

# All Fiber Booster Olive tree

*Reforming skin tissues*

## A STORY

The Olive tree | *Olea europea, Oleaceae*  
The symbol of Mediterranean longevity

*Born in Asia minor, it is growing in the Mediterranean area since more than 20 000 years and can live more than 1000 years, thanks to shoots and a taking root with a big ramification. It grows very slowly and likes stoned soils better. It can be found in many myths and legends in Ancient Greece, it has now become the symbol of peace and immortality all over the world, but also the symbol of success in Japan. As a useful plant, its oil and its wood are very much appreciated for several domestic uses.*

## Key points

### An active plant cell

Developed to deliver the highest amount of original active molecules

### A high tech natural ingredient

Created to preserve and improve the identity and the benefits of a natural product

### A general anti-ageing action

Increases the synthesis of fibers and cell regeneration to limit ageing signs

Because skin needs dense and regenerated tissues, it is necessary to maintain their «making» at a sufficient level. To get a skin firmer, more alastic, more resistant.



## PRODUCT BENEFITS

### Anti-ageing

#### Firming

Contributes to densify the dermis. Helps to improve or restore the dermis functions, skin resistance.

#### Regenerating

Increases epidermis cell regeneration and reinforces the protective skin barrier.

#### Anti-oxidant

Slows down general cell oxidation, reduces excessive production of free radicals.

#### Restructuring

Restores higher levels of the synthesis of fiber and glycoproteins in the extra cellular matrix.

#### Softening

Contributes to restore the original suppleness of skin.

*To be used in skincare or make-up products such as cream, fluid, serum, balm, lotion, milk, foundation, concealer, etc. In any cosmetic or skincare product dedicated to fighting and preventing skin ageing.*

**NÆOLYS**

Related products | FIBER BOOSTER PLUS SAFFRON | ALL EVEN SWEET IRIS | TOTAL GENERATION CURRY PLANT

**HOW IT WORKS**

# All Fiber Booster Olive tree: relaunching the complete process of the creation of skin structure

All Fiber Booster Olive tree acts on the formation of tissues that changes with ageing: this change means a skin with sagged and thinner. Indeed, natural skin ageing is translated by a slowing down of creation of the very material of skin, that happens especially because cells slow down their activities. Then, at the dermis level, the active plant cells will stimulate the synthesis of fibers in the extra cellular matrix: collagens, elastin and proteoglycans. In the same time, they help to balance regeneration of epidermis in terms of production of keratinocysts and specification of cells, a process that decreases with ageing. And to complete its anti-ageing effect, it protects epidermis skin cells against free radicals made both through skin biochemical reactions and environment (especially UVB).

Thanks to those actions, the two skin layers can be more densified and globally balanced.

## *in vitro* testing results

### Study of the extra-cellular matrix - dermis level

In the dermis, the extra cellular matrix (ECM) is made of different non cellular components, and provides not only essential physical scaffolding for the cellular constituents but also initiates crucial biochemical and biomechanical cues that are required for tissue morphogenesis, differentiation and homeostasis. It is made of water, polysaccharids and proteins; the two main classes of macromolecules are proteoglycans and fibrous proteins like collagens, elastins, fibronectins and laminins synthesized by fibroblasts, the dermis cells.

Actually the ECM is a highly dynamic structure that is constantly being remodeled, either enzymatically or non-enzymatically. The ECM

generates the biochemical and mechanical properties of skin, such as its tensile and compressive strength, elasticity, and also mediates protection by a buffering action that maintains extracellular homeostasis and water retention.

With ageing, the synthesis of the different macromolecules made by fibroblasts decreases, then the biochemical cues in the ECM are modified, therefore its properties decrease too.

#### Studies about 4 components of ECM: proteoglycans, collagen, elastin and GAG

The different studies on the components of the ECM run by Naolys have been made on culture of fibroblasts.

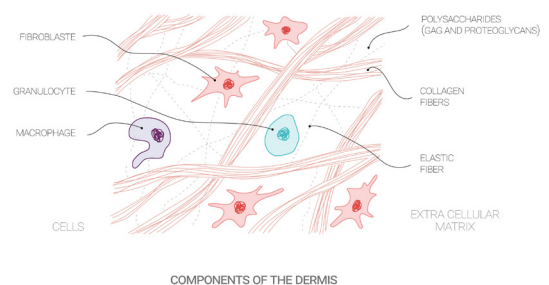
Naolys studied the synthesis of the 3 types of proteoglycans made by fibroblasts, which is a very precise study.

Proteoglycans are made of a combination of a protein and a GAG. As they are made of long O-glycolized chains, they are like «water traps». They have buffering, hydration, binding and force-resistance properties.

Collagen is the most abundant fibrous protein within the interstitial ECM and constitutes the main structural element of the ECM; collagens provide tensile strength, regulate cell adhesion, support chemotaxis and migration, and direct tissue development.

Elastin is another fibrous protein and the principal structural component of the elastic fibers in the ECM.

GAG (glycosaminoglycans) are important acids that have very strong capacities in water retention. There are many GAG, including hyaluronic acid.



#### Technical information to formulate All Fiber Booster Olive tree

**INCI name of cells**

olea europea leaf cell extract

**form**

cells (20%) in glycerin or sunflower oil (80%)

**aspect**

liquid

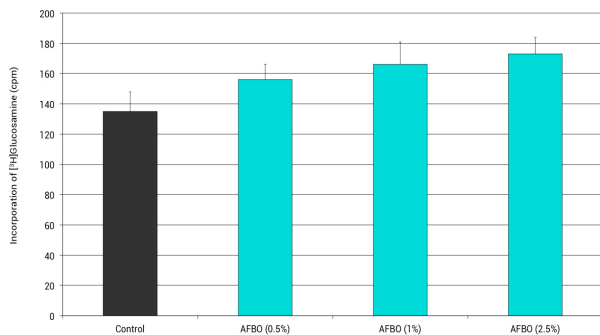
**concentration**

starting at 0.5%

**dispersible**

in any formulation

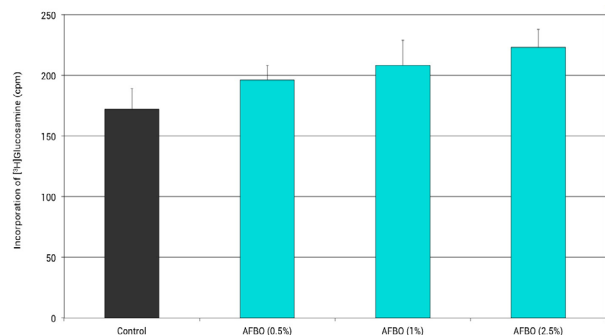
### Study of the synthesis of proteoglycans



#### Increase of the peri-membrane proteoglycans rate

→ At concentrations of 0.5%, 1% and 2.5%, increase of the peri-membrane proteoglycans rate respectively by 16%, 23% and 28%

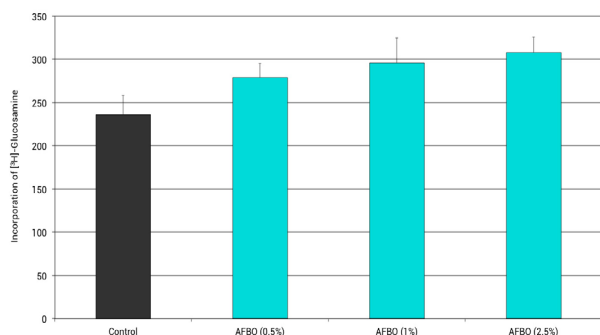
### Study of the synthesis of proteoglycans



#### Increase of the trans-membrane proteoglycans rate

→ At concentrations of 0.5%, 1% and 2.5%, increase of the trans-membrane proteoglycans rate respectively by 14%, 21% and 30%

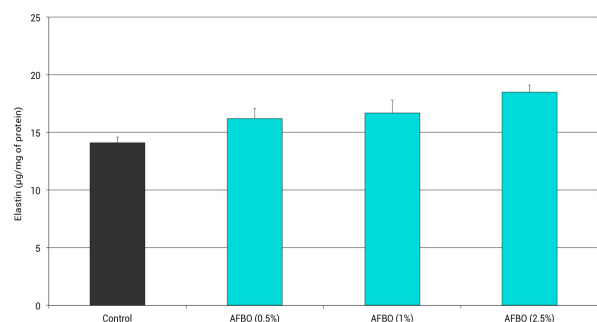
### Study of the synthesis of proteoglycans



#### Increase of the matrix proteoglycans rate

→ At concentrations of 0.5%, 1% and 2.5%, increase of the matrix proteoglycans rate respectively by 18%, 25% and 31%

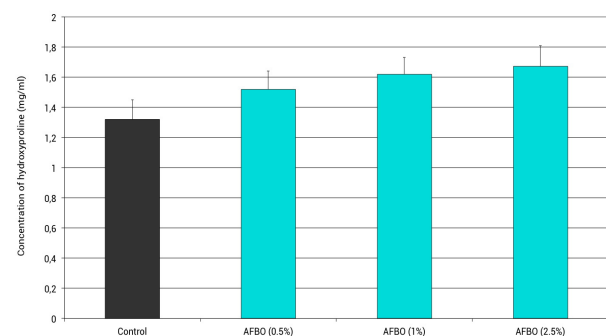
### Study of the synthesis of elastin



#### Increase of the elastin rate

→ At concentrations of 0.5%, 1% and 2.5%, increase of the elastin rate respectively by 15%, 18% and 31%

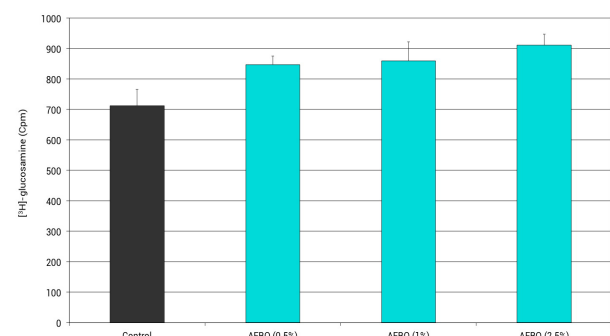
### Study of the synthesis of collagen



#### Increase of collagen rate

→ At concentrations of 0.5%, 1% and 2.5%, increase of collagen rate respectively by 15%, 23% and 27%

### Study of the synthesis of glycosaminoglycans



#### Increase of GAG

→ At concentrations of 0.5%, 1% and 2.5%, increase of GAG rate respectively by 19%, 21% and 28%

## Study of cell renewal - epidermis level

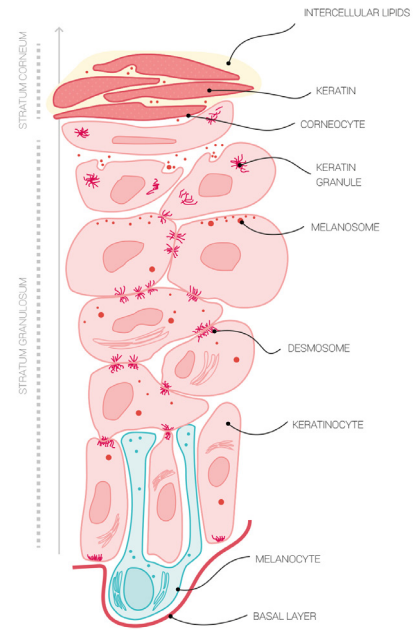
The epidermis, the superficial layer of skin is first made of cells called keratinocytes which renew non stop according to a 21 days cycle. That renewal of the epidermis is made thanks to the cell proliferation and the differentiation that keep the balance of adult tissues, therefore keratinocytes, divide at the level of the basal layer of the epidermis, which is mainly made of non differentiated cells and migrate to the surface changing their form: they lose their nuclei and load hard filaments of keratine. When they reach the cornified layer, they become corneocytes, dead cells that create a solid membran (thanks to keratine) impermeable and protective: the protective natural barrier of the epidermis. Those built up corneocytes will naturally break away and be shed. The alteration of that balance, essential to the good of tissues called homeostasis is responsible for physical changings linked to ageing: skin wilting because of the decrease of cell proliferation, lack of healing in case of wounds, loss of hair...

### Study of the proliferation and the differentiation of epidermis cells

In order to show that the balance of tissues has been maintained, Naolys studied both proliferation and differentiation of epidermis cell.

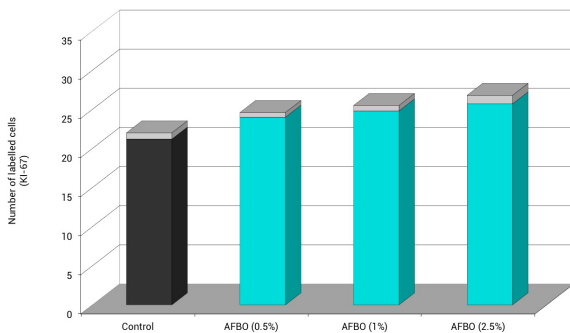
KI67 is a anti-gene to mark cell proliferation and flaggrin is a protein to mark cell differentiation.

Studies have been made on reconstructed epidermis.



THE EPIDERMIS AND KERATINISATION PROCESS

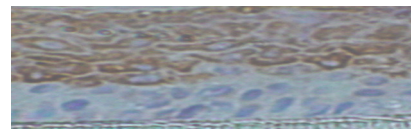
### Study of epidermis cell proliferation



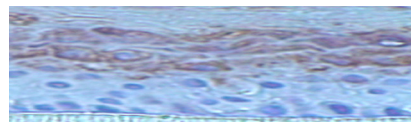
#### Increase of KI 67

→ At concentrations of 0.5%, 1% and 2.5%, stimulation of the proliferation of keratinocytes in the basal layer for treated epidermis respectively by 13%, 17% and 21%

### Study of flaggrin



Labelling of filaggrin: control epidermis



Labelling of filaggrin: epidermis treated with All Fiber Booster Olive tree at 2.5%

Decrease of the cell differentiation translating by a labelling of filaggrin less intense but uniform at the level of the granular layer