



# AC Olea Shield

INCI: Lactobacillus & Olea Europaea (Olive) Fruit Water & Lactobacillus Ferment



# New Age of Aging

Aging is a complex process and a forever target for the cosmetic industry. Self-care and well-being trends emphasized during the COVID-19 pandemic have contributed to the development of a new way of visioning anti-aging.

Body positivity is booming, driven by an awareness of one's overall mental and bodily health. This revival of the anti-aging concept with stronger codes on **pro-aging** is taking over the beauty industry.



# Pro-Aging

In beauty, there are **two main schools** of thought: anti-aging and pro-aging. The **anti-aging** approach is all about preventing the signs of aging from appearing, while the pro-aging philosophy embraces the natural process of aging and aims to make the most of the years we have.

Since ancient times, people are trying to **preserve youth**. But new generations started to look at aging in a different way. Pro-aging is about **accepting yourself** the way you are and enjoying life no matter your age. The goal of pro-aging is not to look younger, but to feel better and be the **best version of yourself** at any age.



Spain will have the highest average life expectancy by 2040

Source - The Lancet

## MedDiet

Life expectancy is increasing. Researchers are looking for new anti-aging strategies to reach a healthy aging stage. Diet plays a key role in the maintenance and optimal functioning of immune cells.

Widely considered as one of the healthiest diets, the "Mediterranean Diet" (MedDiet) is a wonder for health and body. One of the best allies for pro-aging benefits, the MedDiet is a prudent choice of lifestyle.





# O'live your best life

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Olive oil is a **strong staple** of the MedDiet. Olive oil contains high quantities of numerous active ingredients, including oleic acid (predominant monounsaturated fatty acid) and **polyphenols** (hydroxytyrosol, oleuropein, and flavonoids).

Many of the **health benefits** are associated with those oil components, such as a lower risk of cancer. Compared to refined olive oils, **virgin olive oil** contains a **greater amount** of polyphenols.



# Valuable Leftovers

For the **highest oil quality**, the process is still quite similar to old traditional times, pressed with no heat or chemicals to let the liquid, a mixture of oil and **vegetation water**, escape.

Olive Vegetation Water (OVW) is a **by-product** of the olive oil extraction process produced seasonally in a **large quantity** and is a major issue for olive oil producers.

During the olive oil extraction process, only a small amount of **polyphenols** present in the olives is transferred to the oil while an important percentage is **retained in the OVW**.





# Upcycling

Normally dispersed over farmland, OVW has adverse effects on the environment because of their highly pollutant organic load. OVW could specifically be treated to obtain a **unique reusable residue** with a strong source of value-added phytochemicals.

Sustainability has pushed olive leftovers to be revitalized with a **zero waste mindset** with implementation of the reprocess to produce reusable materials. These effluents contain phenolic compounds that exhibit significant health benefits related to their antioxidant properties.



Reduce. Reuse. Recycle.

# Unique Sourcing

Credit Agraria Riva del Garda



## Local Richness

Premium sourcing of Italian olive vegetation water to obtain high-functioning polyphenols.

&

Unique microclimate of Lake Garda gives highest quality of extra virgin oil.

## Looking for Quality

High-quality with integrated economic, land passion, and short-chain favoring.



This circular reuse of side waste helps to have a positive impact for economic reasons and for agroecological needs.





# Oxy Protection

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As the main phenolic antioxidant, **hydroxytyrosol** is a powerful polyphenol that occurs naturally in the olive fruit, pulp, leaves, and mill waste waters. Hydroxytyrosol has received increasing attention due to its multiple **pharmacological activities**, such as antioxidant, anti-inflammatory, and pro-apoptotic activities. Hydroxytyrosol is a nice consideration for the development of new anti-aging strategies.

As an agent for the prevention of aging and age-related diseases, studies have shown that hydroxytyrosol can induce **autophagy** by activating the protein coding gene **Sirtuin 1 (SIRT1)** pathway.

# Benefits

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Biofermented and derived from Italian upcycled olive waste water, AC OleaShield activates the autophagy detoxification process within the cells to maintain skin homeostasis and counteracts the age-related decline in skin cell function. Improving intrinsic antioxidant protection and capitalizing on our body's natural defenses to embrace and enhance the quality and health of skin to age with beauty and grace. Get the power of Mediterranean olive into your skin!

Healing abilities & cell proliferation properties.

Skin homeostasis & cellular aging reduction.

Attenuation of excessive oxidative stress.

Free radical quenching abilities & cellular protection





# Available Efficacy Studies

## *In Vitro .*

- Reactive Oxygen Species Scavenging Assay
- Antioxidant ORAC Assay
- Cellular Detoxification Assay
- Scratch Assay

## *In Vivo .*

- VISIA Results-Reduction in Porphyrins
- VISIA Results-Reduction in Wrinkles

## *Tox & Safety .*

- AMES Test Report
- Cellular Viability Assay Analysis Report
- Dermal and Ocular Irritation Tests
- OECD 201 Freshwater Alga Growth Inhibition Test Report
- OECD 301B Ready Biodegradability Assay
- OECD TG 442C-Direct Peptide Reactivity Assay
- OECD TG 442D In Vitro Skin Sensitization Report



# Cellular Detoxification Assay

## Maintenance of Skin Homeostasis

### Efficacy

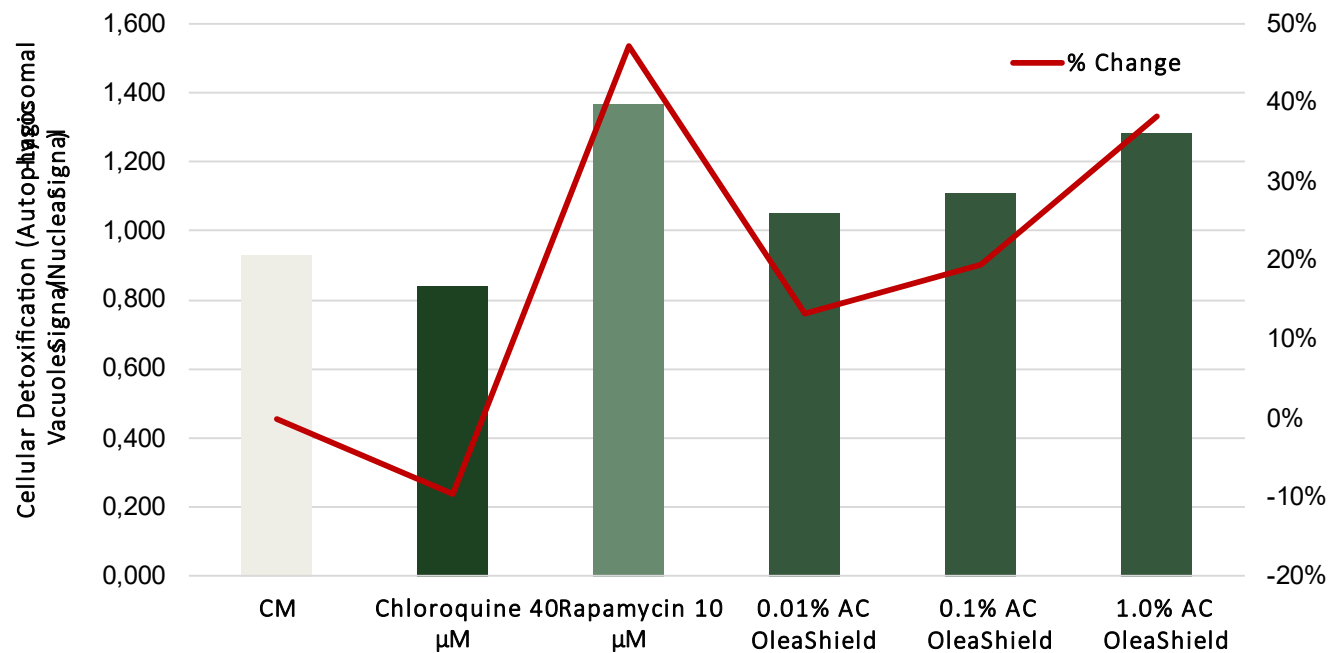
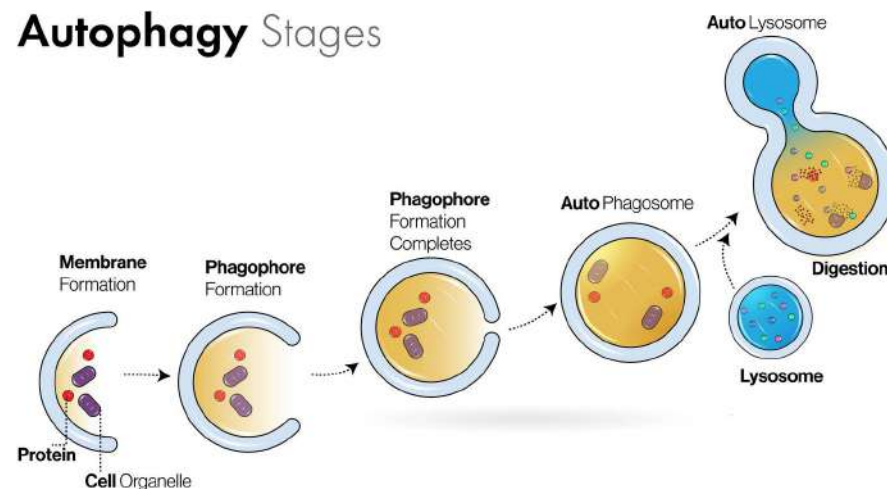


Fig 1. Effect of AC OleaShield on fibroblast cellular detoxification.

## Autophagy Stages

### Autophagy Stages



Autophagy is the self-identification and delivery of damaged cellular proteins and organelles, intracellular microbes, and toxins to lysosomal vacuoles for breakdown.



AC OleaShield at 1.0%  
increased autophagic activity  
compared to untreated  
fibroblasts by

38%

## *Benefits*

These data indicate AC OleaShield triggers this cellular detoxification process, which may help to attenuate characteristics of cellular aging.

# ROS Assay

## Oxidative Stress Scavenging

### Efficacy

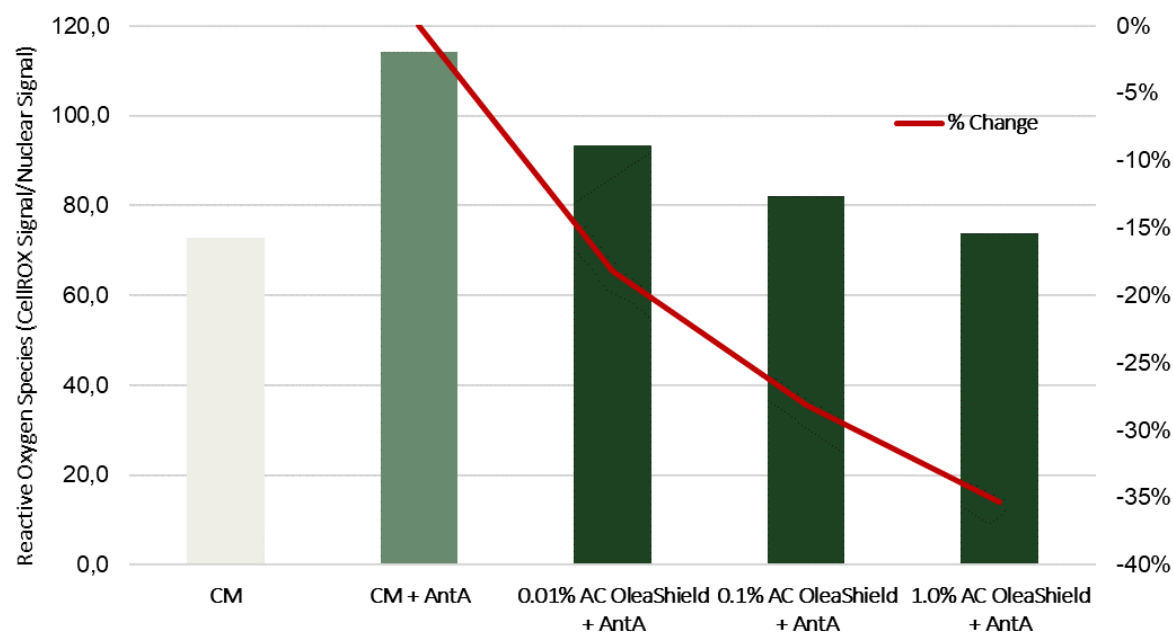
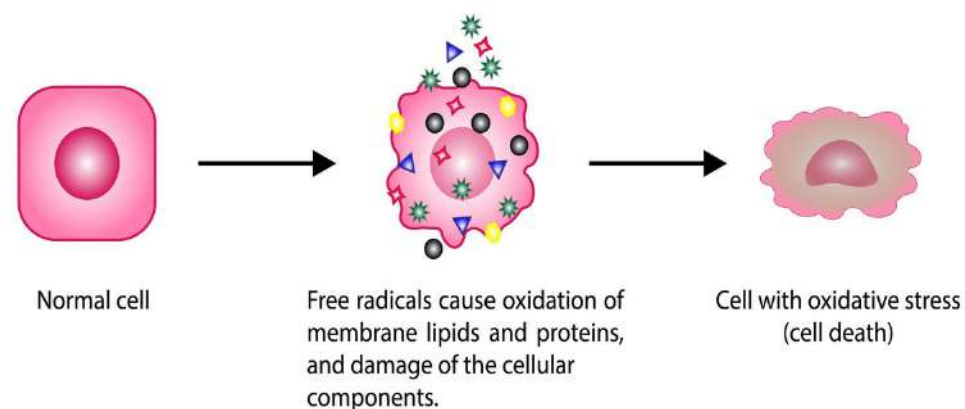


Fig 2. Effect of AC OleaShield on ROS scavenging..

### Oxidative Stress



UV irradiation, pollutants, foreign substances, and aging elicit unrestricted increases in reactive oxygen species (ROS). These deregulated augmentations in oxidative stress lead to an acceleration of DNA mutation, cellular senescence, protein oxidation, and collagen degradation.



AC OleaShield at 1.0%  
decreased ROS levels by

35%

# Benefits

These data indicate AC OleaShield scavenges unnecessary ROS, which may help to attenuate characteristics of cellular aging.

# ORAC Assay

## Antioxidant Properties

### Efficacy

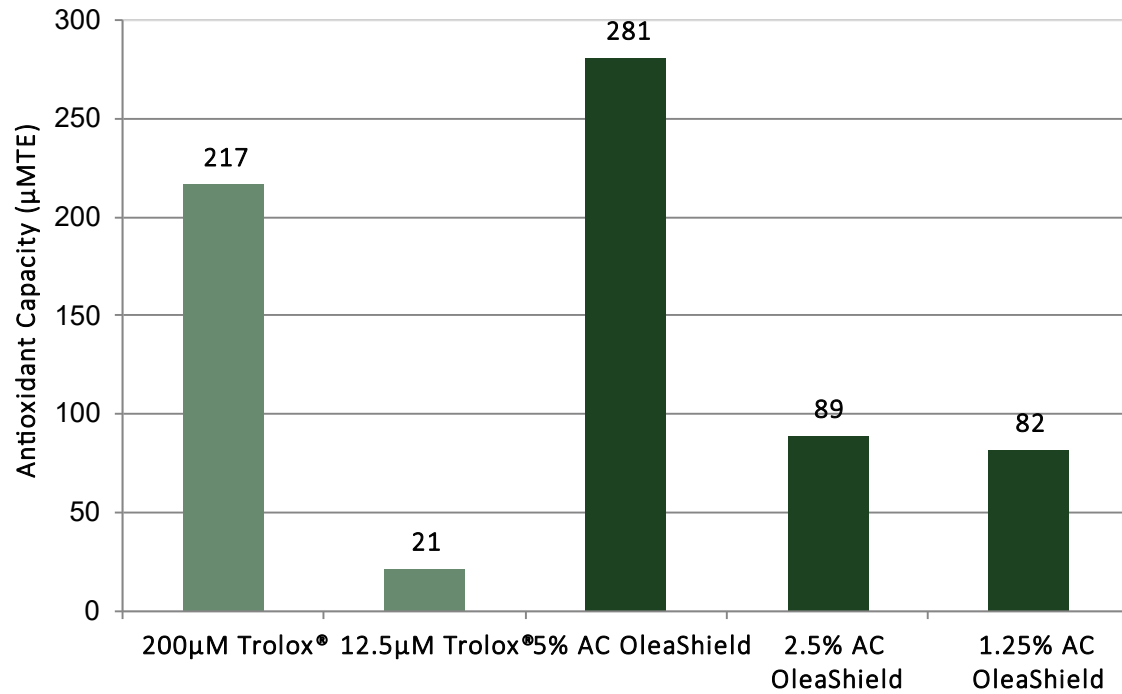
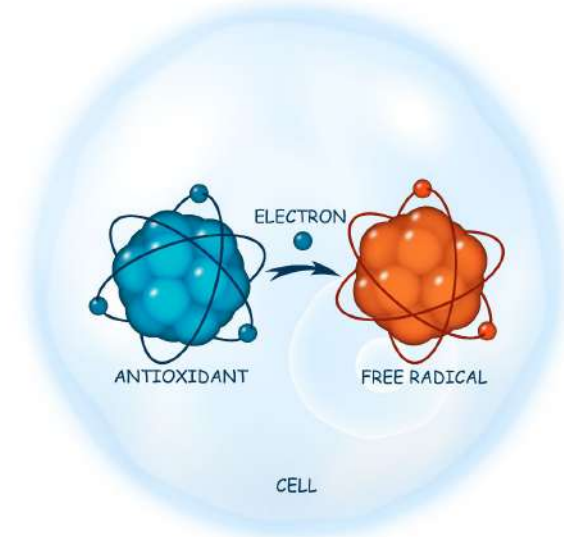


Fig 3. Effect of AC OleaShield on Antioxidant capacities.

## Free Radical



Maximizing the antioxidant capacity on a cellular level allows for free radicals to be dealt with at a rate that provides protection from cellular damage. This cellular damage can be seen as physical signs of aging, such as wrinkles, loss of elasticity, unwanted pigmentation, and skin unevenness with slow regeneration.



AC OleaShield at 5.0%  
exhibited greater  
antioxidant activity than  
200 $\mu$ M Trolox<sup>®</sup> by

29%

# Benefits

AC OleaShield is capable of  
providing antioxidant properties and  
aids in the anti-aging process through  
protection at the cellular level.

# Scratch Assay

## Healing Benefits

### Efficacy

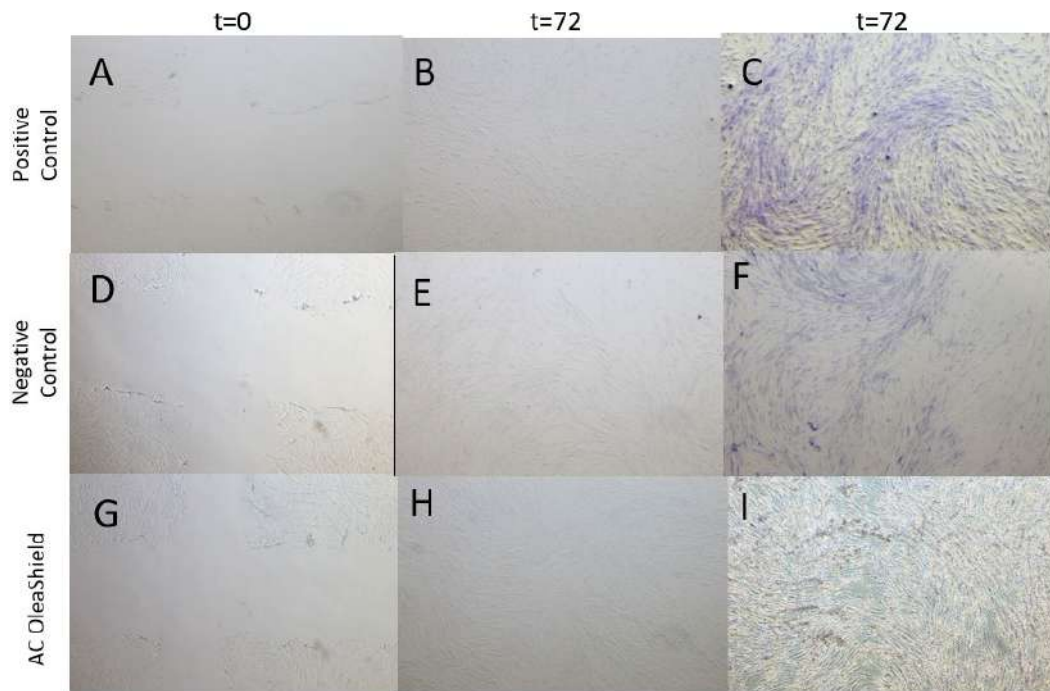
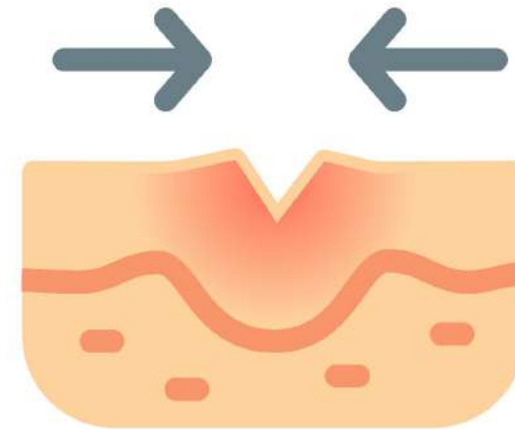


Fig 4. Images at t=0 hours (A, D, G) and t=72 hours (B, E, H) for AC OleaShield positive control (EGF-1), and negative control (SFM). At experiment completion (t=72 hours), cells were fixed in paraformaldehyde and stained with crystal violet (C, F, I).

## Wound Healing Process



Wounded tissue begins a complex and structured series of events in order to repair the damaged region. Some of these events include upregulation of angiogenic factors, causing increased vascularization, increased deposition of extracellular matrix, and increased cell proliferation.



AC OleaShield at 0.1% was able to increase cell migration and close the scratch at a rate comparable to the positive control after 72 hours by

99%

*Benefits*

These data indicate that AC OleaShield has healing abilities and cell proliferation properties.

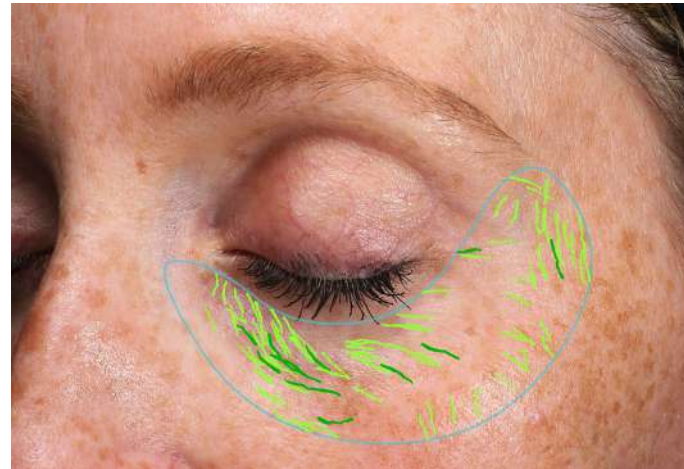
# VISIA. Reduction in Wrinkles

Increasing youthful appearance

## Efficacy



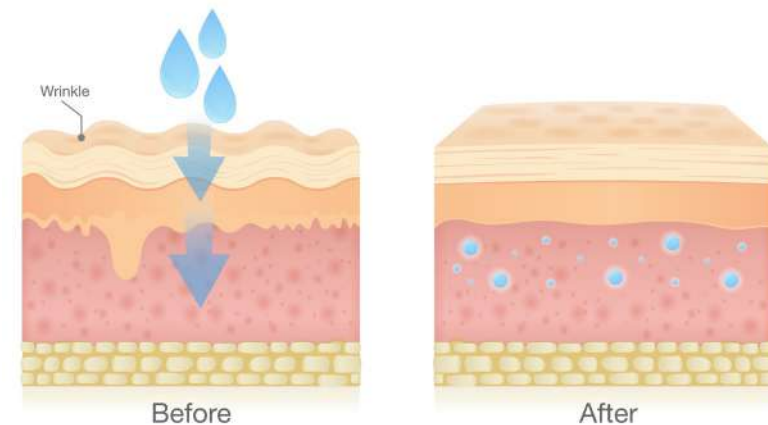
T=0



T=4 weeks

Fig 5. Images of Participant Treated with 5.0% AC OleaShield. Natural photos (top) and VISIA Image Enhancement (bottom) Before and After Four Weeks. .

## Wrinkles



Wrinkles are furrows, folds, or creases in the skin that are associated with a decrease in skin elasticity as a result of sun exposure. It is important to monitor the development of skin damage, such as fine lines and wrinkles, because limiting skin damage provides a healthier and more youthful appearance.



AC OleaShield at 5.0%  
decreased the VISIA  
Simulated Skin Age by

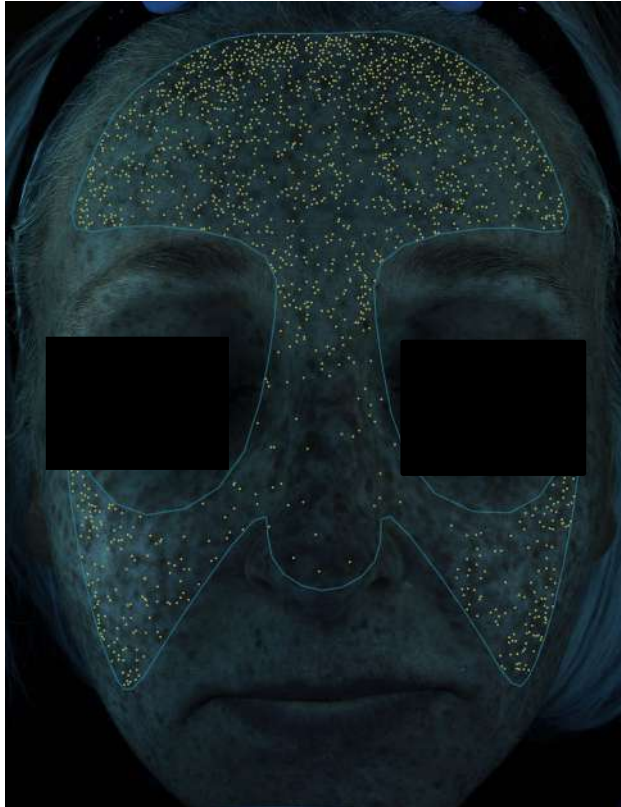
-4 years

*Benefits*

These data indicate AC OleaShield provides a reduction in VISIA Simulated Skin Age which reduces the visual impacts of normal aging.

# VISA. Reduction in Porphyrins

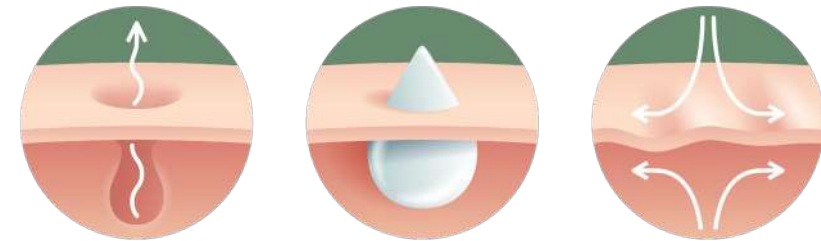
## Maintenance of Skin Health



T= 0

T= 4 weeks

## Porphyrins



Porphyrins are bacterial excretions that can lead to acne by becoming lodged in pores. In UV light, they fluoresce and display circular white spot characteristics. The buildup of porphyrins can lead to several skin diseases as well as depleting skin health. Reducing porphyrins empowers the skin to look more youthful in appearance while also maintaining an adequate level of skin health.

Fig 6. Images of Participant Treated with 5.0% AC OleaShield. Natural photos (top) and VISIA Image Enhancement (bottom) Before and After Four Weeks.



AC OleaShield at 5.0%  
decreased the overall number  
of porphyrins

11%

## Benefits

These data indicate AC OleaShield provides a reduction of porphyrin appearance on the face resulting in a more youthful skin appearance.

# Summary

## WHAT.

Italian exclusive upcycled material, rich in hydroxytyrosol, to boost cell's natural antioxidant defense.

## WHY.

AC OleaShield activates autophagy detoxification process within the cells to maintain skin homeostasis and counteract the age-related decline in skin cell function.

## MADE OF.

From revitalized olive leftovers, AC Oleashield uses Italian olive vegetation water in the spirit of a zero waste economy.

## ACTION.

Improving intrinsic antioxidant protection and capitalizing on our body's natural defenses to embrace and enhance the quality and health of skin to age with beauty and grace.





# AC OleaShield

Code: 12006

INCI: Lactobacillus & Olea Europaea (Olive) Fruit Water & Lactobacillus Ferment

Appearance: Clear to Slightly Hazy Liquid Yellow to Amber

Suggested Use Level: 1-10%

Suggested Applications: OleoDetox . Pro-Aging . Antioxidant

Standardized for Antioxidant Activity (DPPH RSA; 5% Solution) :  $\geq 40\%$



In Vivo



In Vitro



ISO 16128  
NI & NOI



Vegan  
Compliant



COSMOS  
Compliant



China  
Compliant



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