

Active Beauty
Unitrienol™ T-27
Hair and skin sebum normaliser

Crafted by synthesis



Focus on the product

Oily hair/scalp and skin: the risks

Having greasy hair/scalp is considered a problem frequently due to the poor aesthetic look it provides. It is often perceived as a lack of hygiene. This issue is addressed by cosmetics more than by dermatological solutions. However it has been shown that oily scalp and skin if left untreated, could lead to serious pathologies such as acne, dandruff, seborheic dermatitis, or even alopecia. Very few products are biologically capable of equalising sebum production on both skin and scalp with the same efficiency.

The biological reason behind oily hair/scalp and skin

Hair and skin look "greasy" when there is an over-accumulation of sebum on the surface. This accumulation comes from an over-release of sebum by the sebaceous glands.

Some studies explain that lack of cholesterol leads to weakening of the sebocytes' membrane and consequently results in an excess of sebum excretion. This phenomenon is also triggered by a localised inflammation since the accumulated sebum has an abnormal lipids composition. This abnormal composition is formed as a result of their degradation by oxygen and microorganisms found on the scalp and skin. As a consequence, when people suffer from "greasy" hair/scalp and skin, they often have other complications of skin and scalp such as follicular hyperkeratosis and epidermis alteration.

Unitrieniol™ T-27 equalises the sebum excretion on both skin and scalp

Unitrieniol™ T-27 is a unique concept of 3 effective molecules aiming at sebum equalisation on both skin and scalp:

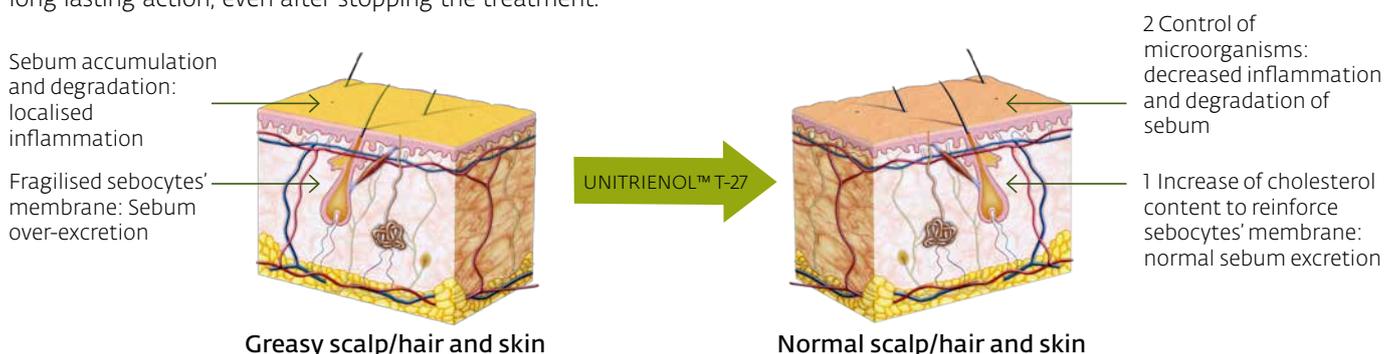
▶ Panthenyl triacetate is an acetylated form of panthenol, a precursor of panthotenic acid belonging to the vitamin B family. It plays a major role in the cholesterol synthesis¹, thus reducing sebum over-excretion.

▶ Farnesyl acetate and farnesol are precursors of farnesyl pyrophosphate, directly involved in the cholesterol synthesis, helping equalise the sebum excretion. They also have intrinsic antifungal and antibacterial properties² which reduce the risks of inflammation due to the microorganisms.

Farnesol will act instantly, and the two acetylated forms will improve the long term effect of Unitrieniol™ T-27, so that results can also be seen after stopping any treatment.

▶ A study on 40 volunteers with either dry or oily skin has shown that Unitrieniol™ T-27 normalises their sebum level in less than 2 weeks.

▶ A study on 27 volunteers showed that greasy hair can be avoided by using Unitrieniol™ T-27 in a shampoo in 28 days, with a long lasting action, even after stopping the treatment.



¹ J cosmet Sci, 2012, 63: p. 1-13.

² Antimicrob Agents Chemother, 2006, 50(4): p. 1463-9.

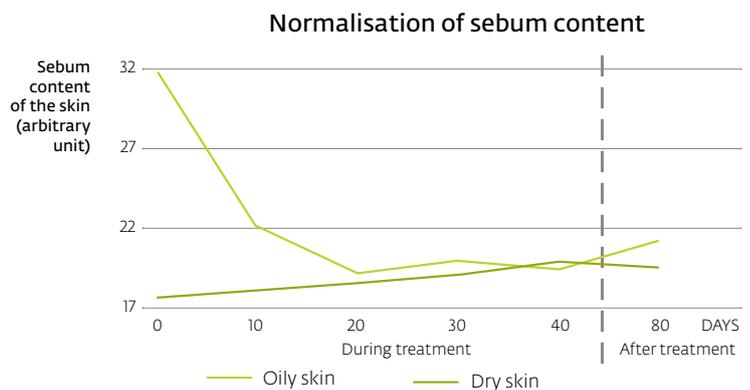
Biological activity

Normalisation of sebum content on the skin (Clinical evaluation)

UnitrienoTM T-27 was tested to normalise sebum content on the skin's surface (forehead). A clinical trial was run on 20 volunteers (aged under 30) with a high content of sebaceous matter on the skin, and 20 volunteers (aged over 45) with dry skin. A cream containing 5% of UnitrienoTM T-27 was applied twice a day, for 45 days. A measurement of the sebum content (using a Creachem sebumeter following the method developed by H. Schaefer and H. Kuhn-Bussins) was done every 10 days until day 40 approximately. Then a last measurement was done 35 days after stopping the treatment. A glass was used to see the level of transparency and so determine the quantity of sebum accumulated on the forehead.

Results: UnitrienoTM T-27 normalises the sebum content on the skin's surface.

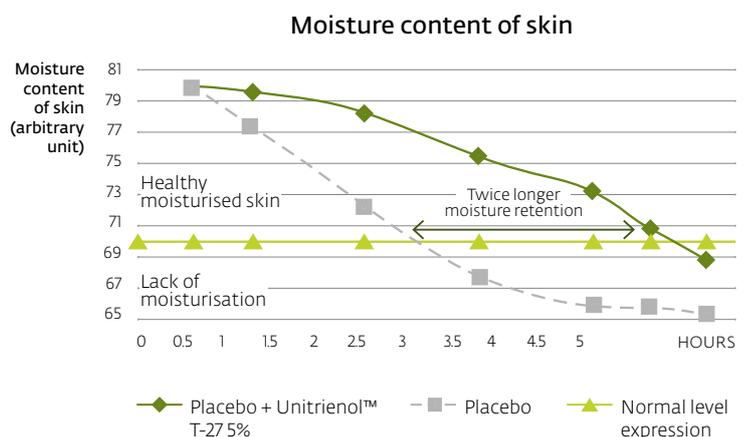
The effect of the product is also noticeable after stopping the treatment.



Enhancement of skin moisture retaining capacity (Clinical evaluation)

UnitrienoTM T-27 was tested to improve skin moisture retention since the product brings essential molecules to rebalance the skin lipids content and repair the skin barrier function. A clinical trial was run on 40 volunteers (half men, half women) with predominantly dry skin. After the determination of the mean base values, half of the subjects applied a placebo cream and the other half the placebo cream + 5% of UnitrienoTM T-27. The moisture content was measured thanks to a Dermatometer on forearm, and the measurements were done every 30 minutes until 5 hours after application.

Results: UnitrienoTM T-27 enables the skin to be hydrated two times longer than when the volunteers applied the placebo!



Efficacy

Reduction of oily hair (Clinical efficacy)

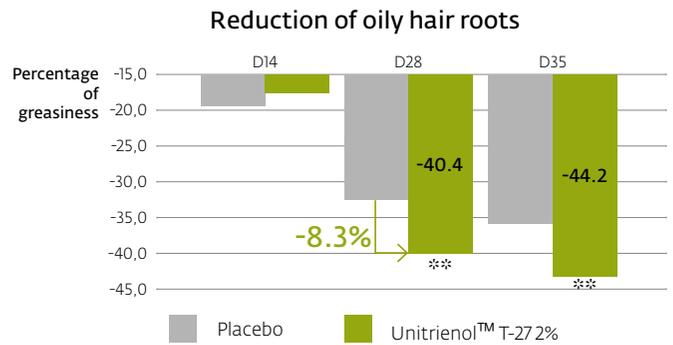
UnitrienoI™ T-27 was tested in a shampoo to evaluate its potential for reducing the "greasy" effect in hair. 27 volunteers applied either a shampoo (placebo) or the shampoo + 2% UnitrienoI™ T-27 for 28 days. Volunteers were selected due to their high sebum rate: minimum of 80µg/cm². They applied the product 3 or 4 times a week for two minutes according to the provided schedule.

A clinical scoring of the oily aspects of the hair roots was done at day 0, 14, 28 and 35 (7 days after stopping the treatment) to evaluate the greasiness level of hair.

Results: UnitrienoI™ T-27 reduces the greasiness of hair roots significantly after 28 days showing -8.3% improvement compared to the placebo.

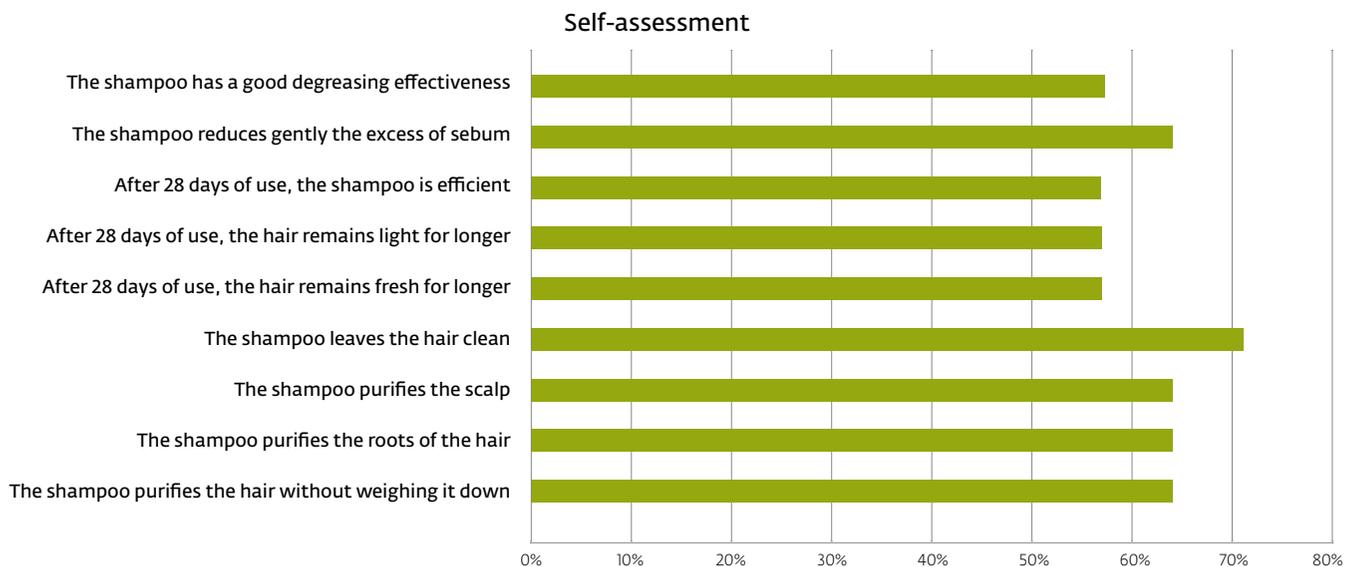
7 days after stopping the treatment, the results are even better, showing the long term efficacy of UnitrienoI™ T-27. Using UnitrienoI™ T-27 reduces hair grease up to -44%.

**p<0.01 compared to D0, Student's t Test



Positive results for 90% of the volunteers!

A self-assessment was run on the volunteers. They were able to notice the sebum reduction on their hair as well as a strong efficacy of the product, which purifies the scalp and hair.



Summary



Technical information

INCI Unitrienol™ T-27:	Farnesyl Acetate (and) Farnesol (and) Panthenyl Triacetate
INCI Unitrienol™ T-272 WSL:	PEG-12 Glyceryl Laurate (and) PEG-36 Castor Oil (and) Farnesyl Acetate (and) Farnesol (and) Panthenyl Triacetate
Origin:	Organic synthesis
Preservation:	Preservative free
Appearance:	Clear, Slightly yellow liquid
Solubility:	Unitrienol™ T-27: Oils, alcohols, glycols Unitrienol™ T-272 WSL: Water, ethanol, propylene glycol, glycerin
Dosage:	2-5%
Processing:	Can be incorporated in any formula in liquid form at pH between 5 and 8 and temperature below 50°C

Claims

Claims:	Anti-greasy hair, sebum equalisation, moisturising
Applications:	Anti-greasy hair, hair care, scalp treatments, oily skin treatments, dry skin

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