C20+ Cobiolive

Hydroxytyrosol from Mediterranean origin

C20+ is a natural extract from olives with a high titrated content of **HYDROXYTYROSOL (over 20 %), TYROSOL,** and other **polyphenols.**
This combination produces positive **synergistic effects, resulting** in **highly antioxidant properties.**

Symbol of the Mediterranean culture, olive tree is extremely long living due to its content of potent antioxidant compounds.

Hydroxytyrosol is reported to perform several biological activities, such as **anti-inflammatory** properties (is capable of inhibiting the synthesis of proinflammatory cytokines up to a 33%), **collagen booster**, (is able to boost collagen synthesis on human dermal fibroblasts x 3) and is considered one of the most **powerful scavengers**, collector of free radicals, reducing oxidative stress, which is the main cause of wrinkles, flaccidity, age spots, and skin aging. It also has **anti-redness and anti-erythema** activity, (probed on in-vivo clinical trials).

It also has microbicide and antimycoplasmal properties.

INCI name

Olea Europaea (Olive) Fruit Extract, Glycerin, Water.

Description

The olive, *Olea europaea*, (meaning "Oil from/of Europe") is a small tree in the family Oleaceae, native of the Mediterranean.

FAMILY: Oleaceae
GENUS: *Olea*
SPECIES: O. europaea
COMMON NAMES: Olive
BOTANICAL NAME: *Olea europaea*

HABITAT

The olive typically grows in seasonally dry Mediterranean-type habitats.

Spain is the most important Olive Oil manufacturer in the world, and it is the most characteristic and important food in the Mediterranean Diet.

In comparison with Northern European or other Western countries, Mediterranean countries have lower rates of mortality from cardiovascular disease and cancer, and this is attributed, at least in part, to Olive Oil consumption.

Since then, Olive oil has been known and used for its recognized benefits.

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DESCRIPTION

One of the world's oldest cultivated plants the olive has shaped both the culture and the landscape of the Mediterranean for thousands of years.

Olea europaea is a long-lived evergreen tree between 8 - 15m tall (Parsons & Cuthbertson, 1992); some specimens are reported to live for up to 1000 years (Baali-Cherif & Besnard, 2005).

All parts of the olive tree have been widely used by humans, and is said to be the Mediterranean region's most valuable and versatile crop.

TRADITIONAL USES

Olive had been used in traditional medicine for centuries. It was usually used in treatment of hemorrhages, fevers, and as a metabolism inducer. It was considered be an astringent, antiseptic and a general tonic.

Nowadays, studies are showing more and more that Olive shouldn't be taken for granted, and that it has proven anti-bacterial, anti-fungal and anti-inflammatory properties.

Olive leaf is also proving in beneficial effects concerning certain cardiovascular conditions. It reduces LDL cholesterol and blood pressure levels. It also increases blood flow and reduces blood sugar levels.

Hydroxytyrosol (HT) is the most important component and responsible for the majority of olive health benefits such as a**ntioxidant properties** that helps our body fight free radicals.

Effects in Cosmetic Products

The responsible for **C20+** antioxidant properties is its polyphenol content, and of these, especially the presence of **hydroxytyrosol (>20).**

Collagen booster:

Free radicals cause chain reactions that damage cell structure of collagen and elastin, affecting the elasticity of the skin.
Over 75% of young skin is made of collagen. With age, the ability to rebuild collagen decreases.

The density of collagen and elastin in the dermis declines, and elasticity of the skin degrades, becoming thinner and more rigid, gravity then pulls on the skin, all leading to sagging eyelids, bags under the eyes, and jowls.

This fall in collagen also results in the loss of hyaluronic acid, that reduces moisture, suppleness and elasticity in the skin. The diminished elasticity of the skin reduces its ability to retain its shape.

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Exposure to ultraviolet light, accounts for 90% of the symptoms of premature skin aging.

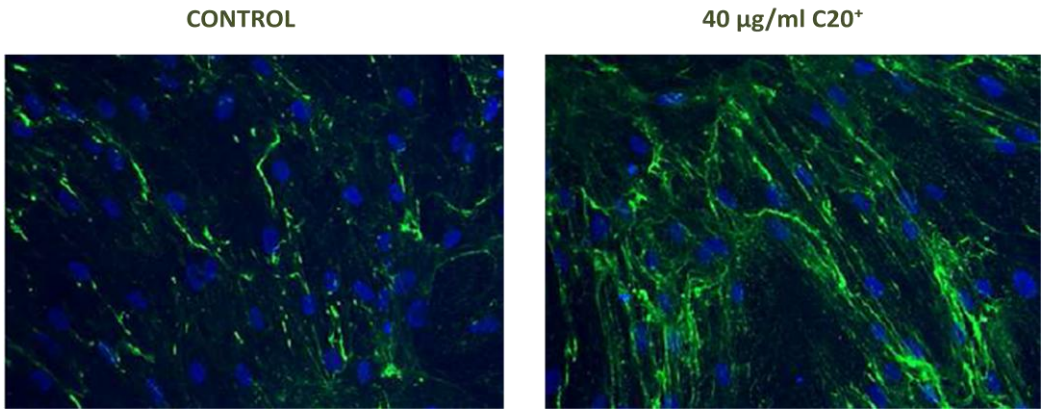
Ultraviolet (UV) irradiation reduces production of type I procollagen, the major structural protein in human skin, causing collagen breaking down at a higher rate than with just chronologic aging.

Sunlight damages collagen fibers and causes the accumulation of abnormal elastin.

When this sun-induced elastin accumulates, enzymes called metalloproteinases are hyper-activated resulting in the formation of disorganized collagen fibers known as solar scars. This process repited over and over cause **wrinkles develop.**

Hydroxytyrosol scavenger properties reduce chain reactions maintaining and protecting proteins structure **stimulating** the genesis of new collagen.

We have verified the ability of C20+ to stimulate collagen synthesis up to **215%:**



Antioxidant Protection:

HT is considered the **best scavenger** substance that protects cells from oxidative stress.

HT activates certain genes at the cellular level that guard against damage from free radicals. Hydroxytyrosol counteracted the effects of oxidative stress on cells, reducing ROS (Reactive Oxygen Species).

Based on its antioxidant activity, HT protects skin cells from long-wave ultraviolet radiation UVB and reduces the harmful effects of smog and second-hand smoke[13].

- ✓ Protects cellular structure
- ✓ DNA protector
- ✓ Metal Ion chelator
- ✓ Protects skin lipids

HT plays an important role in **slowing the process of aging**, based on the free-radical hypothesis of ageing, blocking the external consequences of the natural process.

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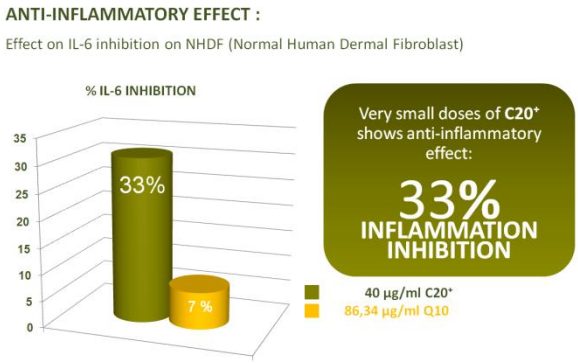
Natural anti-inflammatory:



Cytokines liberation is the first step in a cascade of oxidations chain, leading to the disintegration of the epidermal barrier, hypersensitivity, erythema, resulting in an increase in transs-epidermal water loss (TEWL).

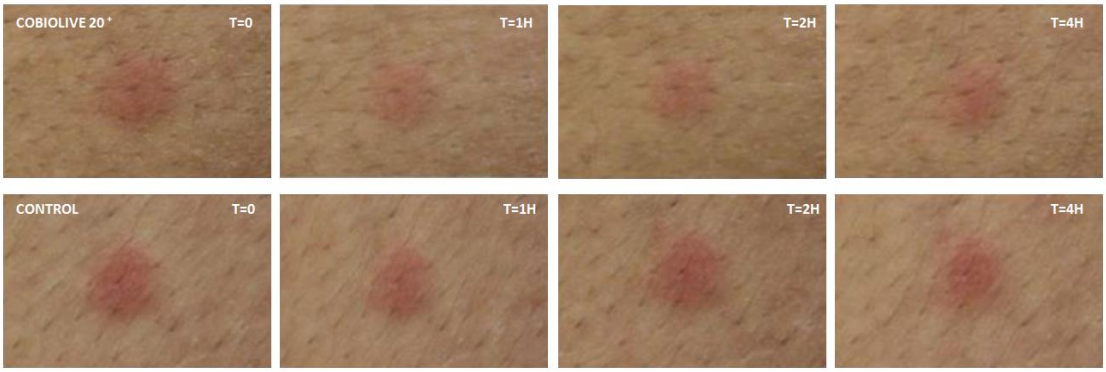
Hydroxytyrosol has a significant **anti-inflammatory effect.**

In cell culture in vitro, **C20+ inhibits the synthesis of IL-6 a 33%.**

UV Radiation Protection and anti-pigment:

Sunburn is an inflammation caused by free radical induced tissue damage. By neutralizing these free radicals, **C20+ helps** protecting skin from the stress and damage of sunburn and photo aging.

C20+ has also proved anti-redness and anti-erythema activity. Topically applied **C20+** provides protective and soothing effect against erythema and skin alterations caused by UV (in-vivo test).



Hydroxytyrosol has confirmed, its efficiency as a **skin anti-pigment** cosmetic, inhibiting melanogenesis, (*Chiba Tomohiro (fancl corp., central res. inst., jpn)*, inducing the synthesis of GSH (Glutathione). GSH plays an important role in the regulation of melanogenesis: Protects cells from oxidative stress, and inhibits tyrosinase activity, **lowering skin pigmentation intensity**. Other clinical studies (*Lueder Maria ,Swiss Scc, Switzerland),* has shown that HT lightens skin colour significantly by reducing the overall melanin production.

The benefits of hydroxytyrosol were recognized by the European Food Safety Authority, EFSA, in April 2011.

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Dosage – Solubility – Processing

A- DOSAGE:

0, 2 - 1 %

B- SOLUBILITY:

Soluble in Glycerin, Propanediol, and Alcohol.

C- PROCESSING:

C20+ is compatible with most of the raw materials normally used in cosmetics; nevertheless, it is the duty of the formulator to make sure of the stability of the formulae with the necessary tests.

Analytical Data

- APPEARANCE: brown syrupy liquid
- DENSITY at 20 ^{o}C: 1,180 – 1,122
- PH VALUE: 4,20 – 5,80 (pure product)
- PRESERVATIVES: Preservatives Free
- MICROBIOLOGY:
  - Total germs: <50 CFU
  - Pathogen: Absence
- TOLERANCE: Excellent.
- STORAGE: Store at room temperature, dry and away from light.

  If original container is opened, to avoid secondary microbiological contamination handle with special care.

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References:

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