

12006.

AC OleaShield

BIOFERMENTS



VEGAN



COSMOS



IN VITRO



CHINA



ISO 16128



THE FEATURES.

Biofermented and derived from Italian up-cycled 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!

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

Actions

Detoxification
Pro-Aging
Antioxidant
Reparation

TECHNICAL DATA SHEET.

THE REGULATION.

INCI. Lactobacillus & Olea Europaea (Olive) Fruit Water & Lactobacillus Ferment
CAS. 68333-16-4 (or) 92128-79-5 & 8001-25-0 & 68333-16-4 (or) 1686112-36-6 (or) 9015-54-7
EINECS. N/A (or) 295-777-8 & 232-277-0 & N/A (or) N/A (or) 295-635-5
EUROPE. Approved
USA. Approved
CHINA. Approved

THE SPECIFICATION.

Origin. Botanical
Natural Antimicrobial. Lactobacillus Ferment
Preservatives. None
Solvents Used. None
Soluble/Miscible. Water Soluble
Appearance. Clear to Slightly Hazy Liquid Yellow to Amber**
Use pH. 4.0- 7.0
Use Level. 1- 10 %

**When handling this product please prevent prolonged exposure to temperatures above 25°C. Prolonged exposure to temperatures above 25°C may cause darkening.



THE STORY.

Aging is a complex process and a forever target for the cosmetic industry. The self-care and well-being trends highlighted so much during the COVID-19 pandemic have contributed to the development of a new way of thinking about anti-aging. With marketing of anti-aging as the elimination of wrinkles and other signs of aging coming to an end, consumers are more realistic about expected results. The new booming area is body positivity driven by an awareness of one's overall mental and bodily health. The new generation sees their skin as the extension of their body, especially as the first visible part. This revival of the anti-aging concept with stronger codes on better aging is taking over the beauty industry.

As life expectancy is increasing, there is a strong interest in research 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. Interestingly, in Spain, where the Mediterranean Diet (MedDiet) is the reference food pattern, life expectancy will have the highest average by 2040¹. Widely considered as one of the healthiest diets, the MedDiet is a wonder for health and the body, with a strong staple for this diet being olive oil².

The large intake of olive and olive oil compared to other healthy diets provides high amounts of antioxidants, carbohydrates, and fiber. Many of the health benefits are associated with those components in the oil. Olive oil consumption has been linked to a lower risk of cancer and to several health benefits, such as boosting heart health, lower stroke risks, reduced inflammation etc. The chemical composition of olive oil varies depending on the extraction technology that is applied in order to obtain an oil from the fruits. Compared to refined olive oils, virgin olive oil contains a greater amount of polyphenols.

THE SCIENCE.

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. Sustainability has pushed olive leftovers to be revitalized in a zero waste mindset with implementation of the reprocess to produce reusable materials. Normally dispersed over farmland, OVW has adverse effects on the environment because of their highly polluting organic load. Nevertheless, OVW could specifically be treated to obtain a unique reusable residue with a strong source of value-added phytochemicals.

The main phenolic antioxidant of interest present is hydroxytyrosol, a powerful polyphenol which occurs naturally in the olive fruit, pulp, leaves, and mill waste waters. Hydroxytyrosol is under consideration for the development of new anti-aging strategies, therefore becoming 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) pathway³. Autophagy stands as a major key process that supports skin homeostasis and healthy aging. Autophagy helps to accelerate the mechanism of cell renewal and improves collagen production rate. Considered as the ultimate anti-aging treatment, this process can help the cells to regenerate in a better way.

Active Concepts puts an effort to find, in its own local richness, a premium sourcing of Italian olive vegetation water to capitalize on the presence of those high functional polyphenols. For the creation of our latest active, olive vegetation water undergoes a biofermentation process using *Lactobacillus* strain in order to further captivate the powers of the polyphenols.

THE BENEFITS.

Skin

- Healing benefits & cell proliferation *Scratch Assay*
- Autophagy & cellular aging reduction *Cellular Detoxification*



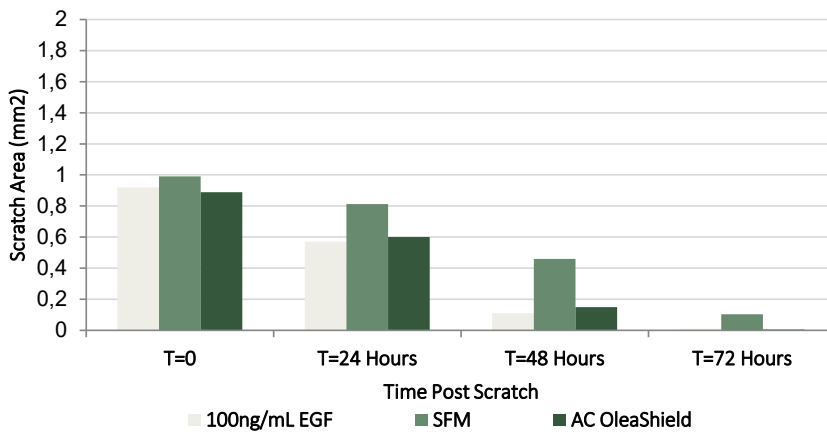
- Oxidative stress scavenging *Reactive Oxygen Species Scavenging Assay*
- Antioxidant *ORAC Assay*



THE EFFICACY.

Scratch Assay.

An *in vitro* scratch assay is a well-known and widely used method to study cell migration and proliferation. This test was conducted to assess the wound healing properties of AC OleaShield treated *in vitro* cultured human dermal fibroblasts.



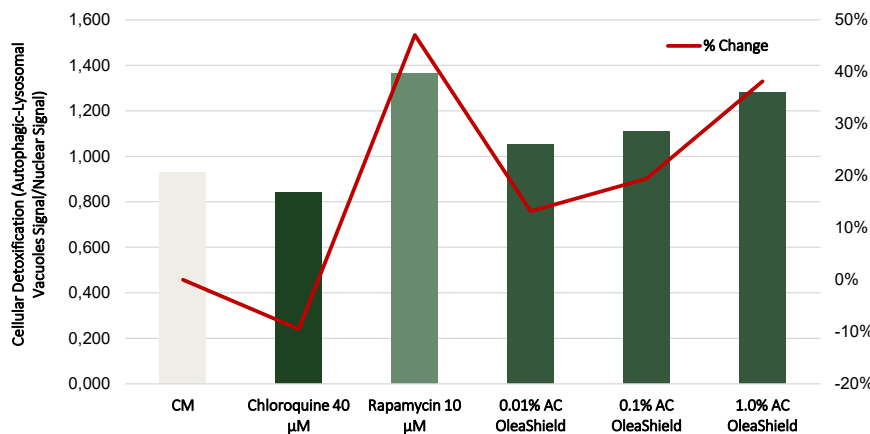
Increased cell migration at a comparable rate to the positive control **(in 72 hours)**

Reparation.

Healing abilities & Cell proliferation properties

Cellular Detoxification Assay.

An Autophagy Detection Assay was conducted to assess the *in vitro* effect of AC OleaShield to trigger autophagy in dermal fibroblasts. Activating this biological detoxification process maintains skin homeostasis and counteracts the age-related decline in skin cell function.



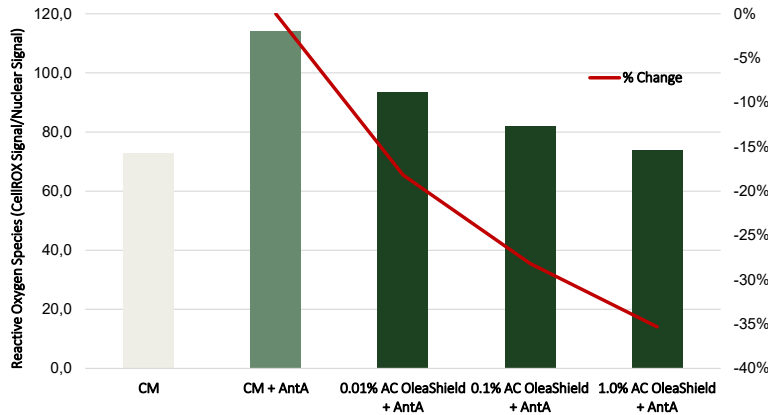
Increased in autophagic-lysosomal vacuoles compared to untreated fibroblasts **(38% tested at 1%)**

Detoxification.

Skin homeostasis & Cellular aging reduction

ROS Scavenging Assay.

ROS (Reactive Oxygen Species) Scavenging Assay was conducted to assess the *in vitro* effect of AC OleaShield to scavenge unnecessary oxidative stress in dermal fibroblasts. Attenuation excessive ROS preserves cellular homeostasis, and blunts intrinsic and extrinsic age-related declines in skin cell function.



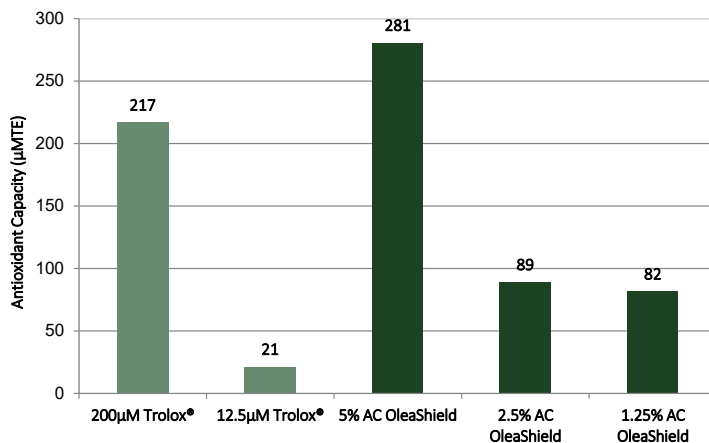
Reductions in ROS levels compared to fibroblasts treated with Antimycin A
(38% at 1%)

Pro-Aging.

Attenuation of excessive oxidative stress

ORAC Assay.

Oxygen Radical Absorbance Capacity (ORAC) assay was conducted to assess the antioxidant capacity of AC OleaShield.



Exhibited greater antioxidant activity than 200µM Trolox®.
(at 5%)

Antioxidant.

Free radical quenching abilities & Cellular protection

- Foreman KJ, Marquez N, Dolgert A, Fukutaki K, Fullman N, McGaughey M, Pletcher MA, Smith AE, Tang K, Yuan CW, Brown JC, Friedman J, He J, Heuton KR, Holmberg M, Patel DJ, Reidy P, Carter A, Cercy K, Chapin A, Douwes-Schultz D, Frank T, Goettsch F, Liu PY, Nandakumar V, Reitsma MB, Reuter V, Sadat N, Sorensen RJD, Srinivasan V, Updike RL, York H, Lopez AD, Lozano R, Lim SS, Mokdad AH, Vollset SE, Murray CJL. Forecasting life expectancy, years of life lost, and all-cause and cause-specific mortality for 250 causes of death: reference and alternative scenarios for 2016-40 for 195 countries and territories. *Lancet*. 2018 Nov 10;392(10159):2052-2090. doi: 10.1016/S0140-6736(18)31694-5. Epub 2018 Oct 16. PMID: 30340847; PMCID: PMC6227505.
- Mazzocchi A, Leone L, Agostoni C, Pali-Schöll I. The Secrets of the Mediterranean Diet. Does [Only] Olive Oil Matter? *Nutrients*. 2019 Dec 3;11(12):2941. doi: 10.3390/nu11122941. PMID: 31817038; PMCID: PMC6949890.
- Sun T, Chen Q, Zhu SY, Wu Q, Liao CR, Wang Z, Wu XH, Wu HT, Chen JT. Hydroxytyrosol promotes autophagy by regulating SIRT1 against advanced oxidation protein product induced NADPH oxidase and inflammatory response. *Int J Mol Med*. 2019 Oct;44(4):1531-1540. doi: 10.3892/ijmm.2019.4300. Epub 2019 Aug 5. PMID: 31432093.

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