BIBLIOGRAPHY


On balance, the results show that hydroxytyrosol is an effective antioxidant and could be considered for use in skincare products, as well as health and nutraceutical products.


These results strongly suggest that hydroxytyrosol has a significant protective effect against UVB-induced DNA damage and that oxidative stress plays an important role in this.


In the physiology of human skin, squalene is not only used as an anti-oxidant, moisturising cream, and material for topical application, but it is also used in the treatment of skin disorders such as seborrhoeic dermatitis, acne, psoriasis or atopic dermatitis.


Various studies give results showing certain bioactivities of squalene. To date, anti-carcinogenic, antioxidant, drug carrier, detoxifying, skin hydrating, and emollient activities of these substances have been reported for animal studies as well as in vitro studies.


The results suggested that oils containing predominantly monounsaturated oleic acid, on average increased the flow of the marker to a greater extent than oils that contain a mixture including both mono and polyunsaturated fatty acids. Natural oils have penetration enhancing effects.
Oil from the olive seed when used topically provides medicinal properties to combat various skin disorders such as dermatitis, eczema, psoriasis or even as a treatment for dry or reddened skin.

Oil from the olive seed is obtained from the whole seeds contained in the olive stone. The seeds undergo a cold pressed process resulting in an oil that is rich in squalene, triterpenic acids, linoleic acid and other useful components.

The oil is extracted using exclusively mechanical means, squeezed from the olive seed in a continuous pressing process, with no chemical treatment.

Based on its analytical composition this product is rich in squalene, maslinic acid and oleanolic acid, oleic acid (ω9), with a high content of linoleic acid (ω6), and alpha-linoleic acid (ω3) and tocopherol (Vitamin E). It also contains hydroxytyrosol and co-enzyme Q10.

- **Squalene** provides emollient, cell regenerating and healing properties as well as eliminating imperfections from the epidermis among other things.

- **Alpha-tocopherol** (Vitamin E) has antioxidant properties, and is also strengthens the defence system and prevents damage to the cell membranes.

- **Omega 3 and 6 fatty acids** modulate inflammatory, protective and cell antioxidant processes.

- **Oleic acid** helps the skin absorb the oil better, as well as providing anti-inflammatory properties.

Testing:

Based on the premises listed above, at the Doctor Alcalá pharmacy in 2015 a dermal-nutritional panel was established of people aged between 25 and 65 who suffer from psoriasis, vitiligo or atopic dermatitis, respecting their usual medical treatments.

After a personalised interview and analysis of each case, the people were first given a list of nutritional advice. In terms of dermal treatment, they were advised to use a moisturising or hydro nourishing cream with sun protection factor and twice a day to lightly massage in a small amount of olive seed oil applied to the areas to be treated, and in the specific case of vitiligo, to mix this oil with the slight addition of powdered black pepper.

Results: In all cases, after 30-60 days, the stinging and irritation of the skin was reduced, and the epidermis appeared better moisturised and for the majority of psoriasis sufferers their skin was less flaky and in some cases the flakes disappeared almost completely.

In the cases of vitiligo, a slight darkening of the white patches could be seen.

In the cases of atopic dermatitis the irritation and red patches were greatly reduced.

Properties:

- High oleic acid ω9 content.
- High linoleic acid ω6 content.
- The **polyphenols** of the oil help to protect the lipids in blood from oxidative damage. Rich in **squalene** and triterpenic components, principally maslinic and oleanolic acid (high antioxidant content: Co-enzyme Q10 and Hydroxytyrosol).
- Nourishing, emollient.
- Protects the skin from external agents.
- Anti-radical, anti-aging.
- Regenerating.

Indications:

- Any skin disorder:
  - Eczema.
  - Flaking skin.
  - Lack of moisture.
  - Red patches.