PHYKOSIL 2000

Marine algae cell extract
(ASPARAGOPSIS ARMATA)
Ingredient code CLS : 522025

Algae family

Asparagopsis armata is a red alga (Rhodophycea : family of Bonnemaisoniaceae).
PHYKOSIL 2000 is a cell extract from young plantets of the Asparagopsis armata.
At first, the aim was to put in place processes of culture then to extract the intracellular biologically active silicon linked to an environment rich in polysaccharides, proteins and vitamins...

Analytical composition

characterization : - carrageenan

titration : - iodine
- magnesium
- total nitrogen
- silicon (about 0.3g/kg)

Technical characteristics

clear, slightly viscous liquid

pH between 3 and 4

dry extract : between 2.5 and 5%

Availability

drums of 5 ,30 or 60kg
PHYKOSIL 2000 is a stabilized extract and is treated in order to avoid any precipitation in time.

Uses

Anti inflammatory and soothing care products
(young skin suffering from acne, sensitive skins : babies, children and old people, sun and after sun products, after shave, soothing cream after depilation ...)

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Face and body moisturizing
Intra cellular algal silicon, natural marine product will give a moisturizing action, with a better skin elasticity improving its radiance an its smoothness.

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Anti ageing products
Regenerating activity, PHYKOSIL 2000 nourishes and stimulates the cutanous cells.

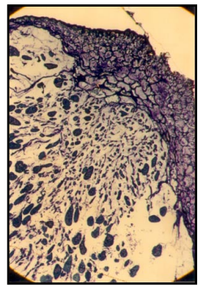
SILICON, CULTURE, ACTIVITIES

Silicon localization

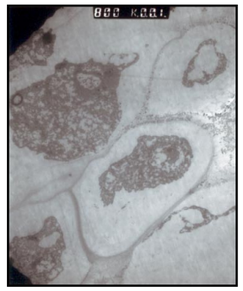
Observation of the algal tissue

Two methods are used :

- light microscopy,
- electron microscopy.



Light microscopy picture



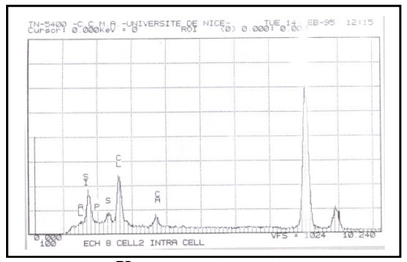
Electron microscope picture x 3000

Localization and detection of silicon

Two methods of micro analysis have been coupled :

- Ion analysis,
- X ray spectrometry

Secondary ion mass spectrometry is a qualitative chemical method with an isotopic analysis of elements at low concentration of the cellular volume. This technique associated with optical microscope is used to detect and visualize the distribution of intracellular silicon. This technique used in biology can microanalyze individual cells.
X ray spectrometry enables to determine chemical elements contained in tissues, cells and cell structure.
At first, we can select the tissue rich in silicon in order to differentiate their characteristics :

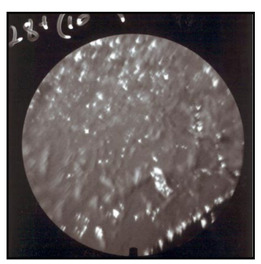


X ray spectrometry

I - Extra cellular silicon : diatom walls or silica deposit on the algae. There is not biological interest.

II - Inter cellular polymerized deposit in a complex mixture of calcium and silica. There is less biological interest in this case.

III - Intra cellular silicon : it is abundant in young plantlets and reproductive structure (cystocarpe). This soluble part of silicon has a biological activity.



Silicon picture

**Asparagopsis armata has been choosen because this algae possesses a low silicon content under a silica form.
It is rich in intracellular biologically active silicon .**

Culture Harvest and extraction of cells

Culture and Harvest

Studies have demonstrated the presence of intracellular silicon in significant quantity to allow industrial production.
These studies involve a harvest period in relation to the maturing of the algae.
We can find intracellular biologically active silicon in the young plantlets.
The culture has been carried out the following way : cultivation in basin according to an appropriate method which allows to subculture it in high sea.

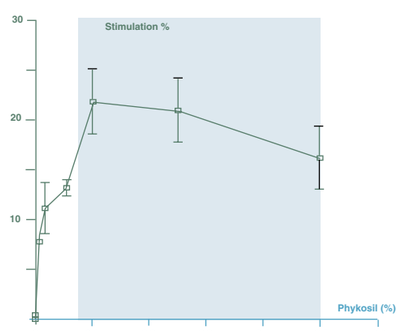
Process of intra cellular extract

We proceed to successive micro-grinding in order to collect the intracellular liquid.
Only a small part of the carrageenan, necessary to the silicon stabilization, wil be kept.

Biological activities

PHYKOSIL 2000 is a natural extract, non toxic and with a good tolerance.
Its primary activity is a **stimulation of the cell cutaneous activity**, and as a second effect : **moisturizing**, soothing, softening, draining and purifying.

We have demonstrated the PHYKOSIL **cytostimulation** power by a study carried out on human **fibroblasts** (WI 38).
Tested concentrations are from 0.001% to 2.5%.
We have observed : **a 20% increase and more without a dose effect of : 0.06% to 0.5%.**



Tolerance study

PHYKOSIL 2000 is a natural extract from algae. This product is extracted from a non toxic alga and our test of tolerance by alternative methods cofirms that PHYKOSIL 2000, is not toxic or irritant.

Formulation

PHYKOSIL 2000 is an aqueous stable solution at a pH between 3 and 4.

Higher pH is compatible in finished formulations.

On an average, the recommended concentration is 2 to 10 %.

PHYKOSIL 2000 presents a very ligth marine odor which can be perfectly combined in a natural product. This odor disappears with a light perfume.

Important note : PHYKOSIL 2000 must be stored at around 4°C but not at temperature inferior to 0°C.

Existing studies

A complete file includes:

Technical document

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Culture document, silicon localization, extraction

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Regenerating cutaneous effect

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Tolerances by alternative methods

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