

AMOÉBA : Convincing results for the use of *Willaertia magna* C2c Maky lysate in cosmetics.

Chassieu (France), October 16, 2023 - 17h45 - AMOÉBA (FR0011051598 – ALMIB) an industrial biotech in pre-commercialization* specialised in the treatment of microbiological risk, developing a biocontrol agent for the crop treatment in agriculture that has obtained a marketing authorization in the United States and a biological biocide that has also obtained a marketing authorisation in the United States for use in closed cooling systems, announces that it has obtained convincing results for the use of *Willaertia magna* C2c Maky lysate in cosmetic skin care and has filed a patent application for this invention.

As part of its research for new applications, the Company unexpectedly discovered that the *Willaertia magna* C2c Maky lysate could be of cosmetic interest. To validate this use, two studies were conducted by specialized laboratories and the below-described conclusive results led the Company to fill a patent to protect the use of the lysate as a cosmetic ingredient.

First study: Induction of genes of cosmetic interest

The first study was carried out by a specialized external laboratory with the aim of assessing the level of induction of target genes of cosmetic interest after lab-grown human skin cells were treated with the *Willaertia magna* C2c Maky lysate.

The results showed that treating human cells with *Willaertia magna* C2c Maky lysate stimulated cellular functions of importance in cosmetics:

- Moderate stimulation of the expression of cellular functions involved in wound healing (*FBL5* gene), hyaluronic acid synthesis (*HAS* gene) and anti-infectious immunity (*TLR2* gene).
- Very strong stimulation of the expression of cellular functions protecting against cell death (*BCL2* gene), cell renewal (*PIWIL1* gene) and UV protection, anti-oxidative stress and photoaging (*FOXO1* and *SGK1* genes).

These results, demonstrating the induction of multiple genes of cosmetic interest, led the Company to evaluate the effect of *Willaertia magna* C2c Maky lysate on a 3-dimensional (3D) skin model.

Second study: Evaluation of the effect of the lysate on a 3D skin model

This study was carried out by LabSkin Creations, a biotechnology company specialised in advanced 3D skin engineering and service provider to the world's leading cosmetics brands.

Willaertia magna C2c Maky lysate was applied every 2-3 days for 30 days to the LabSkin 3D reconstructed skin model to assess the effect of the lysate on ageing skin. Part of the tissue

constructs was exposed to 100 mJ/cm₂ of UV_B to assess the level of protection induced by the lysate against the UV_B effects.

The results on the 3D model of ageing skin and on the 3D young skin model under UV_B exposure showed that, compared with the untreated conditions, treatment with *Willaertia magna* C2c Maky lysate increased epidermal thickness, led to recovery of terminal cell differentiation and improved the quality and abundance of the extracellular matrix which is essential for the cohesion of the skin's compartments.

The amoeba lysate could therefore be used as a cosmetic ingredient for the following cosmetic purposes:

- protection against cell death of skin cells,
- cellular renewal of skin cells,
- protection against the effects of UV rays,
- anti oxidative stress,
- protection against photoaging.

The next step, planned over the coming months, will consist of carrying out a test formulation for cosmetic trials on volunteers by specialized companies.

Intellectual property and regulatory requirements

The Company has filed today a patent with the French Patent Office (Institut national de la propriété industrielle) entitled "*Cosmetic composition containing protozoan*" to protect the invention of a cosmetic composition for skin care including protozoa of the genus *Willaertia*.

At regulatory level, in Europe and the United States, the placing on the market of a cosmetic product does not require prior approval by a competent authority: the person responsible for placing the formulated cosmetic product on the market must carry out a self-assessment of the product safety.

Amoéba could provide the cosmetic industry with an ingredient whose absence of hazard has been validated by all the regulatory studies carried out for the biocontrol application, the cosmetic ingredient being identical to the biocontrol active substance.

"We are very proud of this discovery and of these excellent proof-of-concept results, which once again demonstrate the expertise of our biotechnology and industrial valorisation platform. The cosmetics market is a fast-growing industry that has been called into question in recent years because of the chemical origin and the health and environmental impacts of its ingredients. Once incorporated into a cosmetic formulation, this new cosmetic ingredient, with its many beneficial effects, can provide a multifunctional natural product. The ingredient can be mass-produced using our existing industrial facilities with a high standard of quality.", says Fabrice PLASSON, CEO of Amoéba.

About AMOÉBA:

Amoéba's ambition is to become a major player in the treatment of microbiological risk in the water, plant protection and health sectors. Based on the natural properties of the amoeba *Willarta magna* C2c Maky, our biological solution is a viable alternative to the chemical products widely used in the industry today. Amoeba is currently focused on the closed system industrial cooling tower market in the United States estimated at €200 million (1) and on the global biocontrol market for plant protection estimated at €3 billion (2), out of a global market for chemical fungicides estimated at €21 billion (3). The commercialization of the associated biocides and phytosanitary products is subject to local regulatory approvals.

**At the end of 2022, Amoeba obtained approval of its active substance for biocidal use in closed cooling system and for biocontrol use in the United States. The substance has also been recommended for biocontrol use in Europe by the Austrian authority in the same year. The company is currently in a pre-commercialization phase for biocidal and plant protection applications and is expected to market its products by 2025. Founded in 2010 and based in Chassieu (Lyon, France), Amoéba is listed on Euronext Growth. The Company is a member of the BPI Excellence network and is eligible for the PEA-PME scheme. For more information, please visit www.amoeba-nature.com.*

(1): Amoéba data

(2): IBMA data

(3): Amoeba data

Contacts:

Amoéba

Jean-François DOUCET
Deputy General Manager

☎ +33 4 26 69 16 00

✉ jf.doucet@amoeba-nature.com

Calyptus

Investor & Press Relations

Nicolas HELIN / Mathieu CALLEUX

☎ +33 1 53 65 37 90 /91

✉ amoeba@calyptus.net

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