

LAST NOVELTY IN COSMETICS



The bio-mimetic active ingredients  
from the Mediterranean olive



**Olivan**<sup>®</sup> The Mediterranean Cosmetic Concept

The superior quality upcycling ingredients from mediterranean olive oil by-product.

Designed to imitate skin's biological function, improve skin's structure and provide multifactorial protection.

THE BEST FROM  
OLIVE

BIO - MIMETIC

Active  
Ingredient



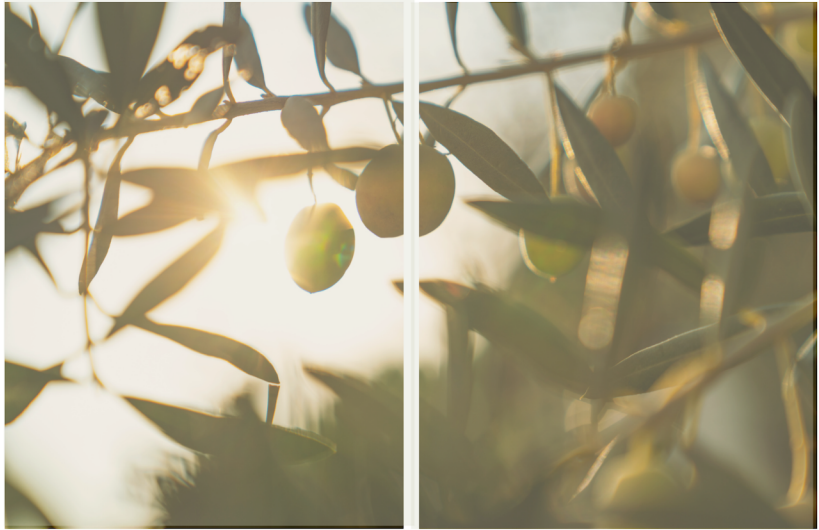
UPCYCLING +

Obtained from the  
BY - PRODUCT of  
the olive oil refinery



SKIN +

Cellular ageless  
Antioxidant  
Moisturizing  
Antiinflammatory



EFFICACY TEST

Anti irritation  
UV Protection  
Vaginal revitalizing  
Emollient

%

1,0 - 10,0



**Olivan DiuVitae**<sup>®</sup>



**COSMOS  
APPROVED**

**Olive Squalene 92%**

**HYDRATION dual system that prevents WATER LOSS and provides the skin with NEW SOURCES of HYDRATION**

**TRIPLE ANTIOXIDANT ACTIVITY neutralizing free radicals, stimulating production of other antioxidants and protecting cell membranes of oxidative damage.**

**2 ANTI-INFLAMMATORY PATHWAYS reducing pro inflammatory cytokines and regulating the gene expression**

100% mediterranean



ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es

This document is the property of ATANOR 118, S.L. The information in this publication is provided in good faith and is based on our current knowledge. No legally binding promise or guarantee regarding the suitability of our products for specific use is made. ATANOR 118 does not assume any express or implicit responsibility in connection with the presentation or any use of this information, nor should the information found here be construed as the granting of a license to any patent or a guarantee of use of this information or product infringe the intellectual property rights of third parties.



**UNTIL NOW - NON SUSTAINABLE - NON ETHICAL**

Use of Squalene dates to 1950, but at beginning it was obtained primarily from shark liver. 2,7 millions of sharks annually to satisfy the needs of the cosmetic market.

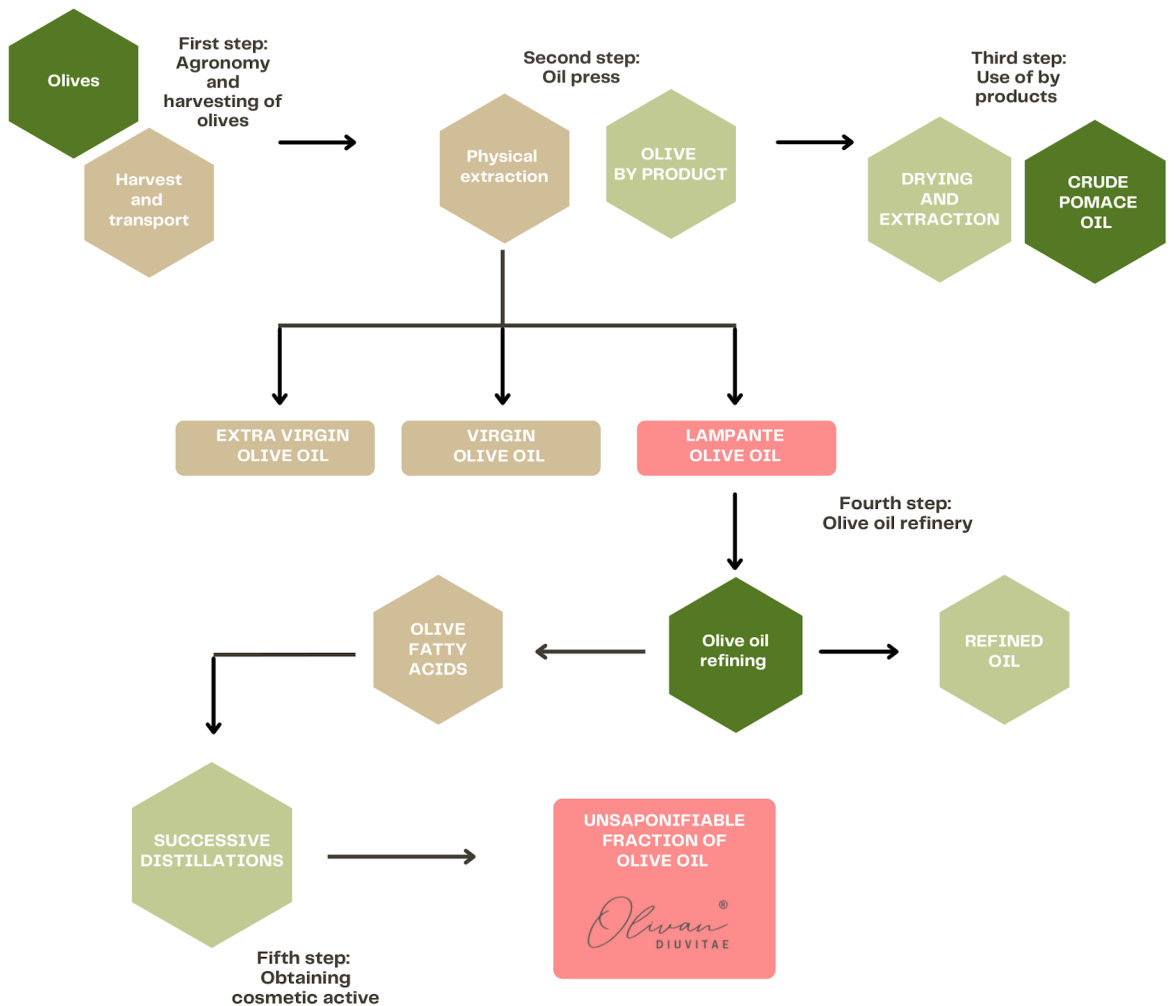
Even vegetal originated Squalene exhausts the resources. 2,5 acres of land + people hand work + time consuming for just 50 kg of the vegetal Squalene.

**'We make the production of Squalene 100 % SUSTAINABLE'**



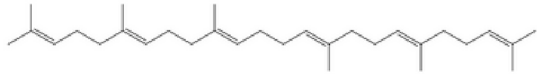
is the OLIVE SQUALENE obtained from olive oil refining.

From olive oil by-product there is enough supply for the whole cosmetic industry.



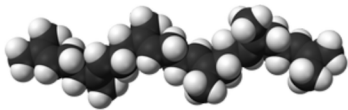
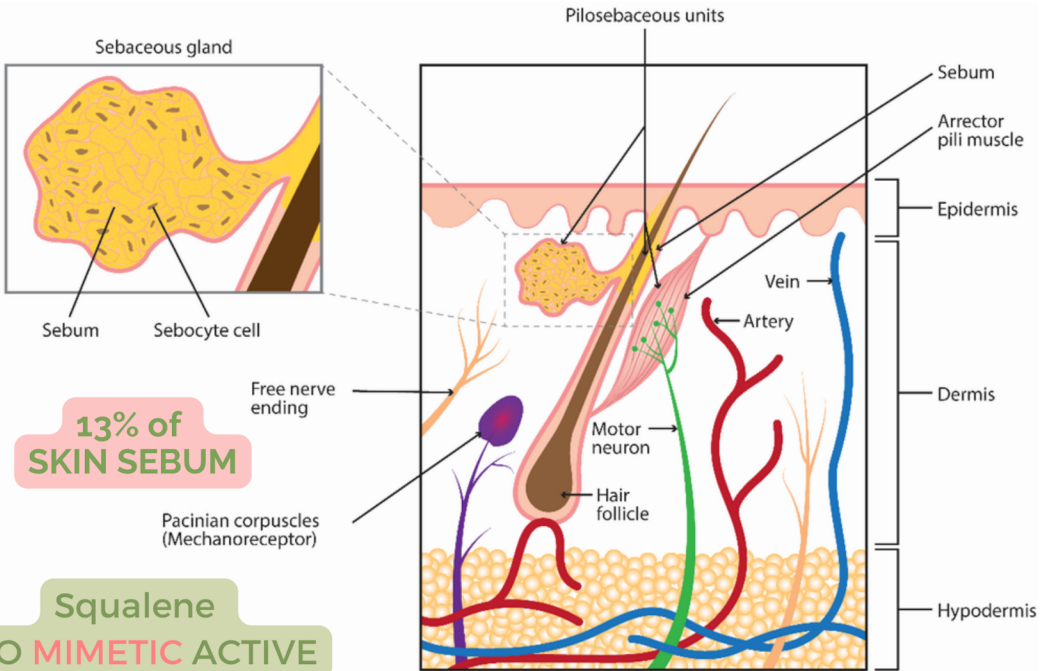


Squalene is structurally unique triterpene compound well known like ANTIINFLAMMATORY, ANTIMICROBIAL and IMMUNOMODULATOR compound.

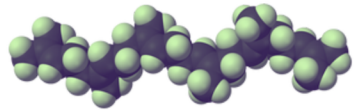


MULTIFUNCTIONAL MOLECULE

## THE SEBUM & SQUALENE - MAINTAINING THE HEALTHY AND BALANCED SKIN



Squalene from the SEBUM



Squalene obtained from the OLIVE

The OLIVE SQUALENE imitates biological FUNCTION and improves the PROCESSES of the Squalene from the skin sebum.

SQUALENE is the main compound of the skin SEBUM, liberated in sebaceous gland.

SQUALENE is the CHOLESTEROL precursor, the fat that maintains the skin STRUCTURE and FUNCTION.

At age of 30 production drastically slows down.

4 roles of skin sebum:

- 1. MOISTURIZING THE SKIN**  
by creating a barrier that locks in moisture.
- 2. PREVENTING SKIN DRYNESS**
- 3. PROTECTING THE SKIN**  
from bacteria, pollutants and UV-rays.
- 4. REGULATING OIL PRODUCTION,**  
the amount of sebum is regulated by hormones - lack cause skin problems



## ANTI IRRITATION TEST

### ANTI IRRITATION TEST

**SQUALENE** decreases erythema by reducing the levels of generated  $O_2^-$  (superoxide anion).

Erythema was induced by the ointment of **Lauroylsarcosine 1%**. Generation of superoxide anion was a mediator responsible for the skin irritation.

**SQUALENE** ointment 10% **SIGNIFICANTLY REDUCED** the superoxide anion.



Figure 1. Photo of erythema

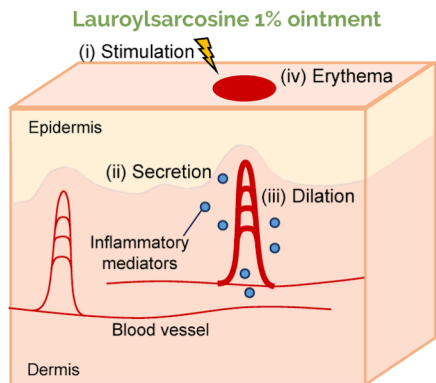
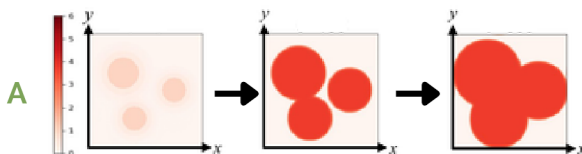
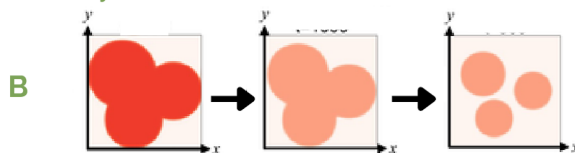


Figure 2. Graphic visualization of the skin reaction when the erythema is induced

Akihiro Aioi, Tatsuo Shimizu, Kiyoshi Kuriyama. Effect of squalene on superoxide anion generation induced by a skin irritant, lauroylsarcosine, International Journal of Pharmaceutics, Volume 113, Issue 2,1995.



A. Erythema increase induced by 400 mg/ml of Lauroylsarcosine ointment 1%.



B. Erythema decrease achieved by 100 mg/ml of Squalene ointment 10%



## ANTI INFLAMMATORY ACTIVITY OF SQUALENE

**SQUALENE** has 2 different pathways of ANTI INFLAMMATORY activity

### 1st ANTI INFLAMMATORY pathway

**SQUALENE** acts by reducing the production of **PRO-INFLAMMATORY CYTOKINES**, the small proteins released by cells that play a key role in the inflammatory response.

### 2nd ANTI INFLAMMATORY pathway

**SQUALENE** acts by inhibiting the activation of nuclear factor kappa B (**NF- $\kappa$ B**), a transcription factor that regulates the expression of genes involved in inflammation.

## UV PROTECTION TEST

SQUALENE has the role of **FUNCTIONAL FILTER** in the UV PROTECTION.

SQUALENE is peroxidized by UV RADIATION. Peroxidation is regulated by pH, temperature and other factors.

Suggested damage of the cutaneous tissue by production of SQUALENE PEROXIDE is NOT OBSERVED.

SQUALENE appears in the skin surface like a film with esters, triglycerides and ions Na<sup>+</sup>, Cl<sup>-</sup>. It's suspended in water from sweat and epidermal cell in sebum.

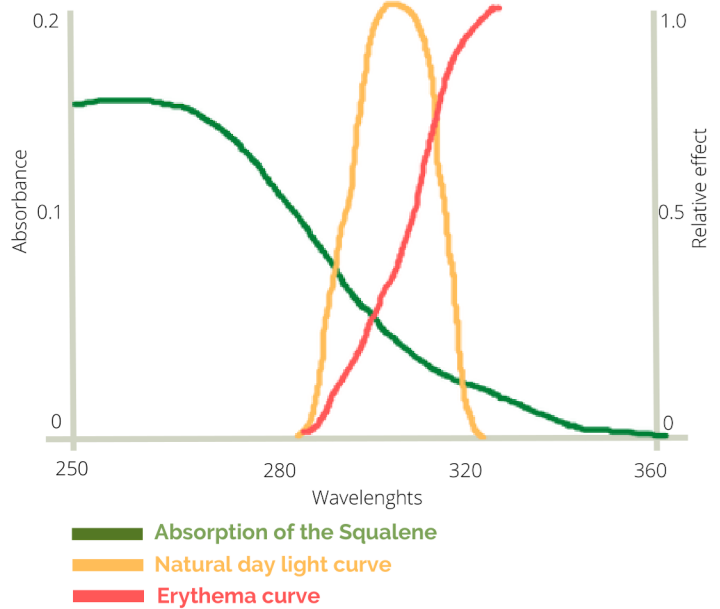
UV ENERGY when arrives to the skin is trapped by SQUALENE as the form of PEROXIDATION.

Figure 1. Coincidence among erythema curve, natural daylight and UVB absorption of Squalene.



## UV PROTECTION

Figure 1.



Ohsawa K, Watanabe T, Matsukawa R, Yoshimura Y, Imaeda K. The possible role of squalene and its peroxide of the sebum in the occurrence of sunburn and protection from the damage caused by U.V. irradiation. J Toxicol Sci. 1984 May;9(2):151-9. doi: 10.2131/jts.9.151. PMID: 6481825.



## EMOLIENT EFFICACY - Squalene's super power

SQUALENE can be used like a material of topically applied vehicles like lipid emulsions.

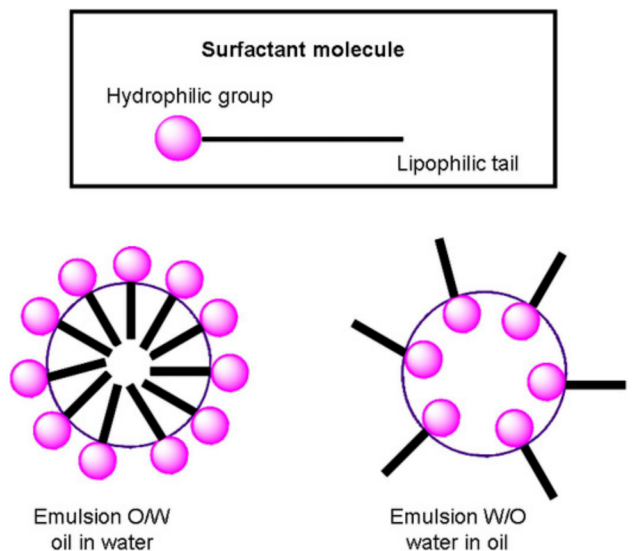
SQUALENE has the ability to incorporate actives with poor solubility within the dispersal phase. See Figure 2.

Double-chain monoglycerides of SQUALENE act as a surfactant in O/W type emulsions.

SQUALENE gives the stability to the O/W emulsions.

Thanks to Squalene's great power of PENETRATION through the skin, it is a great CARRIER for cosmetic active ingredients into the skin.

Figure 2.



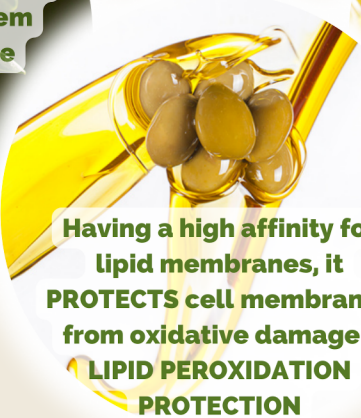
The Active Ingredients Mixture of Olives Provides Skin Whitening and Age Spot Reduction; Author: Maria Lueder, Qenax AG, Switzerland

ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es

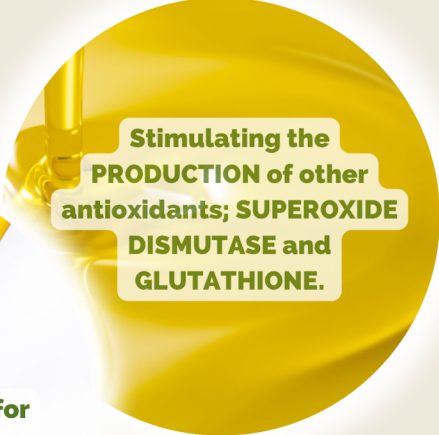
## SQUALENE'S ANTIOXIDANT TRIPLE ACTION



Scavenging **FREE RADICALS** and **NEUTRALIZING** them before they can cause damage to cells.



Having a high affinity for lipid membranes, it **PROTECTS** cell membranes from oxidative damage - **LIPID PEROXIDATION PROTECTION**



Stimulating the **PRODUCTION** of other antioxidants; **SUPEROXIDE DISMUTASE** and **GLUTATHIONE**.



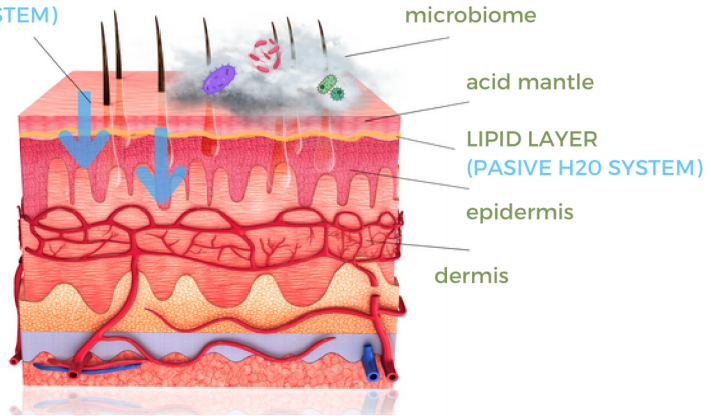
### MORE THEN 25 YEARS OF STUDIES ON ANTIOXIDANT CAPACITY OF SQUALENE

Study	Results
Aioi A. et al., 1995	<b>Inhibition of O<sub>2</sub><sup>-</sup> production by addition of 100 mg/ml of Squalene</b>
Buddhan S. et al., 2006	<b>Inhibition of lipid peroxidation, increased levels of reduced glutathione, superoxide dismutase by 2% of Squalene supplement</b>
Motawi T. M. K. et al., 2010	<b>Improvement of Glutathione peroxidase and Glutathione levels after 7 days of applying 0,4 ml of Squalene</b>
Gabás-Rivera C. et al., 2014	<b>Decreased ROS in lipoproteins after taking 1g / kg of Squalene for 11 weeks</b>
Ravi Kumar S. et al., 2016	<b>Elevated mRNA expression of Superoxide dismutase and Glutathione peroxidase when supplemented with 2% Squalene for 4 weeks</b>



## SQUALENE'S HYDRATION DUAL SYSTEM

PENETRATION of Squalene (ACTIVE H<sub>2</sub>O SYSTEM)



### ACTIVE H<sub>2</sub>O SYSTEM

SQUALENE with its GREAT ability of PENETRATION to a deeper levels of the skin, provides the skin with new sources of hydration, REPLENISHING the skin's natural lipids.

### PASIVE H<sub>2</sub>O SYSTEM

SQUALENE helps maintain the skin barrier FUNCTION. Being the main compound of the LIPID LAYER, SQUALENE is crucial for preventing WATERLOSS from the skin.



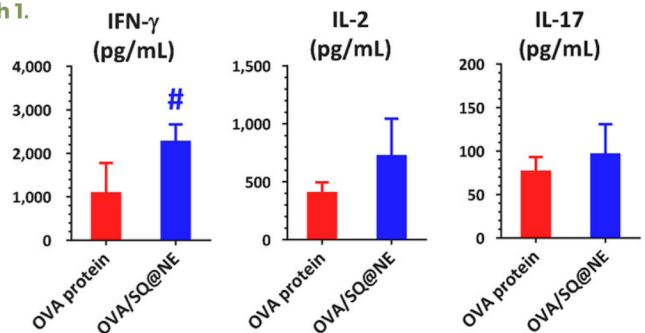
## VAGINAL IMMUNITY BOOSTER AND LUBRICANT

SQUALENE is a VAGINAL ADJUVANT for the induction of mucosal and systemic IMMUNE RESPONSE

3 SQUALENE'S BENEFITS FOR VAGINAL HEALTH:

- Provides HYDRATION levels
- Drains LYMPH nodes
- Prevents VIRAL and BACTERIAL infections

Graph 1.



Graph 1. The graph shows results of intravaginal immunization once a week for 3 weeks. OVA is the model protein antigen formulated with Squalene. SQUALENE is expanding and activating gene expressions responsible for the immune response.

Hui-Min Ho, Chiung-Yi Huang, Yu-Jhen Cheng, I-Hua Chen, Shih-Jen Liu, Chung-Hsiung Huang, Ming-Hsi Huang, Squalene nanoemulsion reinforces mucosal and immunological fingerprints following intravaginal delivery, Biomedicine & Pharmacotherapy, Volume 141, 2021.

ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es



**IN VITRO EVALUATION OF THE ANTI-INFLAMMATORY AND ANTIOXIDANT EFFECT IN HUMAN KERATINOCYTES**

In this study we evaluated the IN VITRO EFFECTS OF Olivan DIUVITAE® on the expression of genes involved in inflammation and oxidative stress in human keratinocytes.

**IL-1 $\alpha$**  - cytokine responsible for the production of the inflammation.

**IL-6** - controls the acute phase response at the beginning of acute inflammation.

**NFkB** - transcription factor essential for inflammatory responses

**Nrf2** - an emerging regulator of cellular resistance to oxidants

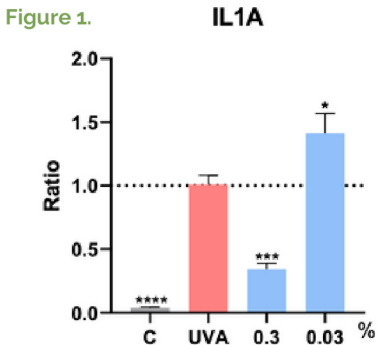
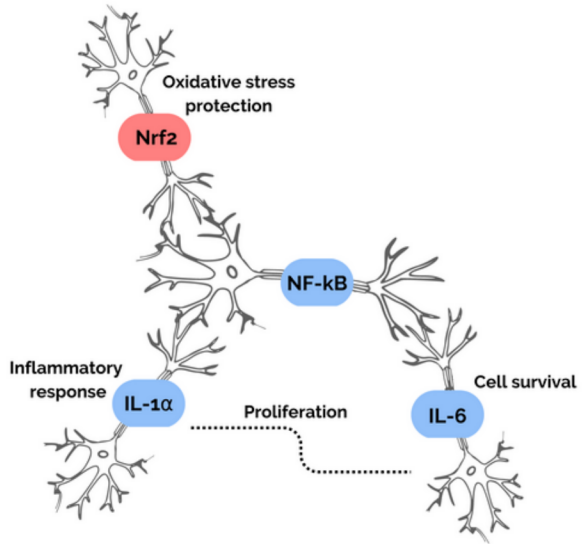
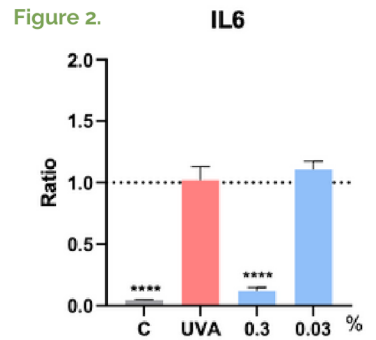


Figure 1. Olivan DiuVitae® decreased the UVA induced IL-1 $\alpha$  gene expression by 71,1 +/- 13,4 % when used at 0,3 %.

Figure 2. Olivan DiuVitae® decreased the UVA induced IL-6 gene expression by 90,3 +/- 9,0 % when used at 0,3 %.



ANTI INFLAMMATORY CAPACITY

UP TO **84,5 %**

CELL SURVIVAL CAPACITY

UP TO **99,3 %**

INFLAMMATORY REGULATION CAPACITY

UP TO **62,3 %**

ANTIOXIDANT CAPACITY

UP TO **69,1 %**

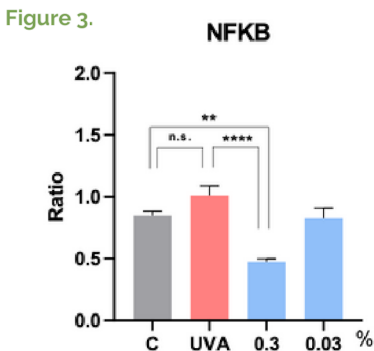
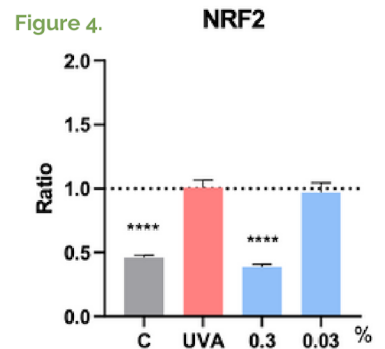


Figure 3. Olivan DiuVitae® decreased the expression of NFKB factor when used at 0,3 %, compared to the control by 37,4 +/- 8,5 %, compared to the UVA treated by 53,8 +/- 8,5%.

Figure 4. Olivan DiuVitae® decreased the UVA induced NRF2 gene expression by 61,9 +/- 7,2 % when used at 0,3 %.



**IN VIVO SOOTHING & CALMING TEST OF CREMA OLIVAN DIUVITAE 3% IN 15 VOLUNTEERS AFTER 90 MINUTES**

Analysis of the **CALMING EFFECT** of the base cream formulated with the product **OLIVAN DIUVITAE 3%** after its topical application on the forearm of volunteers who had induced **IRRITATION** by applying an occlusive **CAPSAICIN** patch.

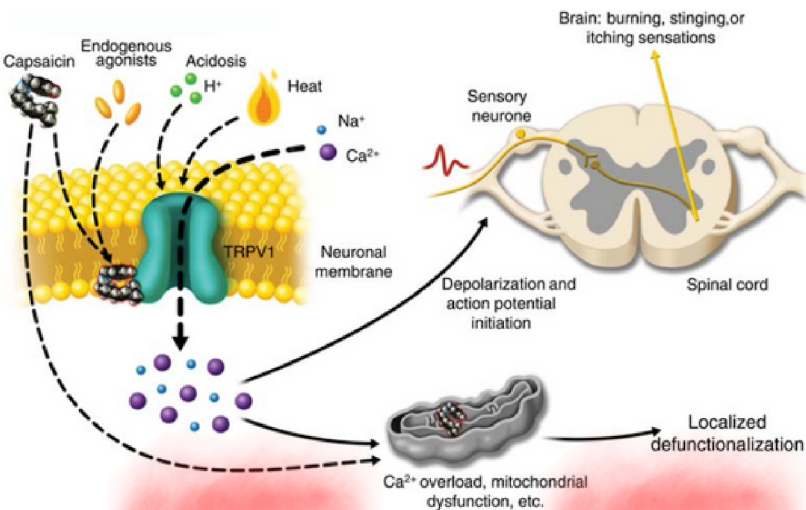


Figure 1. **SYSTEM** of the **CAPSAICIN** induced **IRRITATION**; By application of the Capsaicin patch we induced the local sensitization to activation by heat, acidosis and endogenous agonists. Topical exposure led to the sensations of heat, burning, stinging and itching.

Figure 2. The study is executed by a topical treatment with **OLIVAN DIUVITAE 3%** on 15 **VOLUNTEERS**.

The product was applied after the irritation was induced.

Quantitative questionnaire was performed and dermatological surveillance was included in the study.

The analysis showed a **STATISTICALLY SIGNIFICANT IMPROVEMENT** by **SOOTHING & CALMING** effect on the skin until **11,7%** in comparison with basal values after just 90 minutes.

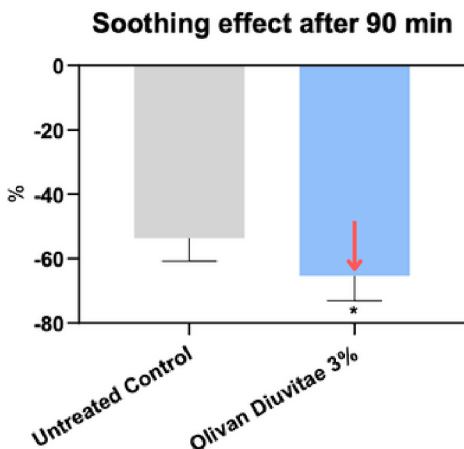


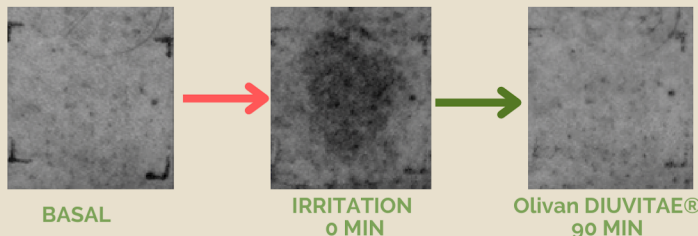
Figure 2. Evaluation of the reduction of the erythema using the Mexameter.

**RESULTS**  
**AFTER 90 MINUTES**

**CALM & SOOTH**  
**SKIN EFFECT**  
**UP TO**

**11,7%**

Figure 3. Macroscopic images of the treatment with **Olivan DIUVITAE®**



The **DERMATOLOGICAL** surveillance & questionnaire evaluation indicates that

**87 %** of participants claim

**Olivan DIUVITAE®**

**REDUCES** itchy skin.  
**REDUCES** skin redness.  
**STIMULATES** skin recovery  
**MOISTURIZES** the skin

## PRODUCT DESCRIPTION

*Olivan*<sup>®</sup>  
DIUVITAE

PRODUCT CODE:	OLDV2023
INCI NAME:	Squalene
SOLUBILITY:	Liposoluble Great integration and carrier role of the non-soluble actives
FORMULATION:	Squalene is incorporated in oil phase on a temp. 70-80 C.
RECOMMENDED DOSAGE:	1 - 10%

## FORMULATION EXAMPLES



Body oil - 2-8%

Mosturizing cream - 1-4%

Serum - 5-10%

Balms - 1-5%



ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es

This document is the property of ATANOR 118, S.L. The information in this publication is provided in good faith and is based on our current knowledge. No legally binding promise or guarantee regarding the suitability of our products for specific use is made. ATANOR 118 does not assume any express or implicit responsibility in connection with the presentation or any use of this information, nor should the information found here be construed as the granting of a license to any patent or a guarantee of use of this information or product infringe the intellectual property rights of third parties.

THE BEST FROM  
OLIVE

BIO - MIMETIC

Active  
Ingredient



UPCYCLING +

Obtained from the  
BY - PRODUCT of  
the olive oil refinery



SKIN +

LIPID BARRIER  
RESTRUCTURATION  
MICROBIOME  
PROTECTION



EFFICACY TEST

Relipidization  
Anti microbial  
Anti inflammatory

%

1,0 - 10,0



**OLIVAN** Elementum<sup>®</sup>

Oleic acid 75%  
Linoleic acid 10%



COSMOS  
APPROVED

REINFORCING the EPIDERMAL lipid barrier

Effectively INHIBITS GROWTH of BACTERIA

SYNERGISTIC ANTIINFLAMMATORY activity with MULTI -  
LAYERED ANTIINFLAMMATORY efficacy

100% mediterranean

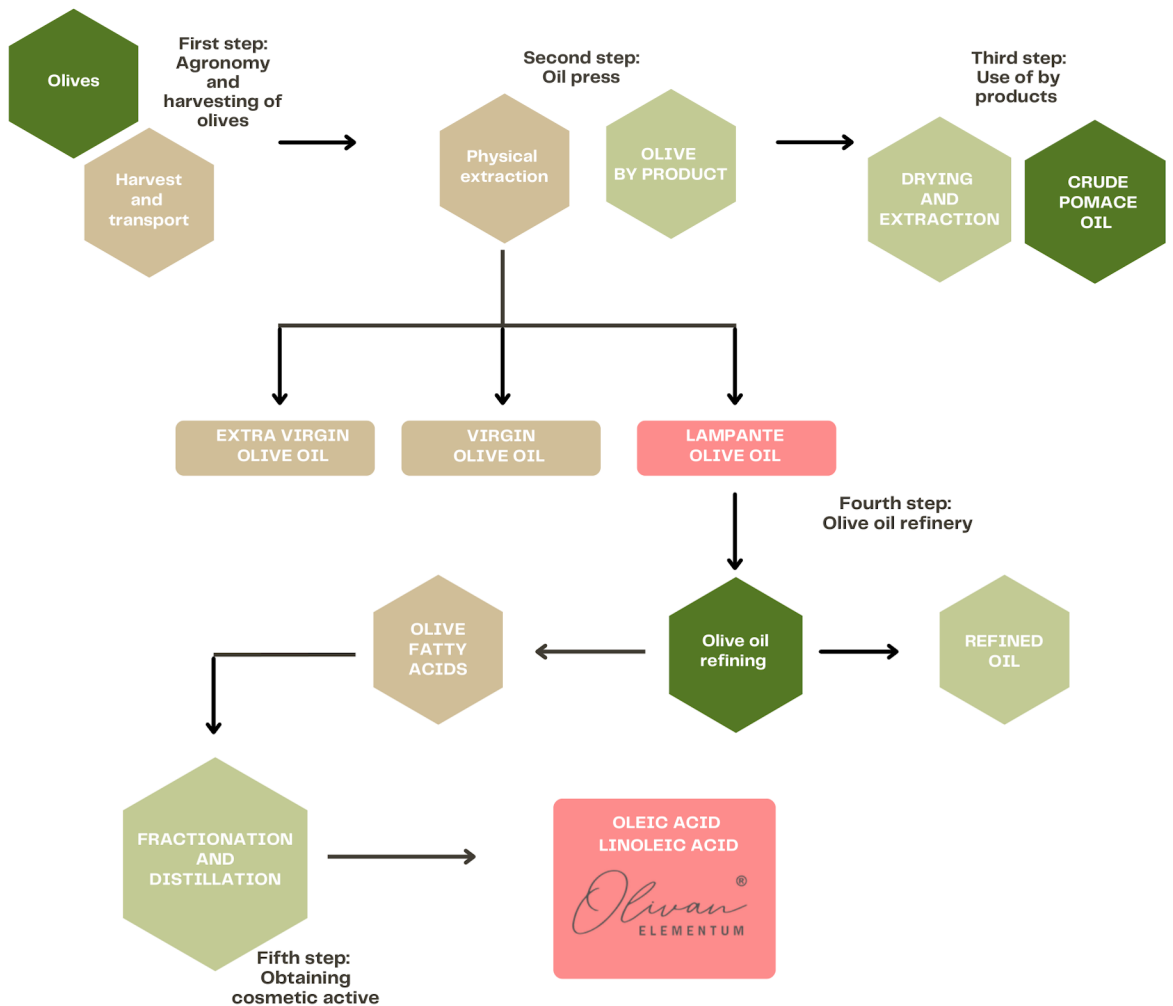


REDUCING WASTE

MAXIMIZING THE USE OF RESOURCES

ADDING THE VALUE TO THE PRODUCT

Obtaining this unique combination of OLEIC and LINOLEIC acid from the BY-PRODUCT of the olive oil refineries; after fractionation and distillation of olive fatty acids.





Actives synergy - **ACTIVITY +**  
**SENSORY +**  
**SKIN TEXTURE +**

Olivan ELEMENTUM consists of **OLEIC ACID** which is mono unsaturated fatty acid and **LINOLEIC ACID** which is poly unsaturated fatty acid.

**OLEIC ACID** nourishes the skin with moisturizing properties.

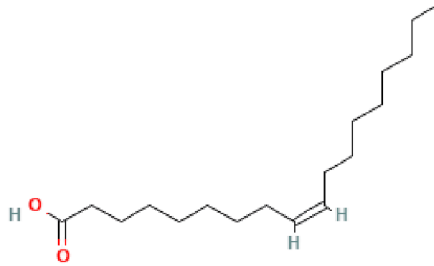
**LINOLEIC ACID** maintains integrity of the skin barrier.

**COMBINATION** that **BALANCES** the **OIL PRODUCTION** in the skin.

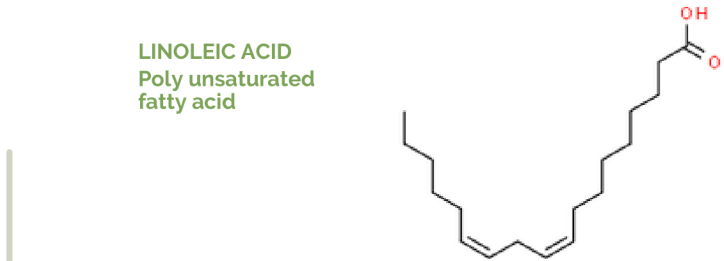
Oleic heavier texture with the lighter linoleic texture easy to absorb benefits the skin without leaving the skin feeling oily.

**COMBINATION** that **SUPPORTS** the **SKIN BARRIER** preventing the moisture loss and protecting the skin from external stressors.

**COMBINATION** that **PROVIDES** to skin a range of **NUTRIENTS** for better skin health and appearance.



**OLEIC ACID**  
Mono unsaturated fatty acid



**LINOLEIC ACID**  
Poly unsaturated fatty acid



**OMEGA 6 & OMEGA 9 & OMEGA 7 MICROBIOME PROTECTION**

**OLEIC ACID**



Improves the level of **HYDRATION** within the dermis.

Improves skin **ELASTICITY**, reduces wrinkles

**SOFTENS** the skin and protects against drying

**PALMITOLEIC ACID**



Improves the skin **STRUCTURE..**

Protects from **AMBIENTAL** stress

Stimulates the production of **COLLAGEN**.

**LINOLEIC ACID**



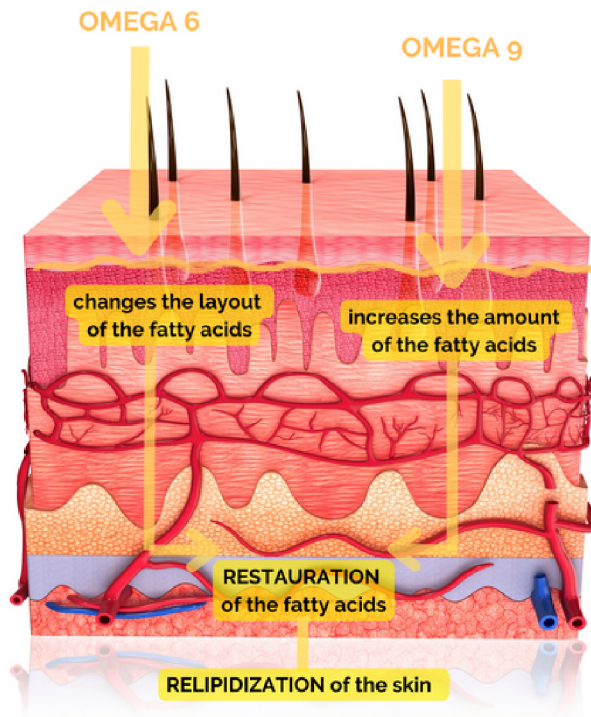
Improves skin **PERMEABILITY** barrier and fatty acids metabolism

Reduces the transepidermal **WATER LOSS**.

Helps skin cells **DIFFERENTIATION** and **MATURATION**

**WHITENING** the skin via inhibiting enzymes involved in melanin production

**Sinergy of all 3 OMEGA's helps overall HEALTH of the skin. Helps PROTECT and REGENERATE the skin. Protects the SKIN MICROBIOME.**



## SKIN RELIPIDIZATION

The **LIPID BARRIER** of the skin is a **PROTECTIVE BARRIER** against the **ENVIRONMENT**. With the addition of **OMEGA 9** and **OMEGA 6**, the **RELIPIDIZATION** of the skin is favored, **REINFORCING** the **EPIDERMAL** lipid barrier that is lost with age.

Linoleic acid (**OMEGA6**) penetrates the skin and changes the **DISPOSITION** of the rest of the fatty acids. While oleic acid (**OMEGA9**) increases the **AMOUNT** of simple fatty acids in the skin.

The **ADDITION** of fatty acids induces the **REDISTRIBUTION** of fatty acids not only in the **STRATUM CORNEUM** but also in the **EPIDERMIS** and **DERMIS**.

A **PENETRATION** of both oils and a **RESTORATION** of fatty acids were **OBSERVED**, and it was concluded that the **RELIPIDIZATION** of the skin is facilitated.

Free fatty acids have bacteriocidal activity and are important components of the INNATE IMMUNE SYSTEM.

**TEST** IN VITRO

OLEIC ACID effectively inhibits *Staphylococcus aureus* growth.

Figure 1. OLEIC ACID dosage dependent starts to kill the bacteria. OLEIC ACID was dissolved in 5% dimethylsulfoxide, and as the control group served the bacteria incubated with dimethylsulfoxide.

OLEIC ACID wasn't cytotoxic for a human skin sebocyte cells at any concentration.

Figure 2. OLEIC ACID can effectively eliminate *Staphylococcus aureus* through cell disruption.

**TEST** ANTIMICROBIAL

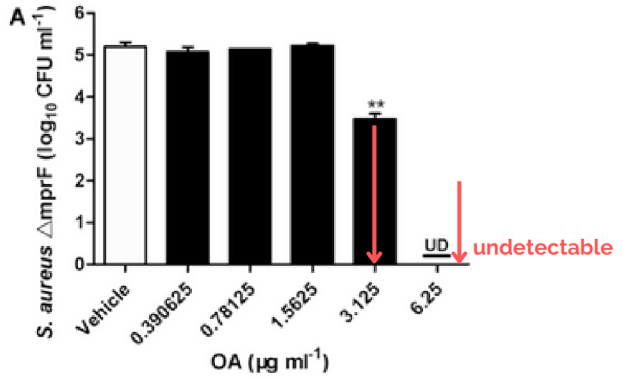


FIGURE 1. Oleic acid exerts bacteriocidal activity against *Staphylococcus aureus*. The results are significant and made of data of three individual experiments.

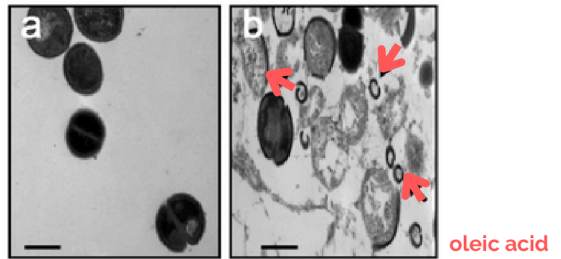


FIGURE 2. Oleic acid kills the *Staphylococcus aureus* bacteria by breaking down the cell walls. The study revealed cell wall separation from cytoplasmic compartments and lysis when treated with Oleic acid.

- Bacteria infected skin treated with dimethylsulfoxide
- Bacteria infected skin treated with Oleic acid

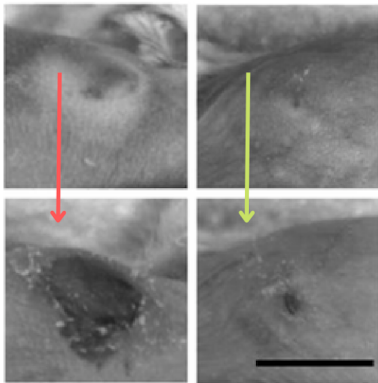


Figure 3.

- Significant decrement of the bacteria colonization in the lesion when treated with Oleic acid

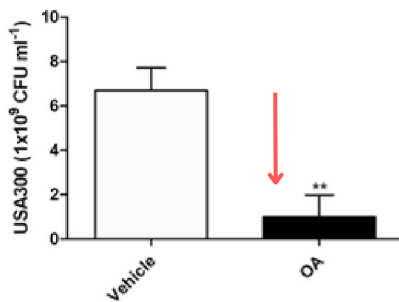


Figure 4.

**TEST** IN VIVO

Determination of the Oleic acid protection ability against the bacteria infection in vivo.

Figure 3. Oleic acid alleviates lesions in the bacteria infected skins.

Figure 4. Oleic acid decreases the bacteria colonization in the bacteria infected skin.

Chen CH, Wang Y, Nakatsuji T, Liu YT, Zouboulis C, Gallo R, Zhang L, Hsieh MF, Huang CM. An innate bacteriocidal oleic acid effective against skin infection of methicillin-resistant *Staphylococcus aureus*: a therapy concordant with evolutionary medicine. *J Microbiol Biotechnol.* 2011 Apr;21(4):391-9. PMID: 21532323.





## ANTI-INFLAMMATORY

OLEIC ACID influences cell membrane fluidity, receptors, intracellular signaling pathways and gene expression.

OLEIC ACID directly regulates the synthesis and activities of the antioxidant enzymes.

### SYNERGISTIC ANTIINFLAMMATORY ACTIVITY

The anti inflammatory effect of the OLEIC ACID is contributed to the INHIBITION of PRO INFLAMMATORY CYTOKINES and the ACTIVATION of ANTI INFLAMMATORY CYTOKINES.

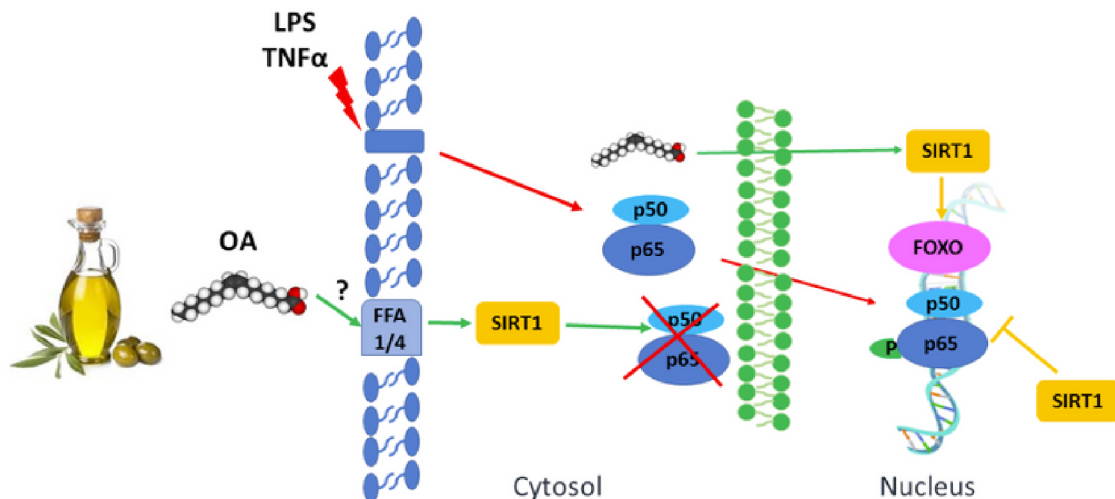


Figure 1. Role of OLEIC ACID in response to inflammatory stimulation, inhibiting NF- $\kappa$ B signaling pathway by promoting SIRT1 activity. Blunt arrow indicate inhibition, while sharp arrows indicate stimulation.

### MULTI- LAYERED ANTIINFLAMMATORY EFFICACY

OLEIC ACID is a natural **ACTIVATOR** of sirtuin 1 - **SIRT 1**. SIRT 1 reduces the formation of inflammatory cytokines.

→ **RESVERATROL like**

**EPIGENETIC**

OLEIC ACID exerts beneficial anti-inflammatory effect by **REGULATING** micro **RNA EXPRESSION**.

OLEIC ACID **REDUCES** the intracellular concentration of **ROS**. (Reactive oxygen species)

→ **ANTIOXIDANT**

**DEXAMETHASONE like**

OLEIC ACID acts by **GLUCOCORTICOID** receptor **MEDIATION**. It's anti inflammatory effect similar to dexamethasone without adverse effects.

Santa-Maria C, López-Enriquez S, Montserrat-de la Paz S, Geniz I, Reyes-Quiroz ME, Moreno M, Palomares F, Sobrino F, Alba G. Update on Anti-Inflammatory Molecular Mechanisms Induced by Oleic Acid. *Nutrients*. 2023;

ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es



This document is the property of ATANOR 118, S.L. The information in this publication is provided in good faith and is based on our current knowledge. No legally binding promise or guarantee regarding the suitability of our products for specific use is made. ATANOR 118 does not assume any express or implicit responsibility in connection with the presentation or any use of this information, nor should the information found here be construed as the granting of a license to any patent or a guarantee of use of this information or product. Infringe the intellectual property rights of third parties.

## PRODUCT DESCRIPTION

PRODUCT CODE:	OLEL2023
INCI NAME:	Oleic acid
SOLUBILITY:	Liposoluble Great integration
FORMULATION:	Oleic acid is incorporated in oil phase on a temp. 70-80 C.
RECOMMENDED DOSAGE:	1 - 10%

## FORMULATION EXAMPLES



Body oil - 2-8%

Mosturizing cream - 1-4%

Serum - 5-10%

Balms - 1-5%



ATANOR 118, S.L. Fontcoberta 31, 08034 Barcelona, CIF:B66642224, atanor118.es



**info@atanor118.es**

*www.atanor118.es*

+34 937 476 369

+34 650 443 596



**THE NEW WAY OF SKINCARE**