



# REFORCYL®

Nutrition & Resistance for Mature Skin



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REFORCYL® helps regenerate the perturbed barrier of mature skin and provides nutrition and new resistance.

The plant *Gynostemma pentaphyllum* from the Far East activates LXR and stimulates the synthesis of epidermal lipids; the skin barrier is restored from within.

The Western plant *Cistus incanus* strengthens the reduced antioxidative defence system found in mature skin. Reactive oxygen species are neutralised, thus preventing further damage to the skin barrier.

The amino acid L-Glutamine acts as metabolic fuel and reactivates the decelerated metabolism of ageing skin cells. REFORCYL® shows a five-fold efficacy against the appearance of mature skin; hydration, firmness, wrinkle depth, elasticity and skin smoothness are all markedly improved.

## Confirmed efficacy

- Activation of LXR in human primary Keratinocytes (*in-vitro* study)
- Activation of key enzymes involved in epidermal lipid synthesis (*in-vitro* study)
- Improvement of hydration, firmness, elasticity and smoothness of skin (*in-vivo* study)
- Visible improvement of wrinkle depth in eye area (*in-vivo* study)

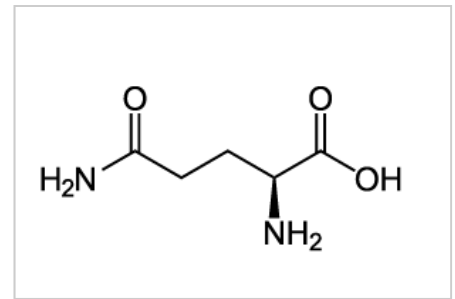
## Active ingredients



*Gynostemma pentaphyllum*, the immortality herb, has a high gynosaponin content. Extract of this plant activates the LXR, stimulates the neosynthesis of the epidermal lipids and strengthens the skin barrier from within.



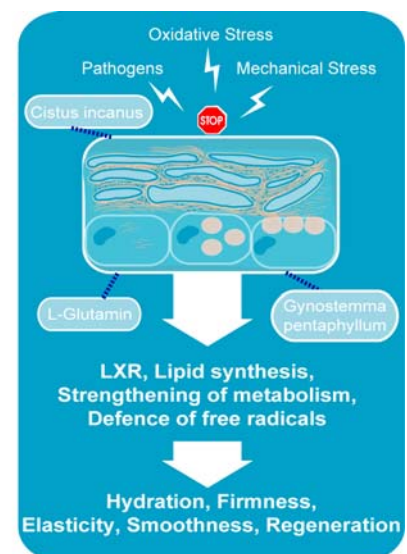
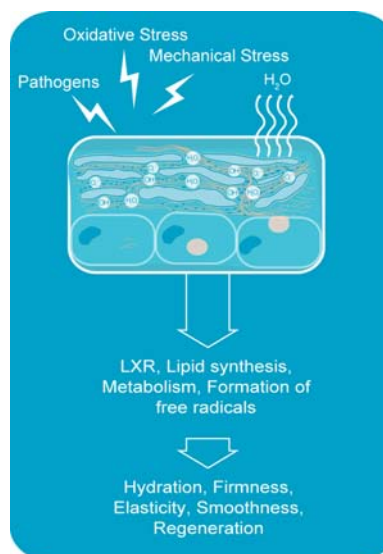
*Cistus incanus*, the plant of beauty, is especially rich in polyphenols. Extract of this plant neutralises reactive oxygen species (ROS) and improves the reduced antioxidative defence system found in mature skin.



L-Glutamine is a valuable nutrient for ageing skin cells and provides the energy needed to stimulate metabolic processes which are only functioning to a limited extent.

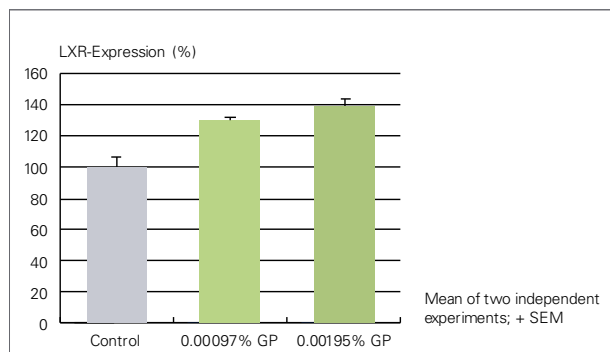
## Mode of operation

Mature skin is accompanied by disruptions to the skin barrier. The epidermal lipid synthesis and the antioxidative defence system only function to a limited extent. REFORCYL® stimulates both of these processes which leads to a visible and measurable regeneration of the skin barrier: Skin moisture, firmness, elasticity and skin smoothness are sustainably improved.



## Efficacy studies

### REFORCYL® activates LXR (in-vitro study)



**Measurement parameters:** Determination of the expression of LXR using real-time (RT) PCR analysis.

**Method:** Cultivation of human keratinocytes in a sub-toxically dosed 0.00097% Gynostemma pentaphyllum extract (~ 0.05% REFORCYL®) for two days, followed by isolation of the RNA and determination of the expression of the Liver X Receptor (LXR).

**Result:** Treatment with Gynostemma pentaphyllum extract leads to an increase in LXR expression of 30% or 39% dependent on the dose, when compared to the untreated control. REFORCYL® efficiently stimulates the formation of the LXR and has a demonstrably positive effect on epidermal lipid synthesis.

### REFORCYL® improves skin hydration, firmness, elasticity and smoothness (in-vivo study)

**Measurement parameters:** Corneometer (moisture), Cutometer (firmness, elasticity), Primos (skin roughness).

**Method:** Twice-daily applications of aqueous solutions with 0% (placebo), 1%, 3% and 5% REFORCYL®. Treatment period: 28 days; 20 test subjects of Caucasian skin type; age: 50 – 70 years; measurement of skin hydration (with 1%, 3% and 5% REFORCYL®), skin roughness (with 3% REFORCYL®); elasticity and firmness (with 5% REFORCYL®) on Day 0, 14 and 28.

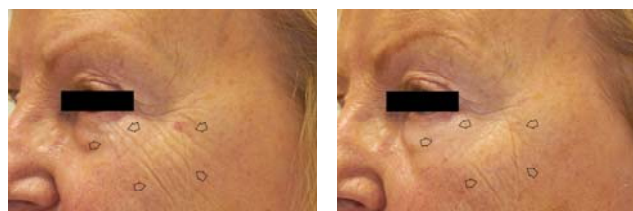
**Result:** The application of 5% REFORCYL® brings about an increase in skin hydration of up to 32% after 28 days. With 5% REFORCYL®, skin firmness is improved by up to 14% after 28 days, and skin elasticity increases by up to 9%. Not shown are the test results with lower concentrations: 1% and 3% REFORCYL® bring about an increase in skin hydration dependent on the dose. Moreover the application of 3% REFORCYL® leads to a reduction in skin roughness of up to 11% after 28 days.

### REFORCYL® smoothes wrinkles in the eye area (in-vivo study)

**Measurement parameters:** Determination of the wrinkle depth of crows feet using Primos, with the addition of digital photographs.

**Method:** Twice daily application of a gel with 3% REFORCYL®. Treatment period: 28 days; 20 test subjects of Caucasian skin type; age: 50 – 70 years; Wrinkle depth measured on Day 0, 14 and 28.

**Result:** Treatment with 3% REFORCYL® leads to a statistically significant reduction in wrinkle depth of 9% after 14 days and 14 % after 28 days. The wrinkle smoothing effect of REFORCYL® can be seen in the pictures with the naked eye.



Before application

After 28 days

### Concentration for use

1 - 5%

### Areas of application

Anti-age products for mature skin. Suitable for gels, emulsions (O/W and W/O) and serums.

### INCI

**EU:** Glycerin, Aqua, Glutamine, Decyl Glucoside, Phenethyl Alcohol, Cistus Incanus Flower/Leaf/Stem Extract, Gynostemma Pentaphyllum Leaf/Stem Extract

**USA/Japan:** Glycerin, Water, Glutamine, Decyl Glucoside, Phenethyl Alcohol, Cistus Incanus Flower/Leaf/Stem Extract, Gynostemma Pentaphyllum Leaf/Stem Extract

### Further information

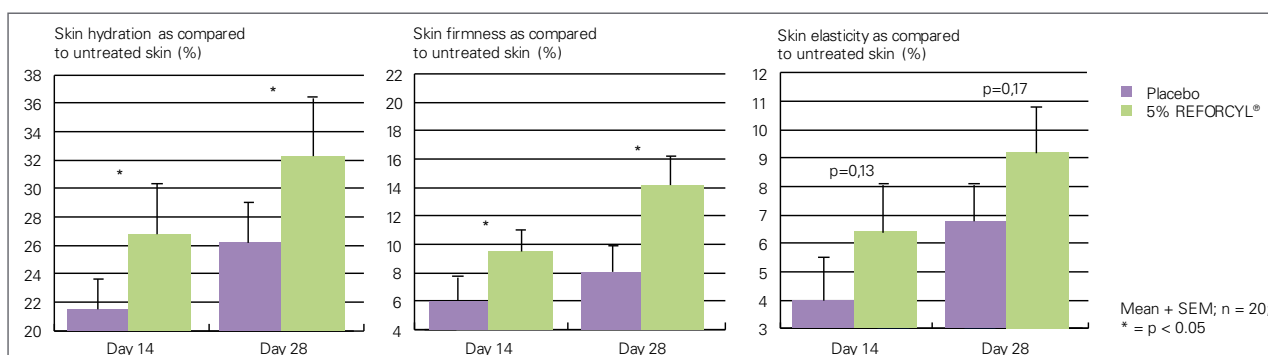
**Natural Cosmetic:** Ecocert: listed

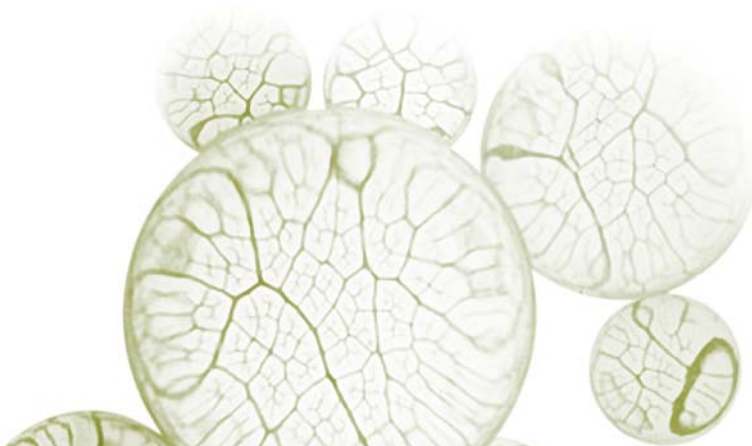
**Preservatives:** None

**Animal experiments:** Not tested on animals, no ingredients of animal origin

**Toxicology:** Not toxic for humans or the environment

**Safety:** GM-free, BSE-free, CMR-free, free from pesticides, free from mineral oils, free from heavy metals





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