

ALPAFLOR[®]

ALP-SEBUM CB

Organic
prebiotic
visible care
for oily skin



Naturally clear and mattified skin

Many people suffer from oily skin, a shiny appearance, and large pores, affecting their self-image. As the face is so important in our social interaction, clearing up excess of sebum and having matte looking skin is a high priority for many consumers – no matter what their age or their gender.

ALPAFLOR® ALP-SEBUM CB considerably helps to reduce the skin's sebum production, which is responsible for shiny skin.

In vivo study with 3D facial color sebum mapping shows visible effects on the different facial areas. In addition care is taken for the skin microbiome to balance it for improving the healthy looking skin without impacting the microbiome diversity. ALPAFLOR® ALP-SEBUM CB, 100% naturally derived, is suitable for all natural products that target the causes of oily skin, sensitive skin and acne-prone skin and restore the skin's healthy appearance.

Botanics

ALPAFLOR® ALP-SEBUM CB is produced from *Epilobium fleischeri*, a rare glacier species of Willowherb, organically, sustainably and ethically cultivated in the Alps, whose outstanding soothing activity has been known to the Alpine population for centuries.

DSM selected *Epilobium fleischeri* over other *Epilobium* species because of its especially high quantity of both Oenothien B and flavonoids. These are the key compounds that show sebumregulating and anti-inflammatory activities.

Mechanisms

Sebum production is regulated in the sebaceous glands by hormones such as testosterone and dihydrotestosterone (DHT). But DHT, which is converted from testosterone by the enzyme 5 α -reductase (type 1), shows much stronger activity than testosterone.

The inhibition of 5 α -reductase is thus the most efficient way to visibly decrease sebum production.

Key facts

UNIQUE PRODUCT FEATURES

- Outstanding **facial color mapping** showing a **sebum production decrease (-17%) in all facial areas**, with a strong focus on forehead and cheek, after 4 weeks
- **Strong reduction** versus placebo **of non-inflammatory lesions** (-45%) and of porphyrins, the risk factor for acne (-65%)
- **Microbiome balancing activities**, promoting microbial skin self-defense and reducing the risk of skin irritation e.g. by
 - **downregulating troublesome bacteria** such as *Staphylococcus capitis* and *Corynebacterium kroppenstedtii*; and
 - **promoting beneficial skin bacteria** like *Staphylococcus epidermidis* and *Micrococcus yunnanensis*
- **Inhibition of 5- α -reductase** is the most efficient way to decrease sebum production (-56% after 2 months *in vivo* study)
- **Unique glacier willowherb species, *Epilobium fleischeri***, sustainably, fairly and organically cultivated

BENEFITS

- **Organic prebiotic bioactive** (against oily skin, enlarged pores, sensitive skin and acne prone skin)
- Delivers a sustainable **visible mattified skin** with less oil and sebum
- Restores the **skin's healthy appearance**
- Reduces spots, leads to a **visibly clearer and cleaner skin**

CONSUMER APPLICATION

- Products that target oily, shiny skin
- Skin care products for young skin
- Enlarged pores and blemish care
- Color cosmetic with mattifying biological effect

SUGGESTED CONCENTRATION

1–3% ALPAFLOR® ALP-SEBUM CB in cosmetic formulations

INCI NAME

Epilobium Fleischeri Flower/Leaf/Stem Extract



ALPAFLOR® ALP-SEBUM CB
19.86% Organic Origin
Certified as 19.86% organic by Ecocert Greenlife according to COSMOS Standard available at <http://cosmos.ecocert.com>



ALPAFLOR® ALP-SEBUM CB
7% Natural (98% Organic)
23% Water
69% Derived Natural
Complies with the NATRUE Criteria



Fair trade certified according to the Fair For Life standard available at www.fairforlife.org



IECS listed,
IECIC listing



Halal certified according to Halal Food Council of Europe

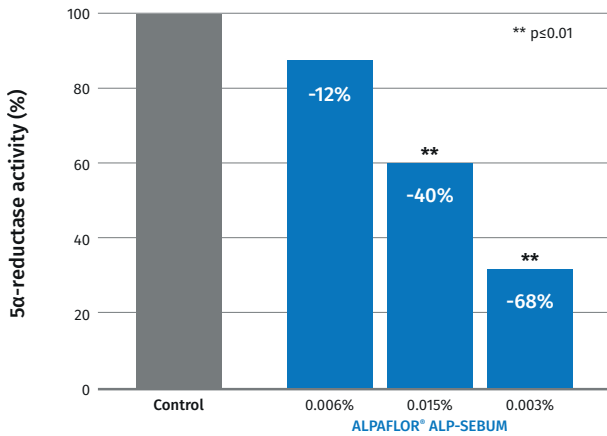


Efficacy

In vitro

Strong sebum regulation activity

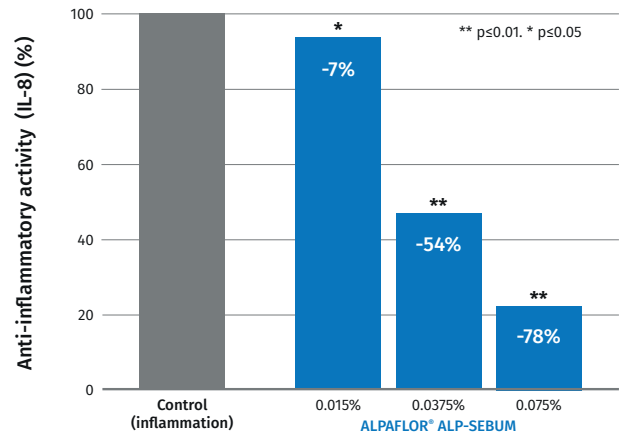
5 α -reductase activity is evaluated by measuring the levels of dihydrotestosterone (DHT) produced by human skin fibroblasts incubated with testosterone.



RESULTS: Significant dose-dependent inhibition of 5 α -reductase activity up to 68% versus control with 0.03% ALPAFLOR® ALP-SEBUM CB

Anti-inflammatory effect

Quantification of soluble pro-inflammatory cytokines release by human keratinocytes in response to a non-sensitizing contact irritant.



RESULTS: Significant dose-dependent decrease of the epidermal pro-inflammatory cytokine Interleukin 8 (IL-8) of up to 78% with 0.075% ALPAFLOR® ALP-SEBUM CB

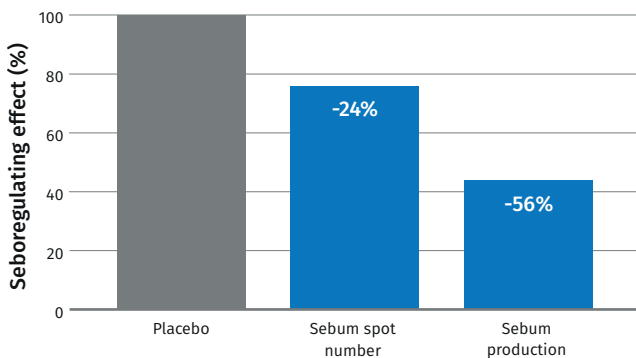
In vivo

This study has been carried out on 21 female volunteers. A cream-gel containing 3% ALPAFLOR® ALP-SEBUM CB was applied twice daily for 56 days. Measurements were made at Day 0 and Day 56, and compared to a placebo.



1. Decrease in sebum production

The sebo-regulating effect of ALPAFLOR® ALP-SEBUM was evaluated by measuring the reduction of the sebum spot number and of sebum production by means of a Sebupape®.



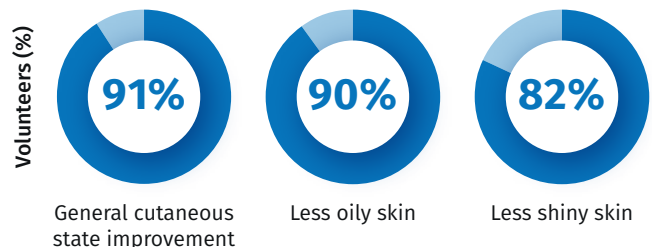
RESULTS: 24% reduction in spot number and 56% decrease in sebum production were shown after 56 days of treatment

2. Reduction of pore size

Clinical scoring (visual evaluation by a dermatologist) **a reduction in pore size in 18% of the volunteers.** No pore size reduction was found with the placebo.

3. Visible improvement of the cutaneous state

About 90% of the volunteers experienced a general cutaneous state improvement and judged their skin to be less oily.



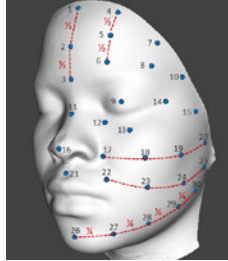
3D facial color sebum mapping

This study has been carried out on 23 female Caucasian volunteers (average age: 33.7 +/- 9.8) with high sebum level, in double blind against placebo. A cream-gel containing 3% ALPAFLOR® ALP-SEBUM CB was applied twice daily on the full face for 28 days. Measurements were made at Day 0 and Day 28 and compared to a placebo.

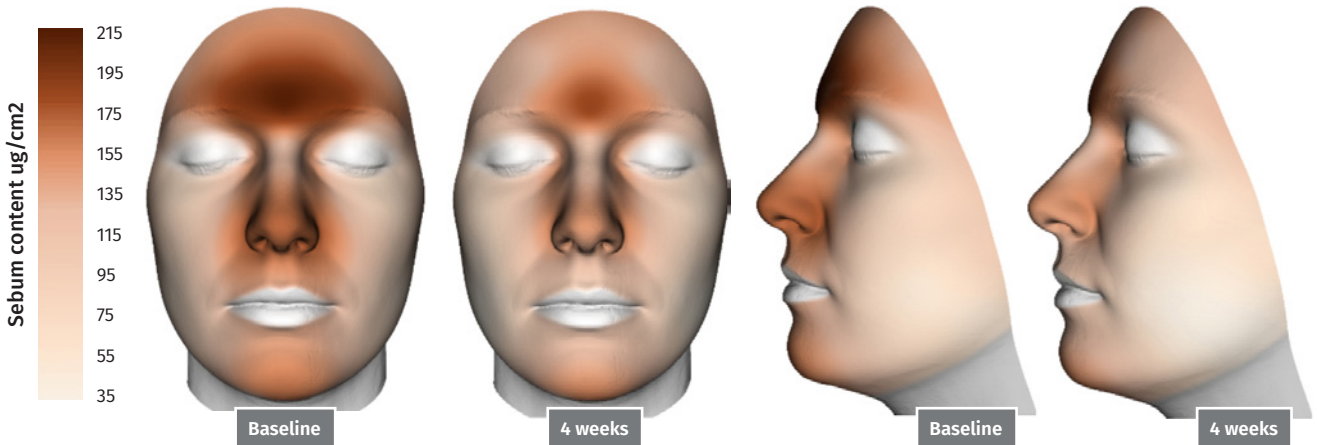


Measurements at T0 and T28:

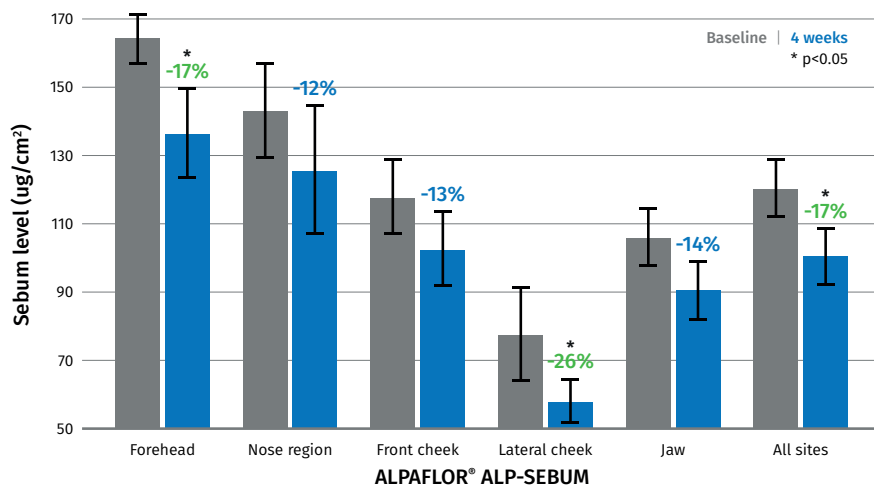
- Sebum level by Sebumeter® SM 810 on 30 predefined sites (picture A)
- Microbiome sampling on 5 sites (50 swab stripes per site)
- Pictures analysis: sebum mapping, porphyrins content, number of lesions



3D Facial color sebum mapping: visible sebum reduction in all facial areas with 3% ALPAFLOR® ALP-SEBUM CB



Sebum content on different facial areas after 4 weeks treatment



ALPAFLOR® ALP-SEBUM CB rebalances the sebum to normal levels with significant reduction on the full face (17%) and especially on the forehead (17%), and on lateral cheek (26%) where acne is the most prevalent.

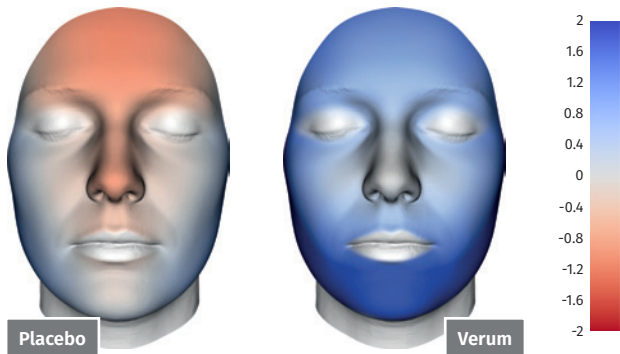
Microbiome balancing – Prebiotic

In addition to the sebum mapping, we sampled the microbiome on five facial sites (A,B,C,D,E) by swabbing.

ALPAFLOR® ALP-SEBUM CB acts as prebiotic **modulating key bacteria for healthy looking skin.**

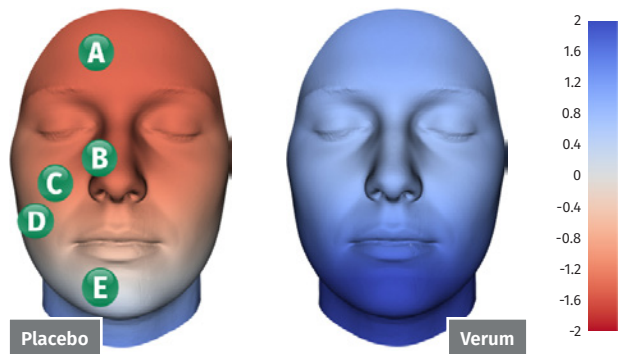


The ratio between *M. yunnanensis* / *S. Capitis* after 4 weeks treatment



Results: The ratio between *M. yunnanensis* / *S. capitis* increased by at least 100 folds in forehead and chin

The ratio between *S. hominis* / *S. Capitis* after 4 weeks treatment

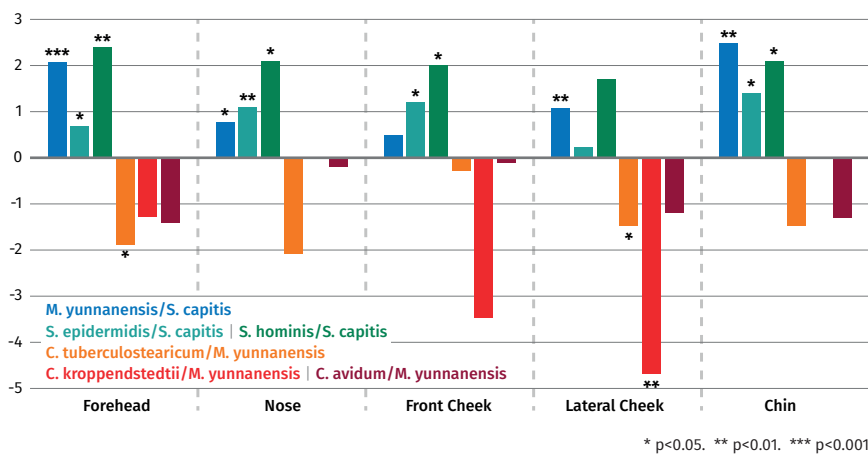


Results: The ratio between *S. hominis* / *S. capitis* increased by at least 2 logs in all facial areas except lateral cheek.

ALPAFLOR® ALP-SEBUM improved the overall skin condition by a strong modulating effect on key bacteria on all facial sites providing a balanced facial microbiome.

- Reducing the risk of enlarged pores, skin inflammation, irritation and redness by downregulating *Staphylococcus capitis*, *Corynebacterium kroppenstedtii* and *Corynebacterium tuberculostearicum* especially in forehead and cheek.
- Promoting the microbial skin self-defense, protecting against growth and colonization of troublesome bacteria by upregulating *Staphylococcus epidermidis*, *Staphylococcus hominis* and *Micrococcus yunnanensis* especially in forehead and chin.

Significant modulation of key bacteria versus placebo (log ratio)



Cutibacterium acnes is the most prevalent bacteria on the oily face. The majority of *C. acnes* strains are non-pathogenic and an essential part of the facial microbiome, they act as skin sentinel and help to block pathogens. Only few strains are pathogens and associated with acne.

C. acnes abundance is well preserved by ALPAFLOR® ALP-SEBUM CB. The microbiome diversity is not affected and kept in balance.

RESULTS: Significant improvement of the microbiome quality in forehead, chin and cheek

For more information, please visit www.dsm.com/personal-care

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