



PhytoCellTec™ Alp Rose

Charges skin stem cell resistance

The Alps – Habitat of a Highly Interesting Flora



- The Alps provide a variety of precious plants with highly active compounds
- Alpine plants developed diverse strategies to withstand the extreme conditions: variations of the temperature, extremely deep temperatures, strong radiation, nutrient-poor soil
→ many interesting plant metabolites

The Swiss Alp Rose

Rhododendron ferrugineum L.



- In the Swiss Alps, the alpine rose is one of the most typical and prominent flower
- Rhododendron (rhodon = rose, dendron = tree, ferrugo = rust)
- Ericaceae
- 1500 – 2800 m
- 1 m high, winter-green shrub, highly branched
- Pink, bell-shaped flowers
- Egg-shaped, lanceolate leaves, underneath with rust-colored scales

The Use as a Medical Plant



In ancient times

Leaves of *Rhododendron ferrugineum* were used as hypertonic, against articular gout, rheumatic disorders, neuralgia, muscle pains and migraine

Today

Mainly used for homeopathy and external applications

A Very Resistant Plant



- Adapted to cold, dryness and intense sun light
 - Resists extreme climate changes
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- Leaves have a thick cuticle
 - Stomata are covered by scales to limit water loss
 - Dehydrins (proteins protecting from dehydrating and freezing)
 - High content of polyphenols protect from radicals

Active Compounds in Alp Rose Leaves



- Taxifolin
- Rhodoxanthin
- Essential oils
- Chlorogenic acid
- Polyphenols (Catechin, Epicatechin)
- Dehydrins



Excellent antioxidants and protective proteins!

PhytoCellTec™



- Alpine roses symbolize ideally „Swissness“
- Alpine roses are very resistant: They grow in extreme conditions and survive on rocks and in the snow
- Very interesting metabolites

but

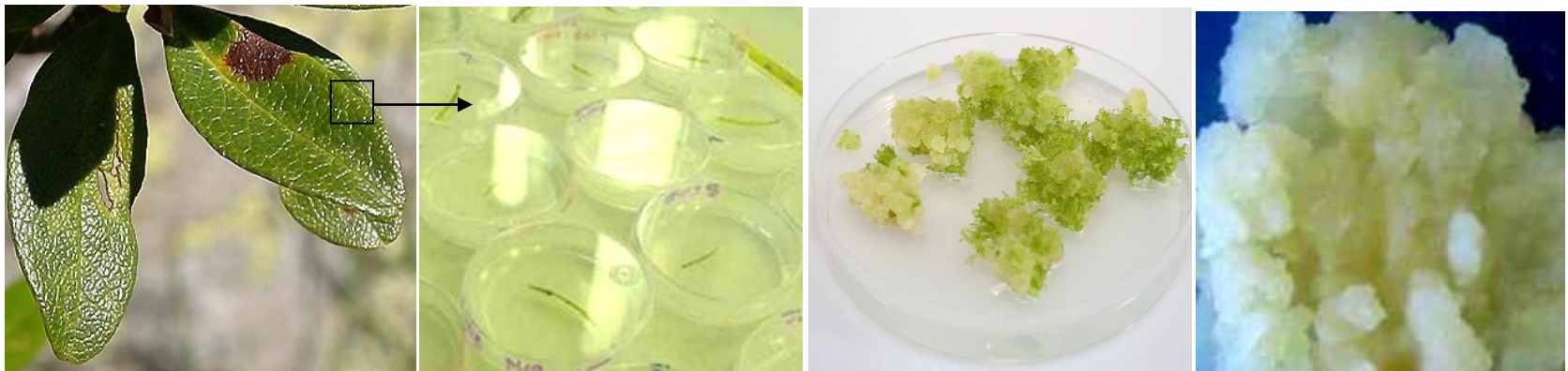
- Alp roses are rare and partly protected
- No plantations



Plant cell technology
(PhytoCellTec™)

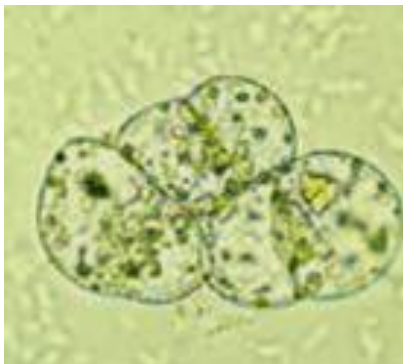
Production of PhytoCellTec™ Alp Rose

- Leaf of alpine rose is wounded to induce callus formation
- Callus cells are transferred to agar plates
- The developed callus with its stem cells is harvested and further cultivated on agar plates until complete dedifferentiation of the cells and generation of a homogenous culture



Production of PhytoCellTec™ Alp Rose

- Stem cells are brought into suspension with liquid media
- The suspension culture grows continuously in a homogenous manner (doubling time 2-10 days)
- Exposure to low temperatures (adaptation to cold)
- Batch is harvested
- Oil- and water-soluble ingredients are extracted by liposomal bilayers
- Spraying on a powder based on Isomalt



Composition of PhytoCellTec™ Alp Rose

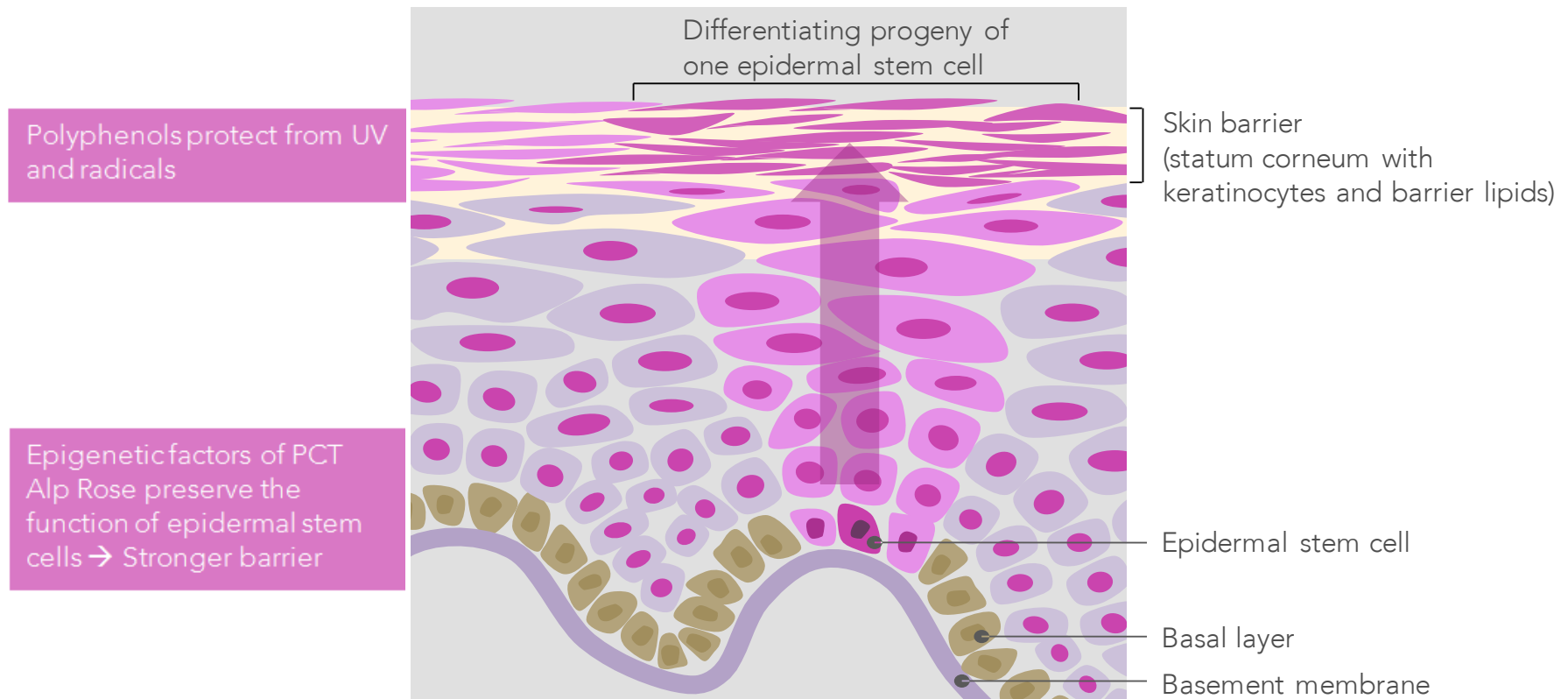
Composition

Rhododendron ferrugineum leaf cell culture extract (dry) (corresponds to 50% cell culture suspension)	0.8%
Phospholipids	0.8%
Isomalt	93%
Sodium benzoate	0.3%
Lactic acid	0.2%
Aqua	~6%

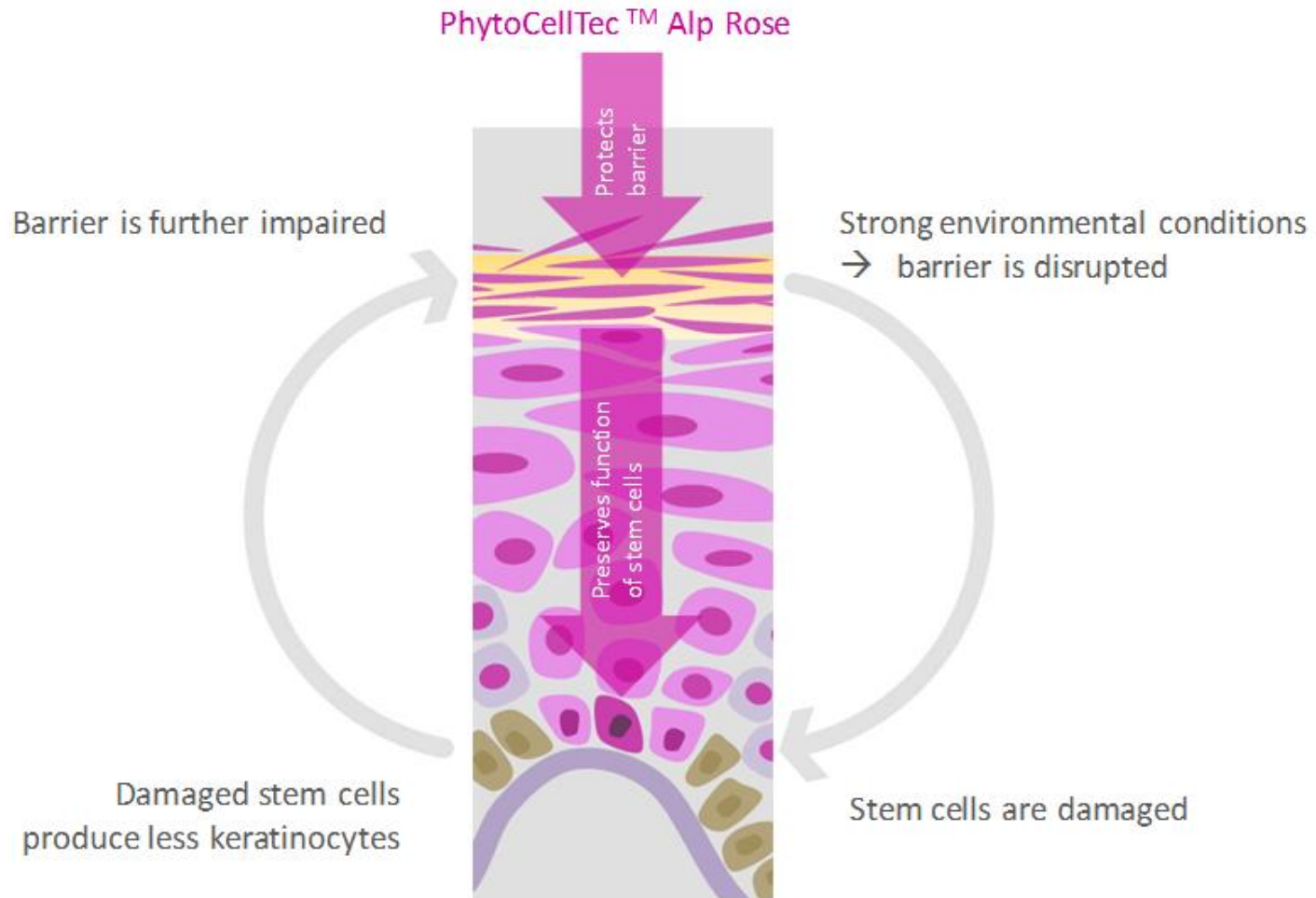
CTFA/INCI

Rhododendron Ferrugineum Leaf Cell Extract (and) Isomalt (and) Lecithin
(and) Sodium Benzoate (and) Lactic Acid (and) Aqua/Water

PhytoCellTec™ Alp Rose and the Skin Barrier

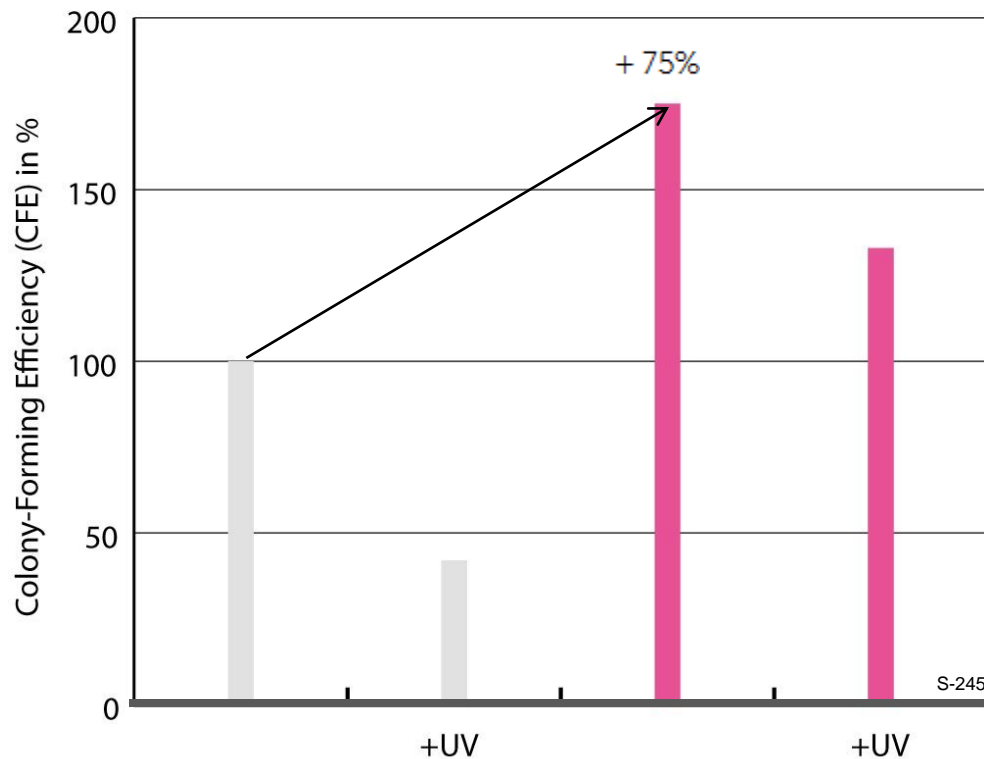


Viscous Circle Impairs Skin Barrier



Protection/Improvement of Skin Stem Cell Vitality with PhytoCellTec™ Alp Rose

■ Control ■ Alp Rose stem cell extract 0.15%



Cell line: Epidermal stem cells
 Product: 0.15% Alp rose stem cell extract
 Treatment: Radiation with UVA+UVB at 450 kJ/m²
 Analysis: Determination of colony forming efficacy (CFE)



Alp rose stem cell extract increases the vitality of epidermal stem cells and protects them against UV-induced stress.

PhytoCellTec™ Alp Rose Ski Holiday Study



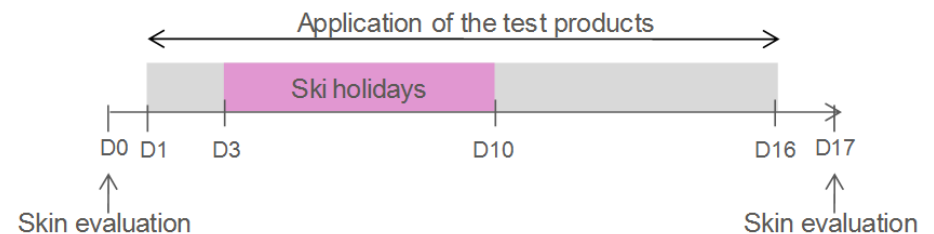
Test products

- Sun cream SPF 30
+ 0.4% PhytoCellTec™ Alp Rose
- Placebo (sun cream SPF 30 without active)

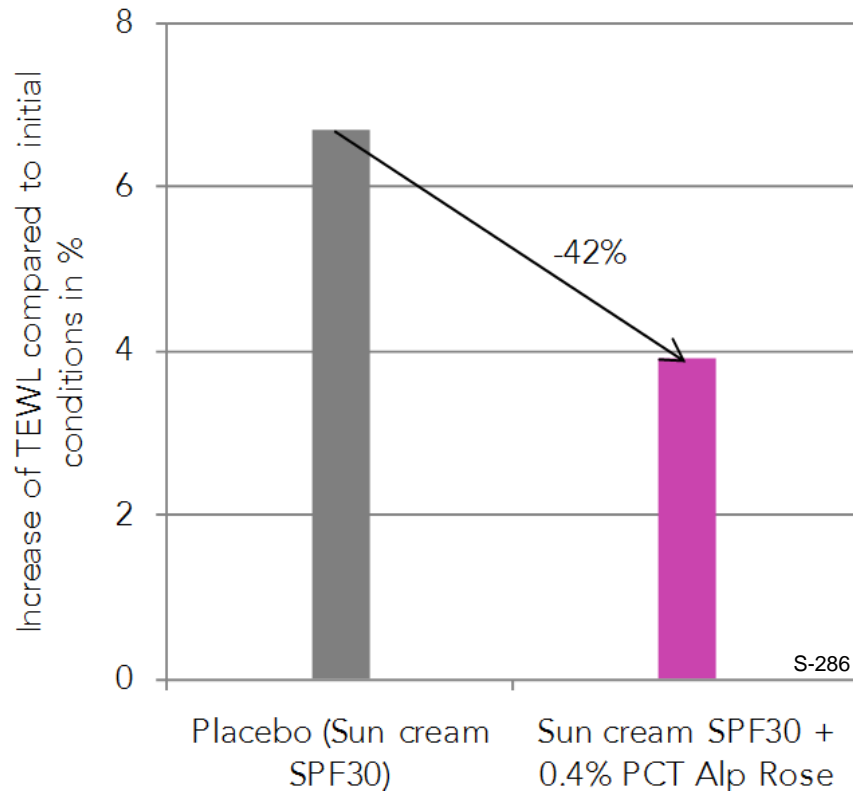
Volunteers: 22 (20 – 52 y)

Application: 3 times daily (morning, noon, evening)

Test area: Face, half side test (blind, randomized)



Ski Holiday Study: Reduction of TEWL



With PhytoCellTec™ Alp Rose the skin was protected from an increase in TEWL by 42 % compared to placebo

Ski Holiday Study: Profile Photos (Visioface Quick®) Anti-Wrinkle Effect



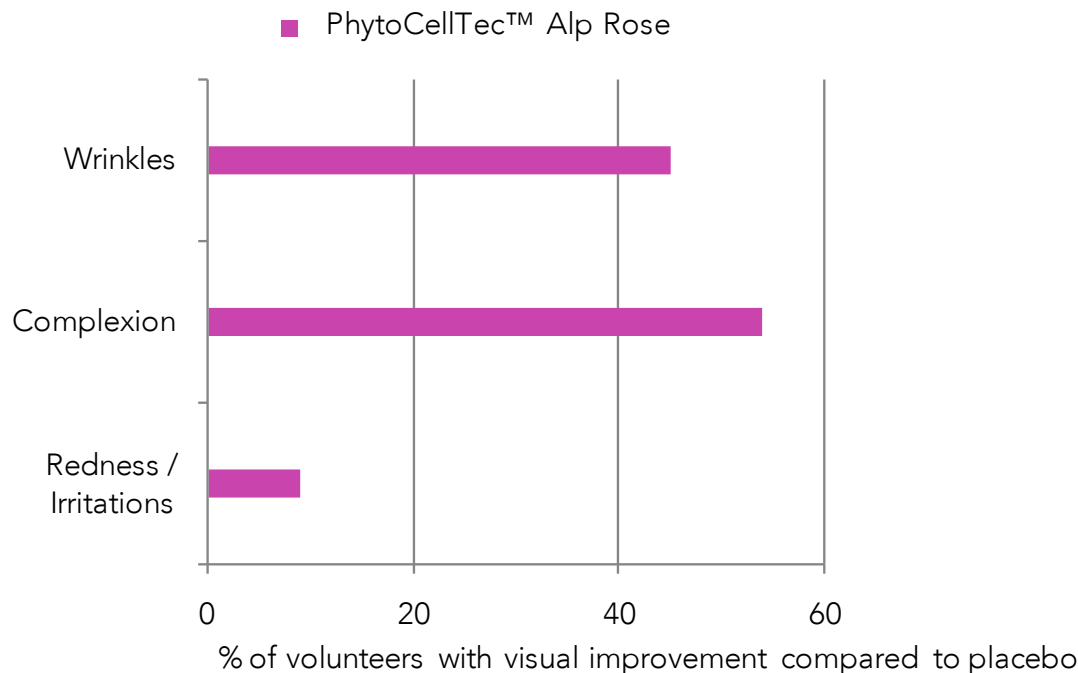
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Ski Holiday Study: Visible Improvement of the Skin Quality



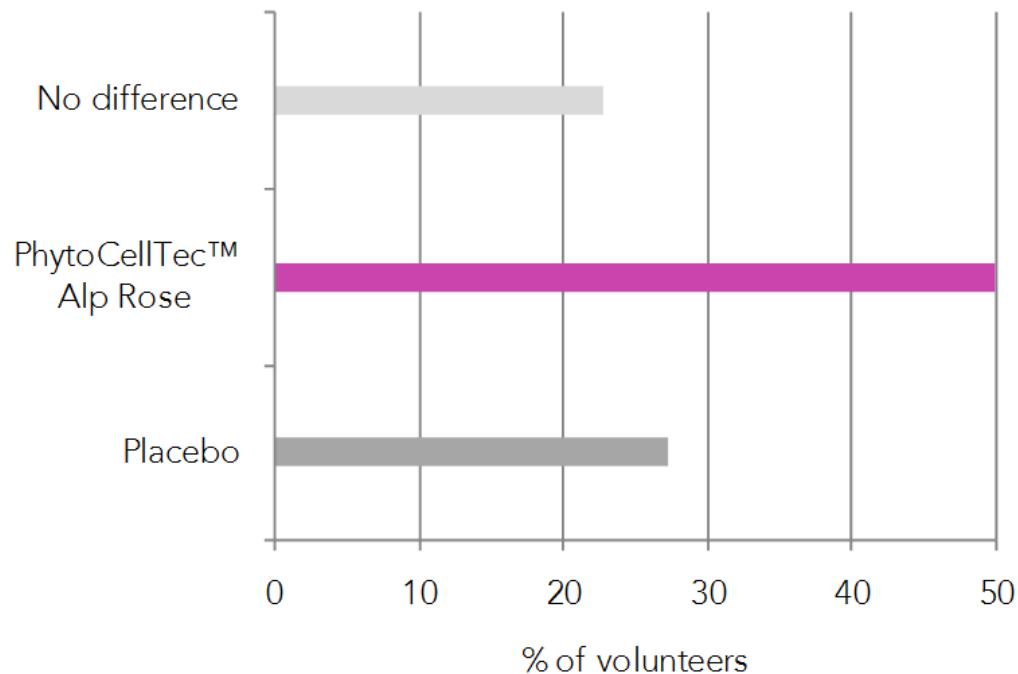
Scoring:

Visual scoring by dermatologists on day 0 and day 17



The skin side treated with PhytoCellTec™ Alp Rose showed an improvement of all 3 characteristics.

Ski Holiday Study with PhytoCellTec™ Alp Rose: Questionnaire



Criteria for a better skin feeling:

- Overall general improvement
- Better protected skin
- Less likely irritated skin
- Skin is better protected from cold



50% of the volunteer perceived an improvement on the side treated with PhytoCellTec™ Alp Rose

Summary



- Alpine roses are typical but rare Swiss alpine plants growing only at high altitudes (2000 m)
- It is known for many medical benefits however, it is not used for treatments since harvesting in the mountains is difficult
- Mibelle Biochemistry established a cell culture of alp rose stem cells (leaves)
- Alp rose stem cells have the capability to protect skin stem cells

Benefits of PhytoCellTec™ Alp Rose

Benefits of PhytoCellTec™

- Plant stem cells contain special, vitalizing compounds (epigenetic factors)
- No overexploitation of rare species
→ material of protected species becomes available
- Reproducible quality

Benefits of PhytoCellTec™ Alp Rose

- Swissness
- The alpine habitat symbolizes perfectly purity and untouched nature
- Attractive plant

PhytoCellTec™ Alp Rose Claim Ideas



- Increases skin stem cell vitality
- Boosts epidermal regeneration
- Improves the skin barrier function
- Helps the skin to cope with climate changes

PhytoCellTec™ Alp Rose Applications



- Advanced „stem cell cosmetic“ formulas
- Face and body care to protect the most valuable skin cells, the stem cells, against environmental stress
- Every weather formulations

PhytoCellTec™ Alp Rose Marketing Benefits



- **Plant stem cells to protect skin stem cells (patent pending)**
- Proven efficacy on skin stem cells
- PhytoCellTec™ – a sustainable technology for the use of rare or protected plants
- Tested in harsh environmental conditions
- Visible anti-aging effect after only 16 days