://www.skinobs.com>) allows cosmeticians worldwide to identify for free the *in vivo* efficacy methods and the testing laboratories suitable for any product claim. It is a comprehensive and independent tool which optimizes the development of products in terms of performance, cost, speed, and innovation. It provides a 360-degree vision of *in vivo* efficacy testing.

In 2020, Skinobs.com (<https://www.skinobs.com>) strengthened their offer with the launch of a new platform dedicated to **preclinical testing**.

The new "Preclinical Testing" platform enables users to identify and select the most relevant testing methods depending on several criteria:

- ▶ Test category: Analytical tests, Content-contentair interaction, Ecotoxicity and Biodegradability tests, Safety tests, UV tests, efficacy tests...
- ▶ Claim: anti-ageing, anti-pollution...
- ▶ Test support: cell cultures, 3D skin models... the various tests corresponding to his objectivation project and directly contact each test provider. A keyword search also simplifies the search.

To get access to the platform: [www.skinobs.com](https://www.skinobs.com) (<https://www.skinobs.com>)

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**Connecting skin and wellness through cosmetic innovations**

(en/connecting-skin-and-wellness,21132)

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**Luxe Pack Los Angeles 2023 to focus on packaging creativity and sustainability**  
([en/luxe-pack-los-angeles-2023-to,21372](https://www.premiumbeautynews.com/en/luxe-pack-los-angeles-2023-to,21372))

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(en/luxe-pack-los-angeles-2023-to,21372)  
Still in the wave of a successful comeback event in early 2022, Luxe Pack Los Angeles, the trade show for creative...

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Anne Charpentier  
*Skinobs*

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## EXPERTS' VIEWS (EN/EXPERTS-VIEWS/)

## Anti-pollution claims (2/2): in-vitro and ex-vivo assays (en/anti-pollution-claims-2-2-in-vitro,21414,en)



(en/anti-pollution-claims-2-2-in-vitro,21414,en)

The stress induced by the pollution can increase the formation of glycated products at the several layers of the skin. It produces the...

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The development of more responsible beauty sponges, expected by customers, is a major challenge for the cosmetic accessories industry,...

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SPECIAL ISSUES (EN/SPECIAL-ISSUES/)

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Cosmetic Ingredients - April 2022 (en/cosmetic-ingredients-april-2022,20112)

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(en/cosmetic-ingredients-april-2022,20112)

After two years marked by a pandemic and a succession of unprecedented global lockdowns, the face of the global cosmetics market has...

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MARKETS & TRENDS (EN/MARKETS-TRENDS/)

South Korea make-up market to renew with growth, finds GlobalData (en/south-korea-make-up-market-to,21426)



(en/south-korea-make-up-market-to,21426)

LAWS & REGULATIONS (EN/LAWS-AND-REGULATIONS/)

France tightens rules on “net zero” claims to take aim at greenwashing (en/france-tightens-rules-on-net-zero,21344)



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## SCIENCE, R&D (EN/SCIENCE-RD/)

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**Cosmet'in Lyon: Two days of scientific talks about the exposome (en/cosmet-in-lyon-two-days-of,21318)**



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## INGREDIENTS & FORMULATION (EN/INGREDIENTS-AND-FORMULATION/)

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**Will bamboo, apple, chebula be the natural beauty ingredients to star in... (en/will-bamboo-apple-chebula-be-the,21298)**

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Fully redesigned refillable glass airless solutions for Stella McCartney (en/fully-redesigned-refillable-glass,21431)

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INNOVATION & NEW PRODUCTS (EN/INNOVATION-NEW-PRODUCTS/)

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The beauty innovations spotted at CES 2023 (en/the-beauty-innovations-spotted-at,21374)

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COMPANIES & INDUSTRY (EN/COMPANIES-INDUSTRY/)

Glassmaker Waltersperger invests in new production capacity (en/glassmaker-waltersperger-invests,21417)

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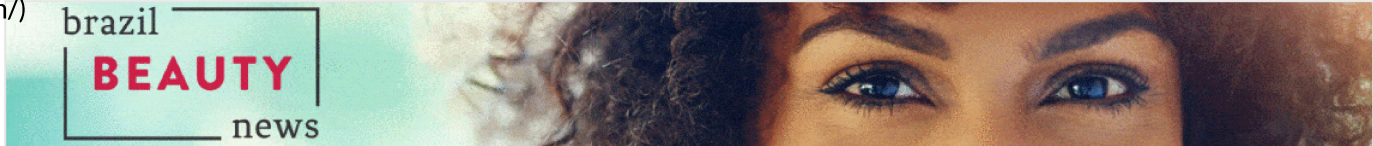
Stoelzle Masnières Parfumerie looks to the future with new management

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