
# ANTARCTICINE®

## A GLYCOPROTEIN FROM THE ANTARCTIC SEA

### DESCRIPTION

A glycoprotein exopolymer with cryoprotective, restructuring and antiwrinkle properties

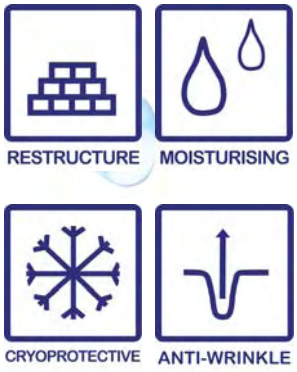
### INCI

WATER (AQUA), PSEUDOALTEROMONAS FERMENT EXTRACT

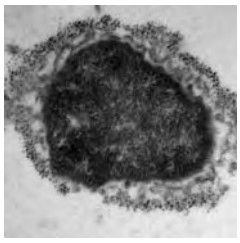
### USE LEVEL

3 - 5%

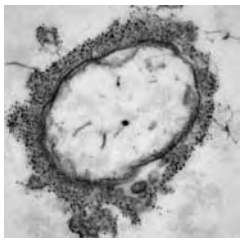
### FUNCTION



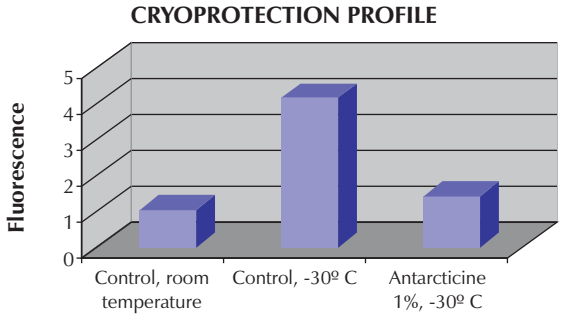

During the Antarctic summer of 1988, a Spanish scientific expedition collected mud samples from the inlet Admiralty Bay, on King George Island, Antarctica. A new bacterial strain, *Pseudoalteromonas Antarctica,* was isolated from these samples and characterised.



During growth, the bacteria produced an extracellular material, an exopolymer of glycoproteins believed to help the bacteria retain water, adhere to surfaces, and withstand the extreme cold.



Its protective function in nature is applied in cosmetics to regenerate and protect the skin.




The controls are untreated liposomes. Normal unfrozen liposomes containing carboxyfluorescein have a fluorescence of around 1. When frozen and defrosted, their membrane leaks and fluorescence rises to 4.1. Liposomes frozen and defrosted in the presence of 1% Antarcticine retain most of the integrity of unfrozen liposomes.

## Cosmetic benefits

- **ANTARCTICINE®** helps the skin retain water, preventing cutaneous dryness
- **ANTARCTICINE®** presents a cryoprotective effect due to its ability to modify the morphology of ice crystals
- **ANTARCTICINE®** stimulates fibroblast adhesion and keratinocyte growth, regenerating tissues and enabling a faster healing of wounds
- **ANTARCTICINE®** increases collagen type I and IV, as well as elastin, resulting in a restructured skin and a reduction in wrinkles
- **ANTARCTICINE®** reduces the depth of wrinkles, especially in the forehead and around the eyes

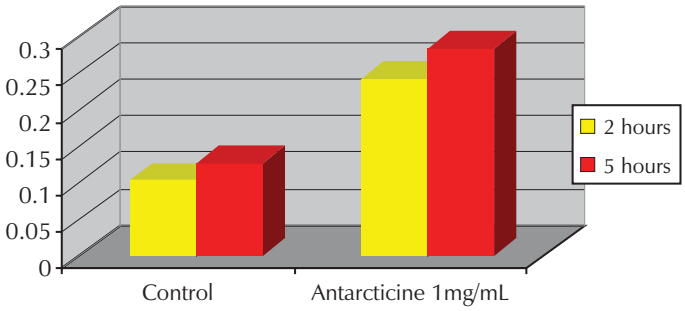
Lipotec

# Efficacy tests

## SKIN RESTRUCTURE

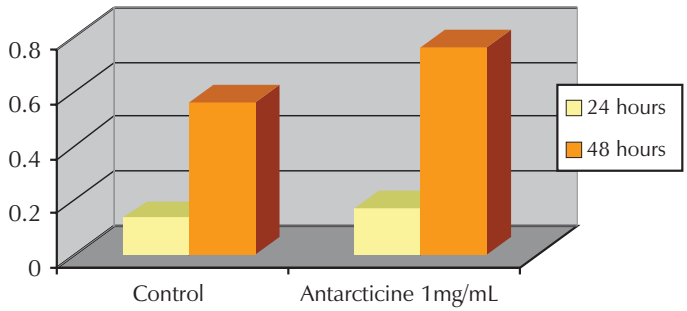
In nature, **ANTARCTICINE®** has the function of protecting the bacteria against harsh conditions. In cosmetics, **ANTARCTICINE®** maintains its natural bioprotective properties and promotes keratinocyte growth and fibroblast adhesion for a skin regenerating effect and enhanced wound healing.

**Human Fibroblasts - Adhesion to Antarcticine**




Fibroblast adhesion was increased 125% in 5 hours!

**Human Keratinocytes - Growth**




Significant HEK growth of approximately 25% in 24 hours and 36% in 48 hours.

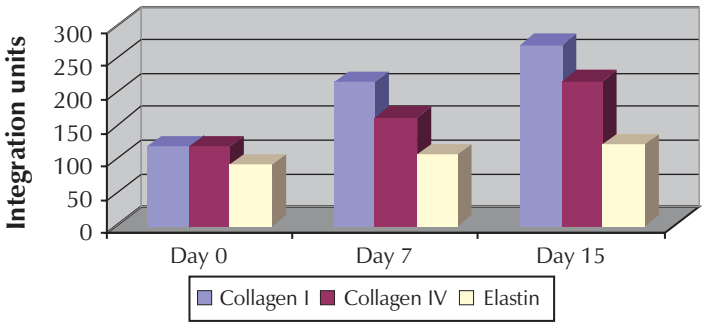
## ANTI-WRINKLE PROPERTIES

### IN VITRO TEST

An in vitro skin model composed of keratinocytes and fibroblasts was used to monitor the levels of Collagen I, Collagen IV and Elastin. The proteins were measured by western blot.

- ✓ Collagen I increases 128% in 15 days
- ✓ Collagen IV increases 81% in 15 days
- ✓ Elastin levels increase 31% in 15 days

**In vitro skin model - Antarcticine 1 mg/mL**

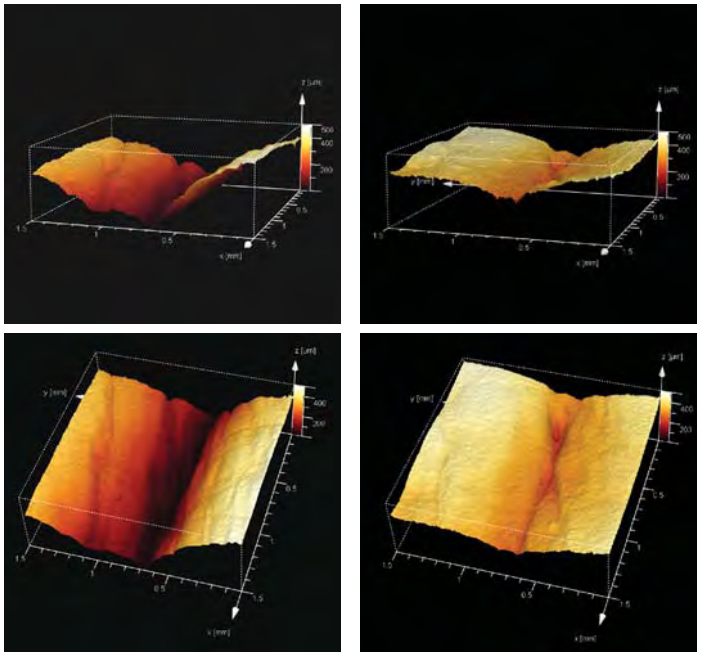



### IN VIVO TEST ON VOLUNTEERS

Skin topography analyses were performed by obtaining silicon imprints from around the eyes of 10 healthy women volunteers.

The product tested was a cream containing 5% Antarcticine and it was applied twice daily for 30 days.

Silicon imprints were obtained pre-test and after 30 days. Analyses of the imprints were performed by confocal laser scanning microscopy to assess the evolution of the skin surface before and after the treatment. Skin topography images from the three dimensional reconstruction of optical sections are shown in the figure. The depth of the wrinkle decreased significantly, with maximum values between 50 and 60%.



D.L. B-6656-2008



Ed. 8A

C/ Isaac Peral, nº 17-Pol. Ind. Camí Ral
08850 Gavà - Barcelona - Spain