Gilas

Hydrogil Opuntia

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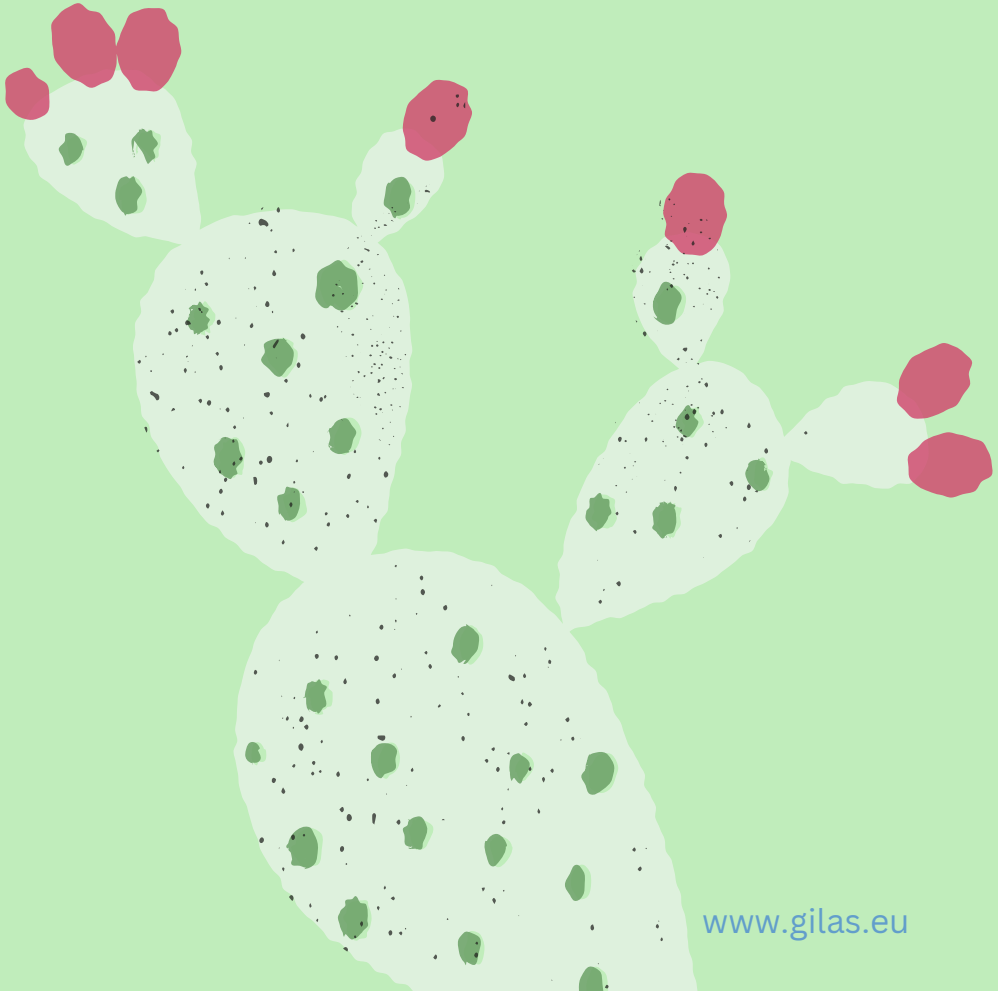
Hydrogil Opuntia

AN ACTIVE INGREDIENT FROM THE HEART OF SICILY

Hydrogil Opuntia

Hydrogil Opuntia is derived from **certified organic** cultivations of Sicilian prickly pear, subjected to rigorous controls before processing.

Through the **cold-pressing** of the cladode, we extract an active ingredient with unique physicochemical characteristics, perfectly suited for nutraceutical, pharmaceutical, and cosmetic applications.



Available Grades

Tailored solutions for every application

Hydrogil Opuntia **Vergin**

Natural, raw state
Visco-elastic liquid gel

Intense green color
Presence of suspended particles

Rich sensory profile
Natural herbaceous scent

Hydrogil Opuntia **Filtered**

Ultra-filtered version
Traslucent liquid gel

Visual Profile
Faint natural scent, debris-free

Microbiological stability
A double guarantee of purity

VIRGIN FILTERED

Heavy Metal Free

Naturalness Certificate

Arsenic-Free*

Chromium-Free*

Cadmium-Free*

Mercury-Free*

Nickel-free*

Lead-free*

Antimony-free*

*Hydrogil Opuntia's purity is guaranteed through strict heavy metal testing, ensuring maximum safety for formulations designed for direct skin contact.

Key Properties & Benefits

Multi-Action Performance

Deeply **Hydrating**

Hydrogil Opuntia significantly strengthens the skin barrier, **reducing Transepidermal Water Loss (TEWL)** for intense, deep-down hydration.

Improves **Skin Elasticity**

Proven to boost skin elasticity, Hydrogil Opuntia **strengthens the skin's structure** and improves its natural resilience against external stress.

Soothing and **Emollient**

Hydrogil Opuntia acts as a powerful emollient that instantly **soothes irritation and restores skin softness**, leaving a smooth and silky finish.

Antioxidant Properties

High ORAC value, Hydrogil Opuntia actively **protects** the stratum corneum from free radicals, **neutralizing oxidative stress.**

Applications

Cosmetic Formulations

Multi-purpose applications

Hydrogil Opuntia is the perfect solution to soothe irritation, dryness, and sunburns. It protects the skin barrier and ensures long-lasting hydration for a soft, healthy appearance.

Its versatile nature makes it ideal, whether **used pure or formulated for various applications**

- face & body creams
- Eye contour creams
- Aftersun lotions
- Lip balms
- Hydrating serums

The synergy between **Piscidic Acid** and long-chain polysaccharides powers a high-performance **healing effect**. It accelerates skin repair and improves the natural scarring process

Test

Clinical and laboratory

1. Comparative study: Opuntia vs Aloe Vera
2. Occlusive Patch test (test in vivo)
3. Elasticizing Activity (test in vivo)
4. Transepidermal Water Loss (test in vivo)
5. Antioxidant Capacity (Test in vitro)

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Comparative study:
Hydrogil Opuntia vs Aloe Vera gel

	Hydrogil Opuntia	Aloe Vera gel
Safety	**100% safe** (the whole plant)	harmful substance in Aloe Vera skin (Hydroxyanthracene)
Mucilage Reticulum	**Stratified** (25 Sugar units)	Linear (8 Sugar units)
Antioxidant Power (direct radical scavenging activity)	Higher (**13%**) *antioxidant activity present in the skin of Opuntia Ficus Indica*	Lower (11%) *toxic in the skin*
Polyphenol Content	**1446 mg/100g** (ensuring superior cellular protection)	307 mg/100g
Vitamins	**Riboflavin** **Vitamin A, B1, B2, B3, B6, C, E, K**	Vitamin A, C, E and B-group
Healing Agents	**Opuntiamannan, Isoramnetin, Piscidic acid**	Acemannan

Test 2

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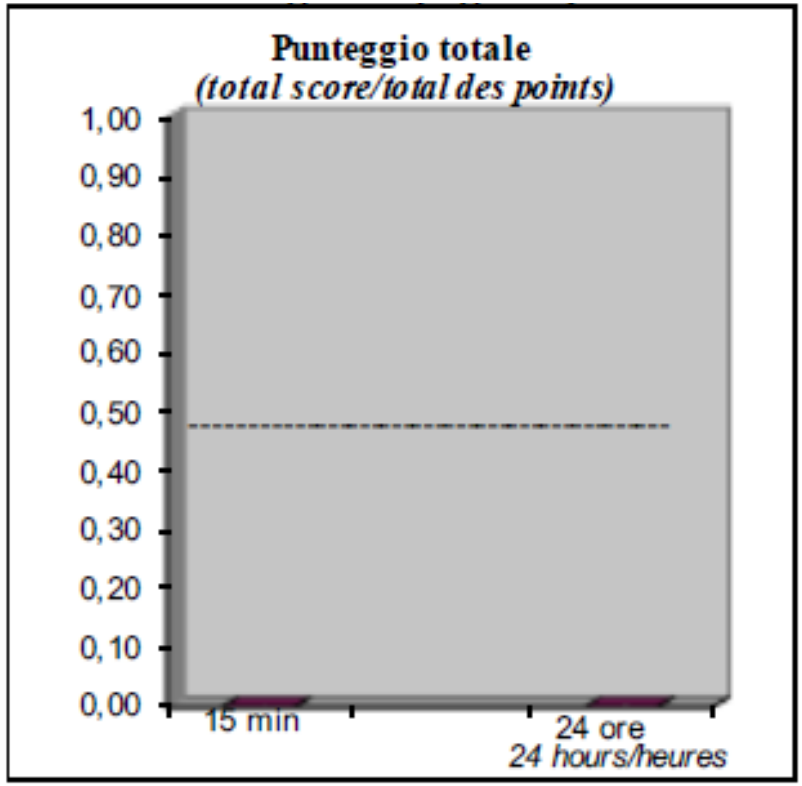
Occlusive Patch Test

Test in Vivo

The test was performed by using the product:
tal quale/ as it is (X) **diluito /diluted 1:10**

Mean index of irritation (total score). The scores due to light, clearly visible and moderate/serious erythematous reactions (including the associated oedema) are shown in blue, purple and black, respectively.
The dashed line indicates the treshold above witch the product is to be classified as slightly irritating.



Test 2

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Occlusive Patch Test

Test in Vivo

The dermatologically tested product, applied as it is under occlusive condition on the healthy skin of 20 volunteers, resulted in a mean index of irritation of:

0,00 (zero,zero) 15 minutes after the removal of the Finn Chamber
0,00 (zero,zero) 24 hours after the removal of the Finn Chamber

According to the evaluation scale used, the product can be classified as:

NOT IRRITATING if applied to human skin

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Elasticizing Activity

Test in vivo

Evaluation of the elasticizing activity of a gel obtained by pressing Prickly Pear cladodes

Instruments used:

ELASTIMETER DELFIN TECHNOLOGIES

The Elastimeter utilizes an indenter which is briefly pressed on the skin. The skin resists the change in shape when an external force is applied and thus the skin's response® under a short term load indicates its instant elastic properties. Instant skin elasticity measurements give important information on the biophysical properties of the skin. The Elastimeter gives information that can be used to assess elasticity change related to skin aging, UV damage, hydration and seasonal variations of the skin. Effects of the skin treatments and different skin care products on the skin can also be examineted. The theory of the measurement is based on material science. Stiffness k is a physical measure of an object's resistance to change in shape under an external force.

$k = F$ (N/m) where F is applied force and δ is deformation δ of the material.

Stiffness can also be defined as

$k = E\,A$ (N/m) where the quantity E is the elastic modulus describing the L
elastic properties of the material. A and L are parameters of the measurement geometry.

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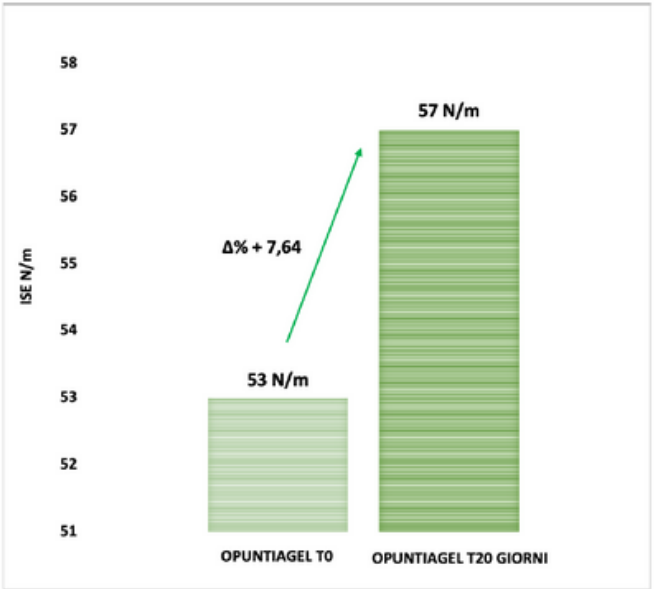
Elasticizing Activity

Test in vivo

Analysis of the results:

For the final assessment being a screening test done on a limited number of volunteers will simply take into account the T0 and T30 data of the variation in skin elasticity in terms of resistance to change of form under the action of an external force (ISE (N/m).
The data obtained from the measurements was used for graphic processing.

Statistical analysis is carried out using the Student t test. The significance level is given by p≤0.05



The results of the instrumental assessments carried out in detecting the ISE elasticity (N / m) show that the sample is able to raise the skin elasticity value with a Δ% of **+7.64%** after 20 days of use.

Test 4

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Transepidermal Water Loss

Test in vivo

Evaluation of transepidermal water loss (TEWL) of a product obtained by pressing from the Prickly Pear cladodes.

Instruments used:

VAPOMETER DELFIN TECNOLOGIES

Measuring transepidermal water loss (TEWL). The Vapometer used a closed chamber measurement principle and thus measurements are unaffected by ambient airflows. The short measurement time ensures that blocking of normal evaporation is minimal. After each measurement the instrument is re-calibrated by means of a ventilation system so that there are no interferences of humidity and temperature such as to invalidate the subsequent measurements.

High TEWL values or in any case an increase of these with respect to a baseline is an indication of cutaneous barrier "damage". Conversely, low or decreasing values compared to the baseline indicate an improvement in the skin barrier.

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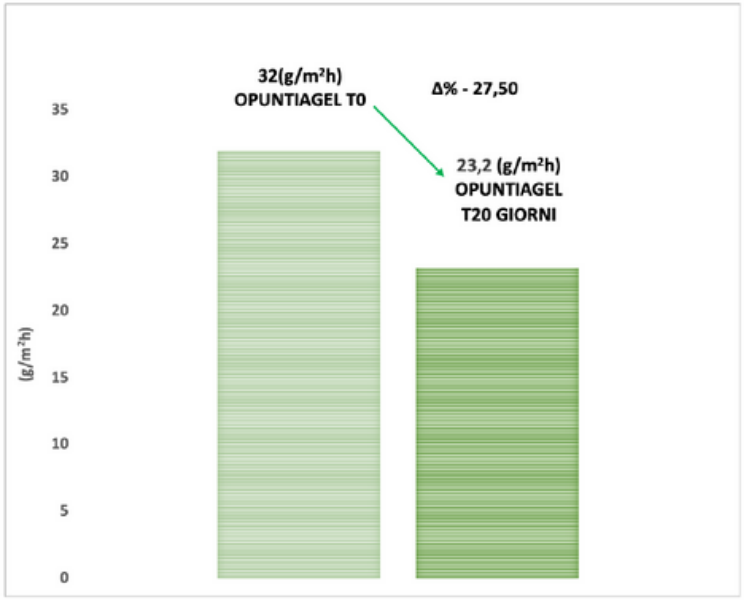
Transepidermal Water Loss

Test in vivo

Analysis of the results:

For the final evaluation of the data, the statistical analysis of the mean trans-cutaneous water loss values expressed in grams per surface per hour (g/m²/h) taken at time t0 and compared with those recorded after 20 days (t20) of application of the product itself. The results are expressed as mean dermal TEWL over time, compared to the values detected at t0. The data obtained from the measurements were used for graphic processing.



The results of the instrumental evaluations carried out in the detection of the TEWL (g/m²h):

They showed that the sample leads to a TEWL reduction of Δ% **-27.50%** after 20 days of use.

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Antioxidant Capacity

Test in Vitro

Determination of Antioxidant Capacity by ORAC (Oxygen Radical Absorption Capacity)

The ORAC test allows for measuring the inhibitory capacity that an antioxidant can exert against peroxyl radicals. The test is based on the protective efficacy of the product towards Fluorescein (Fl). The results obtained are expressed as micromoles of Trolox® equivalents, using this compound as a reference standard.

test 5

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Antioxidant Capacity

Test in Vitro

The table shows the antioxidant capacity value of the product Hydrogil Opuntia

ORAC µmol TE/g
10.38 ± 0.56

Hydrogil Opuntia stands out with remarkable antioxidant capacity:

- ORAC values **higher than pure Aloe Vera gel**®
- Performance that surpasses many standard moisturizers without the addition of high concentrations of Vitamin C or E

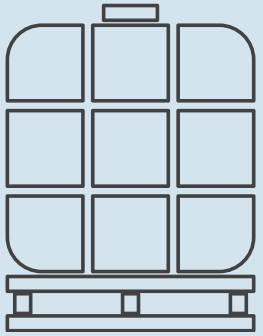
Direct action on the stratum corneum without loss of efficacy

Packaging

Supply & formats

Both variants* come in sizes of:

25Kg
(HDPE plastic drum)



1000Kg
(IBC)

*Both Virgin and Filtered Hydrogil Opuntia

Samples available upon request

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