

Mountain Tea Pro | Substantiated Extract

**NEW**

The Night-Time Remedy for  
Skin Recovery



We make beauty natural.

## At a Glance | Mountain Tea Pro – The Night-Time Remedy for Skin Recovery

Skin regeneration during the night and waking up with a radiant and refreshed complexion like 'Sleeping Beauty' is a favorable image for many beauty consumers. With increasingly hectic lifestyles, people prioritize evening beauty routines that help them unwind and facilitate a restful and recovering beauty sleep at night.

For that, tea rituals are the perfect starting point as they fit to a de-stressing and regenerative evening self-care routine, especially if based on caffeine-free herbal teas, such as mountain tea.

Lipoid Kosmetik presents a new, 100 % natural, COSMOS-certified extract based on organic Greek mountain tea herbs, which is fully traceable to the farmer. Besides an ethical source, Mountain Tea Pro is an efficacy-proven extract that provides caffeine-free beauty sleep support by protecting against oxidative stress and supporting skin recovery overnight.

Mountain Tea Pro is the ideal companion for a de-stressing night-time beauty ritual that combines tea-inspired protection with skin regeneration and recovery.

ACTIVE INGREDIENTS	PROVEN EFFICACY	USER BENEFITS
<ul style="list-style-type: none"><li>• Greek mountain tea herb from a traceable, organic source</li><li>• Protective antioxidants (phenolic acids, flavonoids)</li><li>• Free of stimulating compounds (caffeine, catechins)</li></ul>	<p><i>in vitro</i></p> <ul style="list-style-type: none"><li>• Skin protection against oxidative stress (during day and night)</li></ul> <p><i>ex vivo</i></p> <ul style="list-style-type: none"><li>• Regeneration of skin's antioxidative potential</li></ul>	<ul style="list-style-type: none"><li>• Caffeine-free beauty sleep support</li><li>• Tea-inspired protection against oxidative stress</li><li>• Overnight recovery of skin's antioxidative potential</li></ul>

### Product Details

Mountain Tea Pro is a glycerinic-aqueous extract from organic mountain tea herb (*Sideritis scardica*, *Lamiaceae*), preservative-free/ self-preserving. COSMOS-certified, activity-proven extract belonging to the Herbasol® Pro line.



## Mountain Tea Pro – Legendary Herb of Greek Gods

Mountain tea is a legendary herbal tea made from the leaves and flowers of *Sideritis scardica* plants found in the Mediterranean mountain regions of Greece, Albania, Bulgaria, Macedonia or Turkey. Almost every region has its own name for the tea, reflecting the name of the mountain where it grows. Olympus tea, for example, is made with *Sideritis* herb grown around Mount Olympus, the legendary home of the Greek gods according to ancient Greek mythology.



Mountain tea has been used for thousands of years for its delicious taste and health benefits. Extracts of *Sideritis scardica* are used as natural remedy in the treatment of sleep disorders, anxiety, depression or burn-out. It has thereby never been used in classical tea rituals during an afternoon teatime. Instead, it has remained a humble, unprocessed, and naturally caffeine-free herbal tea predominantly consumed by the common population in the Balkans to strengthen the body and improve the mood <sup>[1-5]</sup>.

*Fig. 1: Greece — The home of the famous Sideritis herb. Typical Greek mountain view and Sideritis plants in their natural habitat. Greece features a vast number of islands and has one of the longest coastlines in the world. At the same time, however, eighty percent of Greece consists of mountains or hills, making it one of the most mountainous countries in Europe.*

## Shepherd's Tea – The Ideal Companion for Relaxation in the Evening

Another common name for mountain tea is shepherd's tea because Greek shepherds use *Sideritis* plants to make tea while tending their flocks high in the hills. The name shepherd's tea evokes an image of the beautiful, rough, craggy and arid terrain of the Southern Mediterranean and the Balkans where sheep and goats graze on plains filled with a plethora of fragrant plants and herbs.

Herbal teas, with their strong traditional values, perfectly fit to the self-care movement and slow living approach. For centuries, caffeine-free herbal teas have been used as natural sleep remedies all over the world. They are increasingly popular choices when the time comes to relax and unwind.



*Fig. 2: Mountain tea, the perfect ingredient for a relaxing evening routine. The tea is traditionally prepared by boiling dried, unprocessed Siderites herbs in a pot of water and then often served with honey and lemon. Mountain tea is perfect for relaxation after a busy day before going to sleep.*

## Ethical Sourcing – Organic Raw Material from a Greek Farming Family

Mountain tea is derived from perennial *Sideritis* plants, which grow wild in rocky areas in altitudes of 400 m and more. The plant genus encompasses many different species, all of which have small hairy leaves and yellow flowers. Lipoid Kosmetik sources *Sideritis scardica* as raw material for Mountain Tea Pro from a family business based in the mountainous backland of Western Greece. The growth site of mountain tea is remote and protected from pollution of industry and urban centers. The farm started in 2012 with initially only 3 ha of land that, due to the high demand, has been expanded to about 40 ha that are mostly occupied with the production of herbal mountain tea.

Depending on the weather, the harvest of the mountain tea starts in April and can last until October. Thereby, the herbs are hand-picked, subsequently bundled and dried in an open-air drying chamber.

The business is fully organic, and the herb is grown without the use of pesticides or other artificial substances. In addition, the harvest and drying are performed manually with great care to maintain the highest nutritive profile and quality of the plant material. The cultivation of mountain tea in the rural region of Western Greece supports the local population by providing employment possibilities. Lipoid Kosmetik is proud to support the family and the local Greek business by purchasing the dried herbs that are the basis of Mountain Tea Pro.



**Fig. 3: Mountain Tea Pro is based on fully traceable plant raw material from the Greek mountains. The *Sideritis* plants that serve as raw material for Mountain Tea Pro are grown and harvested by a local farming family in Western Greece. The business and production process are certified organic and are fully traceable.**

## The Beauty Night-Time Routine & Tea – A Perfect Symbiosis

In the last years, consumers are increasingly focused on health and well-being. Beauty and self-care are becoming synonymous in consumers' minds as they look for a refuge from hectic lifestyles or simply a way to take better care of body and mind [6, 7].

The trend of relaxing and self-care is further developing to redefine the night-time beauty routine.

Self-care before bed is increasingly important and even if the term beauty sleep has been used for many years, recently there is scientific evidence to show that sleep is essential for health, well-being, productivity, memory, aging, and appearance [8]. Hence, night-time routines and their associated cosmetic products are about creating a moment to calm down, relax, encourage a good mood and ultimately facilitate sleep [7].

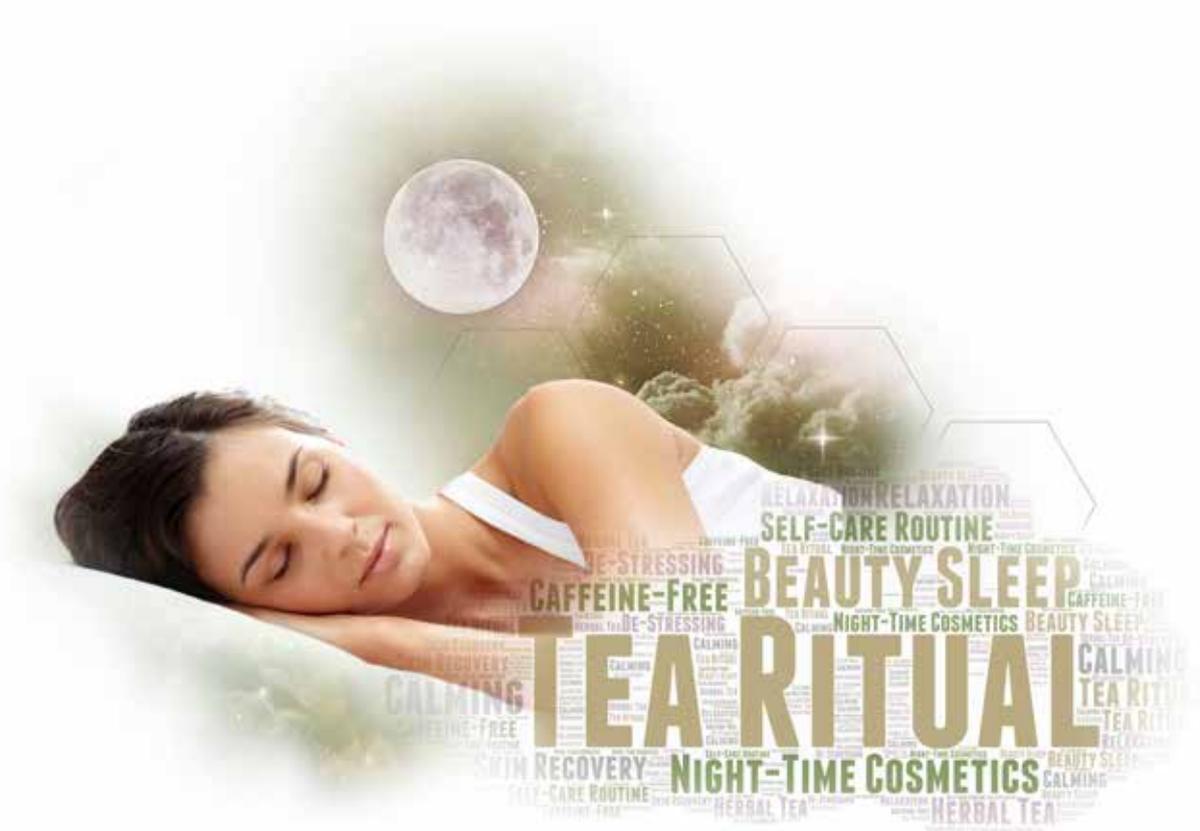
Here, tea rituals provide a great inspiration for mindful beauty routines. Green tea and matcha are industry favorites, however, these *Camellia sinensis* teas are stimulating not relaxing [9].

By contrast, herbal teas with their strong traditional values and de-stressing properties, perfectly connect to the growing self-care movement and slow living approach. They are increasingly

popular choices when the time comes to relax and unwind. Plants such as chamomile, lavender, valerian root, or lemon balm are frequently highlighted as key ingredients in relaxing and calming skin care products.

To enrich the night-time beauty routine, Lipoid Kosmetik presents Greek mountain tea as novel and innovative ingredient for relaxing, tea-infused beauty concepts. With its caffeine-free, calming and protective qualities, Mountain Tea Pro is the ideal ingredient to accompany consumers into a healthy and regenerative beauty sleep routine.

**Emotional night-time cosmetics are about creating a moment to calm down, relax and facilitate sleep [7].**



## Mode of Action | An Innovative Night-Time Ingredient from an Ethical Source

Lipoid Kosmetik makes use of the caffeine-free mountain tea herb *Sideritis scardica* to create a novel and innovative Herbasol® Pro extract. Mountain Tea Pro is ideal for the self-care routine in the evening and provides overnight skin protection and regeneration.

The raw material is of organic quality and sourced from a local Greek farming family, which ensures a traceable and sustainable source. Taken together, Mountain Tea Pro perfectly integrates tea-inspired beauty concepts with activity-proven user benefits.



*Fig. 4: Mountain Tea Pro — The Night-Time Remedy for Skin Recovery. The raw material for Mountain Tea Pro is derived from a Greek farming family and is of organic quality. Tea is associated with unwinding, calming and mood-enhancing effects, which perfectly fits to a relaxing self-care beauty routine. Mountain Tea Pro lacks stimulating compounds while being rich in antioxidative phytochemicals making it well suited to support the nightly beauty sleep. Innovative consumer benefits, e.g. skin protection against oxidative stress and restoration of the skin's antioxidative potential complement the features of Mountain Tea Pro and make it the perfect ingredient for regenerative night-time cosmetics.*

# Phytochemical Analysis | A Caffeine-Free Tea Rich in Protective Compounds

## Objective

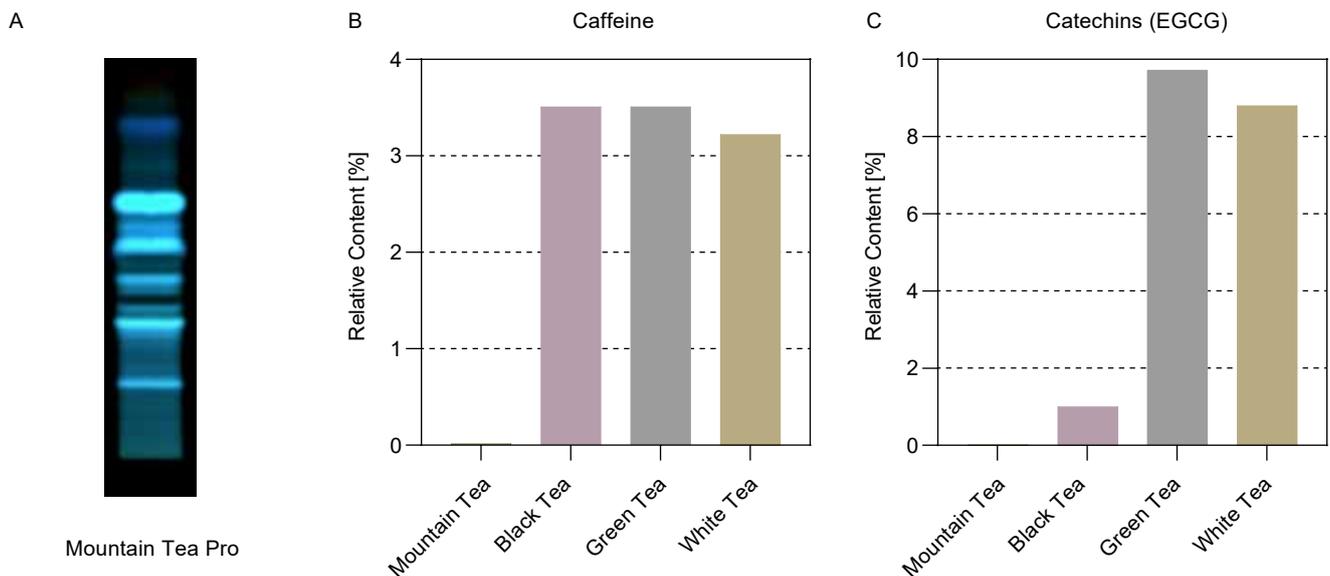
- To highlight secondary metabolites in Mountain Tea Pro with protective and regenerative function.
- To show the absence of secondary metabolites in mountain tea with potentially energizing, stimulating, or activating function (notably caffeine and catechins, which are known to trigger the skin's energy metabolism) <sup>[10]</sup>.

## Technique

A high-performance thin-layer chromatography (HPTLC) analysis was performed to visualize valuable flavonoids and phenolic compounds.

A high-performance liquid chromatography (HPLC) analysis of dried material was performed, and relative content of caffeine and catechins (EGCG) was quantified.

Packed with Protective Compounds and Free from Stimulating Phytochemicals



*Fig. 5: Mountain Tea Pro is densely packed with protective and regenerative compounds and lacks stimulating caffeine and catechins. (A) The HPTLC analysis shows an abundance of phenolic acids and flavonoids (various fluorescent bands) in Mountain Tea Pro. (B, C) Caffeine and catechins are major energizing metabolites. Catechins, represented here by EGCG, are highest in concentration in green and white tea, whereas black tea has substantially fewer due to its oxidation and polymerization during the fermentation process. Mountain tea lacks stimulating metabolites, thus, is perfect for calming skin treatments.*

## Result

Mountain Tea Pro has a high-value flavonoid and phenolic compound profile (Fig. 5 A).

In contrast to classical tea varieties, however, mountain tea does not contain stimulating metabolites such as caffeine and catechins (Fig. 5 B, C).

## Conclusion

Mountain Tea Pro contains protective and regenerative phytochemicals that support recovering night care.

At the same time, Mountain tea lacks stimulating compounds such as caffeine and catechins, hence is ideal for the calming, relaxing and de-stressing night-time routine.

Mountain Tea Pro is rich in compounds responsible for protection and regeneration while lacking stimulating and energizing phytochemicals, making it ideal for night-time cosmetics.

## *in vitro* Activity | Mountain Tea Pro Protects from Oxidative Stress Day & Night

### Objective

- To show that Mountain Tea Pro provides direct antioxidant activity.
- To show that Mountain Tea Pro additionally activates the skin's cellular antioxidative defense system.

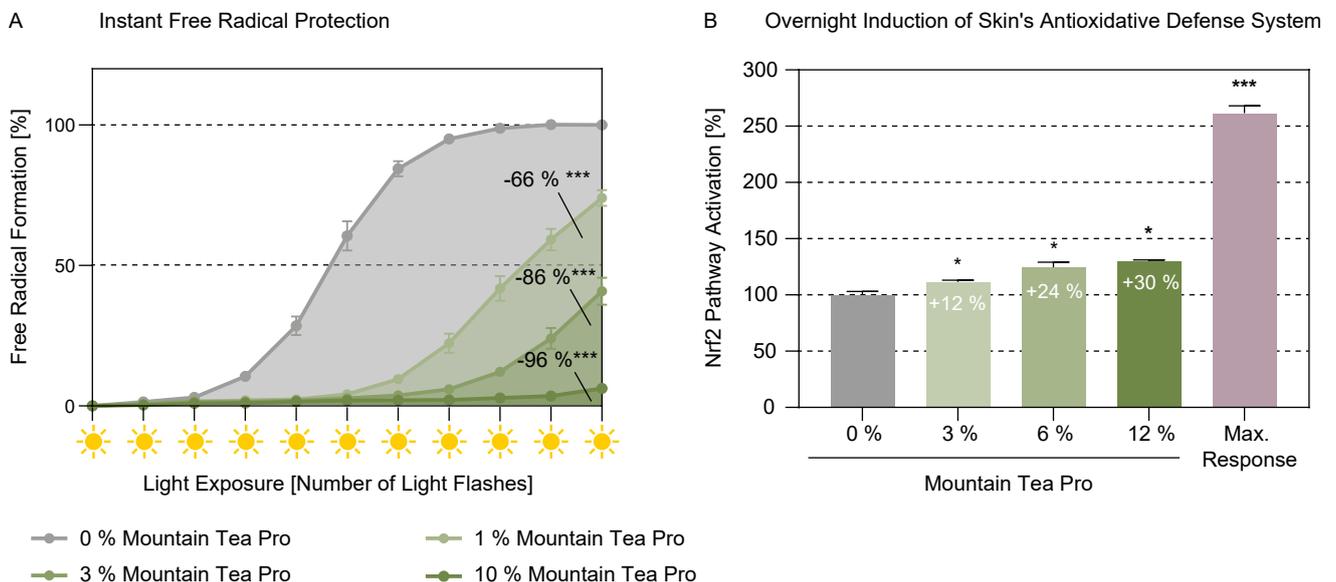
### Technique

The LUCS (Light-Up Cell System) assay allows for quantitative monitoring of free radicals in live keratinocytes. Light exposure in the presence of a photo-inducible biosensor triggers free radical production and eventually fluorescence <sup>[11]</sup>.

The Nrf2 reporter gene assay is a live cell approach that measures the ability of a compound to activate ARE (Antioxidant Response Element), the binding site of the nuclear transcription factor Nrf2. This pathway is well-known as natural antioxidant cell defense and increases the skin's capacity to adapt to oxidative stress <sup>[12]</sup>.

### Study Details

<b>Design</b>	<i>in vitro</i> live cell culture assays
<b>Test Panel</b>	Human keratinocytes (HaCaT cells)
<b>Test Substances</b>	Serial dilutions of Mountain Tea Pro 25 $\mu$ M sulforaphane as positive control (Nrf2 assay)
<b>Application Frequency</b>	LUCS assay: Preincubation with Mountain Tea Pro for 1 h followed by light exposure. Nrf2 assay: Overnight incubation with Mountain Tea Pro followed by Nrf2 pathway activity measurement.
<b>Endpoints</b>	LUCS assay: Neutralization of intracellular free radicals. Nrf2 assay: Activation of Nrf2 pathway, which is the skin's antioxidative defense system.



**Fig. 6: Mountain Tea Pro strengthens the skin's own antioxidative defense – directly and indirectly.** (A) Kinetic data of real-time free radical production upon light stress. The incubation with 1 % Mountain Tea Pro was sufficient to reduce the number of free radicals by 66 %. (B) Increase of Nrf2 downstream gene activation. Overnight incubation with Mountain Tea Pro stimulated the synthesis of antioxidative defense genes by 12-30 % depending on the concentration. The maximal response of the system is shown with the positive control (25  $\mu$ M sulforaphane). Both tests were performed as two independent experiments, each with triplicates; Mean  $\pm$  SEM; Student's t-test versus untreated; \* =  $p < 0.05$ ; \*\*\* =  $p < 0.001$ .

## *in vitro* Activity | Mountain Tea Pro Protects from Oxidative Stress Day & Night

### Result

Mountain Tea Pro showed a strong antioxidant protection even at low concentrations (Fig. 6 A). The effective concentrations (EC values) were calculated.

- It prevented 90 % of intracellular free radicals when used at 1.7 %
- It prevented 66 % of intracellular free radicals when used at 1.0 %.
- It prevented 50 % of intracellular free radicals when used at 0.7 %.

Mountain Tea Pro additionally induced antioxidant countermeasures through activation of the Nrf2 pathway (Fig. 6 B). Nrf2 is a master regulator activating intrinsic antioxidant enzymes and proteins in the skin.

### Conclusion

Mountain Tea Pro provides direct and instant powerful antioxidant protection as it neutralizes light-induced free radicals.

In addition, Mountain Tea Pro activates the skin's intrinsic stress defense system overnight. This will help to load the skin with antioxidant defense proteins, thus, indirectly adds a protective and regenerative activity. Hence, Mountain Tea Pro is an ideal ingredient for preventive night care that can be applied at bedtime to wake up with optimally prepared skin in the morning.

**Mountain Tea Pro directly provides antioxidant protection to the skin by scavenging free radicals.  
Mountain Tea Pro reduces negative effects of oxidative stress by activating the skin's own defense system.**

## *ex vivo* Activity | Mountain Tea Pro Restores the Skin's Antioxidative Potential

### Objective

- To show that Mountain Tea Pro regenerates the skin's antioxidative potential, which is weakened by light exposure during the day.

### Technique

A skin antioxidative potential (SAP) assay was performed on *ex vivo* skin. Thereby, the skin is exposed to a solar simulator. This induces free radicals inside the skin and eventually depletes the skin's antioxidative potential. A compound with effective antioxidant activity, and able to penetrate, restores the skin's antioxidative potential. This can be measured by electron spin resonance (ESR) spectroscopy. In brief, the skin is labelled with a semi-stable free radical that is reduced by the antioxidants inside the skin <sup>[13]</sup>.

### Study Details

<b>Design</b>	<i>ex vivo</i> assay
<b>Test Panel</b>	Pig skin (ear) biopsies obtained from slaughter leftovers
<b>Test Substances</b>	Mountain Tea Pro
<b>Application Frequency</b>	Single application of Mountain Tea Pro after sunlight exposure. Measurement of the skin's antioxidative potential before and after light exposure as well as 10 minutes after product application (regeneration phase).
<b>Endpoint</b>	Regeneration of the skin's antioxidative potential.

## ex vivo Activity | Mountain Tea Pro Restores the Skin's Antioxidative Potential

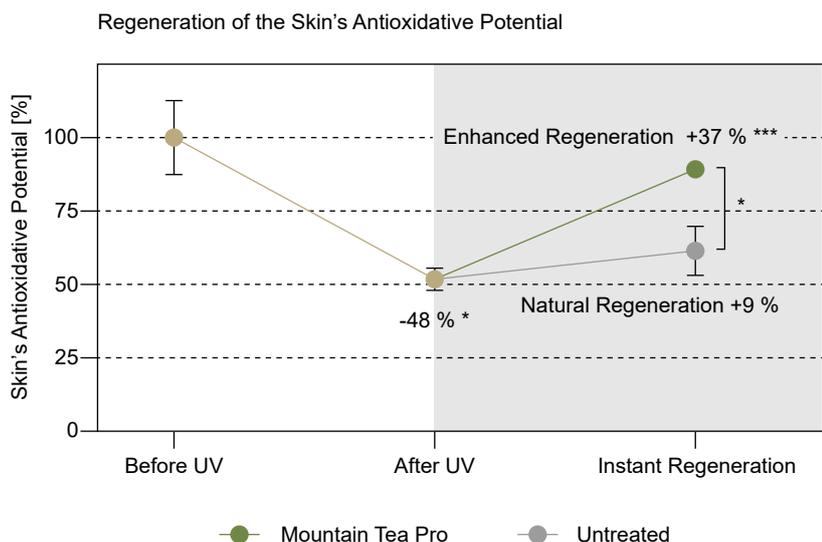


Fig. 7: Mountain Tea Pro restores the skin's exhausted antioxidative potential. Sunlight exposure weakened the skin's antioxidative potential by 48 %. The subsequent application of Mountain Tea Pro in the dark (gray shaded area) rapidly reinvigorated the skin's capacity to cope with oxidative stress. Determination of the skin's antioxidative potential (SAP) by electron spin resonance (ESR) spectroscopy in an ex vivo skin model. N = 3-4; Mean +/- SEM; Student's t-test versus baseline and between treatments; \* =  $p < 0.05$ ; \*\*\* =  $p < 0.001$ .

### Result

Sunlight exposure reduced the skin's antioxidative potential by 48 %. This potential is restored instantly by 9 % (natural regeneration). The application of Mountain Tea Pro amplified this process and increased the antioxidative potential by 37 % (enhanced regeneration). The skin's ability to fight oxidative stress is, thus, restored by the application of Mountain Tea Pro (Fig. 7).

### Conclusion

Repeated sun exposure depletes the skin's intrinsic antioxidative potential over the day. This creates a need for regeneration in the absence of sun light during the night. Mountain Tea Pro represents the perfect ingredient for a successful replenishment.

**Mountain Tea Pro restores the skins intrinsic antioxidative potential during the night.  
Mountain Tea Pro is the perfect ingredient for regenerative night care.**

### References

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## Product Details

### Product Characteristics

- Substantiated extract that belongs to the Herbasol® Pro line.
- Glycerinic-aqueous extract from organic mountain tea herb (*Sideritis scardica*, *Lamiaceae*).
- COSMOS-certified raw material. 100 % natural origin and 18 % organic origin.
- Preservative-free/ self-preserving
- Amber liquid

### Recommended Applications

- Tea-infused or tea ritual-inspired beauty
- De-stressing and calming wellness applications
- Relaxing evening care
- Mood-enhancing self-care
- Beauty sleep supporting creams, masks, or serums
- Regenerating night care and night repair

### Recommended Usage

- Recommended use level: 1-5 %
- Final cosmetic products with Mountain Tea Pro can be claimed as e.g., 'contains Swiss-manufactured ingredient'.

### Formulation Recommendations

- Mountain Tea Pro is perfectly suitable for o/w, w/o emulsions, as well as water-based products, e.g., shower gels, tonics etc. We recommend adding the extract after emulsification below 40 °C or during cold processing at any suitable step. The extract has a mild, aromatic, slightly citric scent which is not perceptible at ≤ 1% use level. Even at higher use levels, the odor is barely noticeable. The extract has a yellow to light amber color. At a use level of ≤ 1% there's no coloration of emulsions or water-based products. A yellow hue might appear in water-based products with increasing levels.
- For detailed information, please ask for our report 'stability and formulation recommendations' (info@lipoid-kosmetik.com).

### Sustainability - Corporate Level

- Award-winning company and top 1 % supplier according to the EcoVadis sustainability rating
- Efficient energy consumption and reduction process
- Climate-neutral according to Scope 1/2; CO<sub>2</sub>-offset with myclimate Gold Standard
- Sustainable use of biodiversity
- Green product portfolio with documented naturalness and sustainability information
- Certified according to the RSPO Supply Chain Standard, Mass Balance
- For more details, please visit the [sustainability section](#) on our website.

### Sustainability - Process Level

- Sophisticated supplier/ raw material qualification system against a comprehensive set of sustainability criteria.
- Energy-efficient and environment-friendly cold process technology.
- Controlled under cosmetic GMP ISO 22716.
- Readily biodegradable product from 100 % renewable sources.
- Excellent material and waste management programs.

### Sustainability - Raw Materials

#### Mountain Tea Herb

- Local family business in Greece
- Traceable to the farmer
- No use of fertilizer or pesticides
- Hand-picked
- Sun-dried
- Organic, [Sustainability Score 3/3](#)

#### Glycerin

- 100 % natural origin, 100 % non-GMO, 100%-palm-free
- Vegetables cultivated in EU

## Regulatory *(Further regulatory documents upon request)*

Origin of the plant material	Greece (not part of the specification)
INCI	Glycerin, Aqua (Water), Sideritis Scardica Flower/Leaf/Stem Extract
EU Cosmetic Regulation	The product complies to the EU Cosmetic Regulation (EC) No 1223/2009.
China INCI	The INCI Sideritis Scardica Flower/Leaf/Stem Extract is not listed in the current Inventory of Existing Cosmetic Ingredient China (IECIC).
EU REACH	The product, i.e. its substances, conforms to the Regulation (EC) No 1907/2006.
China REACH	The ingredient Sideritis Scardica Flower/Leaf/Stem Extract is not listed in the current Inventory of Existing Chemical Substances China (IECSC).
Safety	We affirm to the best of our knowledge that this product is non-toxic, safe and suitable for use in skin and hair cosmetics at the recommended use level.
Allergen	No allergens (as per current EU Cosmetic Regulation: <10 ppm for leave-on/<100 ppm for rinse-off).
CMR	The product is not known to contain substances classified as CMR under the Regulation (EC) No 1272/2008 (CLP).
ABS	The product complies with the requirements of Access and Benefit Sharing (ABS) as derived from the Nagoya Protocol.
COSMOS	The product is certified as 18.3% organic by Ecocert Greenlife according to the COSMOS Standard. 100% natural origin of total.
ISO 16128	Mountain Tea Pro is purely natural. It has a Natural Origin Index (Ino) <sup>1</sup> of 1.  <sup>1</sup> The calculation is based on the Standard ISO 16128, which provides guidelines on definitions and criteria for natural and organic cosmetic ingredients and products.
Halal	The product conforms to HALAL requirements.
Vegan	The product can be used in vegan formulations.
Non-GMO	The product is non-GMO. It meets the non-GMO standards set by Regulation (EC) No 1829/2003 and EC (No) 1830/2003.
Palm oil	The product does not contain palm (kernel) oil or its derivatives.



## Sustainability *(Please refer to page 11 for detailed information)*

Corporate	Top 1 % supplier according to the EcoVadis sustainability rating.
Process	Sophisticated supplier/ raw material qualification system and sustainable process technology.
Raw Material	 3/3 Sustainability Score This product is developed and manufactured in Switzerland.

For more information: [www.lipoid-kosmetik.com/en/sourcing-raw-material](http://www.lipoid-kosmetik.com/en/sourcing-raw-material)

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