Renegrape®
The Ancient Tradition for Safe Skin Renewal

INCI Name: Vitis Vinifera (Grape) juice extract

Key Benefits:
- Stimulates cell turnover
- Provides a safe exfoliation, even on sensitive skin

Background
Renegrape® is a skin exfoliating agent made up of an organic acid mixture (tartaric, malic, lactic, citric and gluconic acid) derived from grapes (Vitis vinifera). It is a liquid extract, 38-42% standardized in organic acids.

As far back as the 17th Century, ladies in the French Court of Louis XIV used to apply aged wine to their faces to keep their skin smooth and young. Nowadays, we know that the link between these ancient anti-aging remedies and the benefits obtained from red wine in skin applications is represented by a group of natural acids belonging to Alpha Hydroxy Acids (AHAs).

What It Does
As reported in a clinical study published in the Journal of Cosmetic Science, topical application of Renegrape® stimulates cell turnover and produces a safe exfoliation which is well-tolerated by the skin\(^{[1]}\). Renegrape® provides an exfoliating effect similar to glycolic and mandelic acids but without the undesirable side effects, primarily skin irritation, and inflammation. Depending on the percentage used, the results will be a mild or strong exfoliation.

Renegrape® can be effectively used as an anti-aging ingredient by promoting the process of skin renewal, which reduces the appearance of fine lines, wrinkles, age spot, and imperfections. Renegrape® is suitable for creams, lotions, gels, shampoo, bath foams, and most cosmetic preparations containing water.

Safety models used in the following study proved that Renegrape® is well-tolerated by the skin and is preferred to other harsher AHAs.

Renegrape is a registered trademark of Bionap srl.

References

Typical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Appearance @ 25°C</td>
<td>Liquid</td>
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<tr>
<td>Odor</td>
<td>Characteristic</td>
</tr>
<tr>
<td>Color</td>
<td>Brown</td>
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<tr>
<td>pH (as is @ 25°C)</td>
<td>3 - 6.5</td>
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<tr>
<td>Solubility</td>
<td>Miscible in Water</td>
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<tr>
<td>Natural Acid Content</td>
<td>38.0 - 42.0</td>
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<tr>
<td>Recommended Use Level</td>
<td>10-50% (w/w) in products for home or professional use</td>
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Product Applications:
- Skin care creams, gels, and lotions
- Exfoliating skin care creams and gels
- Cleansers
- Shampoos and conditioners
- Bath preparation products

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Clinical Studies

Skin Exfoliating Effect

In a 2010 clinical study\(^1\), the efficacy and safety of skin exfoliation produced by Renegrape® have been evaluated by new experimental protocols and the instrumental reflectance spectrophotometric method. The first study was performed to assess the skin exfoliating effect of Renegrape®. The experimental protocol was as follows: 20 healthy volunteers (aged 25-35 years); DHA-induced skin pigmentation model: DHA-induced skin tanning of skin sites and application of test formulations once daily for 12 days; evaluation of melanin index variation by reflectance spectrophotometry for a period of 2 weeks. Depiction of method:

![Skin tanning induced by 5% DHA (dihydroxyacetone) application](image1)

1. Skin tanning induced by 5% DHA (dihydroxyacetone) application

![Application of exfoliating formulations: GLY=10% Glycolic Acid MAN=10% Mandelic Acid RN=10% Renegrape®](image2)

2. Application of exfoliating formulations: GLY=10% Glycolic Acid MAN=10% Mandelic Acid RN=10% Renegrape®

![Evaluation of melanin index by reflectance spectrophotometry for 3 weeks on each skin site.](image3)

3. Evaluation of melanin index by reflectance spectrophotometry for 3 weeks on each skin site.

**Results**

It was shown that Renegrape® increased the rate of skin exfoliation (CTA%) with a significant reduction of time required to obtain complete skin renewal (Fig.1). The activity is slightly lower than glycolic acid but much higher than mandelic acid.

![Skin cell turnover acceleration (CTA%)](image4)

**Fig.1 Skin cell turnover acceleration (CTA%)**

![Graph showing CTA% values for Glycolic acid, Mandelic acid, and Renegrape®](image5)

<table>
<thead>
<tr>
<th>CTA%</th>
<th>Glycolic acid</th>
<th>Mandelic acid</th>
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<tr>
<td>75</td>
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**Skin Sensitizing Effect**

The experimental protocol was as follows: 20 healthy volunteers (aged 25-35 years). Application of test formulations containing 50% acids on skin sites. Evaluation of induced skin erythema by reflectance spectrophotometry for a period of 50 hours. Depiction of method:

![Application of exfoliating formulations containing 50% acids](image6)

1. Application of exfoliating formulations containing 50% acids (GLY= Glycolic Acid, MAN= Mandelic Acid, RN= Renegrape®)

![Evaluation of skin erythema development in each skin site by reflectance spectrophotometry for 50 hours](image7)

2. Evaluation of skin erythema development in each skin site by reflectance spectrophotometry for 50 hours

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Results
After topical application, it produced only a mild erythema which naturally disappeared within a few hours (Fig. 2). Results obtained from this clinical study showed that Renegrape® provides a good balance between efficacy and tolerability in contrast with other agents commonly used in cosmetic products, resulting in a good safety profile.

Skin Photo-Sensitizing Effect
The experimental protocol was as follows: 20 healthy volunteers (aged 25-35 years); Application of tested formulations on skin sites at 10% w/w concentration once a day for 4 weeks; Induction of skin erythema by UV lamp exposure and evaluation of erythema index (E.I.) by reflectance spectrophotometry.

Depiction of method:

1. Treatment with tested formulations (once a day for 4 weeks): GLY=10% Glycolic Acid MAN=10% Mandelic Acid RN=10% Renegrape®
2. UV Lamp Treatment
Each skin site was treated with a UV lamp emitting a range of 290-320 nm for double of the minimal erythema dose (MED) of each subject
3. UV-Induced Erythema Evaluation
For each skin site UV-induced erythema was quantified by reflectance spectrophotometry as photosensitivity percentage.

Results
Topical application of a formulation containing 10% w/w Renegrape® did not induce a significant photo-sensitizing effect in comparison to Glycolic and Mandelic Acids (Fig. 3).

Results Summary
Renegrape® provided the same efficacy results as glycolic acid (within experimental error) with half the negatives of skin irritation and photo sensitization.