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## New industrial-scale production of Phyt-N-Resist® to supply the market

- **DEINOVE launches the production of a new batch of Phyt-N-Resist® to meet the needs of its distributors and future customers.**
- **Several projects for the development of cosmetic products containing the first DEINOVE's active made of Phytoene are underway.**

DEINOVE (Euronext Growth Paris: ALDEI), a French biotech company that uses a disruptive approach to develop innovative antibiotics and bio-based active ingredients for cosmetics and nutrition, **announces the production of a new industrial batch of Phyt-N-Resist®, its first proprietary cosmetic active ingredient, to meet the needs of its distributors and future customers.**

Phyt-N-Resist® is a colorless carotenoid with clinically proven antioxidant and regenerative properties. This first 100% pure Phytoene is an anti-aging active ingredient whose mechanism of action reveals a prime target for cell regeneration: laminin, a protein that links the different types of collagen and contributes to the adhesion of the epidermis to the dermis.

DEINOVE has developed an exclusive process for the bioproduction and extraction of Phytoene. 100% naturally-sourced and vegan, produced exclusively in France, it is derived from fermentation of plant sugars by the extremophile microorganism *Deinococcus geothermalis*. Phyt-N-Resist® has been sampled by nearly a hundred cosmetic brands and incorporated into various skincare formulations, demonstrating its potential in several strategic markets. The partners for distribution of this active ingredient are Solvay in the Americas and Asia, and Univar in EMEA.

*"Phyt-N-Resist® has been tested in different formulations and several tangible projects for the development of cosmetic products containing this active ingredient have been identified. Our distributors work closely with these brands located in different geographical areas. This new industrial batch is essential to address market needs and supply future customers"* says **Coralie MARTIN, Marketing Manager at DEINOVE.**

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## ABOUT PHYTOENE

*A breakthrough in naturally-sourced active ingredients: DEINOVE bioproduced the 1<sup>st</sup> pure Phytoene.*

Both skin cells and plants rely on a common substance to protect themselves from oxidative stress: Phytoene, the original precursor of all carotenoids. However, unlike plants, skin cannot synthesize it. Phytoene counts among these essential molecules that need to be brought through food or external supplementation, either oral or topical.

So far there was no way to extract pure Phytoene. None of the available production processes from plants allows the production of pure Phytoene. They provide only a random mixture of carotenoids, at low concentration, and with varying degrees of stability and colors.

Tapping into the extraordinary resources of biomimetism, harnessing the potential of *Deinococcus geothermalis*, a UV-resistant extremophile bacterium, DEINOVE has for the first time ever achieved the bioproduction of pure Phytoene.

### *Extended anti-aging properties*

Carotenoids are known for their antioxidant properties. Phytoene has been successfully tested for its ability to reduce the amount of lipoperoxidation products, appearing after cells exposure to UV radiations. Indeed, phytoene accumulates in cellular membranes to prevent cellular degradation. By protecting membranes lipids from free radicals, Phytoene reduces the harmful effects of oxidation and, ultimately, skin aging.

DEINOVE went even further while putting in place a systematic screening of its active ingredients across several dimensions. This comprehensive, innovative approach has highlighted a previously untapped feature under the carotenoid family: cell renewal stimulation. Wounded skin is able to regenerate under the action of phytoene.

**These properties were subsequently confirmed by a conclusive clinical study**, demonstrating its beneficial effect on skin firmness, elasticity and radiance. Above all, Phytoene has a significant antiwrinkle action.

**This makes Phytoene a thorough anti-aging active ingredient for the beauty industry.**

## ABOUT DEINOVE

DEINOVE is a French biotechnology company, a leader in disruptive innovation, which aims to help meet the challenges of antibiotic resistance and the transition to a sustainable production model for the cosmetics and nutrition industries.

DEINOVE has developed a unique and comprehensive expertise in the field of rare bacteria that it can decipher, culture, and optimize to disclose unsuspected possibilities and induce them to produce biobased molecules with activities of interest on an industrial scale. To do so, DEINOVE has been building and documenting since its creation an unparalleled biodiversity bank that it exploits thanks to a unique technological platform in Europe.

DEINOVE is organized around two areas of expertise:

- **ANTIBIOTICS, New-generation anti-infective agents:** A first antibiotic candidate is now in Phase II. The Company is also pursuing the systematic exploration of biodiversity to supply its portfolio

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with new leads, drawing notably on partnerships with bioMérieux and Naicons (AGIR program supported by Bpifrance).

- **BIOACTIVES, Active ingredients of natural origin** with cosmetics as the first market and potential in nutrition and health: DEINOVE is already marketing a first innovative asset, a second in partnership with Greentech and plans to launch new assets in 2020. Several other cosmetic actives are in development, including Oléos (Hallstar Group) and Dow. It also runs a program in animal nutrition with Groupe Avril.

Within the Euromedecine science park located in Montpellier, DEINOVE employs 60 employees, mainly researchers, engineers, and technicians, and has filed more than 350 patent applications internationally. The Company has been listed on Euronext Growth<sup>®</sup> since April 2010.

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