

## CLINICAL DATA – ALTEROMONAS (POLYSACCHARIDE) FERMENT EXTRACT

### What is Alteromonas (polysaccharide) Ferment Extract?

Sugar Polymers – High molecular weight polymers mainly composed of sugars. Secreted by micro-organisms directly into their environment to ensure the functions of protection, nutrition or adhesion.

Unique composition – Each micro-organism produces its own specific Alteromonas (polysaccharide) Ferment Extract with its own unique sequence of sugars.

Marine ExoPolySaccharides have no land based equivalent, they therefore represent a new and original source of molecules.

### Alteromonas (polysaccharide) Ferment Extract: where does it come from?

Plankton Micro-organism

Produced by a marine plankton micro-organism collected from the Mer d'Iroise off the coast of Brest in Brittany, France.

Preserved Ecosystem

The area where it is collected still has a number of small zostera, sort of marine seagrass which provides protection and nutrition. It is also a reproduction area and hatcheries for a large number of small organism and micro-organisms. It is the natural environment of the famous hippocampus.

In this ecosystem Exopolysaccharides play a major role for trapping essential nutrients for the growth of small organisms.



### Alteromonas (polysaccharide) Ferment Extract: how is it produced?

Production:

1. Isolation and identification of the plankton micro-organism.
2. Cultivation of the micro-organism in bio reactor: the ExoPolysaccharide is secreted in the culture medium.
3. Use of sophisticated purification systems to obtain a high purification degree of the ExoPolysaccharide.

Guaranties:

- Synthesis totally controlled
- Reproducibility of the chemical structure
- High purity of the molecule

This process allows the manufacture of Pure and 100% natural molecules.

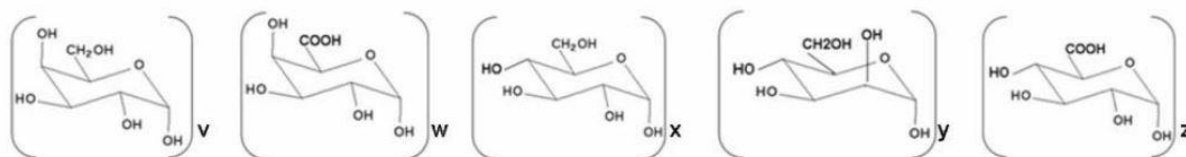
### **Alteromonas (polysaccharide) Ferment Extract: its composition.**

Totally Characterised:

Alteromonas (polysaccharide) Ferment Extract is mainly composed of galactose, galacturonic acid, glucose, glucuronic acid and mannose.

High Molecular Weight

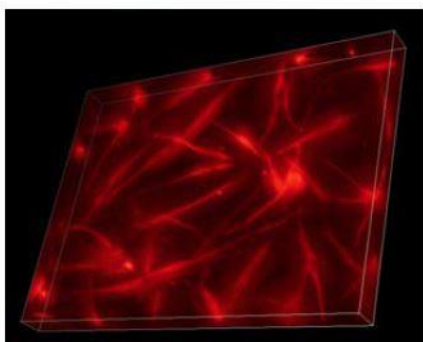
➤ 1.4 million Dalton.



### ***In-vitro Test:***

### **Immediate skin tightening effect of Alteromonas (polysaccharide) Ferment Extract**

Collagen lattice: 3D recreation of dermis



Lattice treated with Vimentine.

In red: fibroblasts



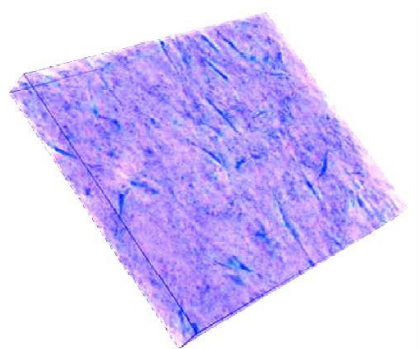
Classical observation of a lattice

Fibroblasts in blue – Collagen network in white

### **Methodology**

The model used is a collagen lattice. This is an *in-vitro* dimensional recreation of a dermis, with a population of fibroblasts producing collagen and interacting with this collagen fibre network.

The model is used to assess the effect of an active cosmetic ingredient on the collagen network more realistically than with cellular cultures.

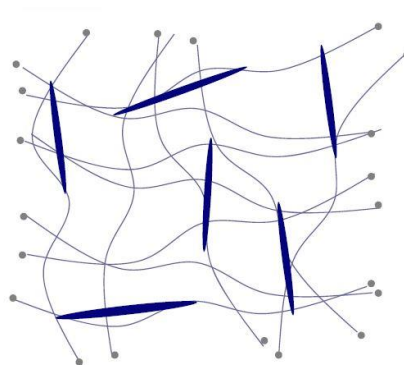


Control

Collagen Lattice: relaxed

In blue: fibroblasts with a relaxed shape

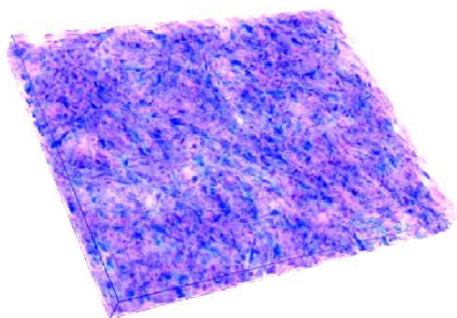
In white: relaxed collagen network



Schematization

Schematic representation of the fibroblasts interacting with collagen fibres in the lattice.

Both fibroblasts and fibres are in a relaxed state and shape.



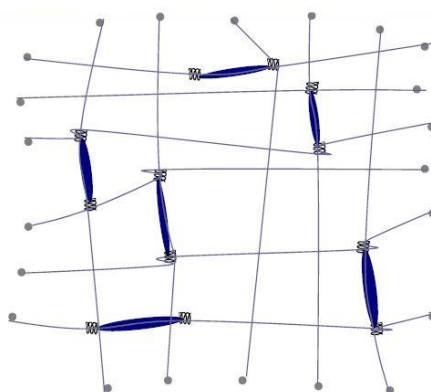
0.2% Alteromonas (polysaccharide)

Ferment Extract

Collagen Lattice: contracted

Fibroblasts (in blue) contract and stretch the collagen fibres.

In white: stretched collagen network



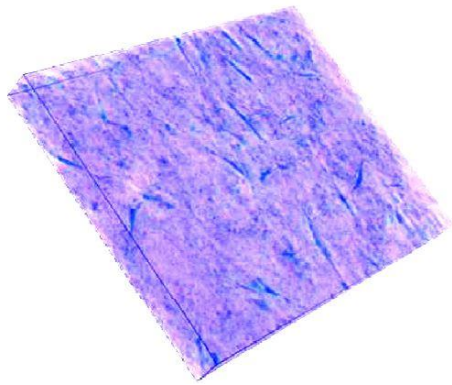
Schematization

Schematic representation of the fibroblasts interacting with collagen fibres in the lattice.

Fibroblasts contract and stretch collagen network.

Alteromonas (polysaccharide) Ferment Extract induces the contraction of fibroblasts which stretch the collagen network for a resulting tensing effect.

# SYNERGIE SKIN CLEAN SCIENCE

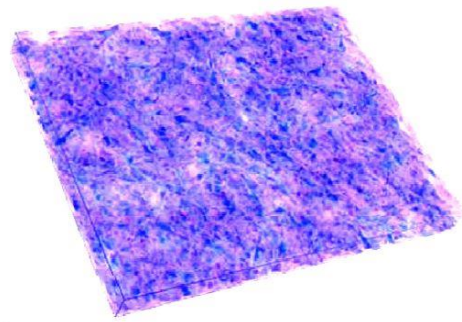


## Control

Collagen Lattice: relaxed

In blue: fibroblasts with usual shape

In white: relaxed collagen network



## 0.2% Alteromonas (polysaccharide)

### Ferment Extract

Collagen Lattice: contracted

In blue: fibroblasts with a contracted shape

In white: stretched collagen network

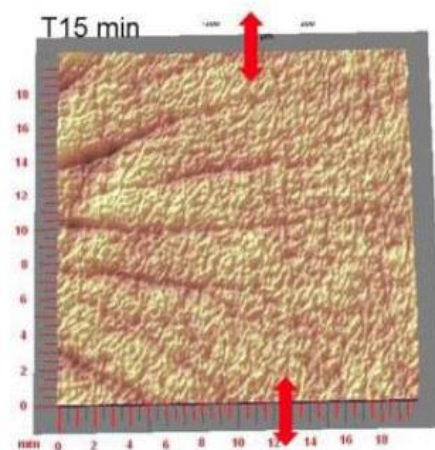
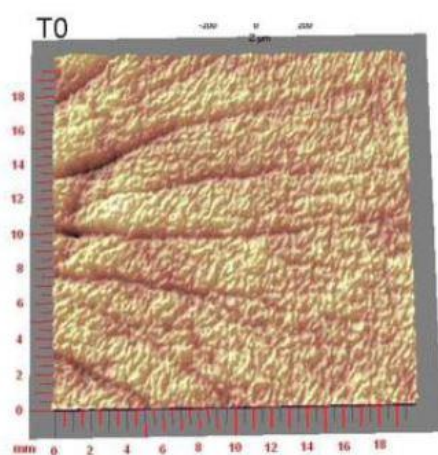
Treated with Alteromonas (polysaccharide) Ferment Extract, fibroblasts exercise a tensing effect on the collagen network for a smoothing effect.

## ***In-vivo test:***

### **Immediate skin tightening effect of Alteromonas (polysaccharide) Ferment Extract**

15 min tightening effect

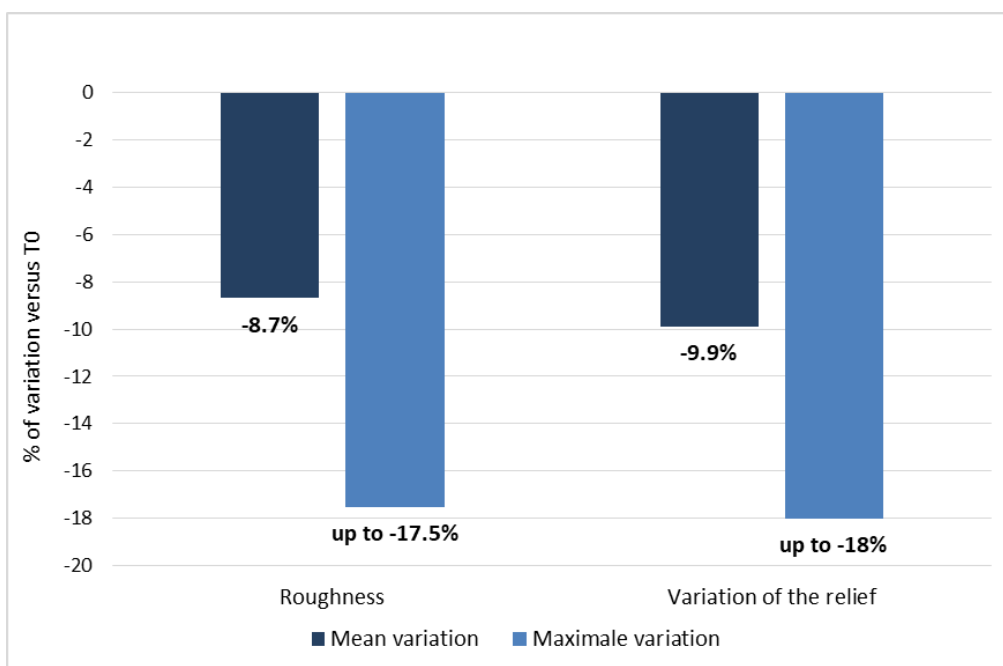
A single application of 2% Alteromonas (polysaccharide) Ferment Extract on crow's feet wrinkles shows a smoothing effect of the roughness as well as a lifting effect and relief 15 minutes after treatment.



15 min to lift and to smooth the skin

Decrease in skin roughness: -8.7% on average up to -17.5%

Decrease in cutaneous relief dispersion: -9.9% on average up to -18%

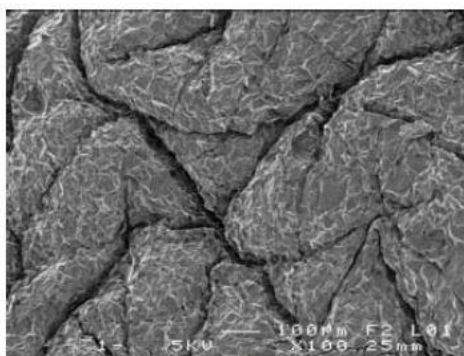


### **Alteromonas (polysaccharide) Ferment Extract: its affinity for skin and its fill in properties**

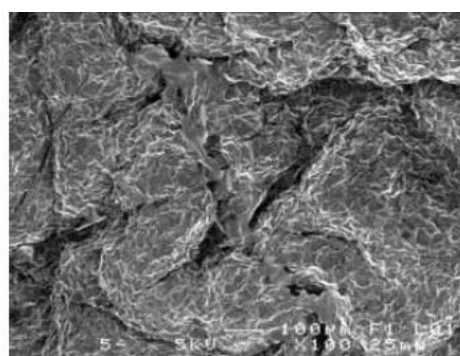
Alteromonas (polysaccharide) Ferment Extract fills in the furrows and smoothes out the relief of skin.

Its high molecular weight gives it a particular affinity for the skin and interesting surface properties for filling in wrinkles.

The below photographs show scanning electron micrographs of the surface of the epidermis. Furrows and variations in cutaneous relief can clearly be seen. After treatment with Alteromonas (polysaccharide) Ferment Extract the furrows are filled in and the differences in relief are smoothed out and made uniform.



Untreated epidermis



Epidermis treated with  
Alteromonas (polysaccharide)  
Ferment Extract

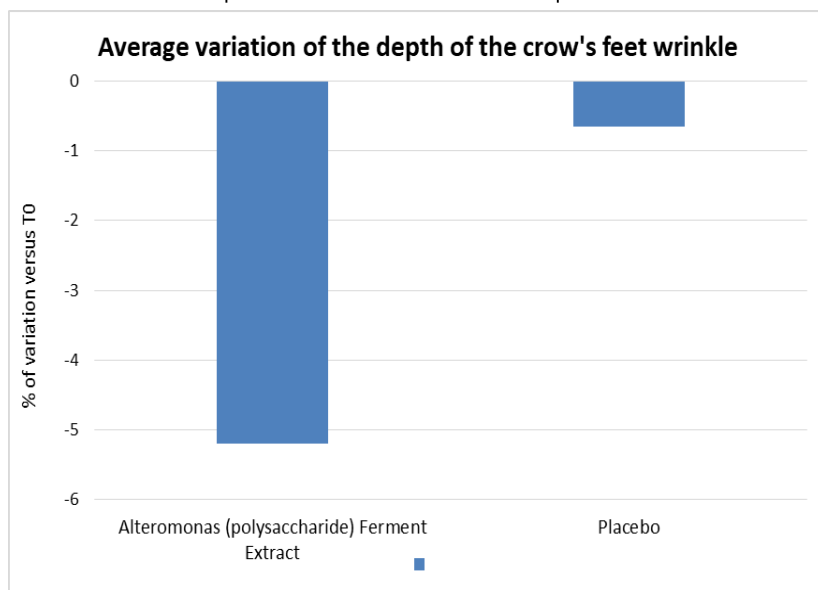
#### **Protocol:**

17 women from 50 to 65 years old.

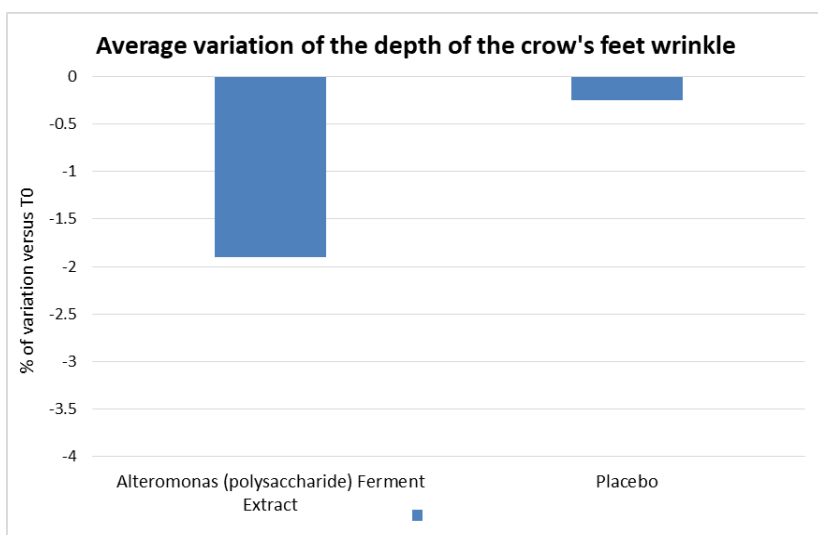
Single application of Alteromonas (polysaccharide) Ferment Extract at a concentration of 2% versus placebo.

Evaluation of the depth of the crow's feet wrinkle using fringe projection.

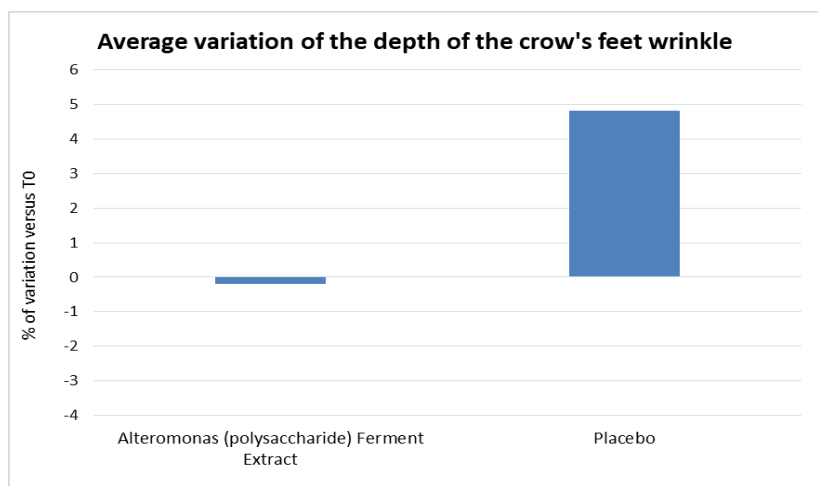
T+15 minutes up to -16% of wrinkle depth



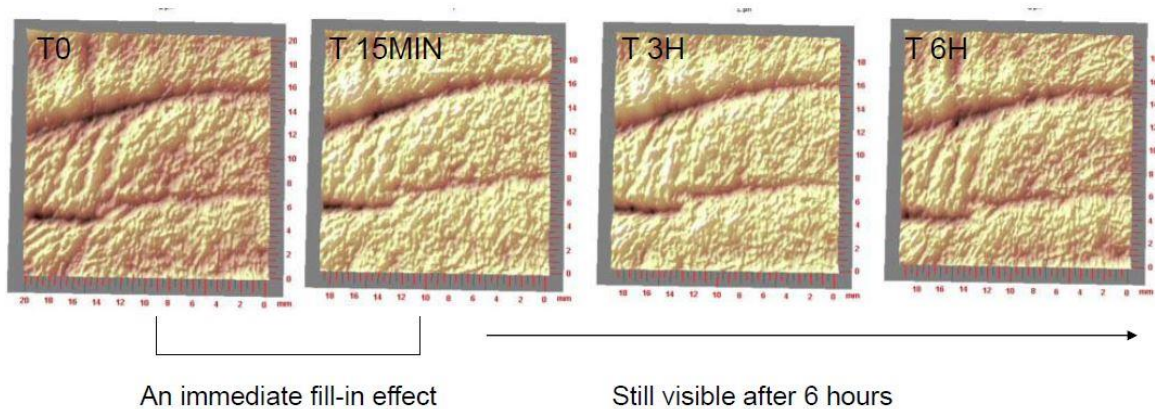
T+3 hours up to -15% of wrinkle depth



T+6 hours up to -14.5% of wrinkle depth



More than 70% of the volunteers found their skin smoothed out and their expression lines softened.



### Conclusion on *Alteromonas* (polysaccharide) Ferment Extract

Cosmetic effects

- Tightening effect on the collagen fibre network
- Immediate smoothing effect (15 min)
- Immediate anti-wrinkle effect (15 min)

