

UL introduces the **Supplier Forum**, a new and exciting way to learn about trends from industry experts.

Urban Lifestyle



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Urban Lifestyle



In 2030 more than 60% of total population will
live in big cities

Urbanization will change lifestyle

New demand for cosmetics with increase
in wellbeing

Cosmetic Active Concepts

1. Hectic, stressed lifestyle → fighting skin irritations induced by glucocorticoids
2. Exhaustive lifestyle → boosting energy levels
3. Lack of sleep → avoiding skin aging by improved protein folding
4. Digital dependence → protection against blue light
5. Feel good → look good with phyto-endorphins
6. Health & eco-consciousness → supplementing skin care for a vegan lifestyle



1. Hectic, Stressed Lifestyle and Skin



What is Stress?



fight



or

flight

Acute stress

- Body's reaction to demanding or dangerous situations („fight or flight“)
- Short term
- Acute stress is thrilling and exciting and body usually recovers quickly
- Adrenaline

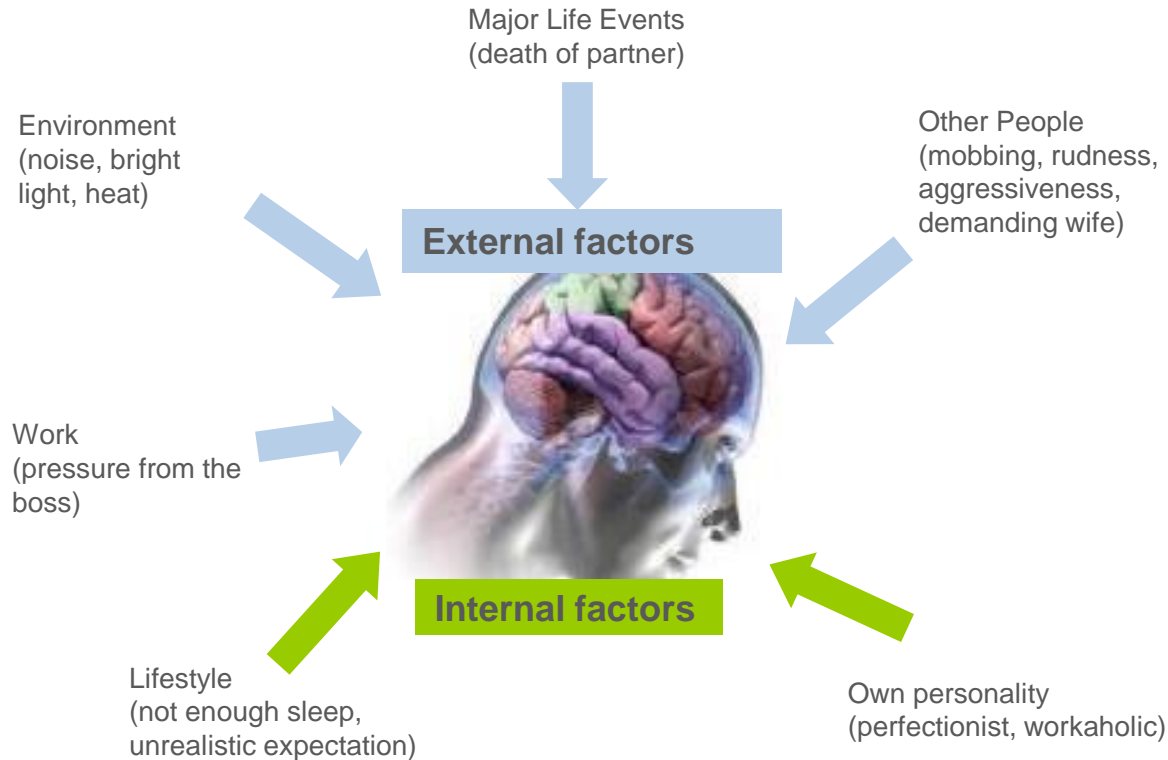
What is Stress?



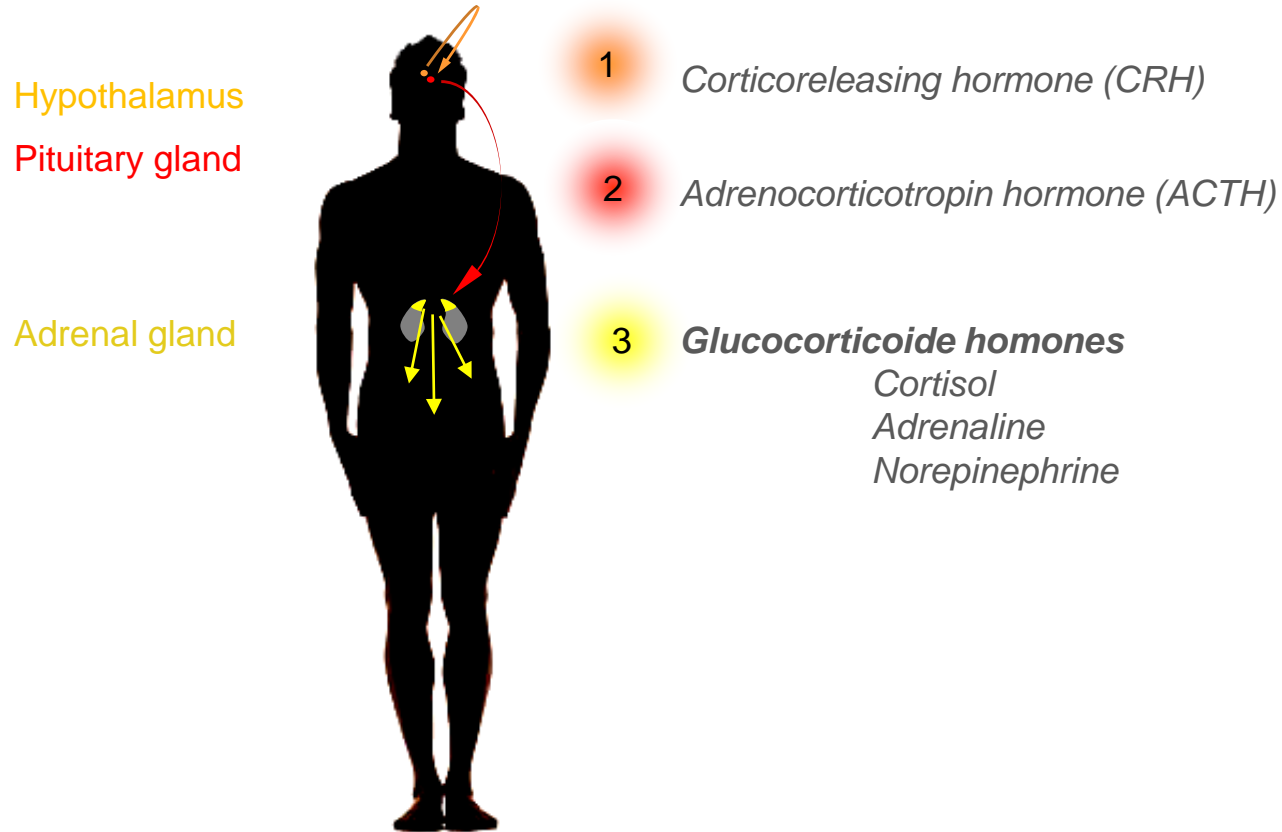
Chronic stress

- Based on stress factors that impact over a longer period
- Always bad and has negative effects on the body and the skin
- Glucocorticoïdes (Cortisol)

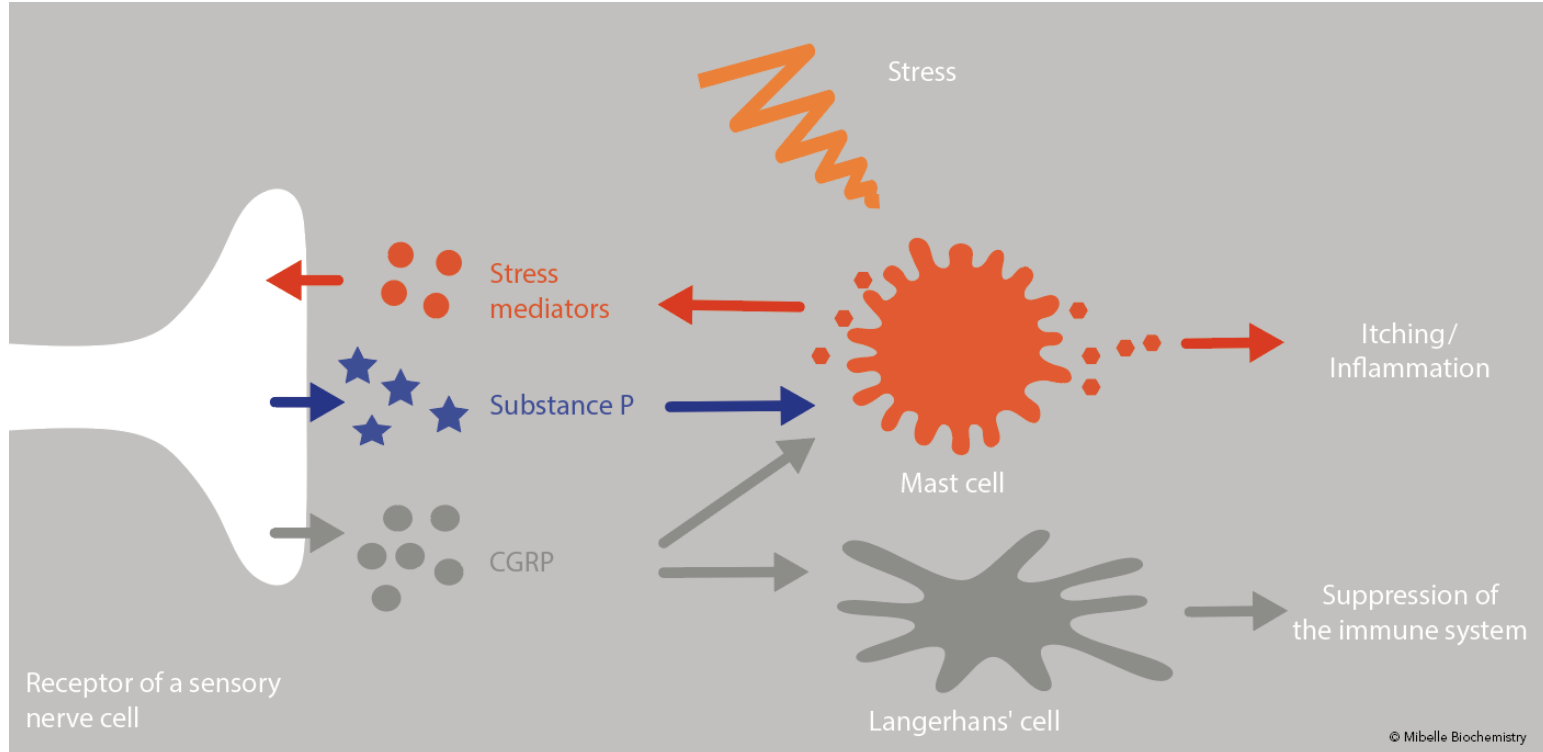
Sources of Psychological Stress Factors



Stress and the Endocrine System



Biochemical Effects of Stress on Skin Cells



Biochemical Reactions of Stress on Skin Cells

Summary

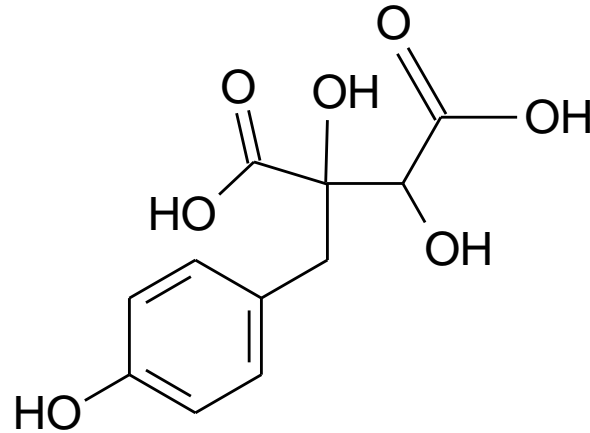
- Psychological stress releases hormones from different glands
- These hormones (glucocorticoids) have negative effects on the function of different skin cells
- Chronic stimulation of these biochemical reactions will result in skin disorders



Search for cosmetic ingredients to reduce skin reactions induced by psychological stress

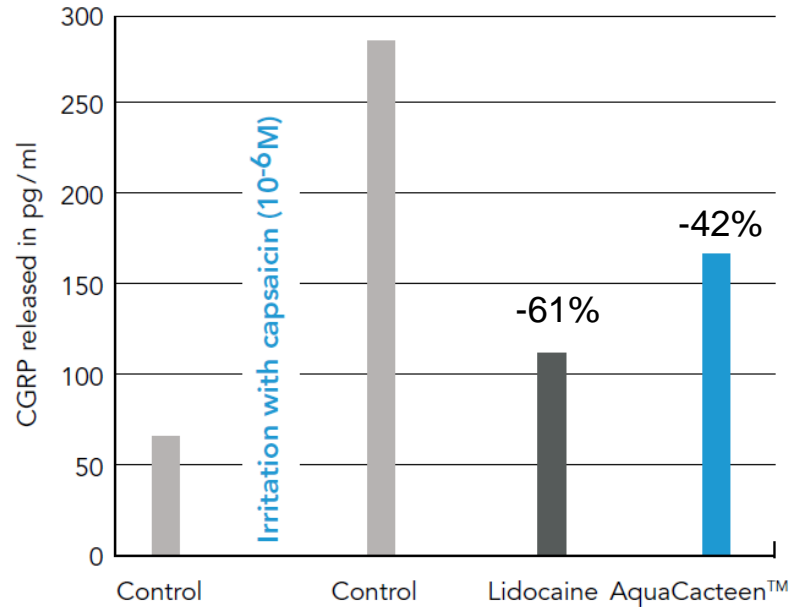
Cosmetic Treatment of Stressed Skin

- Properties of a cactus extract (AquaCacteen™)
- *Opuntia ficus indica* is rich in piscidic acid



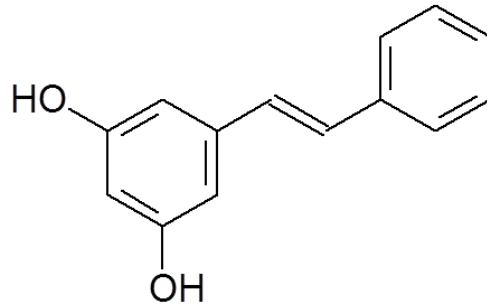
Molecular formula = C₁₁H₁₂O₇

Opuntia Extract: Reducing Stress Signals

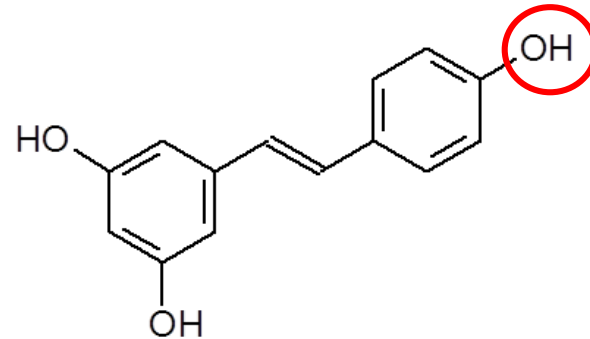


Cosmetic Treatment of Stressed Skin

- Extract of the Swiss stone pine (Pinolumin™)
- Pinosylvin is a stilbenoid (such as resveratrol) which has strong antioxidant and anti-inflammatory activity

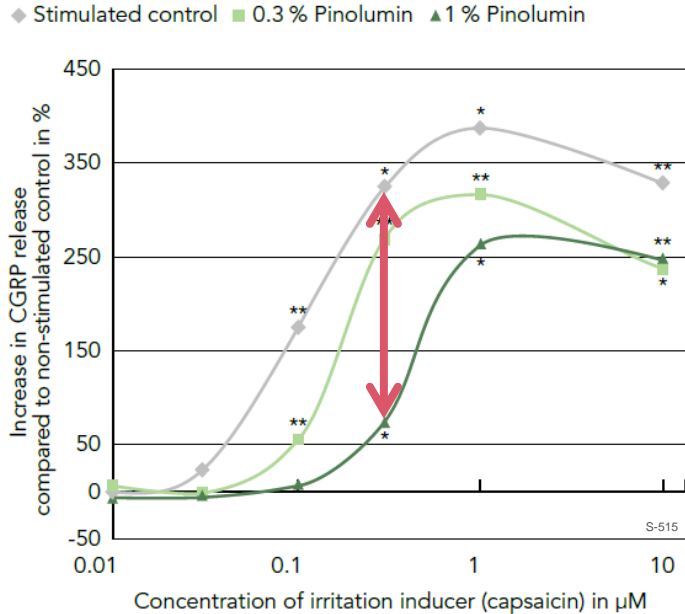


Pinosylvin



Resveratrol

Inhibition of Neuro-Inflammation: Release of CGRP



* $0.001 < p < 0.01$ versus non-stimulated control
** $p < 0.001$ versus non-stimulated control



Concentration-dependent inhibition of CGRP release upon capsaicin stress.

2. Exhaustive Lifestyle

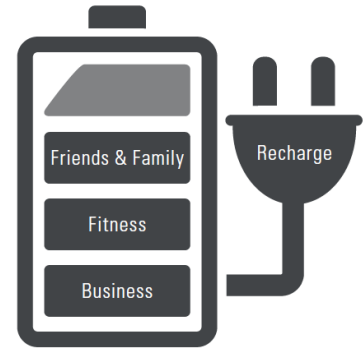
Boosting Energy Levels



Energy

The Key to Keep Pace, Power & Pure Skin Beauty

- The modern lifestyle is an **exhaustive** lifestyle



Energy

The Key to Keep Pace, Power & Pure Skin Beauty

- From aesthetic beauty to **active beauty**
- **Athleisure**
- **Augmented fitness**: strong & beautiful

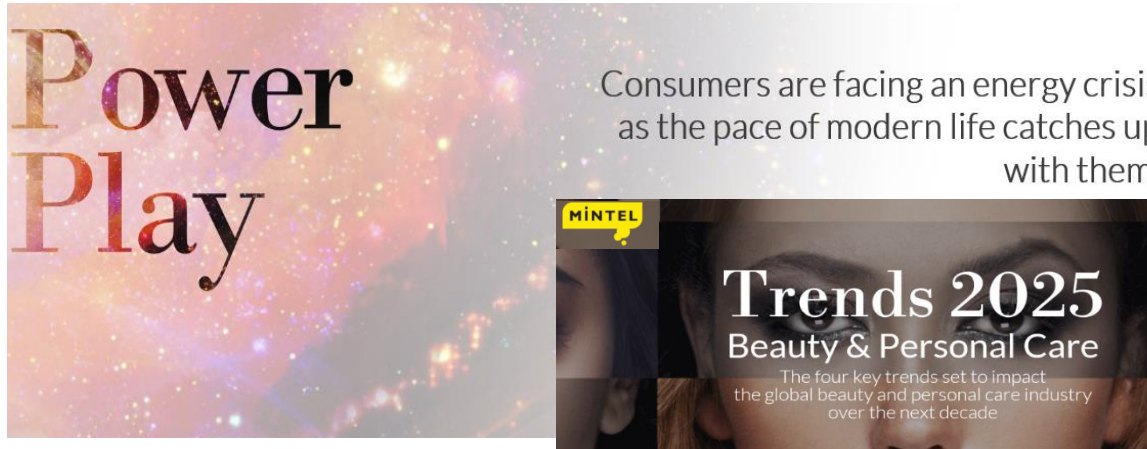


Trend 'Power & Energy'

Consumers want to compensate their exhaustive lifestyle

The aim is to boost energy levels to keep skin healthiness and glow

The cosmetic market seeks for energy-centric formulations



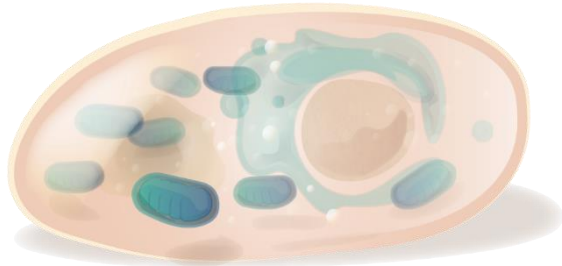
Overcoming the Energy Crisis



energy boosters
repower ingredient
fatigue-fighting products
skin burnout treatments
activating rechargers

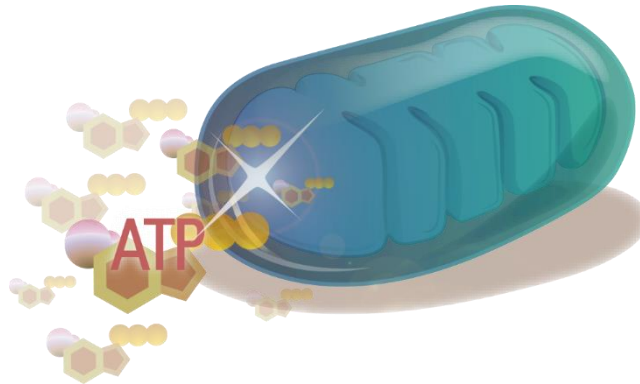
Mitochondria Activation

The Key to Energize the Skin for a 'Glow of Youth'

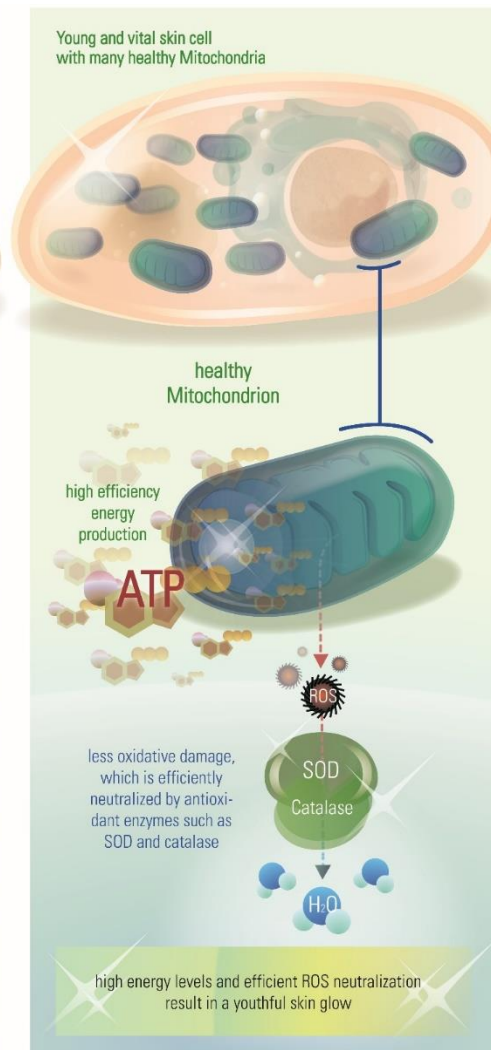
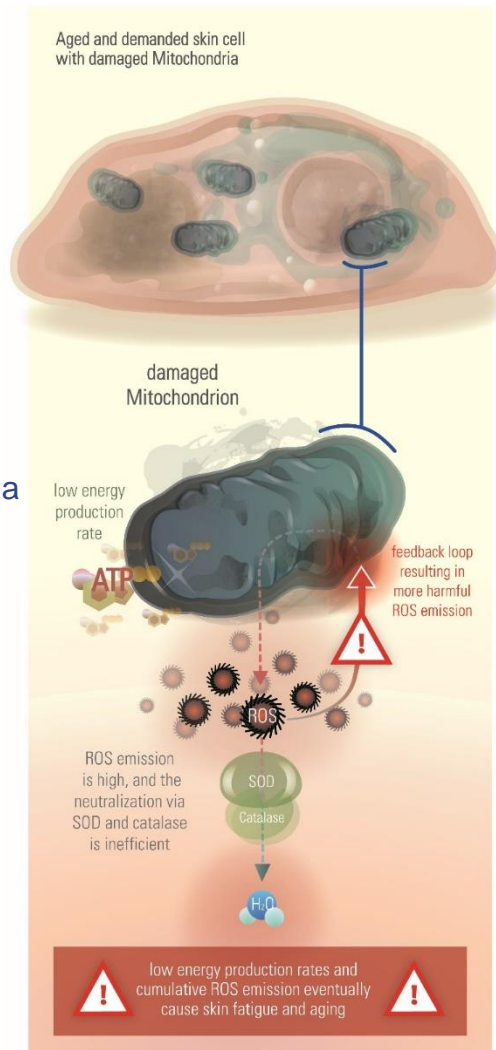


The energy of cells is produced in mitochondria.
Cells that require a lot of energy have higher numbers of mitochondria.

Energy production is a combustion reaction that yields ATP, the energy currency of life.
ATP fuels all kind of cellular activities.



- Energy production causes ROS emission
- Aged/ damaged mitochondria
 - > few energy but lot of ROS
 - > skin aging



- Vital mitochondria
 - > lot of energy but few ROS
 - > youthful skin glow

Product Recommendation



HerbaGlow® NRG – The Power Unit for your Skin

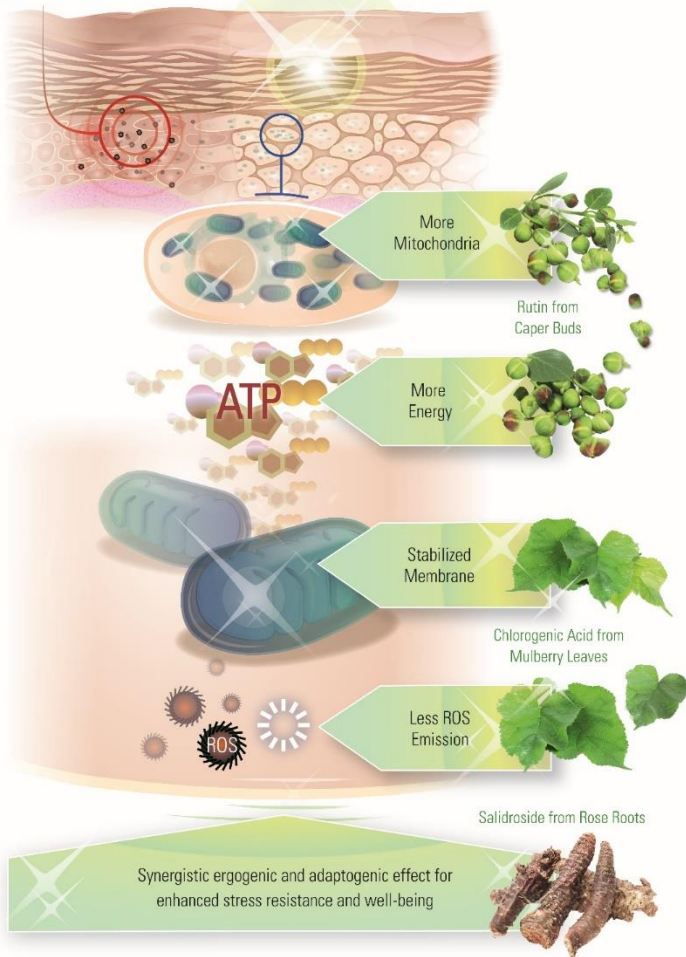
- HerbaGlow NRG is a COSMOS-approved three-component active ingredient, which
 - boosts the skin's **energy supply**
 - reduces oxidative skin damage
 - enhances skin vitality and resistance
 - improves **skin glow and radiance**
- HerbaGlow NRG thus suits for concepts such as energizing, recharging, youth-activating and anti-aging products.





skin fatigue and aging

HerbaGlow® NRG application



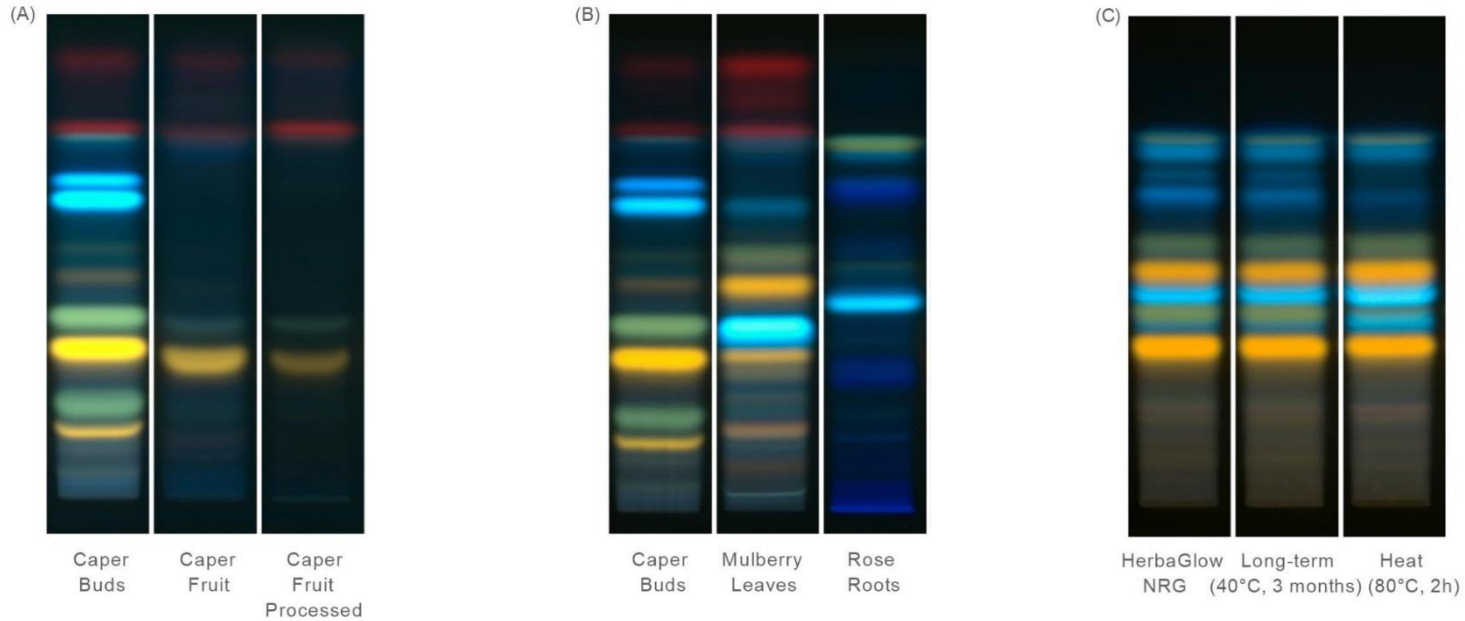
Mode Of Action

HerbaGlow® NRG provides

- ✓ Increased **power**
- ✓ More **protection**
- ✓ Better **performance**

HerbaGlow NRG recharges tired-looking skin and confers a look of perfection and happiness!

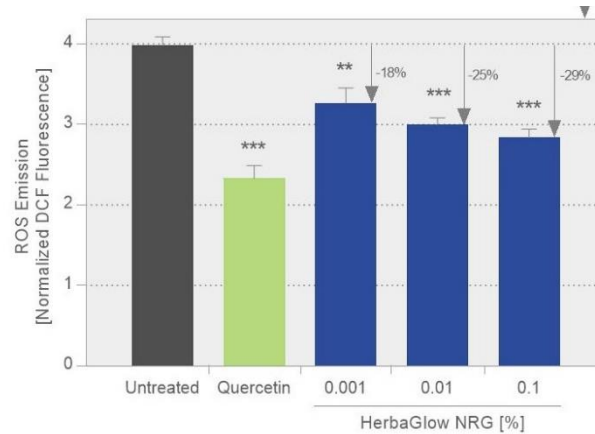
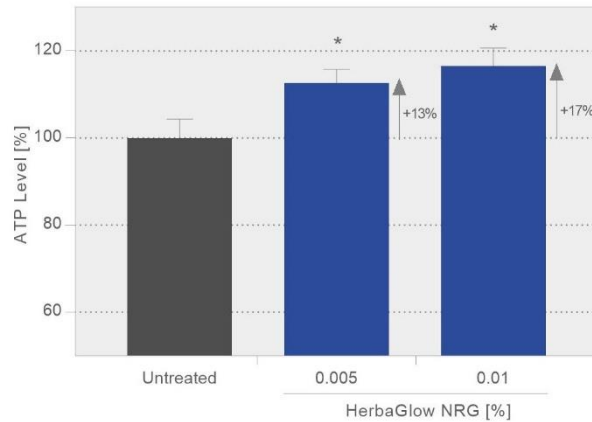
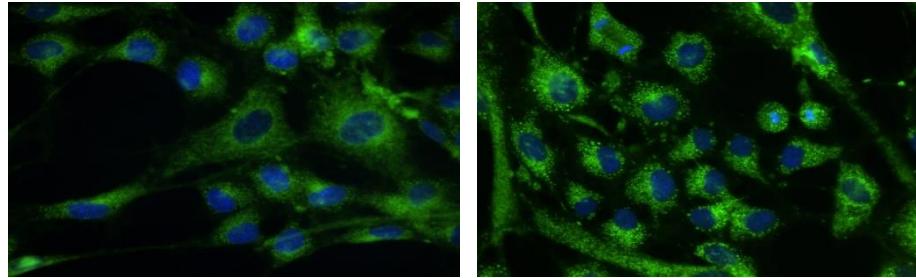
Phytochemical Analysis



- Based on optimal plant material (caper flower buds)
- Substantial amount of various flavonoids and phenolic compounds
- Stable under challenging storage conditions

in vitro Activity

More Mitochondria / More Energy / Less by-products



in vivo Activity

More Energy for a Better Glow

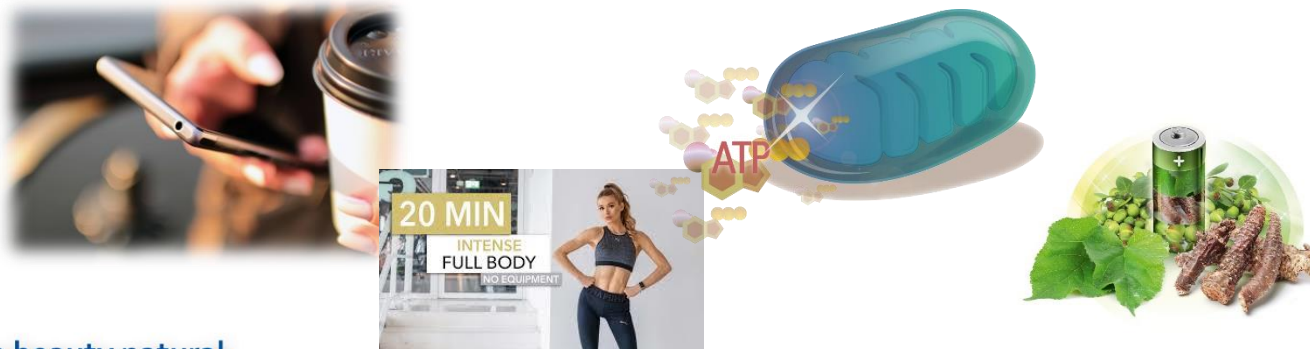
- 1% HerbaGlow NRG improved the facial skin **radiance** measurably, visibly and noticeably:
 1. Improved skin **uniformity** (i.e. smoothness, texture, homogeneity, imperfections/ spots)
 2. Improved skin **glow** (i.e. brightness and youthful appearance)
 3. Improved skin **color**
 4. Improved physical and psychological **well-being**
- In essence, HerbaGlow NRG recharges and revives the skin and allows us to face the stresses and strains of an urban lifestyle with calmness – and attractive skin.



Take Home Message

Trend ‚Power & Energy‘

- The urban lifestyle is an **exhaustive** lifestyle
- Athleisure, **active** beauty, augmented fitness as additional drivers
- Urban consumers are looking for **energizing ingredients**
- **Mitochondria activation** is a promising strategy to energize the skin
- HerbaGlow NRG fights low energy levels and restores the skin's **natural glow**
- It thus suits for e.g. energizing, recharging, or youth-activating concepts.



3. Lack of Sleep



Sleep: The #1 Underrated Public Health Issue

Improve sleep

Consumers acknowledge that lack of sleep has a detrimental effect on appearance. Stress affects both the ease and quality of sleep and brands need to develop **product to address this**.

“
53%

of US Millennials say that they
are actively focusing on their
sleep
Marketing Health to Millennials –
US, May 2018

”

37%

of UK adults in work
struggle to get enough
sleep during the working
week

[The Working Life - UK,
January 2018](#)

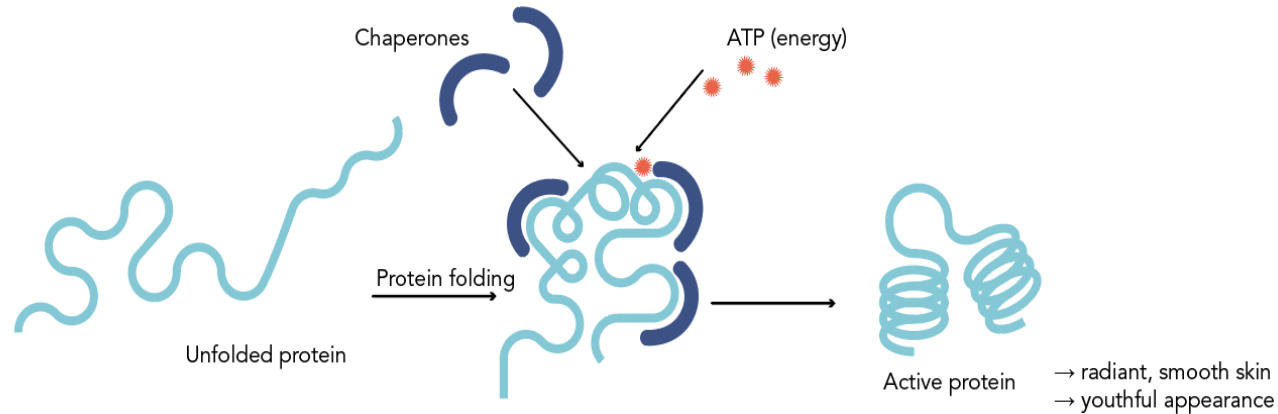
Source: Mintel

Lack of Sleep is Part of our Lives



- In our modern society, many people do not achieve the recommended level of 7-9 hours of sleep per night.
- A hectic lifestyle, stress and poor sleep hygiene prevent both the quality and quantity of sleep that the body needs → tired appearance of the face.
- Young individuals can recover quickly from this lack of adequate rest.
- But: prolonged sleep deprivation acts as a **general aging factor** like UV-irradiation or oxidative stress, which leads to **long-term negative effects** on the skin.

Protein Folding



- Protein production (e.g. collagen) starts by activating a certain gene which encodes the plan to build an amino acid chain.
- This chain has to be correctly folded to perform the intended function (e.g. fortify the skin matrix).
- Helper proteins (**chaperones**) assist in this folding process → essential for a correctly folded active protein.
- For this step, a lot of **ATP** (cell energy) is needed.

Glacier Expedition to Discover new Microorganisms



The expedition took place on a glacier close to Zermatt.



The goal was to discover microorganisms that grow there despite the harsh conditions.

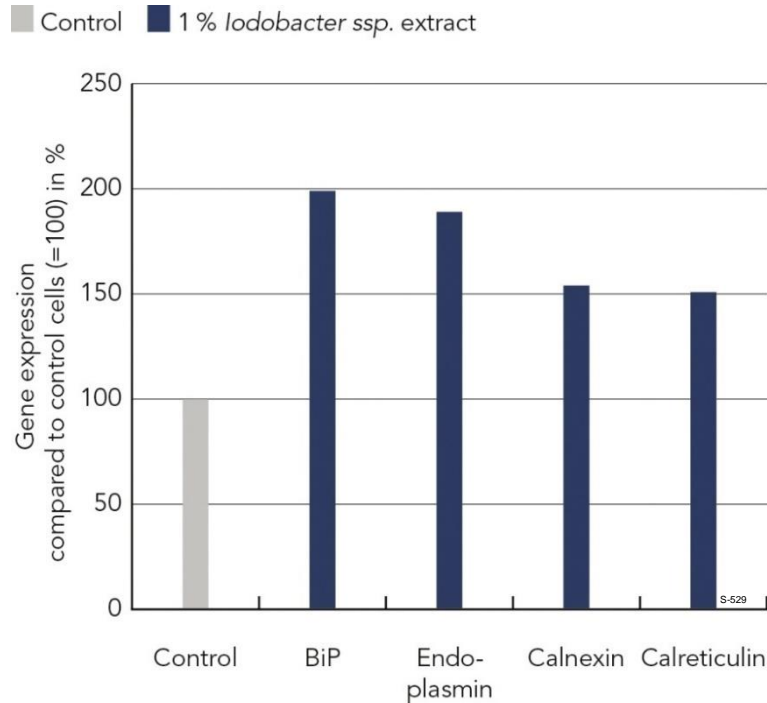


Due to the constant shrinking of glaciers in the past few decades, microbes that were previously hidden below a permanent layer of ice have now become accessible.

Sustainable Production of IceAwake™ in Bioreactors Followed by Spray Granulation



Improving Chaperone Expression in Aged Fibroblasts



BiP: Main chaperone that is responsible for the unfolded protein response in the ER

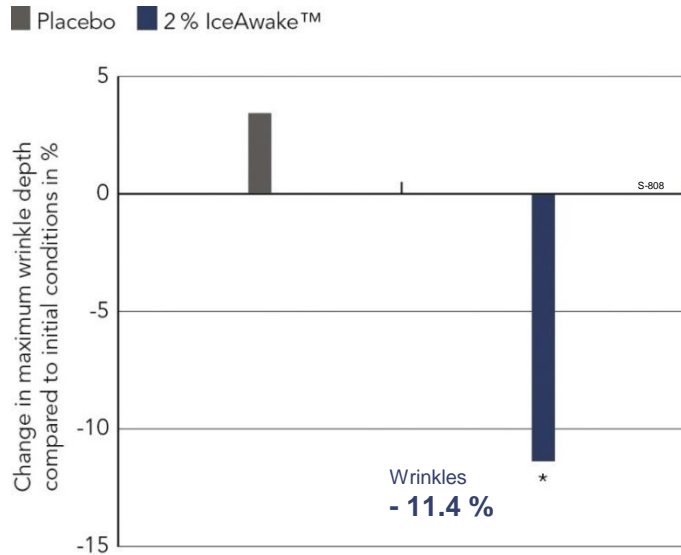
Endoplasmic reticulum: Critical role in protein folding

Calnexin and Calreticulin: Important for the protein quality control, prevent the release of misfolded proteins from the ER

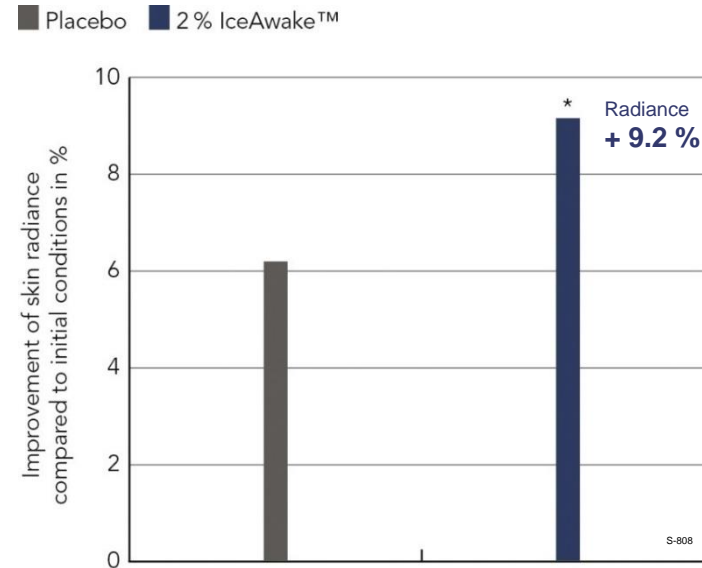


BiP and other important factors for protein folding were upregulated (BiP +100 %) → Indication that IceAwake™ could promote protein folding to be carried out more efficiently despite aging.

IceAwake™ Improves Wrinkle Depth and Radiance Despite a Hectic Lifestyle

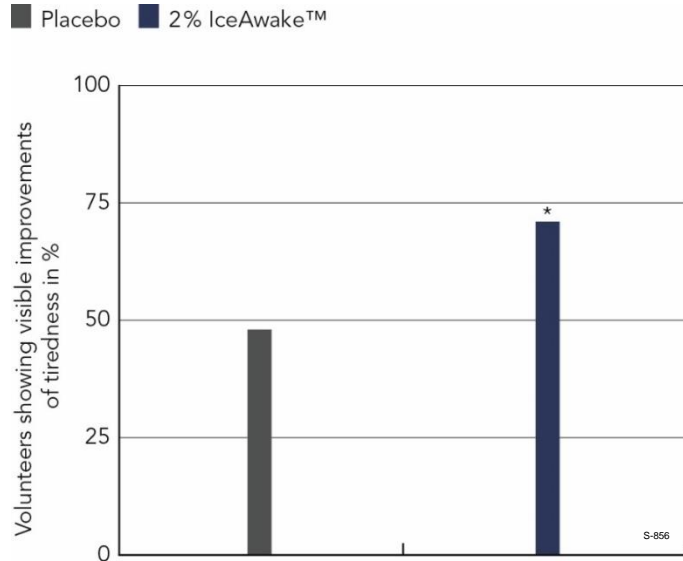


*p<0.05 versus initial conditions and placebo



*p<0.05 versus initial conditions and placebo

Decrease in Tired Appearance after 14 Days



*p<0.05 versus initial conditions



Treatment with 2 % IceAwake™ significantly **reduced visible tiredness** in **71 %** of the volunteers as assessed by clinical-grade evaluation.

4. Digital Dependence

Protection Against Blue Light

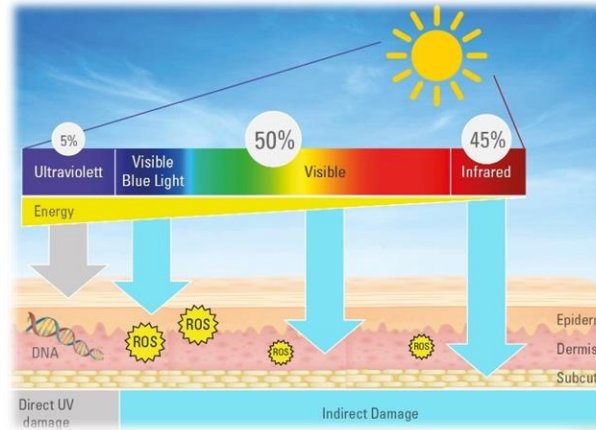


We make beauty natural.

Trend 'Blue Light Protection'

Digital Dependence Necessitates Novel Skin Care

- Blue light is part of the **natural sunlight**
- Today, much of the blue light we are exposed to comes from **electronic devices**
- Blue light triggers premature skin aging.

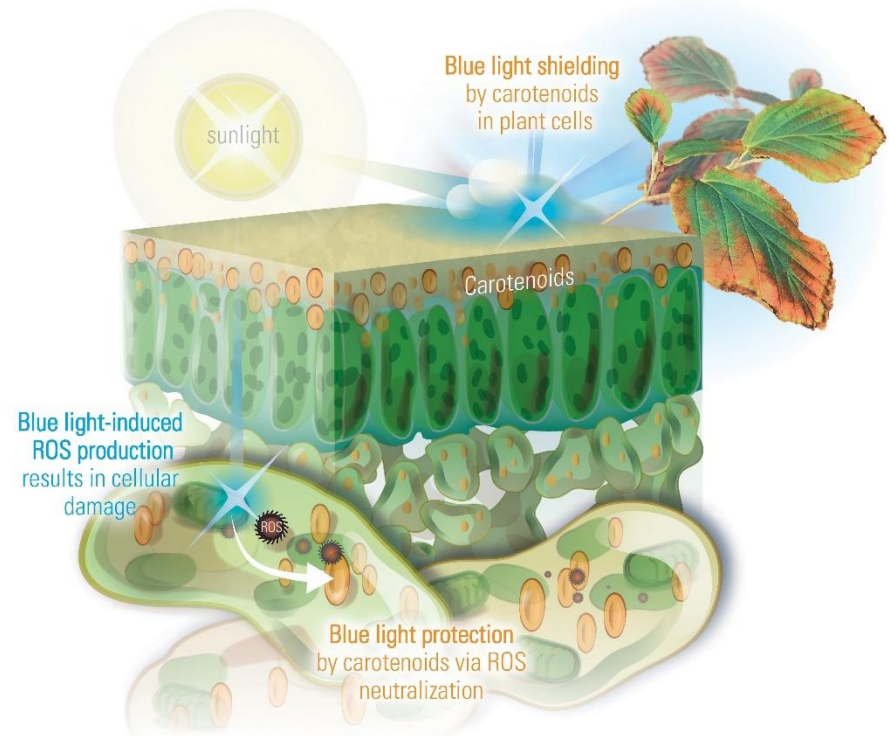


The need to protect 24h-online humans from blue light has turned into a cosmetic trend.

Carotenoids

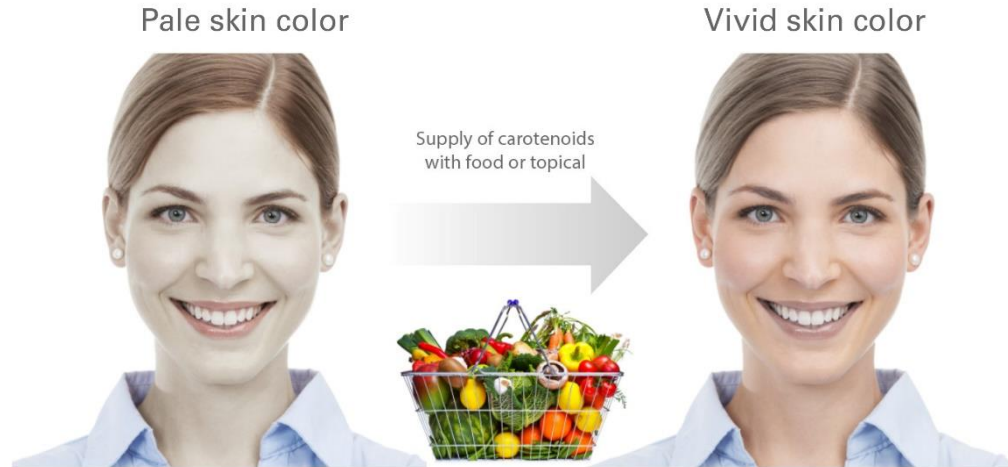
Blue Light Protection Invented by Nature

- Carotenoids reduce blue light stress directly and indirectly:
 1. Shielding of blue light
 2. Reducing blue light-induced ROS
- This natural protection mechanism can be transferred to humans, as carotenoids can integrate into skin.



Carotenoids

A Natural Skin Color Enhancer



- Carotenoids provide an attractive, healthy, and vivid skin tone – cross-culturally
- This is in contrast to melanin-based skin coloration, where major cross-cultural preferences exist

Attractive Skin Needs Carotenoids



Attractive skin

needs an adequate level
of **carotenoids**.

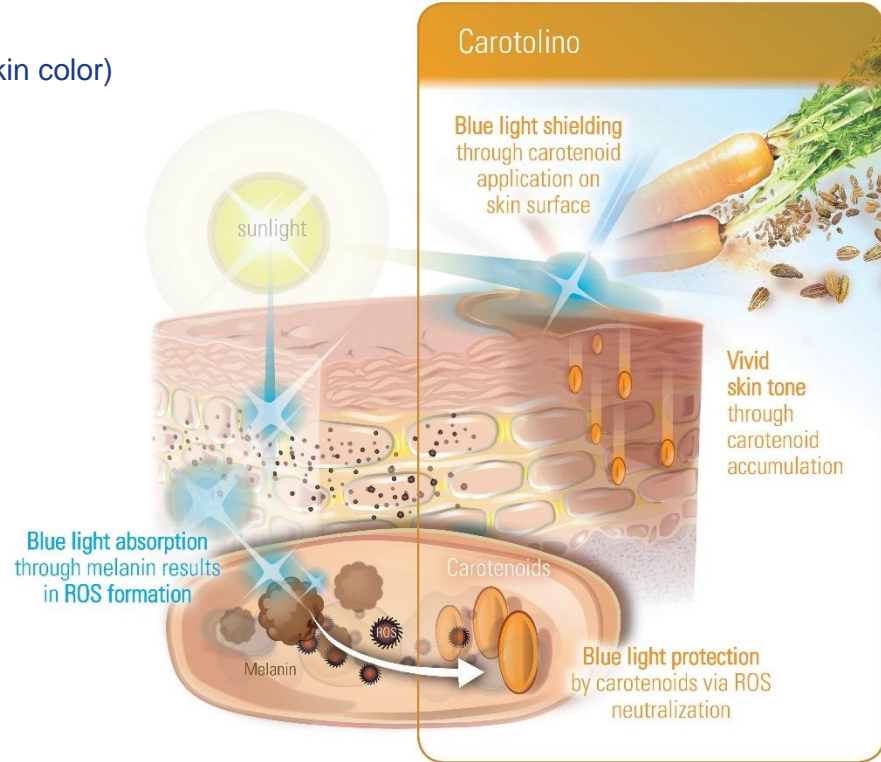
© 2019 Lipoid Kosmetik AG

We make beauty natural.

Product Recommendation

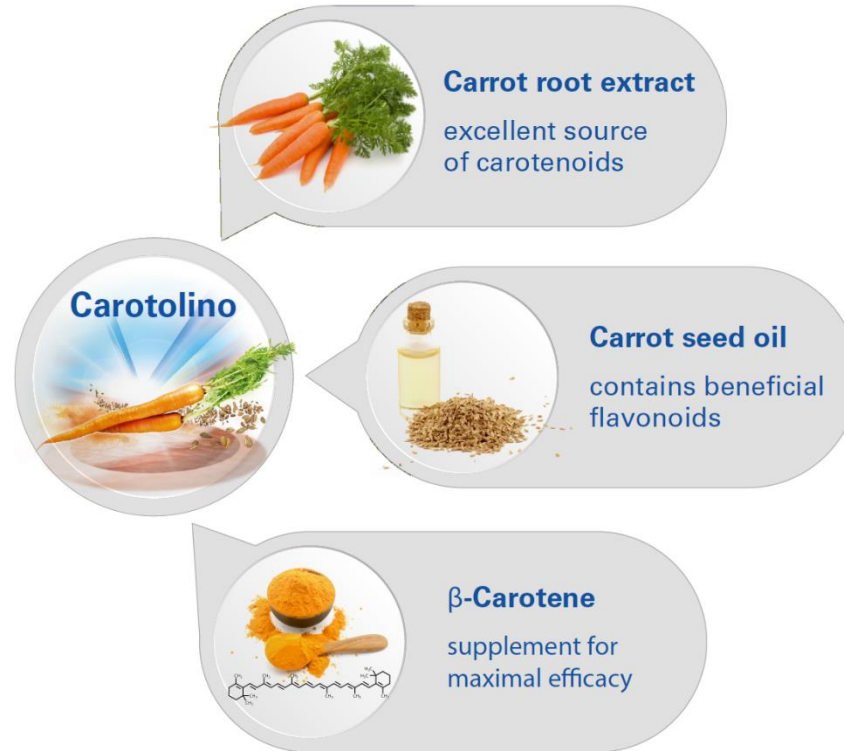
Carotolino – Blue Light Protection and a Vivid Look

- Blue light protection with added value (improved skin color)
- 3-fold efficacy:
 1. Shields blue light directly
 2. Neutralizes blue light-induced ROS
 3. Supports a healthy and vivid skin color



Composition

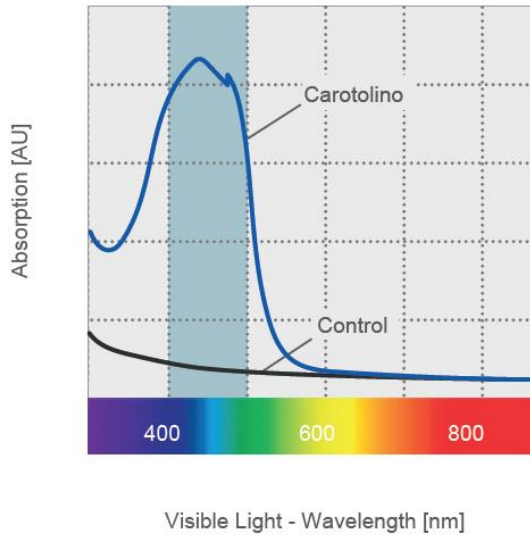
Carotolino – the Best of Carrots



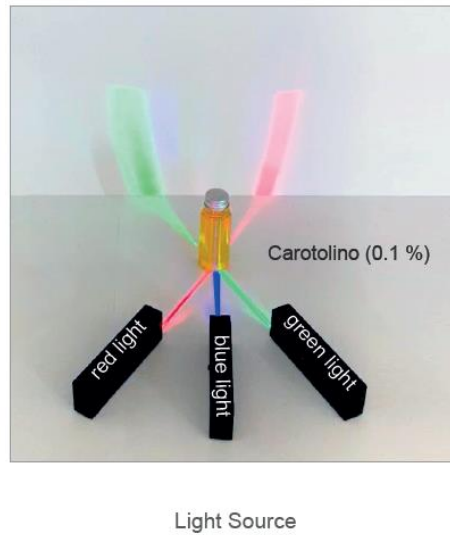
in vitro Activity

Carotolino Shields Blue Light Efficiently

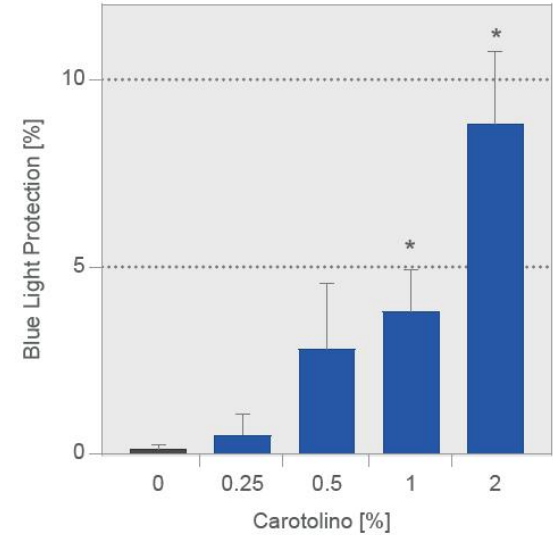
(A) Maximal Absorption in Blue Light Range



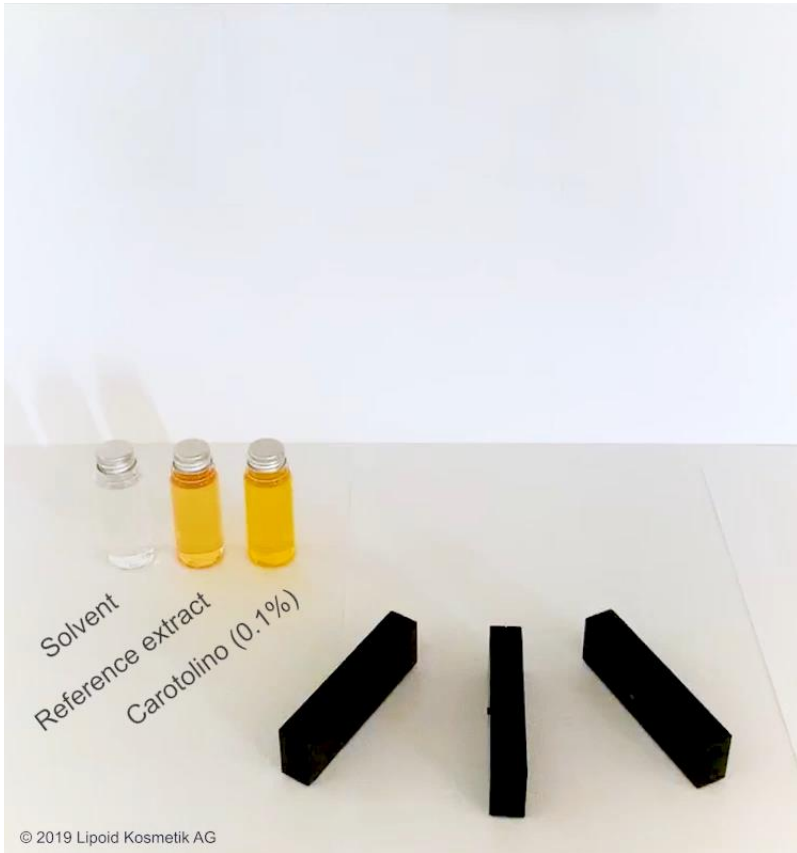
(B) Selective Absorption of Colored Light



(C) Blue Light Protection in a Cosmetic Formulation



Selective Absorption of Blue Light



Lipoid
Kosmetik

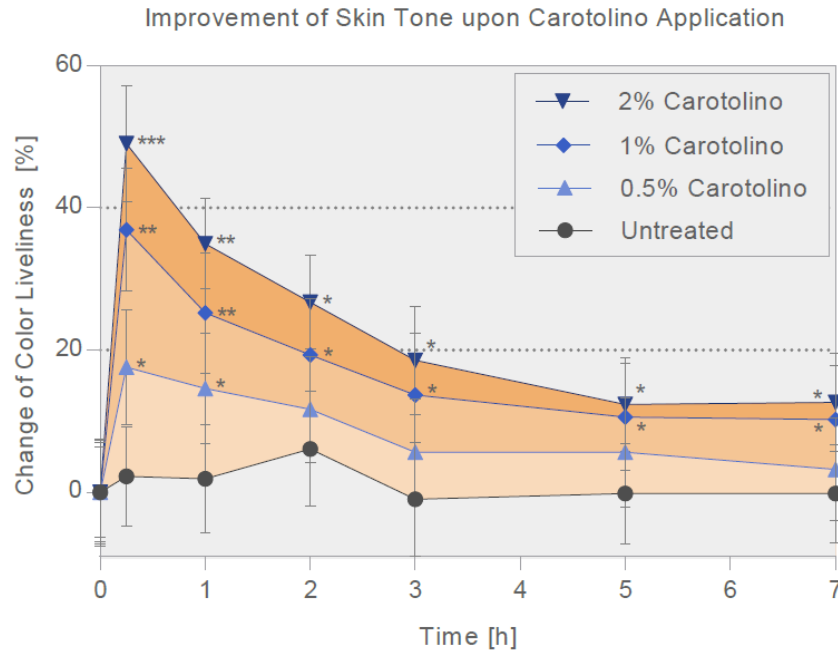
Blue Light Demo

Colored light passes
through cosmetic solutions.

Lipoid
Kosmetik

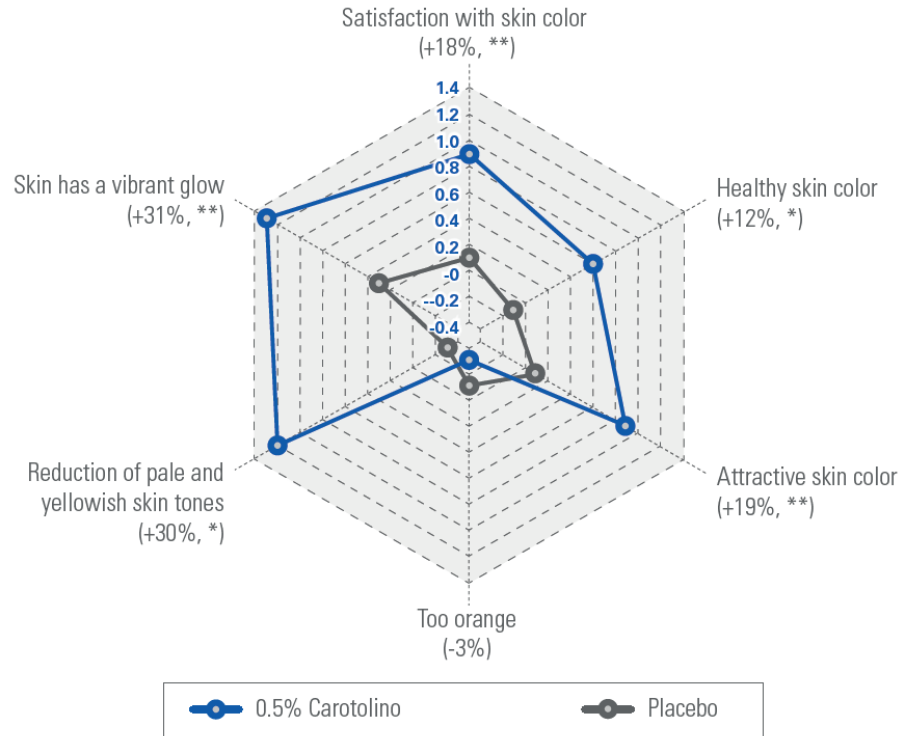
in vivo Activity

Carotolino makes Skin Vivid and Lively



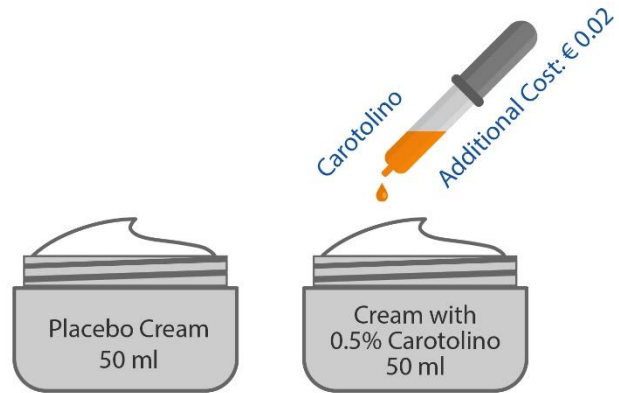
in vivo Activity

Improved Skin Color



in vivo Activity

Increased Product Value



Consumer Price Estimation: € 17.80

€ 20.60

Increased Product Value:

+ € 2.80 / + 14%



Take Home Message

Trend 'Digital Dependence & Blue Light Protection'

- UV-protection advances to **light-protection** (including blue light)
- The **screen time** of the 24h-online consumer grows
- Urban consumers are looking for **blue-light protecting ingredients**
- **Carotenoids** are natural blue-light filters and color enhancers
- Carotolino provides **blue-light protection with added value** (color improvement)
- It thus suits for e.g. light-protecting, defense, or skin-tone improving concepts.



5. Feel Good



Feel Good → Look Good!



What are endorphins?

- Small neuropeptides
- Mainly produced in the pituitary gland and the hypothalamus of the brain.
- They bind to the **opioid receptors** in the brain, reducing the pain sensation and providing a **sense of wellbeing**.

Endorphins – the Body’s Very Own Happy Hormones



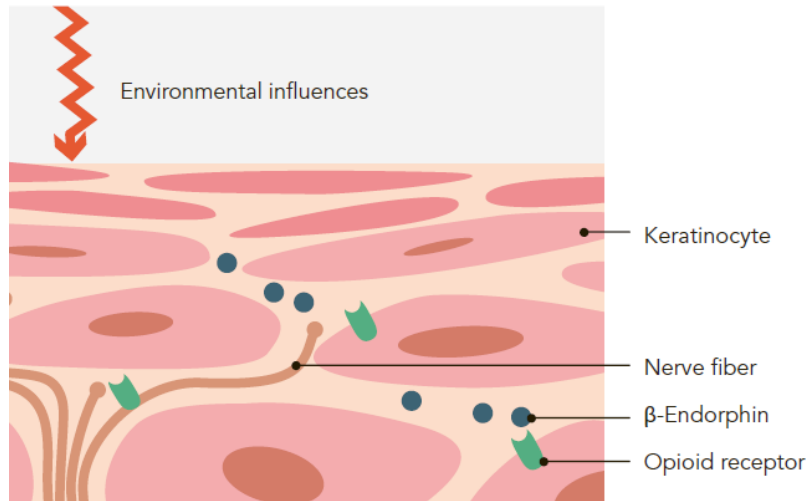
The endorphin system is activated in connection with happy moments.

They cause:

- Mood changes such as **euphoria and happiness**
- **Enhanced performances**
- Increased **resistance to pain**

A well-known result of endorphin production is the so-called “**runner’s high**” (state of euphoria that some runners experience after a prolonged period of exercise).

Endorphin – Opioid Receptor System of Skin and Nerve Cells



↑ Signals from the brain
(influence of mood, wellbeing, stress etc.)

- Peripheral nerve fibers in the dermis and the epidermis possess receptors for β -endorphins.
 - New findings: Keratinocytes can also **produce β -endorphins** and have **opioid receptors** on their surface.
- Cross-talk between the skin and the nervous system.

New Findings

POMC (proopiomelanocortin) is the precursor for β -endorphin and α melanocyte stimulating hormone



Sun light induces in the skin the production of POMC leading to



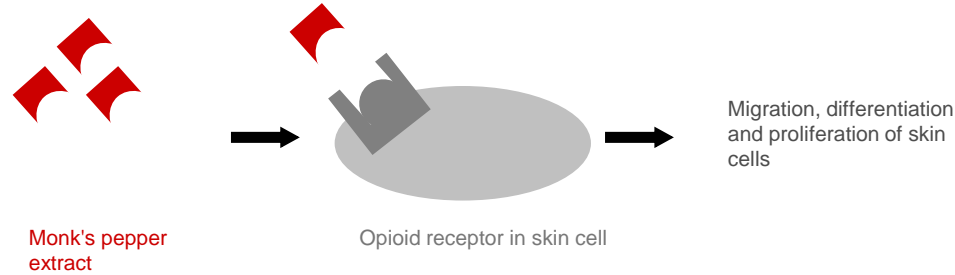
- the formation of skin pigments
- the activation of the skin's immune system
- the release of β -Endorphins

Monk's Pepper Contains Phyto-Endorphins



- Monk's pepper is a large shrub growing in Mediterranean regions and in Asia.
- Berries contain substances – the so-called **phyto-endorphins** – that bind to the opioid receptor.
- Monk's pepper berries were used in ancient Greece to treat injuries and inflammation.
- In the middle ages, monks used the dried berries and experienced a sensation of **wellbeing** and **happiness** after consumption.
- Nowadays, monk's pepper berries are used to treat PMS (premenstrual syndrome; **improvement in emotional balance** and **regulation of prolactin**).

Monk's Pepper in Cosmetics



An ethanolic extract of *Vitex agnus-castus* competes for binding to opioid receptor with IC_{50} -values ($\mu\text{g/ml}$) shown on the right.

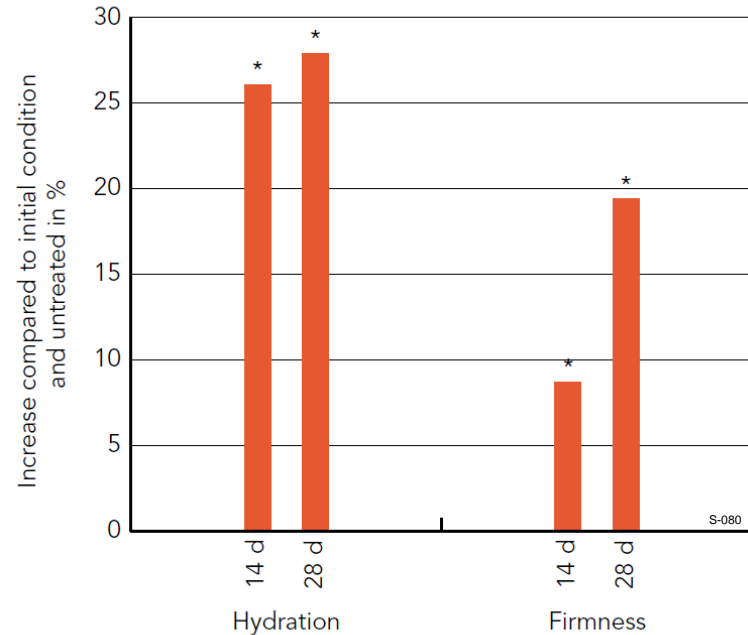
→ ***Vitex agnus-castus* extract exerts a β -endorphin-like activity**

opiod receptor		
μ	κ	δ
36	22	194

*B. Meier et al. (2000)
Phytomedicine 7(5): 373-381*

Increase in Skin Hydration and Firmness

■ 1% Happybelle-PE

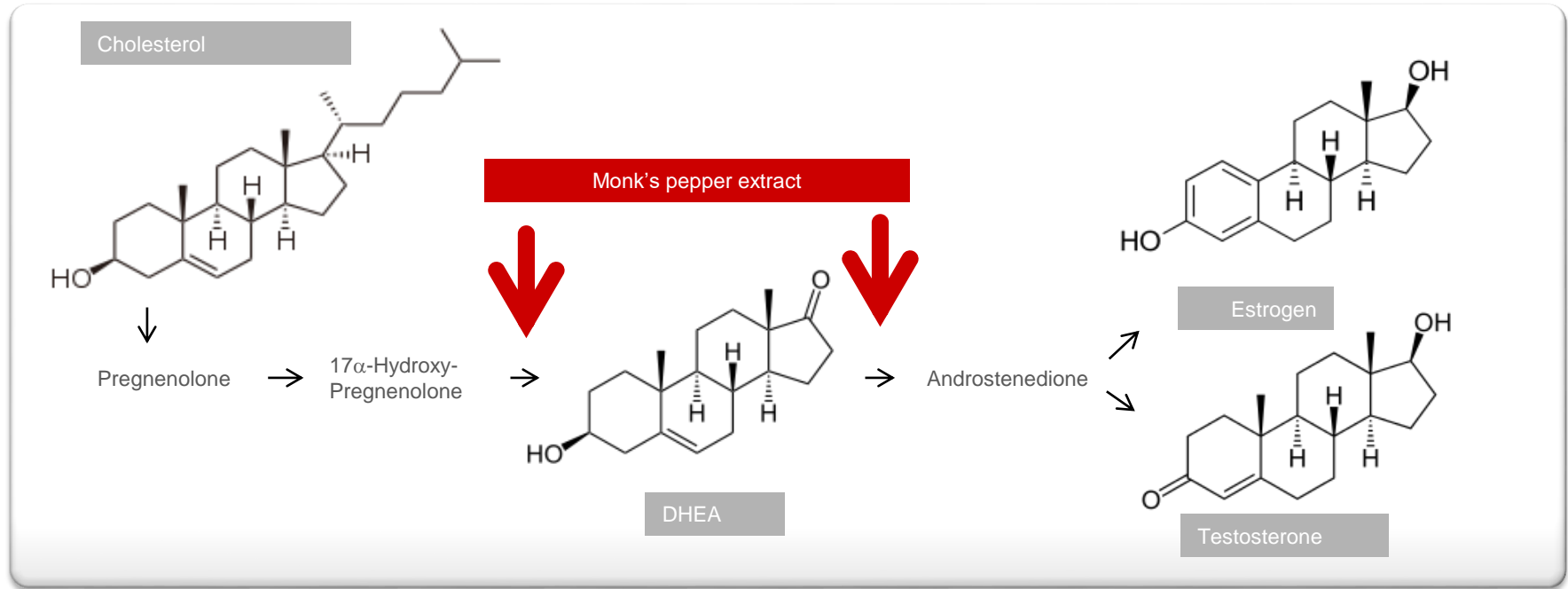


*p<0.05 versus untreated



Significant increase in skin hydration (+28 %) and skin firmness (+19 %) compared to an untreated area after 28 d.

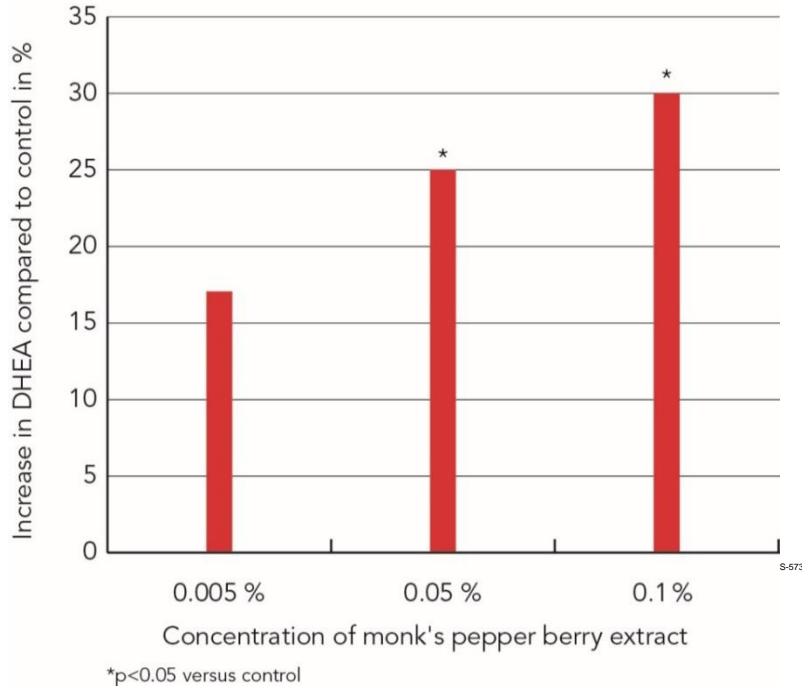
Hormone Synthesis



We investigated the influence of monk's pepper extract on the production of sex hormone precursors DHEA and androstenedione.



Stimulation of DHEA Biosynthesis



Cell line

Human adrenocortical cells (NCI-H295R)

Test substance

Monk's pepper berry extract

Study design

Incubation of cell cultures +/- different concentrations of the test substance for 48 h

Parameter

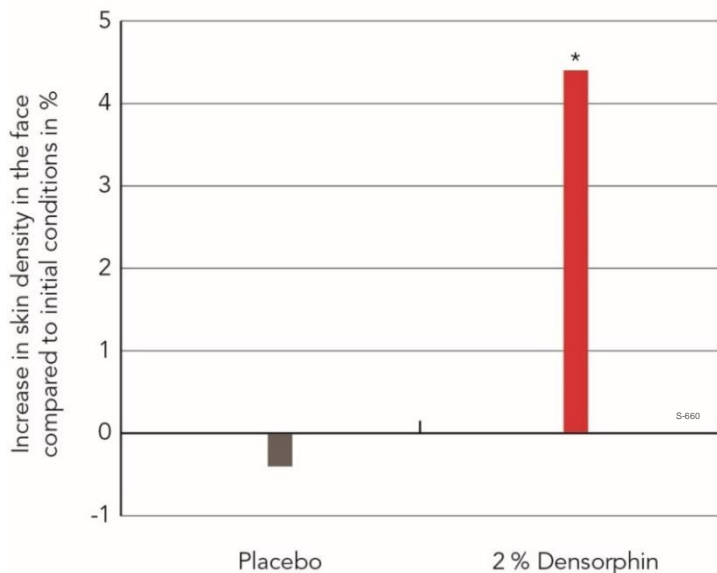
Secreted levels of DHEA (LC-MS).



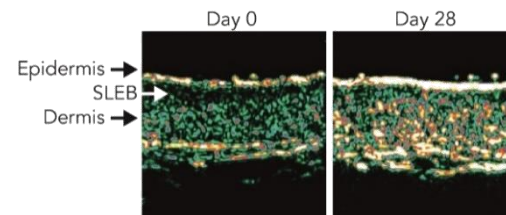
Synthesis of DHEA was increased significantly by up to 30%
→ balances andropause/ menopause effects and thus leads to rejuvenated skin.



Densorphin™ Improves Epidermis + Dermis Density in the Body



*p<0.05 versus initial conditions



Test product: Cream + 2% Densorphin™, placebo

Volunteers: 30 (15f, 15m, 50-65 y), women after menopause

Application: Twice daily for 28 days, half side of the face

Parameter: Determination of low echogenic pixels via ultrasonography



Densorphin™ significant improves epidermis+dermis density in the face.

6. Health- & Eco-Consciousness

Supplementing Skin Care for a Vegan Lifestyle



We make beauty natural.

Trend 'Vegan Lifestyle'

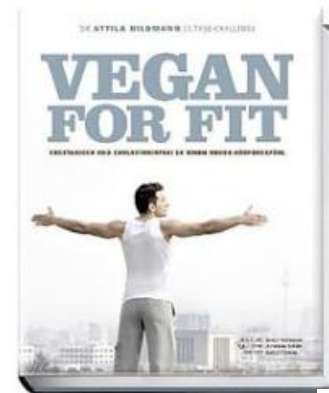
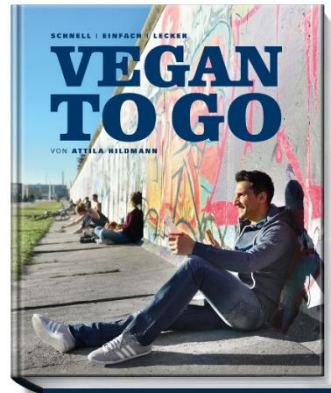
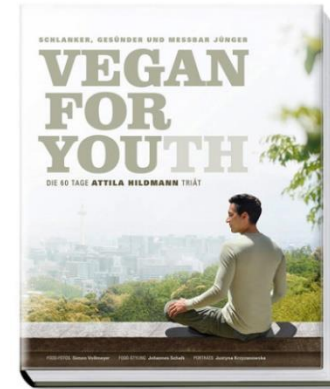
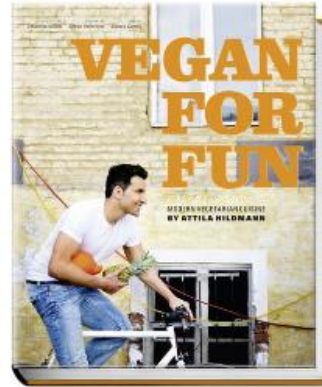
A Vegan Diet is not only about Food - It's about Lifestyle

- 1 billion people worldwide follow a vegetarian or vegan diet
- Veganism is a lifestyle concept, and stands for:
beauty, health, youth & conscious living

Vegan
cosmetic
launches
increased by
175% in
2013-2018*



Vegan Goes Mainstream



Jackfruit – a Symbol of Vegan Lifestyle



Jackfruit – a Symbol of Vegan Lifestyle

Jackfruit – THE vegan meat

- Well-Known from vegan cuisine
- **'Meaty' texture**
- Starting point for vegan skin care products



Product Recommendation



Jackfruit Pro – Vegan Food for Vegan Skin

- A vegan lifestyle stands for conscious living and confidence
- Jackfruit Pro is the perfect tool for the fast-growing market of vegan skin care:
 - Vegan lifestyle symbol
 - Natural and sustainable
 - Vegan formulation
 - **Addresses the needs/ deficits of vegan's skin**
- A vegan diet is healthy, but **lacks creatine**.



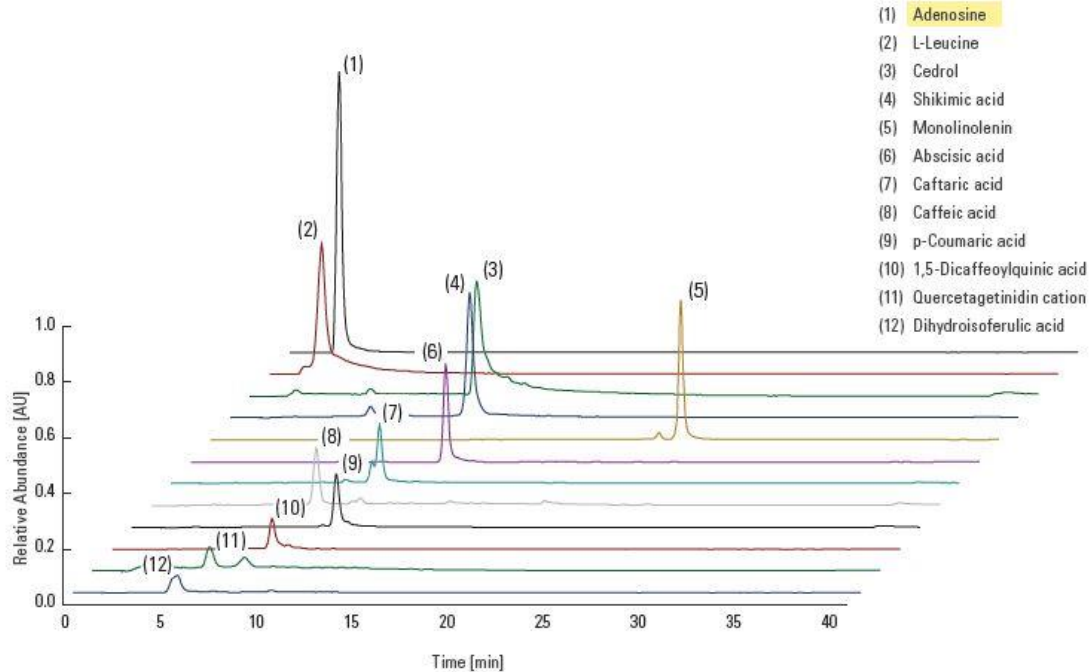
Skin of Vegans Lacks Creatine

Jackfruit Extract to Overcome Skin Creatine Shortage



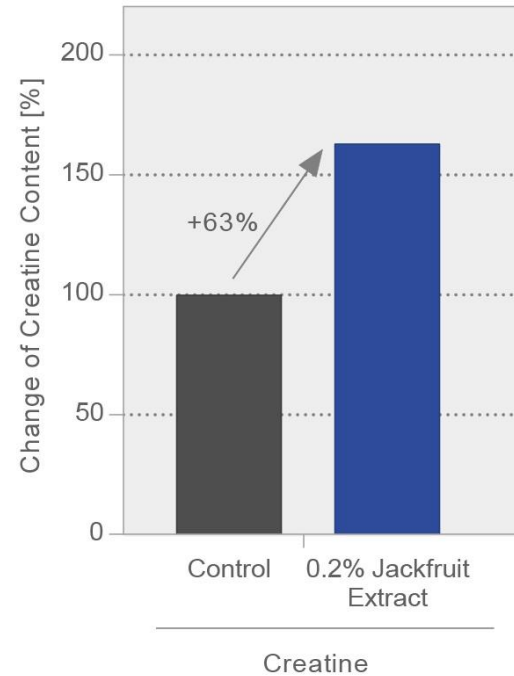
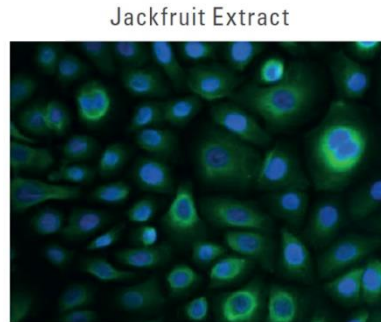
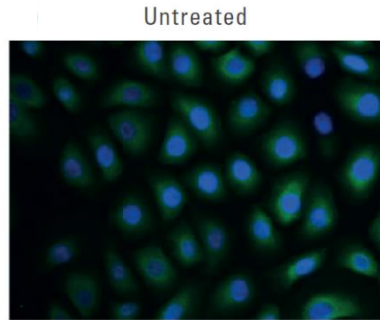
Phytochemical Analysis

Identification of Active Substances in Jackfruit Extracts



in vitro Activity

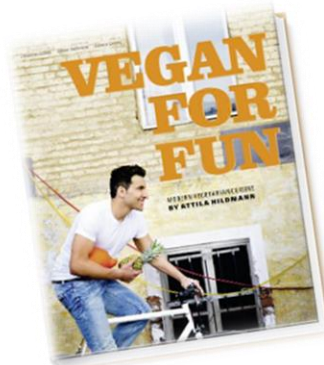
Jackfruit Extract Increases Creatine Uptake in Skin Cells



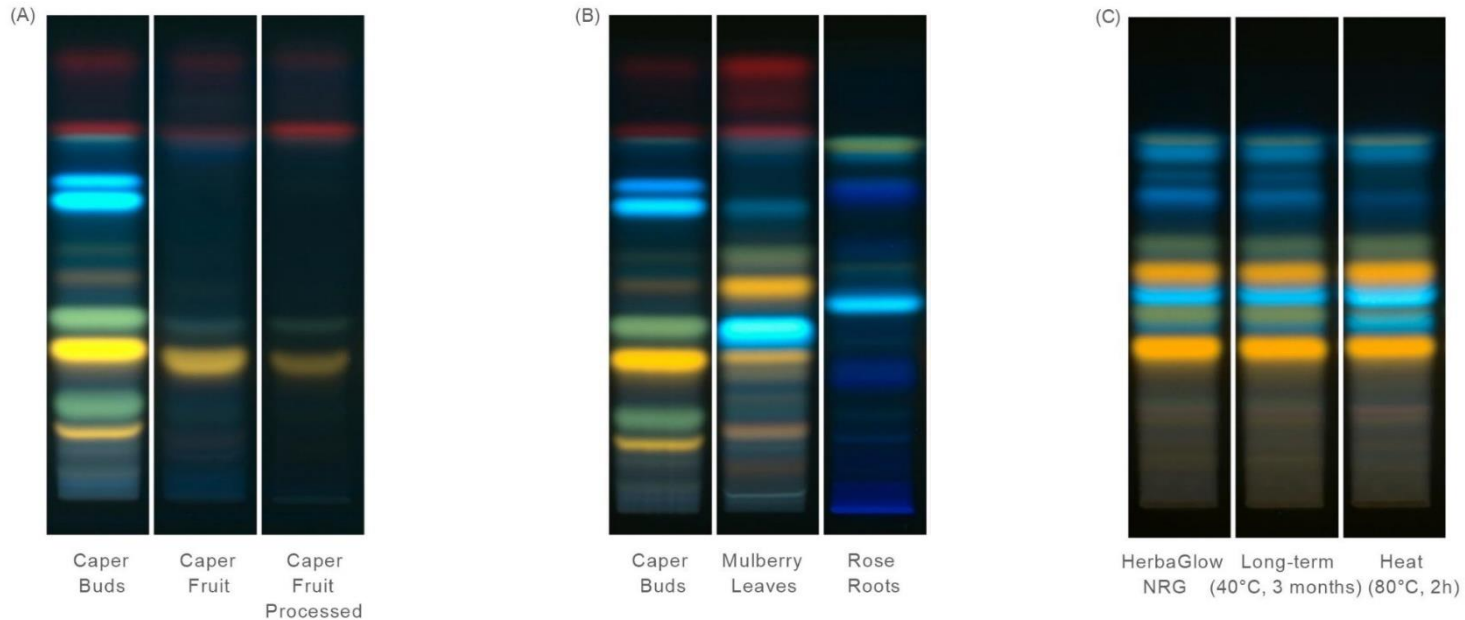
Take Home Message

Trend ,Vegan Lifestyle‘

- Veganism is a lifestyle concept which stands for **conscious living**
- However, it also stands for health, beauty and fun
- Jackfruit is a **symbol of vegan lifestyle**
- It is not only a vegan ingredient but **addresses the needs of vegan’s skin**
- Jackfruit Pro **increases creatine** uptake into skin cells
- It thus suits for e.g. vegan, supplementing or nourishing concepts.



Phytochemical Analysis



- Based on optimal plant material (caper flower buds)
- Substantial amount of various flavonoids and phenolic compounds
- Stable under challenging storage conditions



Thank you all for attending the Supplier Forum and we would appreciate your feedback on the forum format.

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