

PENTAVITIN®
CELEBRATING

40

Years

since 1982

PENTAVITIN®

*The smart moisturizer
- from head-to-toe*

Personal Care & Aroma

Bioactives

Technical & Performance Ingredients

UV Filters

Aroma Ingredients



The use of body care products

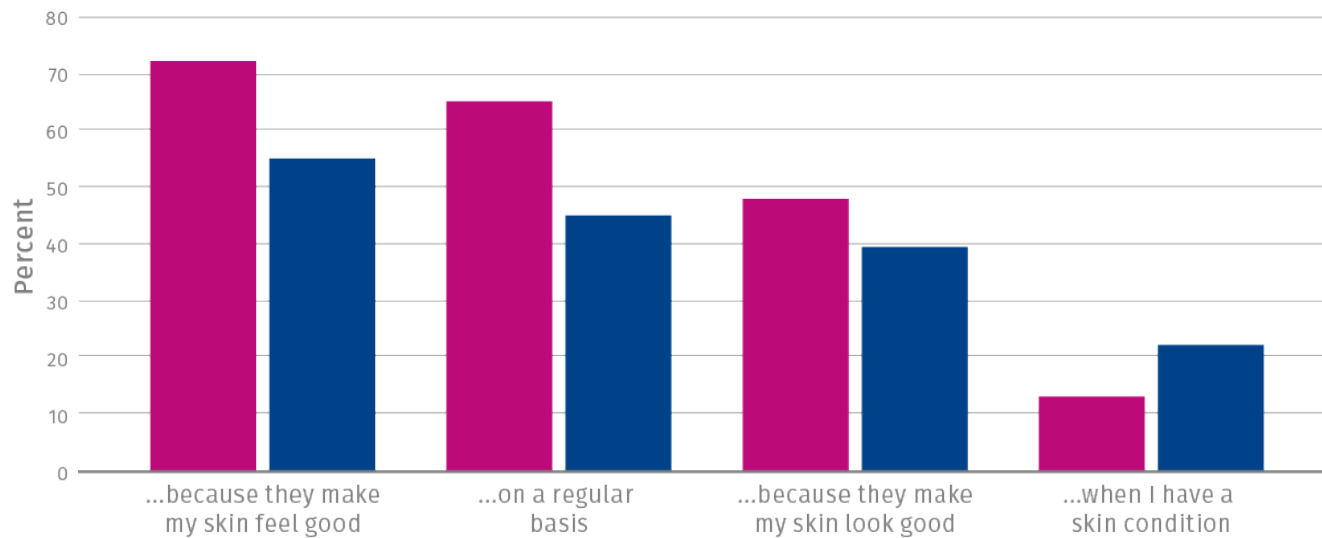


Women use body care products on a regular basis to make their skin look and feel good

Men use body care products when needed (dry, flaky, eczema etc.).



I use body care products...



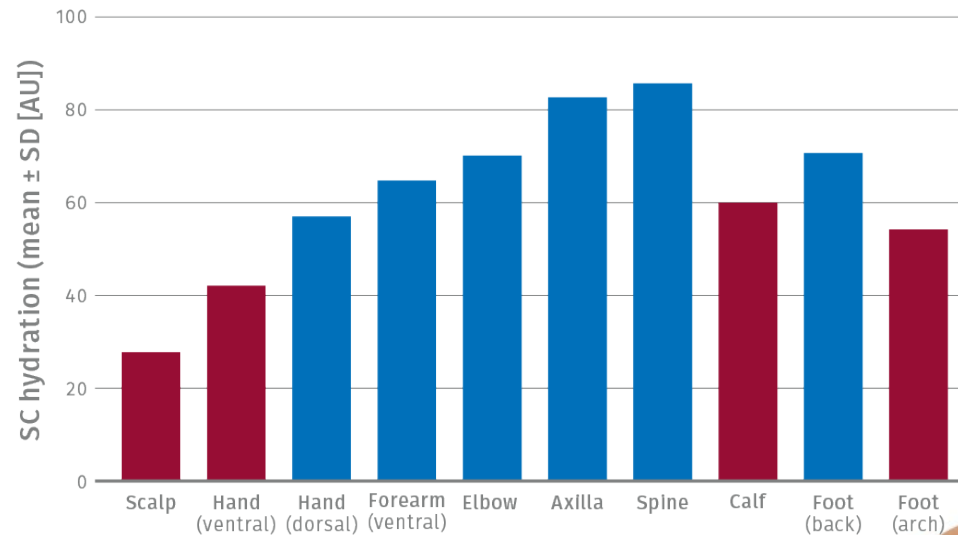
Source: Mintel reports 2020/2021



Your body needs just as much love as your face to stay hydrated!

We all know your face needs a skin care routine – since it's always on show! But your body needs just as much love to stay hydrated and glowing all year round.

The scalp, hands, calf and feet are the driest parts of the body and may demand extra attention.



Source: *Skin Pharmacol Physiol* 2012;25:25–33
Skin hydration was measured with capacitance-based Corneometer CM 825

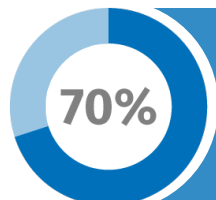


A call for body care products

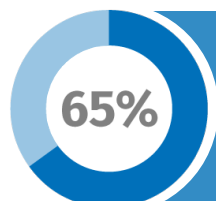
Consumers are looking for trending and proven effective skin care ingredients to incorporate into their body care routine



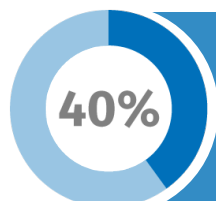
Ingredients remain important to consumers, with a particularly high interest in *natural, sustainably sourced* and *specific active* ingredients.



70% of adults in the US are interested in body care products that contain popular ingredients used in facial skin care.



65% of body care shoppers in China are willing to trade up to a more expensive product if it contains premium ingredients.



40% of internet users (16+) in the UK are interested in body care products with scientifically / clinical proven claims.

Source: Mintel 2021



The next big thing for body care: Beauty Bars

- Eco-friendly
- Water preserving
- Zero-waste
- Plastic-free
- Travel friendly due to their light weight
- Great value; one solid shampoo bar can last two months and save up to one bottle of water per wash
- There's a solid option for nearly every need, including soap, shampoo, exfoliators, lotions and conditioner

Source: CB Beauty Trends 2021



6 simple tips to create a skin care routine for your body



Mild Body Wash

Cleansing is a vital part of any skin care routine.

Product features: A mild body wash that moisturizes your skin without irritating or drying it out.



Moisturize Your Body

Keeping the skin barrier hydrated is crucial for healthy-looking skin.

Product features: For daily moisture, a lightweight, multi-use product is ideal. Those with ultra-dry skin may benefit from the more intense treatment.



Protect Your Hands

Protective hand care as frequent hand-washing and sanitizing is becoming the new norm.

Product features: Hand cream with efficient active ingredients to use regularly is essential.



Hydrate Your Feet

Your feet bear your entire weight every day, so it's no surprise that dry feet are common.

Product features: Foot cream that instantly boosts moisture levels, relieves and repairs dry, cracked feet is recommended.



Soothe Irritated Skin

Skin irritation is the second-most experienced issue, particularly for hands and after depilation.

Product features: Products that explicitly contain actives with soothing and repairing properties are most popular.



Care For The Planet

Sustainability, plastic-free, zero waste, water-saving are increasingly becoming key considerations for consumers.

Product features: Meeting requirements of the increasing trend for natural, water-free products

PENTAVITIN[®]

ID Card



INCI NAME	>	Saccharide Isomerate	>		
DESCRIPTION	>	100% natural, edible maize kernels derived	>		
KEY BENEFITS	>	Renowned for its moisture-magnet properties Unique composition, similar to the skin's own moisturizer, NMF	>		
TECHNICAL	>	Form: Liquid Use level: 0.2–5% pH of use: 4–10	Preservative: Free Solubility: Water soluble Target: Face, Body, Scalp Biodegradability: Biodegradable	>	
REGISTRATION CERTIFICATION	>	 	>		



Celebrating 40 years of PENTAVITIN® – since 1982

1970s | **Sugar isomerization technology**
Start to evaluate sugar isomerisation technology for the Beauty industry

1982 | **PENTAVITIN® The moisture magnet**
Global launch

2012 | **72-hour long-lasting deep hydration**
BSB Award for the Most Innovative Raw Material in the Natural Products Category

2012 | **Soothing & anti-irritation**
China Personal Care & Cosmetics Innovation Award

2015 | **Novel facial color mapping technology**
makes PENTAVITIN® benefits visible

2017 | **Fully sustainable**
One of the lowest carbon footprints in the industry for a moisturizing ingredient

2019-2021 | **New discoveries for rinse-off and body care applications**

- Reduces unwanted effects of skin dryness caused by hand sanitizers
- Boosts skin hydration for 24 hour and even with frequent showering
- Reduces scalp flakiness and oil build-up

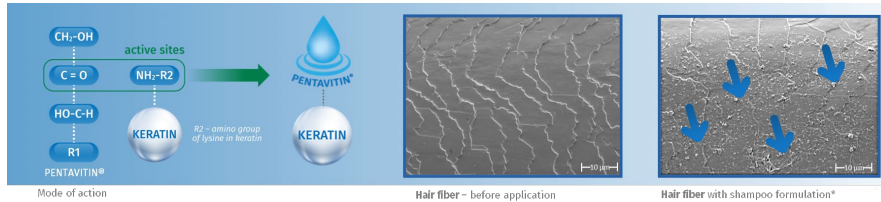
2022 | **PENTAVITIN® is one of the most used moisturizers**
More than 4000 beauty product launches since 2018 (Mintel 2022)

PENTAVITIN® CELEBRATING 40 Years since 1982

PENTAVITIN® The smart moisturizer – from head-to-toe

Unique product features

- Renowned for its moisture-magnet properties¹.



- Unique composition, similar to the skin's own moisturizer, NMF.
- Boosts foam volume.
- Clinically proven efficacy in leave-on & rinse-off formulations.

Fully sustainable



One of the lowest carbon footprints in the industry for a moisturizing ingredient

From head ...

- Hydration is instant and lasts for up to 72 hours²
- 28-days true hydration power to all facial areas³
- Strengthens the skin's natural defenses in preventing dehydration²
- Rapid restoration of skin barrier function²
- Relieves itchy, flaky, dry skin, helping it to feel soft and smooth²
- Reduces scalp flakiness and oil build-up⁷



To toe

- Reduces unwanted effects of skin dryness caused by hand sanitizers⁶
- 24-hour body calming²
- Boosts skin hydration for 24 hour and even with frequent showering⁵
- Takes skin from dry to normal just one hour after washing⁵

1) Soc. Cosmetic Chemists 23, 271-279 (1972)
 2) Cosmetics & Toiletries, Vol.127, No. 9, p 636-643 (2012)
 3) Happy June (2018)
 4) SPC Aug Vol 91 No 8 64-66 (2018)
 5) Personal Care (2021)
 6) Personal Care (2021)
 7) Journal of Cosmetic Dermatology (2022)

PENTAVITIN®

New discoveries



Proven efficacy of PENTAVITIN® (0.2%) in a post-shower body moisturizer**

- ✓ 275% more moisture after single application**
- ✓ Helps to protect skin against dehydration**
- ✓ Strong cumulative moisture recovery effect with repeated use of PENTAVITIN® - even after daily showering**.

Proven efficacy of PENTAVITIN® (0.2%) in a MOISTURIZING SOAP BAR**

- ✓ Performs very well in high pH conditions**
- ✓ 24-hour moisture boost & lock**
- ✓ Hydration booster of glycerin**

Proven efficacy of PENTAVITIN® (0.5%) in a shampoo

- ✓ Visible hydration power & sebum reduction for a healthy-looking scalp**

** *in vivo* tested

Efficacy of PENTAVITIN® in a post-shower body moisturizer

Study Design



Type of study: Single-blind, comparative, randomized and placebo controlled clinical study performed in Brazil

Data collection: August–September 2020

Study population: 20 healthy female volunteers between 18–60 years old

Test products: Body Moisturizer Placebo, Body Moisturizer with 0.2% PENTAVITIN®

Skin characteristics of the selected volunteers: Subjects were pre-screened (corneometry, threshold < 30 AU) in order to find the population with similar values of skin dryness on the test area

Application site: Volar Forearms

Study duration 3 days

Wash out phase: 7 days prior to Day 1 using a standard liquid soap (without PENTAVITIN® - contains Water, Sodium Lauryl Sulfate, Cocamide DEA, Alkylpolyglucoside, Sodium chloride, preservative, pH ~7). The use of this soap was kept through the entire study period.

Time points:

- Day 1 T1 Before investigational products application (baseline)
- Day 1 T2 8 hours after test products application
- Day 1 T3 After rinsing with a standard liquid soap massaged for 15 seconds, rinsed with running water for 5 seconds, dried out with a paper towel to remove the excess of water from the skin
- Day 2 T4 Test products were applied at least 12 hours before the evaluation on Day 2
- Day 2 T5 After rinsing with the standard liquid soap
- Day 3 T6 Test products were applied for the last time at least 24 hours before the evaluation on Day 3

Evaluation: Conductance measurements (Dermalab USB Moisture Module pin probe). Conductance measurement is used to measure the water binding capacity of the stratum corneum. This method is referred as a conductance measurement in the unit of microSiemens (µS).

Strong cumulative moisture recovery effect & dryness protection of PENTAVITIN® in a body moisturizer**

NEW

Feel-good with PENTAVITIN® after daily showering

+ 275% more moisture after single application**

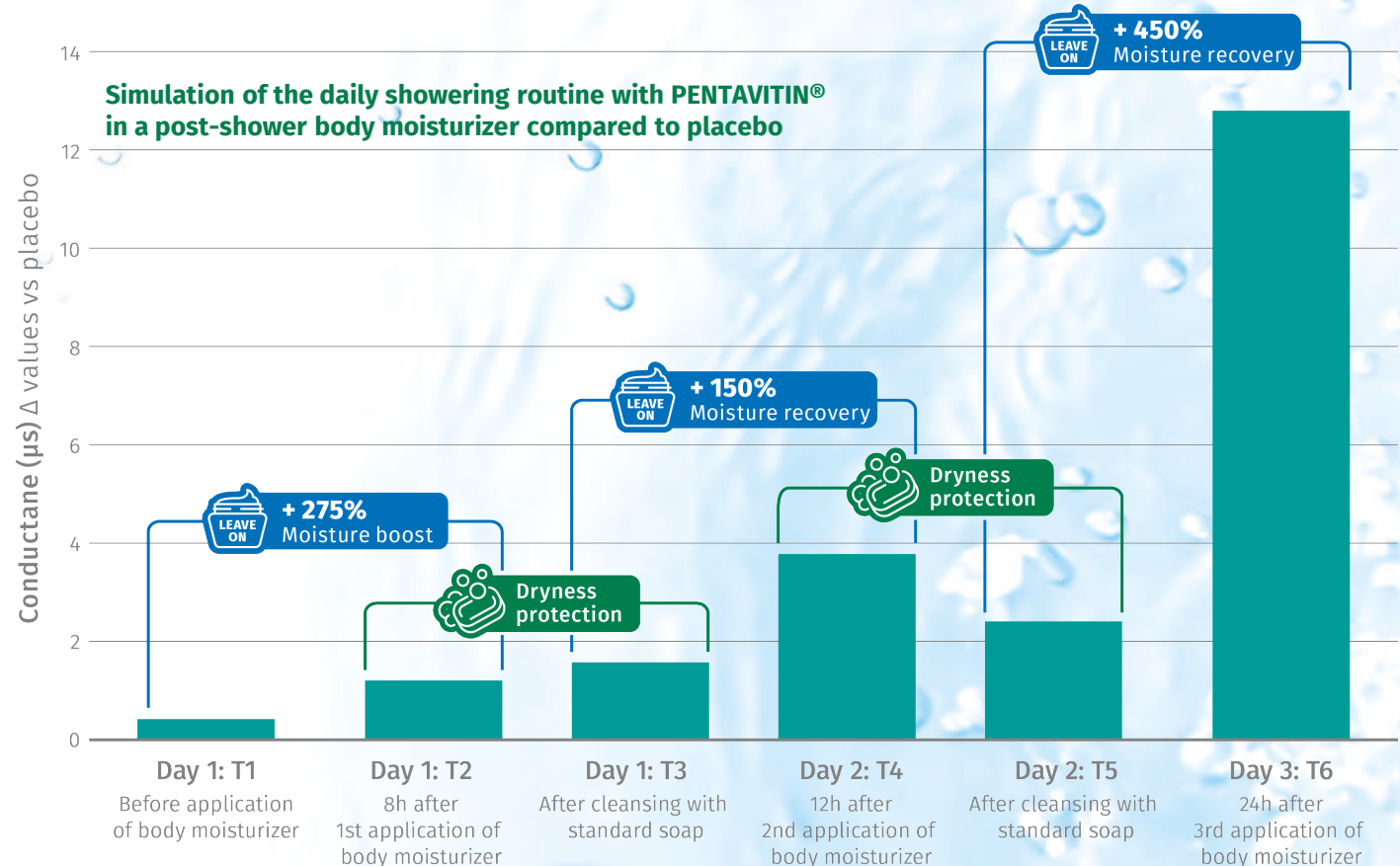
Working like a moisture-magnet, PENTAVITIN® (0.2%) in a body moisturizer boosts skin moisture compared to placebo just 8 hours after a single application (T2).

Helps to protect skin against dehydration **

PENTAVITIN® (0.2%) in a body moisturizer helps to protect skin against dehydration, even after daily showering (T3 and T5).

Strong cumulative moisture recovery effect**

Repeated use of PENTAVITIN® (0.2%) in a body moisturizer (T4 and T6) after daily showering guarantees a strong cumulative moisture recovery effect.



All data are normalized against control (untreated)

** in vivo tested

Efficacy of PENTAVITIN[®] in a MOISTURIZING SOAP BAR

Study Design



NEW

Type of study: Single-blind, randomized and placebo controlled clinical study performed in Europe

Data collection: November–December 2021

Study population: 30 subjects, healthy female volunteers between 25–45 years old

Test products: MOISTURIZING SOAP BAR placebo with 8% glycerin and MOISTURIZING SOAP BAR with 8% glycerin and 0.2% PENTAVITIN[®]
MOISTURIZING SOAP BAR placebo composition: SODIUM PALMATE, SODIUM COCOATE, GLYCERIN (8%), AQUA, pH ~10.

Skin characteristics of the selected volunteers: Subjects were pre-screened (corneometry, threshold < 40 AU) in order to find the population with similar values of skin dryness on the test area

Application site: Volar forearm

Study duration: 8 days. Wash out phase (7 days) prior to baseline using a gentle cleanser.

Rinse-off test procedure: Standardized application

- Test products were applied by gentle massage for 20 seconds.
- Then more energetic massage to allow foaming for 10 seconds.
- Leave the foam for 1 minute.
- Rinse the product under running water for 10 seconds and drying by patting with a tissue (3 times).

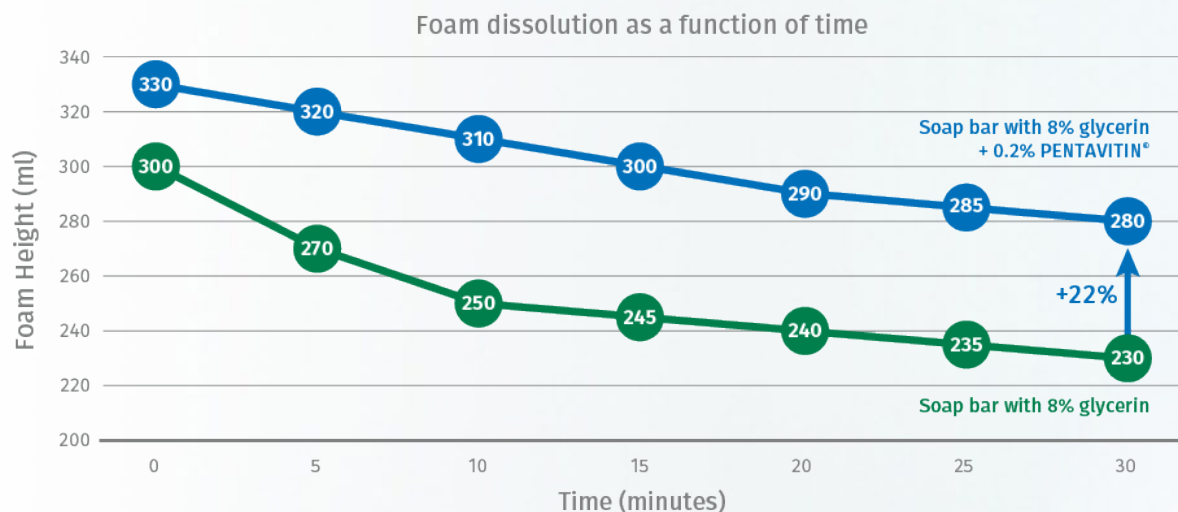
Time points: Baseline, 6 hours and 24 hours after one single use

- Evaluation:**
- Transepidermal water loss (TEWL) measurements (Tewameter TM 300[®])
 - Skin hydration measurements (Corneometer[®] CM 825)
 - Foam height test

Increased foam height with PENTAVITIN® in the MOISTURIZING SOAP BAR

NEW

PENTAVITIN® (0.2%) significantly increases the foam height of the MOISTURIZING SOAP BAR by up to 22% – even better than the soap bar with 8% glycerin!



Method: A graduated cylinder attached to a mixer was used to determine the height of foam. The samples were dissolved using minimal heat and agitation to create a 0.25% solution in deionized water

24-hour moisture boost & lock of PENTAVITIN[®] in a MOISTURIZING SOAP BAR**



NEW

24-hour moisture boost**

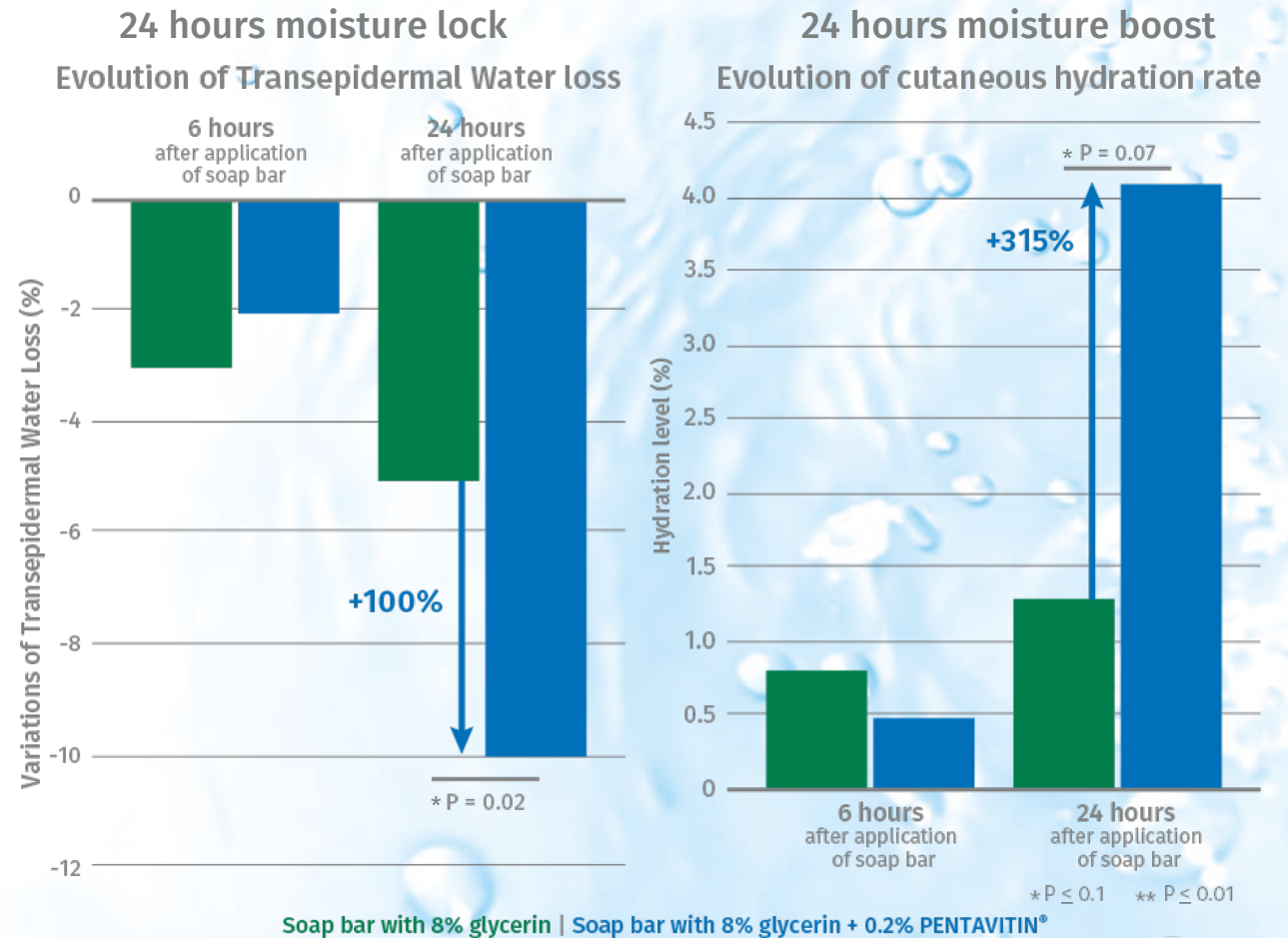
3 times more moisture after one single application of PENTAVITIN[®] (0.2%) in a moisturizing soap bar compared to placebo at 24 hours.

24-hour moisture lock**

PENTAVITIN[®] (0.2%) significantly helps to lock in moisture within the skin for up to 24 hours.

Hydration booster of glycerin**

After one single use, PENTAVITIN[®] (0.2%) significantly boosts the hydration efficacy of a moisturizing soap bar containing 8% glycerin at 24 hours.

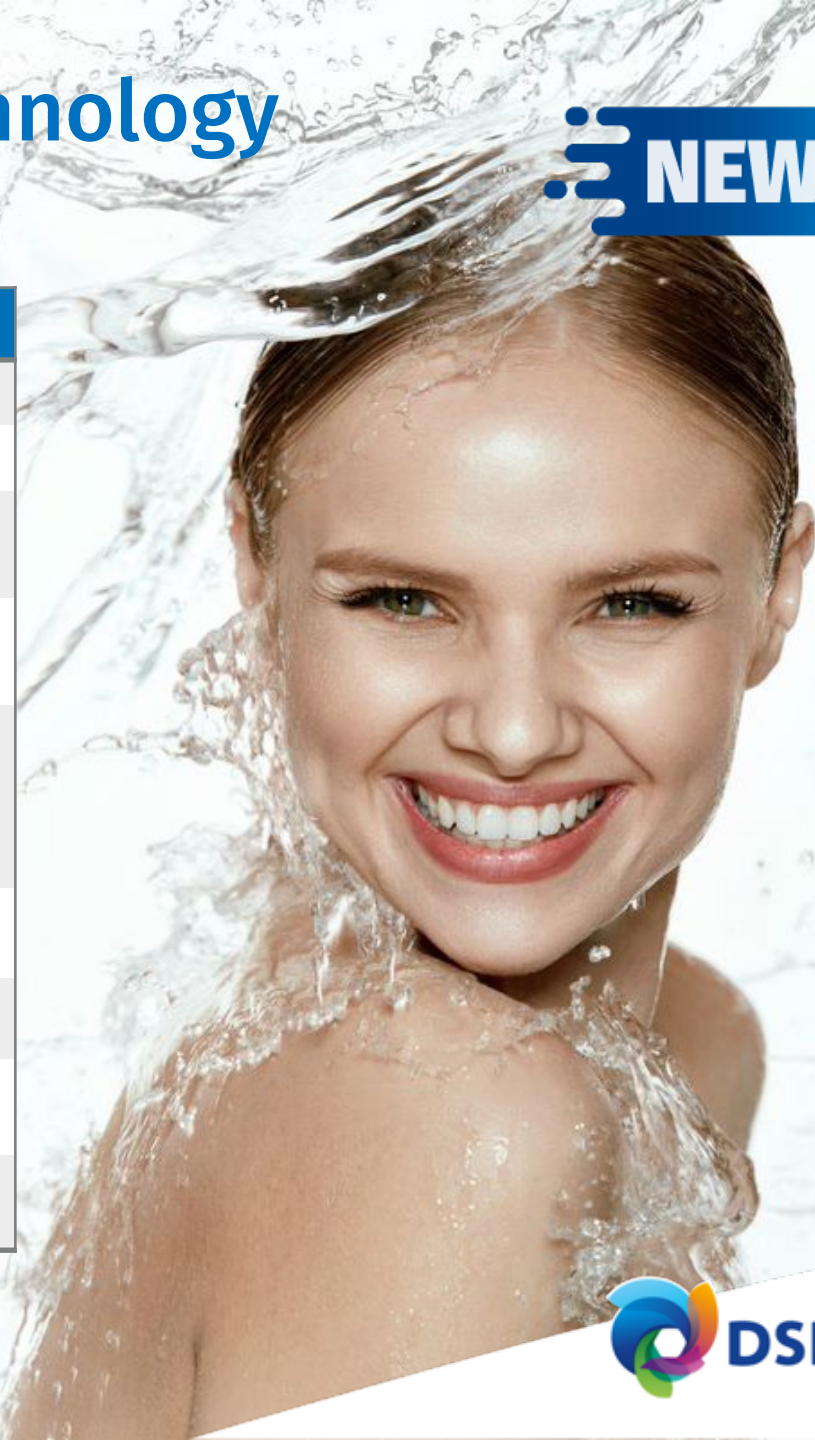


Innovative Scalp Color 3D Mapping Technology

Proof of Concept - Scalp Hydration & Sebum Study

NEW

STUDY DESIGN	
Test Institute	TRI Princeton (USA) - Proof of concept scalp hydration and sebum study on two volunteers.
Data collection	Jan. 2022.
Test products	Shampoo placebo vs. Shampoo with 0.5% PENTAVITIN®: Aqua, Sodium laureth sulfate, Glycerin, Coco-betaine, Sodium cocoamphoacetate, Sodium chloride, Sodium lauryl glucose carboxylate, Lauryl glucoside, Sodium cocoyl glutamate, Lactic acid, PENTAVITIN®, Phenoxyethanol, Benzyl alcohol, Potassium sorbate, Tocopherol.
Skin characteristics of the selected volunteers	Scalp hydration study: one healthy female volunteer (Caucasian, 27 years old). Scalp sebum study: one healthy female volunteer (Caucasian, 24 years old, scalp has dandruff and tends to be on the oilier side).
Study duration	<ul style="list-style-type: none"> - 1 week wash out with shampoo Placebo (Baseline¹). - Daily application of Shampoo Placebo for 7 days (day 7¹). - 10 days break (personal hair routine). - 1 week wash out phase with shampoo Placebo (Baseline¹). - Daily application of Shampoo with PENTAVITIN® for 7 days (day 7¹). - ¹After each wash out phase and day 7 application, FTIR measurements are performed on 12 predefined sites on scalp.
Rinse-off test procedure	<ul style="list-style-type: none"> - Test products were applied by gentle massage on scalp for 2-3 minutes. - Rinse gently and thoroughly the hair and scalp with warm water and drying with a towel.
Measuring sites Time points	<ul style="list-style-type: none"> - Hemi scalp, 12 predefined sites. - Baseline and after 7 days.
Evaluation	ATR-FTIR (Fourier-Transform infrared) spectroscopy measurements with REMSpec optical fiber From the IR spectrum, calculation of water and sebum content.
Colour scales & test parameters	Scalp hydration and sebum are visualized with color scales, resp. from white to blue and white to brown, based on FTIR spectrum intensity. Calculation of difference between Baseline and Day 7 results.



Innovative Scalp Color 3D Mapping Technology

The method...

ATR-FTIR (Fourier-transform infrared) spectroscopy in combination with specific algorithms generates 3D color scalp hydration & sebum mappings

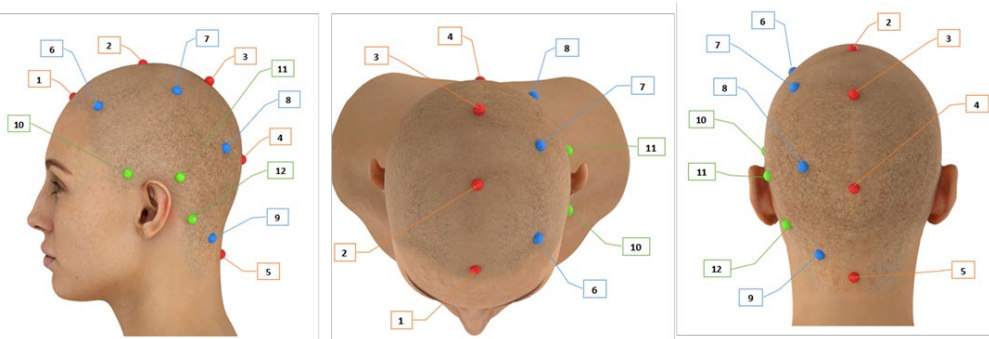
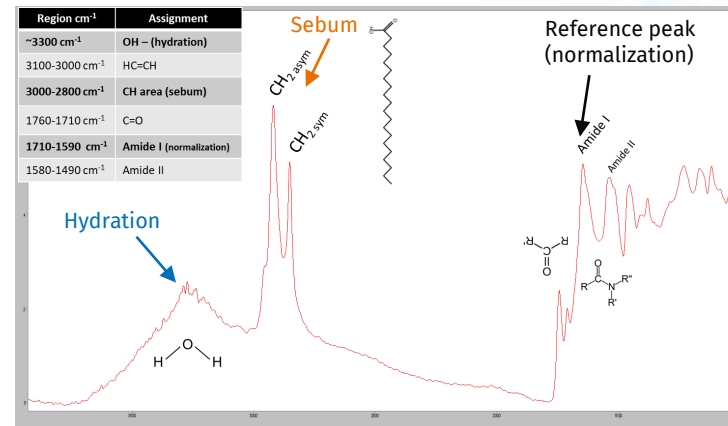


SCALP ANALYSIS

- 12 ATR-FTIR spectra are collected at the same specific location on the scalp to evaluate the level of sebum and water
- These measurements are used to generate specific scalp 3D mapping.

TEST INSTRUMENT

- FTIR spectrometer with REMSpec optical fiber



TEST SITES

- 12 predefined sites on the hemi scalp are selected

SPECIFIC ALGORITHMS



SCALP HYDRATION



SCALP SEBUM

NEWTONE
A QIMA Life Sciences Company



Fully hydrated scalp after frequent use**

NEW

FTIR scalp hydration color 3D mapping
Shampoo placebo / 7 days vs baseline



FTIR scalp hydration color 3D mapping
Shampoo with 0.5% PENTAVITIN® / 7 days vs baseline



LESS HYDRATED

MORE HYDRATED

**NEW
INNOVATION**

Visible hydration power after 7 days frequent use of PENTAVITIN® (0.5%) in a shampoo compared to placebo.

** in vivo tested

Visible sebum reduction after frequent use**

NEW

FTIR scalp sebum color 3D mapping
Shampoo placebo / 7 days vs baseline



FTIR scalp sebum color 3D mapping
Shampoo with 0.5% PENTAVITIN® / 7 days vs baseline



MORE SEBUM

LESS SEBUM

After 7-days frequent use of PENTAVITIN® (0.5%) in a shampoo, visible reduction in sebum observed on scalp.

**NEW
INNOVATION**

** in vivo tested



embrace your skin

TAKING GOOD CARE OF THE SKIN IS TAKING CARE OF HEALTH.

The body's largest organ deserves all the dedication it can get in order to stay hydrated and radiant, from head to toe. After all, we are much more than just a face.

It's time to **Embrace Your Skin...** as a whole!

With the exclusive **PENTAVITIN®** in its formulations, an ingredient of natural origin and recognized effectiveness, the Embrace Your Skin line works by **retaining water in the skin**, transforming your self-care routine with an intelligent treatment of all areas of the body, including those that tend to dry out more, like hands and feet.

The result is skin that is always smooth, restored and protected for a lasting feeling of comfort and well-being.



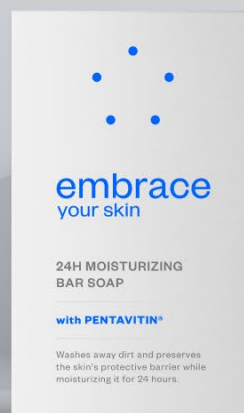
with **PENTAVITIN®**

SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE



PENTAVITIN[®]

*The smart moisturizer
- from head-to-toe*

Back up

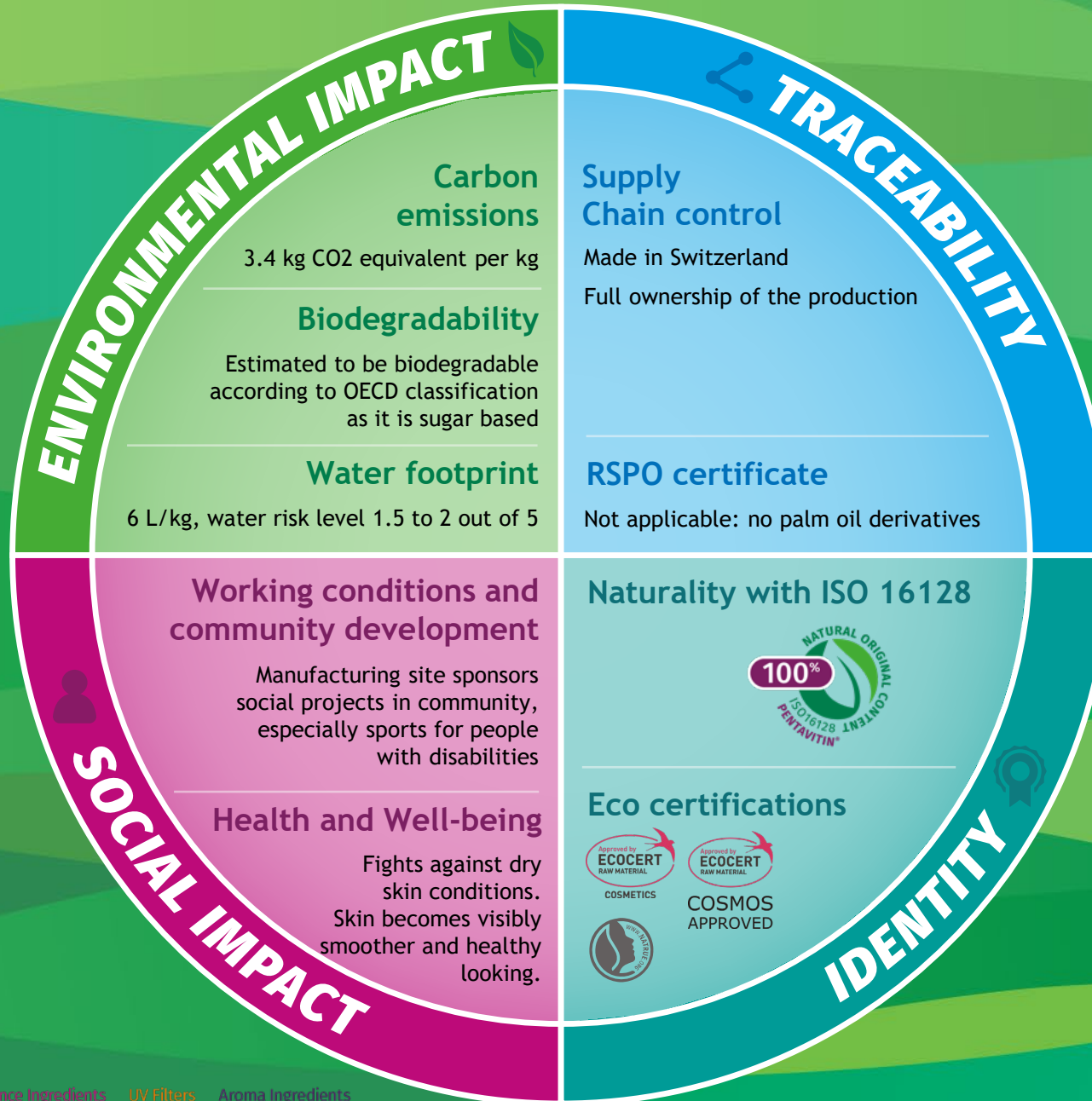
PENTAVITIN®

Sustainability Imp'Act Card™

One of the lowest carbon footprints in the industry for a moisturizing ingredient

Long proven track record on skin health benefits

INCI name (active)
Saccharide Isomerate



Aligned with and contributing to the

SUSTAINABLE
DEVELOPMENT
GOALS

3 GOOD HEALTH
AND WELL-BEING

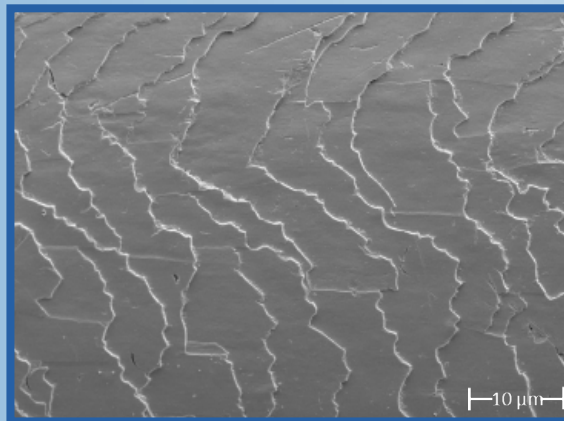
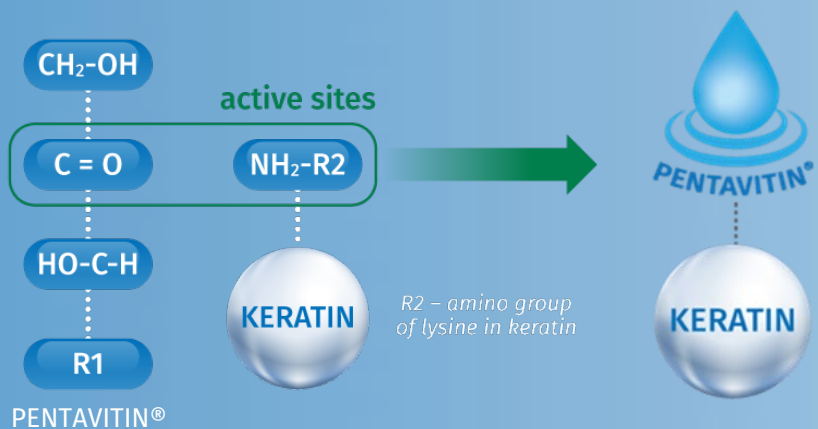


13 CLIMATE
ACTION

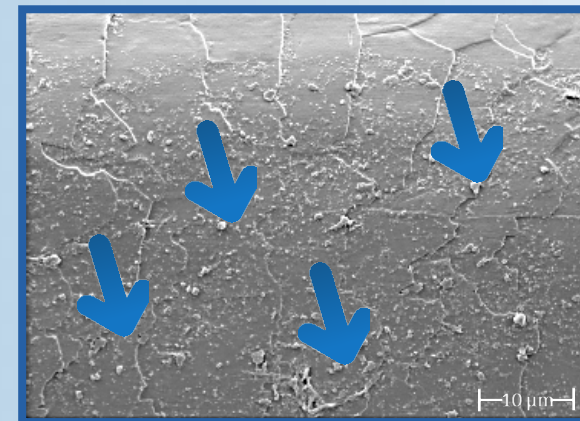


PENTAVITIN®

Binds to keratin as magnet power!



Hair fiber – before application



Hair fiber with shampoo formulation* containing 1% PENTAVITIN®

Mode of action



Binds to keratin as magnet power**



Perfectly connects with the skin's top layers**



Not washed off



SEM pictures of hair fibers washed with a base shampoo are showing deposition (blue) of PENTAVITIN®

Shampoo formulation: water, 1% PENTAVITIN®, 35% sodium laureth sulfate (28%), 5% cocamidopropyl betaine (50%), 0.5% sodium benzoate, 1.5% sodium chloride, citric acid

** in vivo tested

The Science behind PENTAVITIN®



- **Biomimetic** ingredient that reproduces the effects of the skin/scalp's own natural moisturizing factor (NMF)*.
- Unique skin **binding action****
- Contributes **significantly** to skin's **moisturization****.
- It is only removed from skin by desquamation, providing a **long term moisturization** and effects under rinse-off conditions**



PENTAVITIN®

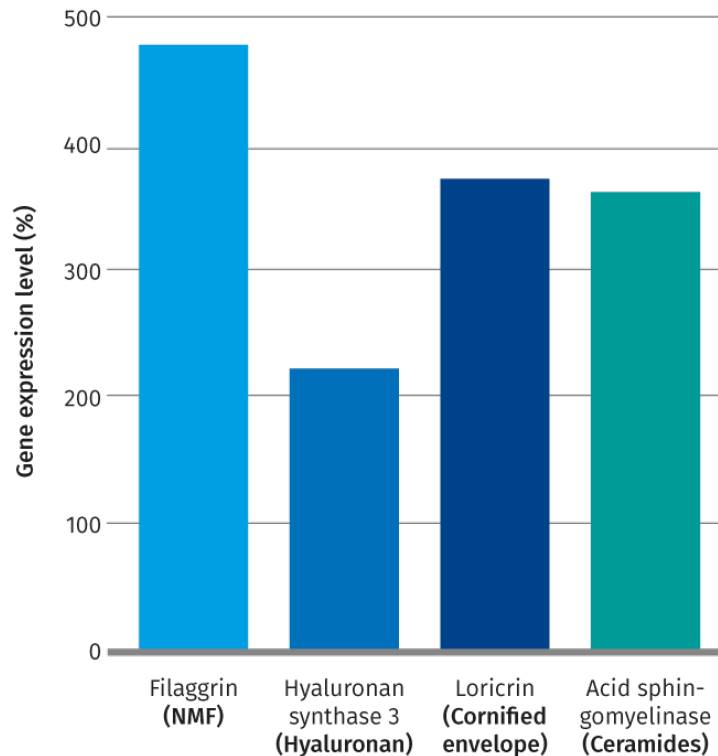


NMF

*in vitro tested
** in vivo tested

PENTAVITIN®

Moisturizing, Protection, Soothing and Strengthening



Natural water boost*
by boosting filaggrin



Protects skin*
by boosting loricrin



Aqua soothing*
by boosting hyaluronan
synthase 3



Strengthens skin's barrier by
boosting acid sphingomyelinase*

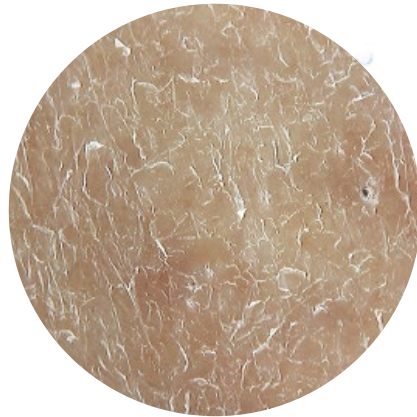
**in vitro tested with 0.3%
PENTAVITIN®*

PENTAVITIN®

Reverse the 5 signs of dehydrated skin: roughness, dullness, flakiness, tightness, redness**



Before application (on leg)

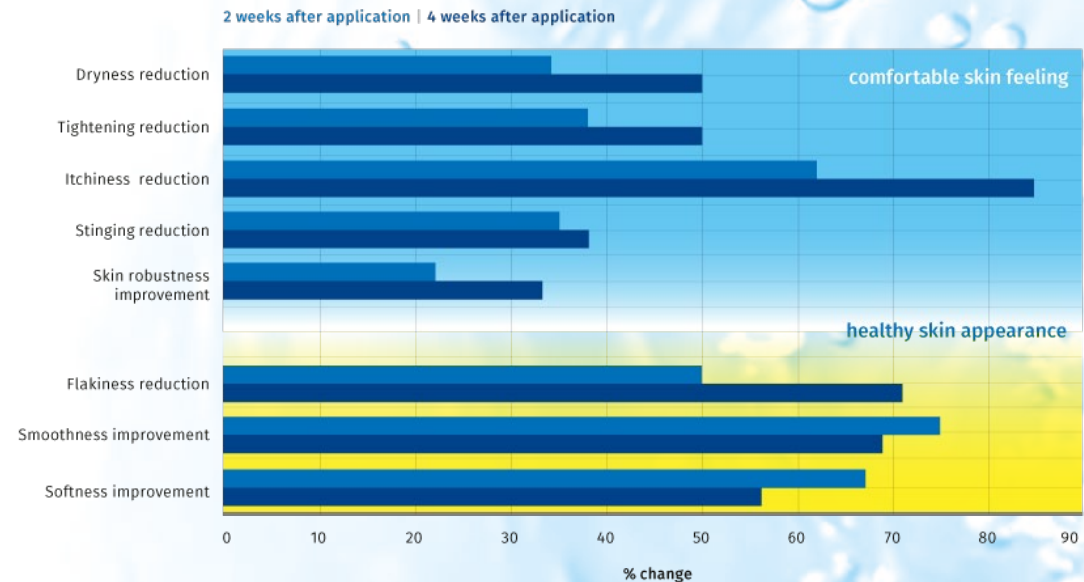


After 4 weeks application of 1% PENTAVITIN® (on leg)

** in vivo tested

Visibly smoother and healthier appearance by 1% PENTAVITIN®**

Consumer panel (39 – 41 years old) testing confirms the benefits of PENTAVITIN® (1%)



Reduced flakiness, tightness and stinging by 1% PENTAVITIN®**

FACIAL COLOR MAPPING TECHNOLOGY Makes PENTAVITIN® Benefits Visible

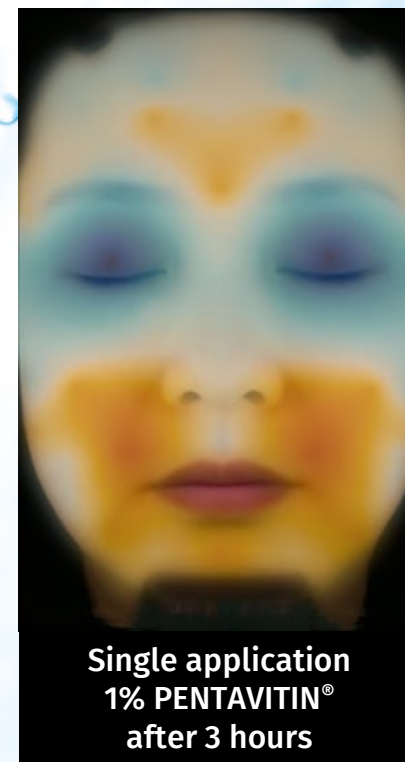
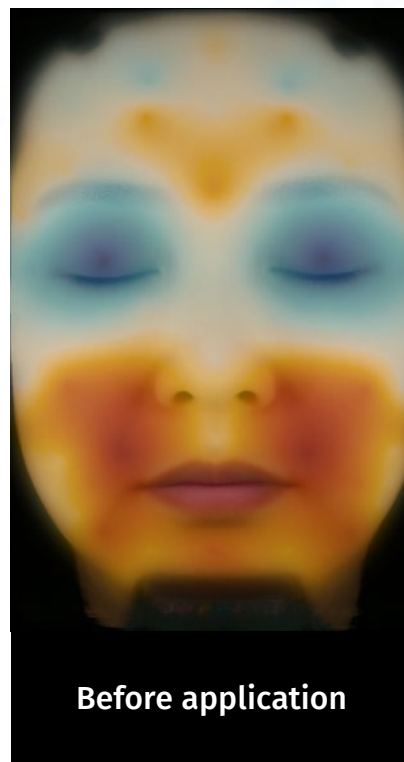


3-HOUR after single application of 1% PENTAVITIN® dry cheek area is already better hydrated**.



Used for 28-DAYS, 1% PENTAVITIN® brings tired, dry skin back to life**.

*** in vivo tested*



PENTAVITIN® (3%)

The true hydration artist!



3-HOUR hydration boost to
excessively dry skin areas**



28-DAYS true hydration
power to all facial areas**

** *in vivo* tested

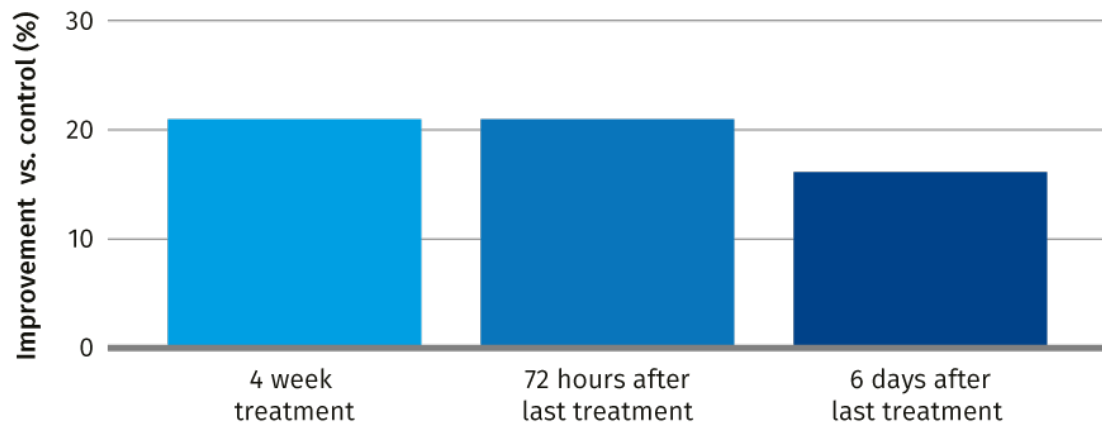


PENTAVITIN®

Long-lasting deep hydration**

Tested on 12 female subjects, 40±1 y, evaluated skin area: calf; 4w and twice daily application of 1% aqueous PENTAVITIN®, measurements 72 hours & 6 days after last application, assessment by clinical grading according to Kligman scale

Improvement in the signs of dry skin according to Kligman's clinical grading



72 hours long-lasting deep hydration**



Prolongs skin hydration up to 6 days following 4 week treatment**

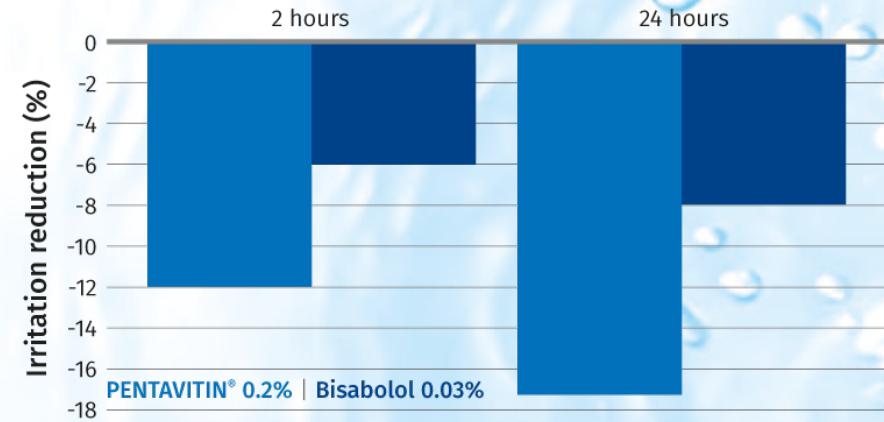
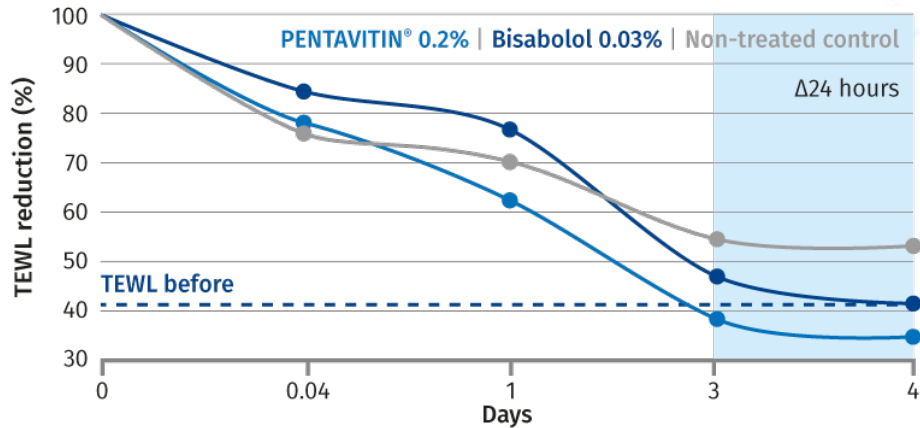
** *in vivo* tested



PENTAVITIN®

Restores & calms stressed skin**

18 subjects, age 32-46, skin type II/III, 14 days treatment of 0.2% aqueous PENTAVITIN® solution and 0.03% Bisabolol under rinse-off conditions at the forearm. Skin irritation and barrier disruption induced by tape stripping, Assessment of barrier repair by TEWL (Tewameter TM 300®) and irritation by Skin Colorimetric Measurement (Colorimeter CL400®, a-value)



Rapid restoration of skin barrier function**



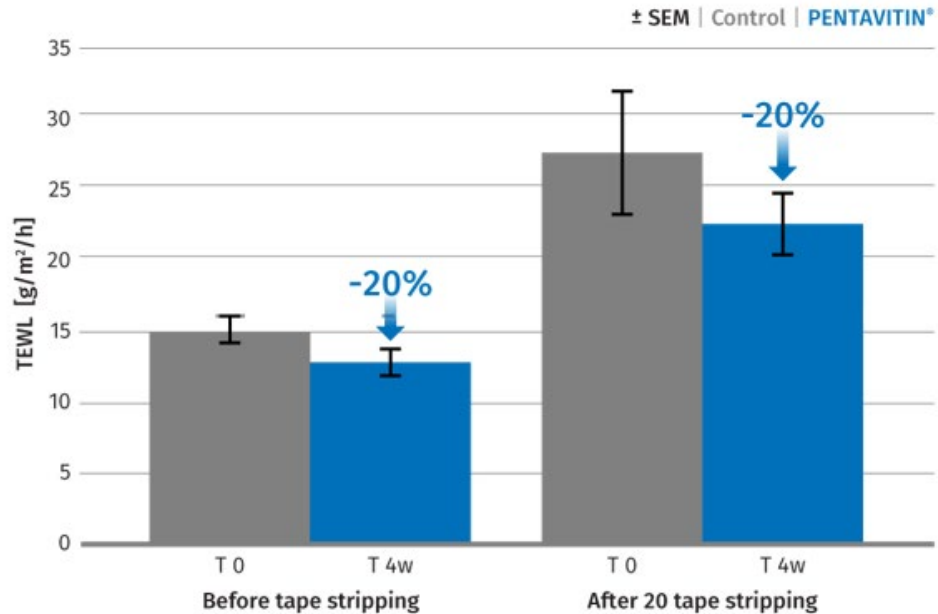
Instant calming of stressed skin that lasts for up to 24 hours**

** *in vivo* tested

PENTAVITIN®

Keeps skin strong by improving the skin's barrier**

Tested on 12 female subjects, 40±1 y, evaluated skin area: calf; twice daily application of 1% aqueous PENTAVITIN®, measurements before and after 4w treatment phase, barrier disruption induced by 20 tape strippings; assessment of barrier repair by TEWL



** *in vivo* tested

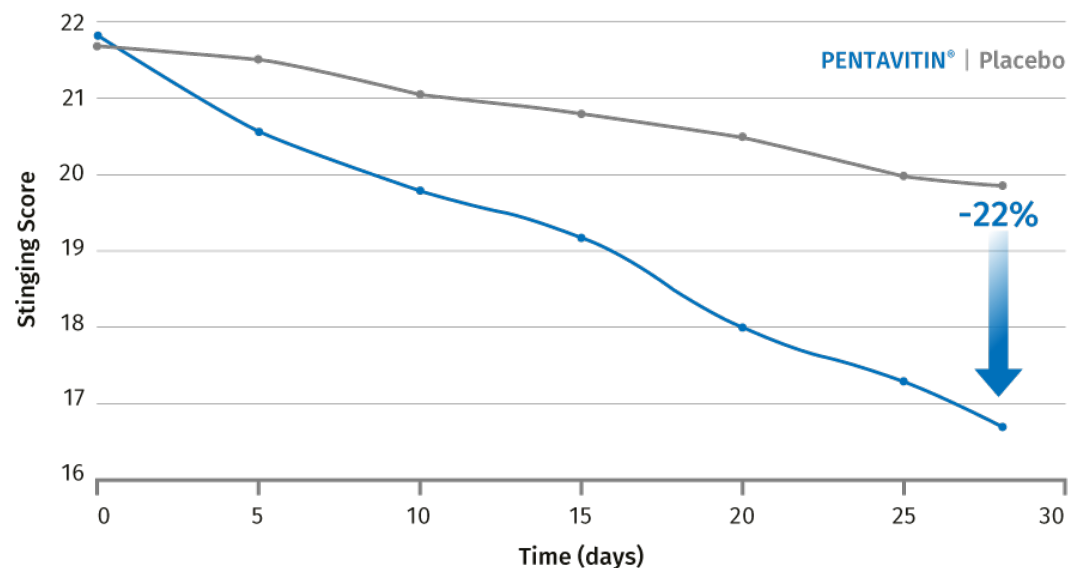


PENTAVITIN®

Irritation reduced by 22%**

Lactic acid stinging test

Tested on 12 female subjects, 40-60 y, evaluated skin area: face; 5% lactic acid cream/pH: 3.0 with and without 5% PENTAVITIN®, 4 weeks twice daily application, the efficacy was evaluated by trained clinician and rated on a 5-point scale (stinging score)



Effective against irritation caused by exfoliation with Alpha Hydroxy Acids**

* W.Smith, SÖFW-Journal, 121;14/95

** in vivo tested



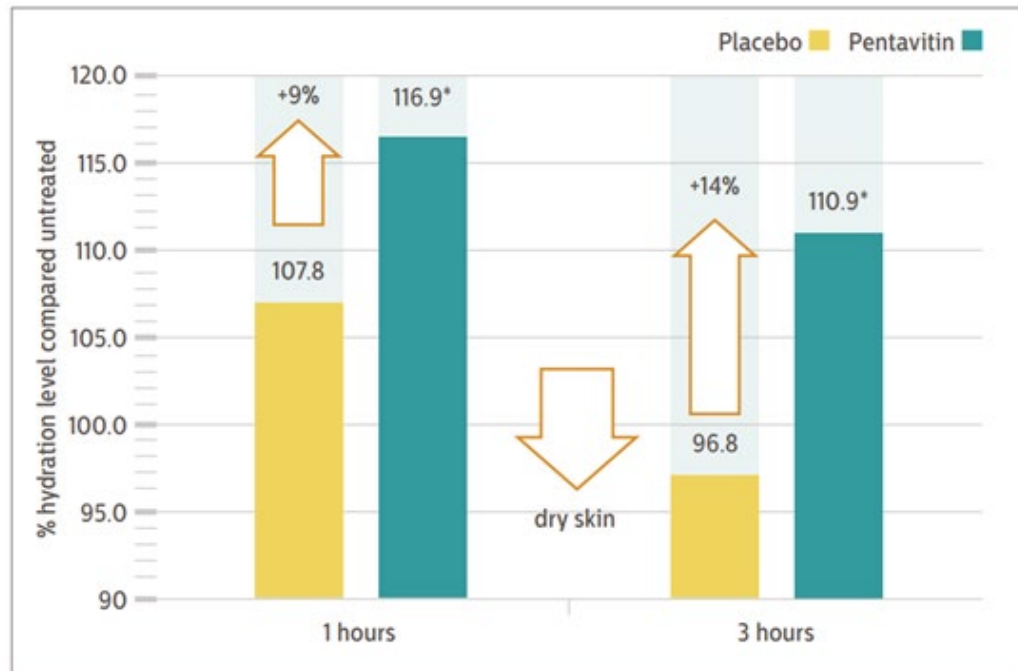
PENTAVITIN® (1%) in alcohol base hand sanitizer

Study design – tested in China

<ul style="list-style-type: none"> TEST PRODUCTS: <ul style="list-style-type: none"> Sanitizer placebo, Sanitizer with PENTAVITIN® (1%) Sanitizer assessment: skin hydration 			
<ul style="list-style-type: none"> STUDY POPULATION: <ul style="list-style-type: none"> 10 Chinese female volunteers, 23-56 years old 			
<ul style="list-style-type: none"> OVERALL STUDY DESIGN 		<ul style="list-style-type: none"> TIME POINTS: <ul style="list-style-type: none"> Baseline, 3 hour 	
<ul style="list-style-type: none"> Conditioning phase: 3 days Application: test products were applied onto the inner forearm as per randomization after standardized cleansing procedure 			
<ul style="list-style-type: none"> SKIN PHYSIOLOGY PARAMETER: <ul style="list-style-type: none"> Corneometer 			
Ingredients	INCI Name	Sanitizer PENTAVITIN® % w / w	Sanitizer Placebo % w / w
WATER DEM.	AQUA	27,48	28,48
Carbopol Ultrez 21	ACRYLATES/C10-30 ALKYL ACRYLATE CROSSPOLYMER	0,80	0,80
Ethanol abs.	ALCOHOL	70,00	70,00
AMP Ultra PC 2000	AMINOMETHYL PROPANOL, AQUA	0,72	0,72
PENTAVITIN®	SACCHARIDE ISOMERATE, AQUA, CITRIC ACID, SODIUM CITRATE	1,00	0



PENTAVITIN® (1%) reduces unwanted effects of skin dryness caused by alcohol base hand sanitizer**



Visualization of the hydration effect in a hand sanitizer formula containing PENTAVITIN® (1%) compared to placebo sanitizer

The sanitizer formulation with 1% PENTAVITIN® shows both to **fully prevent the development of skin dryness** and to **improve hydration levels** when compared to untreated skin**

9% more hydration just 1 hour after use**

14% hydration boost after 3 hours**

Significant effects**

Sanitizer 1% PENTAVITIN® vs sanitizer placebo

** *in vivo* tested

PENTAVITIN®

Shower gel – study design

• TEST PRODUCTS:

- **SHOWER GEL PLACEBO, SHOWER GEL with PENTAVITIN® (0.2%, 0.5%)**
- **SHOWER GEL formulations:** pH 5, soap-free, contain Laureth Sulfate, Cocamidopropyl Betaine
- **SHOWER GEL assessment:** skin hydration and skin barrier

• STUDY POPULATION:

- 50 Caucasian women, 25-45 years old with dry skin
- 25 volunteers Shower gel 0.2% PENTAVITIN® and Shower gel 0.5% PENTAVITIN®
- 25 volunteers Shower gel placebo

• SKIN CHARACTERISTICS OF THE SELECTED VOLUNTEERS:

- Dry skin on volar forearm. Corneometer values: < 40 AU

• OVERALL STUDY DESIGN:

- Wash out phase of 7 days.
- Single standardized application (2 µl/cm²). Moisten the treated rinsed zone and apply the product by gentle massage for 20 seconds and then more energetic massage to allow foaming for 10 seconds. Leave the foam for 1 minute. Standardized rinsing using the atomizer (3 times) and standardized drying by patting with a tissue (3 times).
- Test products were applied on the volar forearm once on Day 0 and twice daily from Day 1 to Day 6.
- Test products were applied for the last time in the evening before evaluation, at least 12 hours before the evaluation on Day 7.

TIME POINTS:

- Baseline, 1-hour, 24-hours and 7-days

• SKIN PHYSIOLOGY PARAMETERS:

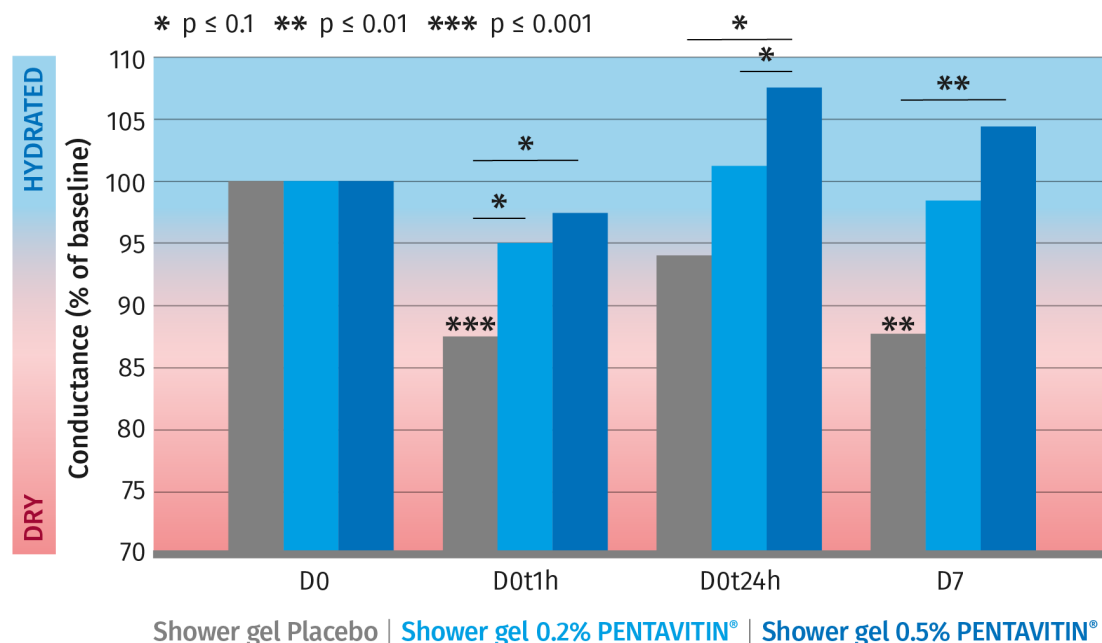
- DermaLab (conductance)
- Self-evaluation questionnaire
- TEWL (Tewameter)

PENTAVITIN®

Boosts skin hydration for 24 hours**



Evaluation of skin hydration after 7 days with shower gel (soap-free, pH 5) formulations



SKIN HYDRATION BOOST FOR 24 HOURS**

After just one use, shower gels with PENTAVITIN® (0.2%, 0.5%) boost skin hydration for 24 hours

POST-SHOWER DRYNESS PREVENTION**

Even after one week of frequent showering, shower gels with PENTAVITIN® (0.2%, 0.5%) hydrate the skin and prevent skin dryness**

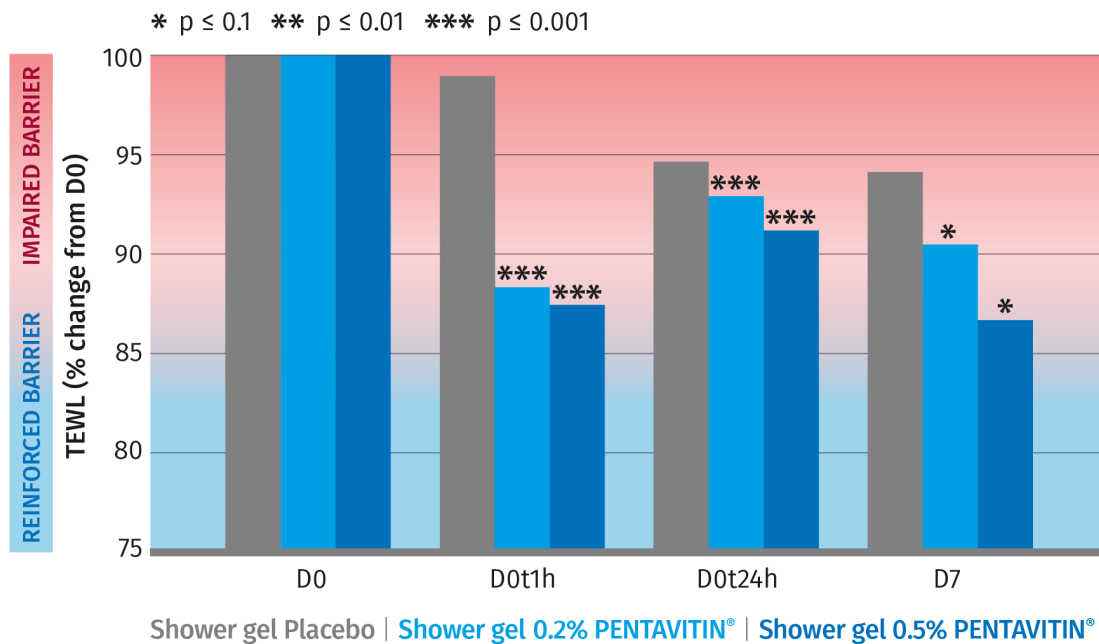
SIGNIFICANT EFFECTS**

- Use of the shower gel placebo leads to a significant decrease in skin hydration immediately after showering that is not recovered after 7 days**
- At any time significant hydration boost of the shower gel PENTAVITIN® (0.5%) vs shower gel placebo**
- After 1 hour significant hydration boost of the shower gel PENTAVITIN® (0.2%) vs shower gel placebo**

Even with frequent showering PENTAVITIN® helps reinforce the skin's barrier**



Evaluation of TEWL (Tewameter) over 7 days with shower gel (soap-free, pH 5) formulations



REINFORCED SKIN BARRIER**

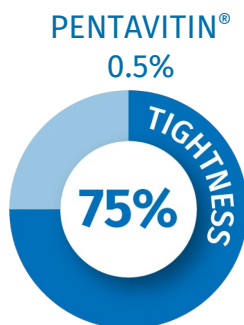
Just 1 hour after showering and even after one week of frequent showering, shower gels with PENTAVITIN® (0.2%, 0.5%) help reinforce the skin's barrier

SIGNIFICANT EFFECTS**

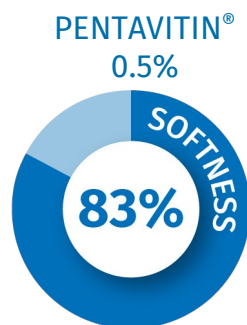
- Shower gels with PENTAVITIN® (0.2%, 0.5%) vs untreated skin (D0)

CONSUMERS CONFIRM EFFICACY**

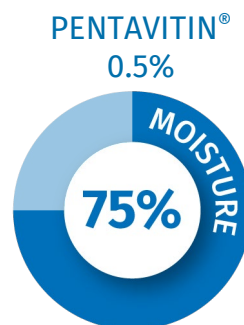
Shower gel (soap-free, pH 5) with PENTAVITIN® (0.5%, 0.2%)



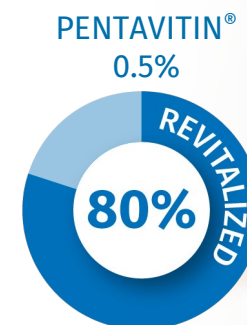
The product alleviates tight feeling



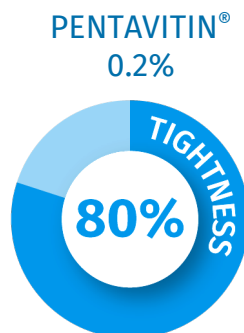
My skin feels softer



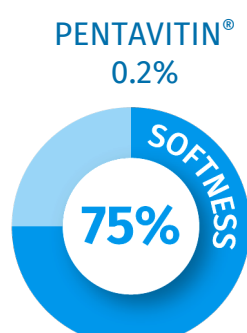
My skin feels more moisturized



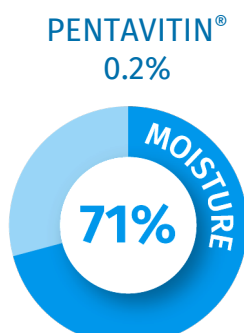
The product left my skin feeling revitalized



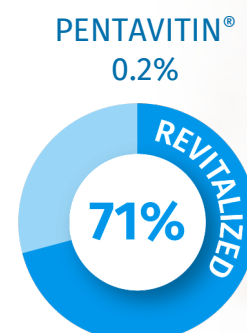
The product alleviates tight feeling



My skin feels softer



My skin feels more moisturized



The product left my skin feeling revitalized

** in vivo tested

PENTAVITIN®

Body wash - study design – tested on Asian skin

• TEST PRODUCTS:

- **BODY WASH placebo,**
- **BODY WASH with PENTAVITIN® (0.2%, 0.5%)**
- **BODY WASH formulations:** pH 9, soap-based, contain potassium salts of aliphatic acids such as Lauric acid, Myristic Acid, Palmitic Acid, Potassium Hydroxide
- **BODY WASH assessment:** skin hydration

• STUDY POPULATION:

- 33 Asian female volunteers, 21-65 years old with dry skin

• SKIN CHARACTERISTICS OF THE SELECTED VOLUNTEERS:

- Dry skin on volar forearm. MMSC (MoistureMeter SC) readings 10 – 20

• OVERALL STUDY DESIGN

- Wash out phase of 7 days.
- Approximately 0.030 g of each product was applied on test sites as per randomization, by massaging for 60 seconds using a fingerstall. Sites were washed with water after this.
- Test products were applied on the volar forearm once on Day 0 and twice daily from Day 1 to Day 6.
- Test products were applied for the last time in the evening before evaluation, at least 12 hours before the evaluation on Day 7

• TIME POINTS:

- Baseline, 1 hour and 7 days

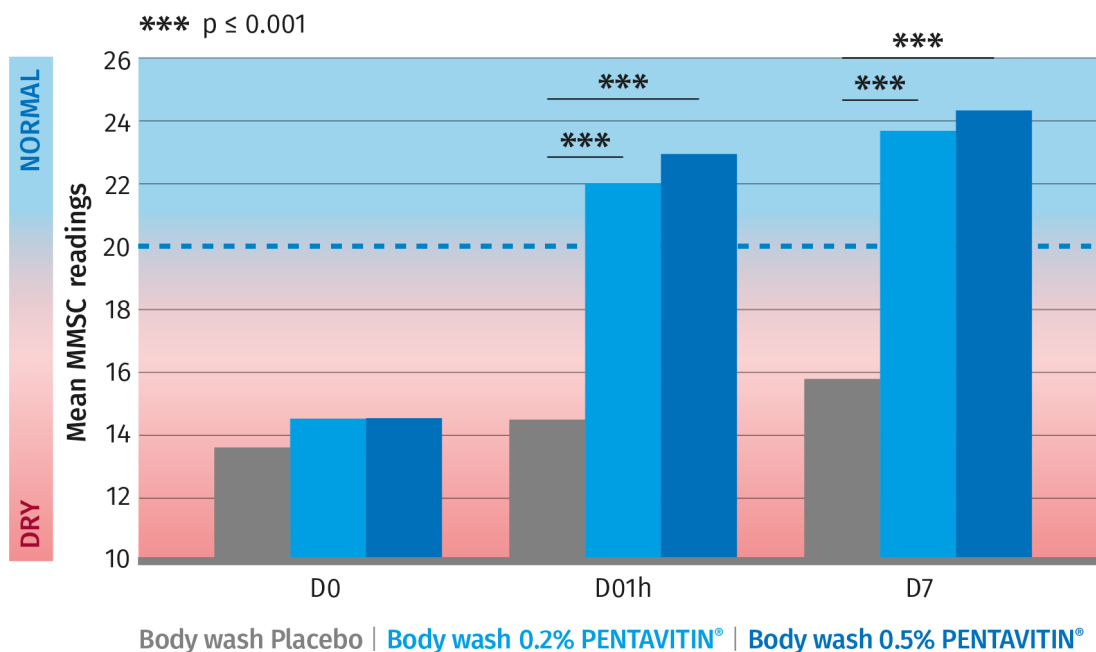
• SKIN PHYSIOLOGY PARAMETER:

- MoistureMeter SC (capacitive device)

PENTAVITIN® takes skin from dry to normal just one hour after showering**



Evaluation of skin hydration (MMSC) over 7 days with body wash (soap-based, pH 9) formulations



SKIN MOVES FROM DRY TO NORMAL**

1 hour after showering with body wash formulations with PENTAVITIN® (0.2% and 0.5%)

OPTIMUM SKIN HYDRATION**

When showering daily for 7 days, body wash formulations with PENTAVITIN® (0.2%, 0.5%) provide optimum skin hydration

SIGNIFICANT HYDRATION BOOST**

Body wash formulations with PENTAVITIN® (0.2%, 0.5%) lead to a significant increase in hydration vs body wash placebo

** *in vivo* tested

PENTAVITIN®

Study Design / Scalp Care

Target group

- 18-50 y.o. (mean 39 y.o.)

30 Volunteers per formulation

- Placebo
- PENTAVITIN® 0.2% and 0.5%

Application: 28 days

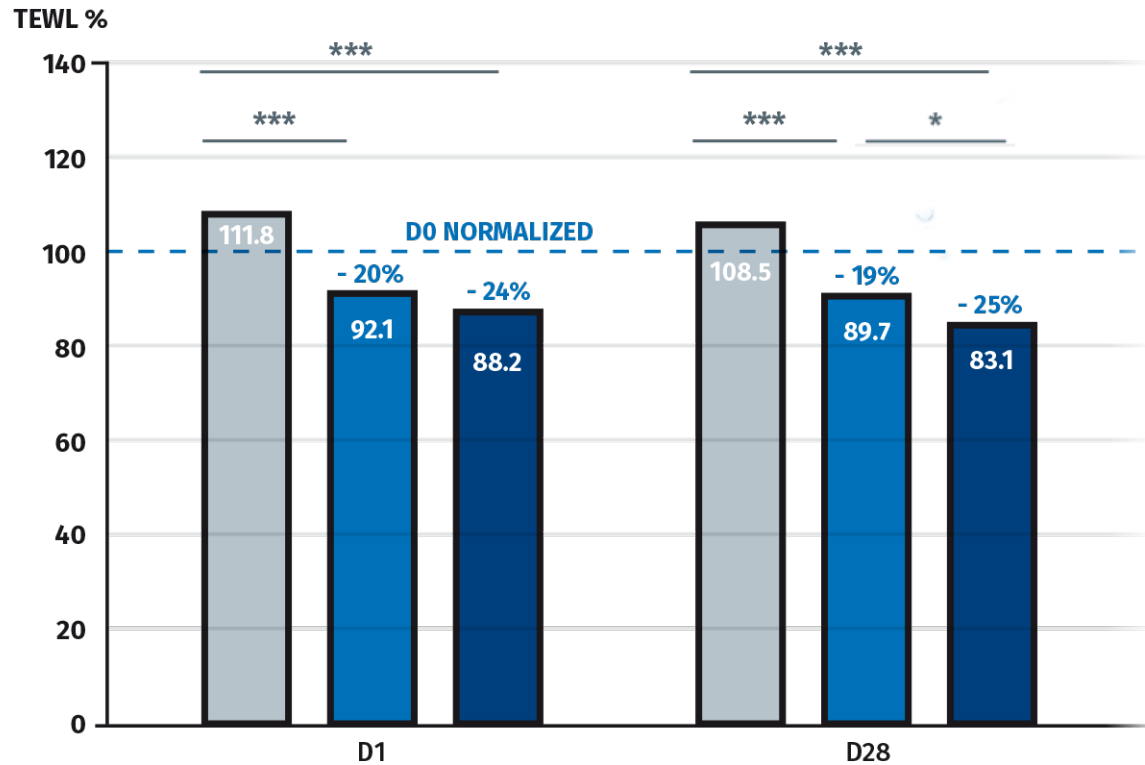
2x day, shampoo, rinse-off

Single-blind, randomized



PENTAVITIN® - Reinforced scalp barrier**

24 hour after one single application and frequent showering

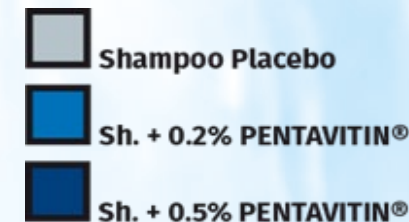


Tewameter TM nano – Dandruff site

Use of the shampoo placebo damages the scalp barrier after showering and it is not recovered even after 28 days**.

24 hour (D1) after one single application and even after 28 days of frequent showering, shampoos with 0.2% and 0.5% PENTAVITIN® reinforce the scalp barrier**.

PENTAVITIN®'s improvements over the placebo are highly statistically significant**.



n=30 – SEM error bars

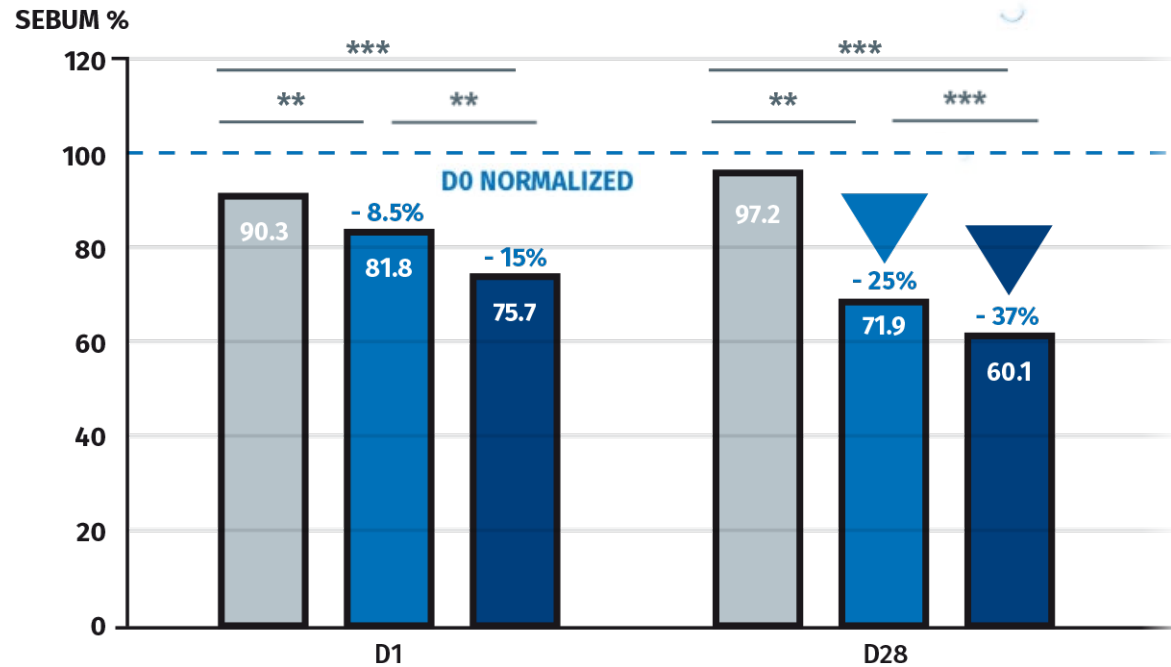
***p < 0.001

Reduction versus placebo

** *in vivo* tested

PENTAVITIN® - Sebum Reduction**

24 hour after one single application and frequent showering



Meibometer , MB560- Dandruff site

15% sebum reduction 24 hour (D1) after one single application with a shampoo containing **PENTAVITIN®** (0.5%)**

37% sebum reduction after frequent showering with a shampoo containing **PENTAVITIN®** (0.5%)**

PENTAVITIN®'s (0.2% and 0.5%) improvements over the placebo are highly statistically significant**



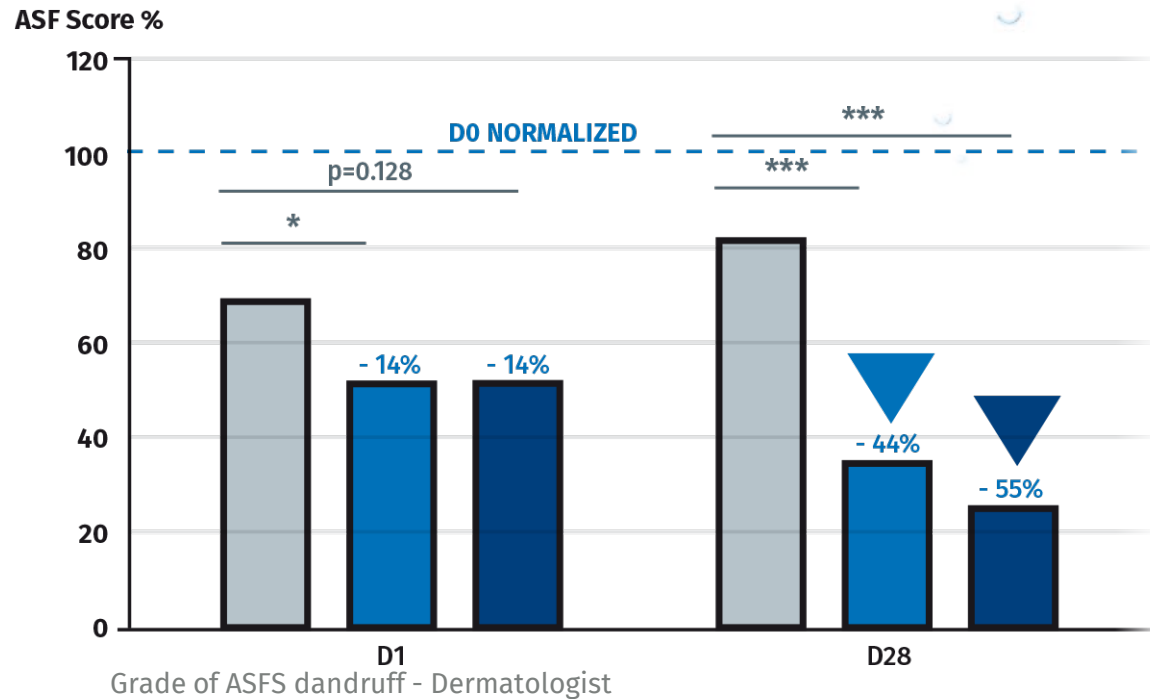
n= 30 – SEM error bars
***p < 0.001 **p < 0.01

Reduction versus placebo

** *in vivo* tested

PENTAVITIN® - Anti-Flaking**

24 hour after one single application and frequent showering

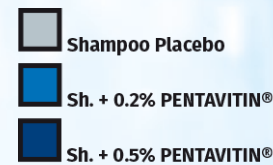


After 28 days of treatment, the placebo increases flaking while PENTAVITIN® reduces it**

14% reduction of scalp flaking 24 hour (D1) after one single application with shampoos containing PENTAVITIN® (0.2% and 0.5%)**

Up to and 55% reduction of scalp flaking after frequent showering with shampoos containing PENTAVITIN® (0.5%)**

PENTAVITIN®'s (0.2% and 0.5%) improvements over the placebo are highly statistically significant**



n= 30 - SEM error bars
***p < 0.001 *p < 0.05

Reduction versus placebo

** in vivo tested

PENTAVITIN® - Anti-Flaking**

Visible reduction of scalp flaking



D0 - Before application



D1 - 24 hours, after just one use of a shampoo with **PENTAVITIN® (0.2%)**



D28 - 28 days, after frequent showering with a shampoo containing **PENTAVITIN® (0.2%)**



D0 - Before application



D1 - 24 hours, after just one use of a shampoo with **PENTAVITIN® (0.5%)**



D28 - 28 days, after frequent showering with a shampoo containing **PENTAVITIN® (0.5%)**

** *in vivo* tested

Consumers confirm efficacy

Scalp & hair improvements after 28 days**



PENTAVITIN® 0.2%



+35% saw “less flakes on my head and shoulders”



+65% stated “my scalp feels fresh”



+ 60% stated “my scalp feels hydrated and healthy”

** *in vivo* tested

PENTAVITIN® 0.5%



+ 70% stated “my hair feels smooth and manageable”



70% stated “my hair feels hydrated”



70% stated “my hair feels strong”

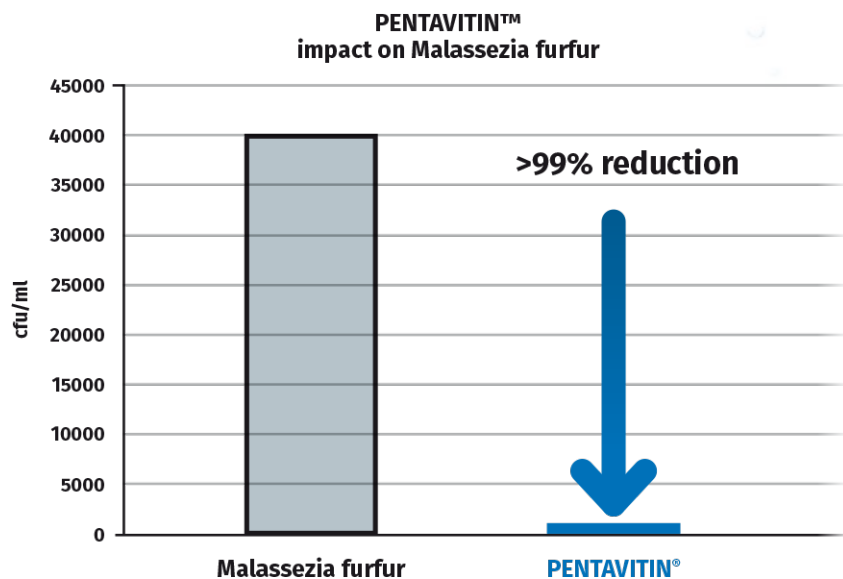
PENTAVITIN®

Controls *Malassezia furfur** known as a common cause of flaky scalp*



Helps to control flaky scalp*

by more than 99% reduction of *Malassezia furfur*



Anti-fungal time kill test *in vitro*

Samples with 1% PENTAVITIN®™ and control are contaminated by *Malassezia furfur* strain ATCC1 at 4E+04 cfu/ml. The counting of the remaining population is carried out at 24 hours.

**Malassezia furfur* is a lipophilic skin fungus and is able to feed on the excess sebum



PENTAVITIN® (0.2%)

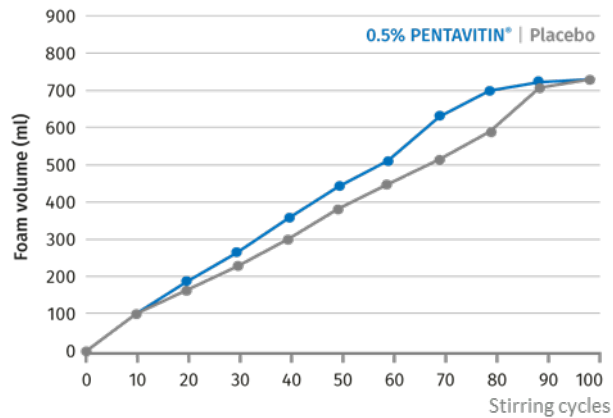
Impressive foam volume boosting effect in a bar soap



PENTAVITIN® - Foam volume boosting effect



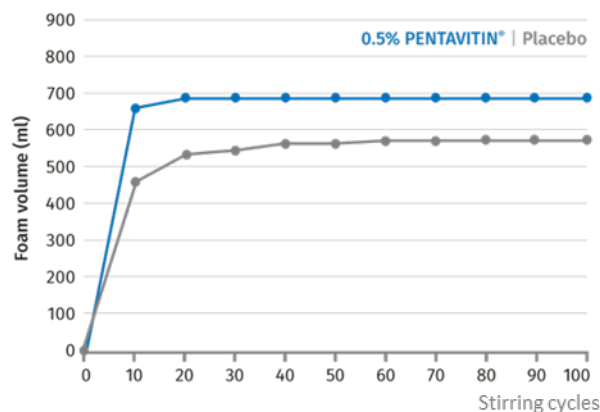
SOAP NODDLE with 0.5% PENTAVITIN® vs placebo



WILFARIN™ SOAP NODDLE with PENTAVITIN® (0.5%) boosts foam volume better than placebo

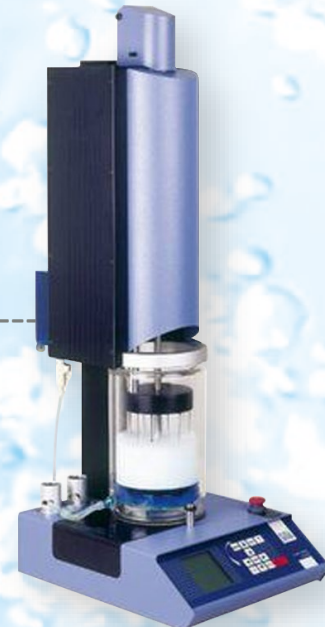
WILFARIN™ SOAP NODDLE WITH 0.5% PENTAVITIN® INGREDIENTS	% w / w
Sodium Palmate & Sodium Palm Kernelate	~ 82%
Palmitic acid	~ 1.5%
Aqua	~ 13.5%
Sodium Chloride	~ 0.5%
PENTAVITIN®	0.5%
Glycerin	~ 1.0%
Chelating agents	< 1.0%

CREAM CLEANSER with 0.5% PENTAVITIN® vs placebo



CREAM CLEANSER with PENTAVITIN® (0.5%) boots foam volume better than placebo

INGREDIENTS	INCI NAME	% W/W
WATER DEM.	Aqua	23,78
Edeta BD	Disodium Edta	0,05
Glycerin 99.5%	Glycerin	25,00
Palmera A9914	Myristic Acid	25,00
PALMAC 70-18	Stearic Acid	5,50
Arlacel 165	Glyceryl Stearate, Peg-100 Stearate	3,00
PEG 1500	Peg-150	5,00
Potassium Hydroxide	Potassium Hydroxide	5,17
MIRAPOL 550 SB	Polyquaternium-7	2,00
Dehypon PK 45	Cocamidopropyl Betaine	3,00
Viatenza Olive PE8	Olive Oil Peg-8 Esters	2,00
PENTAVITIN®	Saccharide Isomerate, Aqua, Citric Acid, Sodium Citrate	0,50



SITA foam tester R-2000



PENTAVITIN®

Easy to use



Soluble in water at all ratios



Stable in formulation containing alcohol



Can be added during the manufacturing process at any time (< 60°C) to the aqueous phase of a formulation



It is recommended to add it below 40°C to avoid unnecessary heating of the active and to use amine-free formulation



Recommended dosage 0.2 - 5%



embrace your skin

FLAKY SCALP MILD CLEANSING SHAMPOO

This Flaky Scalp Cleansing Shampoo with PENTAVITIN® and TILAMAR® PDO with NØØVISTA™ helps to reduce the scalp of flakiness and oil build-up, whilst moisturizing and strengthening it and helping to keep flakes at a bay.

HC-E-100121-16



with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

24H HYDRATION SHOWER GEL

This is a soap-free, daily hygiene product that gently cleanses, hydrates and protects fragile skin. It is infused with PENTAVITIN®, a 100% natural ingredient renowned for its ability to preserve skin's natural defenses and protects it from drying out even with frequent showering. Leaves skin feeling pampered and soft all day.

SK-E-101434-5



with **PENTAVITIN®**

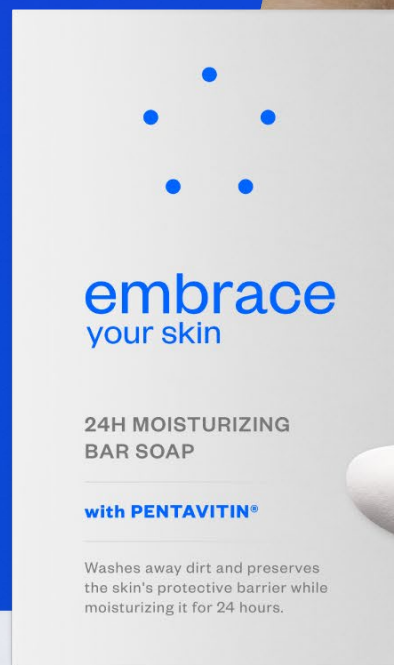
SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

24H MOISTURIZING BAR SOAP

The 24h Moisturizing Bar Soap for a Plastic-Free Shower washes away dirt and helps to preserve the skin's protective barrier while moisturizing it for 24 hours.

SK-E-102147-1



with **PENTAVITIN®**

**SMART MOISTURIZER
FROM HEAD TO TOE**

embrace your skin

SOOTHING FLUID

Even more lightness for your routine with this fluid that delivers a creamy and smooth texture, providing lasting care for your skin. This is thanks to PENTAVITIN®, STIMU-TEX® AS, TILAMAR® PDO with NØØVISTA™, HYA-ACT™ M and VITAMIN B12 CRYST FOOD GRADE that guarantee maximum hydration and helps to calm irritated skin.

SK-E-102146-1



with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

RESURFACING FACE & BODY CREAM MIST

This ON-THE-GO cream has an innovative light texture that combines freshness and moisturization thanks to PENTAVITIN® and ARGAN OIL. This mist with ALPAFLOR® EDELWEISS CB helps to relax the skin, restore elasticity, smooth the skin for a youthful complexion, and protects the skin all over your body.

SK-E-101869-27



with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

INTENSE RESTORATIVE HAND CREAM

This intense hand cream with PENTAVITIN® and STIMU-TEX® AS restores and brings relief to dry, rough and stressed hands leaving skin feeling calm and soft.

SK-E-101250-4



with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE

embrace your skin

REPAIR FOOT CREAM

This cream with PENTAVITIN® and STIMU-TEX® AS is made specially for comforting and repairing dry, cracked feet.

SK-E-102145-1



with PENTAVITIN®

SMART MOISTURIZER
FROM HEAD TO TOE

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