

Expertise and Excellence as Hallmarks

David Boudier, Scientific communication manager from Silab about its expertise in mastering nature and biotechnologies

EURO COSMETICS: *You develop and produce biological active ingredients. What are your particular strengths?*

David Boudier: SILAB has been a global leader in the natural active ingredients engineering sector for more than 30 years by staying true to its founding values of independence, excellence and quality.

In a competitive market, independence especially is a key aspect, giving the company its strength and its ability to look ahead and adapt in order to respond rapidly to market requirements. This legal, financial and managerial independence also enables the company to continuously innovate, by significantly investing in R&D (20% of the turnover; 1/3 of the staff). As a result, SILAB launches 4 to 6 new ingredients each year and is recognized worldwide for its innovative capabilities.

EURO COSMETICS: *What, in particular, distinguishes your products?*

David Boudier: SILAB has been an expert in mastering nature since its creation. As a result, all of its products are coming from natural raw material (whether plants or biotechnologies), and offer original active molecular structures for the endogenous reactivation of the skin's natural resources. SILAB also makes a point of demonstrating the cosmetic efficacy of its active ingredients through robust protocols, thanks to its *in vitro* laboratory, which studies the molecular and tissue biology, and *in vivo* laboratory, which performs clinical evaluations on volunteers.

EURO COSMETICS: *At in-cosmetics in Amsterdam, you won the bronze award for best ingredient for the introduction of your product ECOBIOTYS®. What did your research work reveal?*

David Boudier: ECOBIOTYS® is a natural active ingredient able to rebalance the microbiota of mature skin. It has been devel-



David Boudier

oped based on two unprecedented scientific discoveries made by SILAB:

– SILAB Research has been the first to focus on the extraordinary richness of the floral nectar microbiota, called Nectarobiota®, mainly composed of yeasts. These studies revealed that these yeasts act as genuine regulators of the ecosystem of the plant, in particular its Nectarobiota®, ensuring the defense, development and regeneration of the plant.

– Second, SILAB revealed an imbalance of skin microbiota in the course of aging thanks to unprecedented modeling studies on healthy Caucasian skin. After comparing the microbiota of two groups of volunteers (one young, the other old), using metasequencing tools, the study of taxonomic classification showed the following results in old volunteers: a significant reduction of the relative abundance of the phylum *Actinobacteria* to the benefit of *Proteobacteria*; a significant increase of the relative abundance of the genus *Corynebacterium*.

SILAB's approach to the microbiota is thus unprecedented in the cosmetic industry:

extracting natural molecules from the microbiota of plants to influence the skin microbiota.

EURO COSMETICS: *For this active ingredient, you have used microbiota from plants. Which plants precisely and what makes them so special?*

David Boudier: SILAB has applied its expertise in mastering nature and biotechnologies to study the Nectarobiota® of *Hoya carnosa*. This remarkable plant, commonly named porcelain flower because of its luminous flowers, is among those producing the most nectar, which ensures its attractiveness.

The microbiota of this nectar is composed of, among other things, bacteria and yeasts that have developed exceptional properties of adaptation to this highly selective and transient substrate. Within this Nectarobiota®, SILAB performed a customized sampling and specifically isolated the yeast *Metschnikowia reukaufii*, the species largely dominant and specific to floral nectars. The company then used it as a raw material for the development of its novel active ingredient rich in biopeptides: ECOBIOTYS®.

EURO COSMETICS: *And which tests were conducted?*

David Boudier: *In vitro*, SILAB demonstrated the capacity of ECOBIOTYS® to restore the functional performance of the skin's immune and mechanical barriers. Indeed, tested at 0.5% on aged reconstructed epidermis (SILABSKIN® RE), ECOBIOTYS® protects the skin from pathogenic microorganisms by significantly restoring the expression of the danger detector, Toll-like Receptor 2 (TLR2), by 37% and the expression of antimicrobial peptides such as β -defensins 2 and 3 (HBD2 and HBD3) and ribonuclease 7 (RNase 7) by 127%, 32% and 35% respectively.



As a result, each step from the raw material to the finish product is rigorously controlled. Fortified by the proven efficacy of its active ingredients, it is supported by a customer service based on confidence and availability. Moreover, SILAB stands out by proactively providing for each one of its active ingredients a complete safety assessment file that includes data on:

- the raw material (through bibliographical, analytical and toxicological studies);
- the active itself (through analytical characterization, transcutaneous penetration, toxicity reference value, tests for human health, etc.).

EURO COSMETICS: *What do you do in order to maintain your competitive ability?*

David Boudier: Innovation is SILAB's strong key driver. Internalizing all the necessary expertise and technologies on its unique site in Saint-Viance (France) is a major element contributing to the development of innovative active ingredients. One of SILAB's latest high investment is a perfect example of this strategy: the company decided to create its own production unit for spray-drying, which will be operational beginning of 2019, in order to provide active ingredients in preservative-free powder.

Extending its activity is also another pillar of SILAB's strategy. In 2016, the company created SILAB Softcare, a department fully dedicated to the care of compromised skin which has a strong commitment to health. Intended for the dermo-cosmetic and dermatological markets, SILAB Softcare relies on the expertise and advanced technologies of SILAB, strengthened by specialized resources from the dermatological sector and latest-generation tools inspired by the healthcare sector. It aims at developing innovative products in the form of preservative-free powder based on three principles of excellence: Efficacy, Safety, Naturality. This new activity thus paves the way for novel developments and innovative approaches.

EURO COSMETICS: *Thank you for the conversation.* ■

In vivo, ECOBIOTYS® regulates the ecology of mature skin by acting on the distribution of bacterial communities. When tested at 2.5% on mature Caucasian skin, it also improves skin quality and enhances the complexion by increasing:

- the skin reflection by 9.5% (P < 0.0001);
- the fresh complexion by 13% (P < 0.005);
- the healthy-glow effect by 9.3% (P < 0.005);
- the rested eyes by 8.0% (P < 0.001).

EURO COSMETICS: *How does the manufacturing process work?*

David Boudier: As every SILAB product, the development is based on an eco-design approach. First, SILAB used its considerable expertise in biotechnologies to reproduce and optimize culture conditions in its laboratories to promote the growth of *Metschnikowia reukaufii*. Produced *in situ* at the industrial scale, this biomass is then used as natural raw material through a bioengineering enzymatic process and water as solvent. This process results in ECOBIOTYS®, a patented active ingredient

(INCI name: Yeast Extract) available in aqueous solution (recommended amount: 0.5% to 2.5%), and compliant with international cosmetic regulations (Europe, United States, Japan, China).

EURO COSMETICS: *For which skin type was ECOBIOTYS® developed and with which goal?*

David Boudier: ECOBIOTYS® is recommended in all skin care products designed for healthy, beautiful mature. It aims at rebalancing the microbiota of mature skin which thus recovers a radiant complexion. Indeed, the majority of volunteers having applied ECOBIOTYS® reported that their skin was nourished for a long time, more luminous and with fewer imperfections.

EURO COSMETICS: *How do you guarantee the high quality and safety requirements for a product?*

David Boudier: Being one of the founding values of the company, quality is a vital aspect within SILAB, enabling to ensure the safety and traceability of its products.