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PROGRAMME "QUALITY OF LIFE AND MANAGEMENT OF LIVING RESOURCES"

NO. QLK3-CT-2001-70571

"NATURE: Natural preservatives produced by macro-algae and their use in cosmetic applications"

Lacote promoted and coordinated the above-said scientific research, which was attended by the following Institutes:

- SIMER - LABORATOIRES SCIENCE ET MER, France
- NECTON SA Companhia Portuguesa de Culturas Marinhas, Portugal
- BENESTHER SHELLFISH, United Kingdom
- Università degli Studi di Pisa – Dipartimento di Biologia Marina, Italy
- Università degli Studi di Pisa – Dipartimento di Microbiologia, Italy
- Universidad de Barcelona, Spain

Goals:
The Cosmetics Industry is currently able to guarantee the microbiological safety of cosmetic products only with the addition of synthetic chemical preservatives.
The general trend though is to seek more and more products which are totally natural and "with no preservatives", and to reduce the problems of intolerance and toxicity caused by chemical preservatives.
NATURE project aims to identify and test substances of natural origin obtained from the metabolites produced by macro-algae having antibacterial and antifungal activity comparable to that of synthetic preservatives, which are meeting the requirements in force in the cosmetics industry, but which can also be used in other sectors (pharmaceutical, food).

Implementation and Results of the research:
Starting from 50 species of algae known for their antibacterial and antimicrobial action available in the Mediterranean Sea, 5 species which are particularly promising (through in vitro assays) were selected and studied; cycles of experiments were carried out in different laboratory crops and then the metabolites were extracted and purified.
After the selection of secondary metabolites, once determined the useful minimum concentration and evaluated the stability of the active metabolites, then microbiological tests and stability tests over time were conducted.
The seaweed called TRAILLIELLA INTRICATA was the one with the best antifungal and antibacterial activity.

The data collected can now be used as a starting point for further researches (Verification of the product safety for the consumer. Technical and economic analysis for the production of natural preservatives. Industrial feasibility.) that will allow to develop a preservative system alternative to existing synthetic antimicrobial systems, in order to protect consumers from potential hazards from contaminating micro-organisms and to limit the onset of skin irritations, allergies, atopic skin reactions.