



**Anti-dandruff overall action**

## SANISCALP®

[ Rebalancing scalp  
purifier ]



*For a  
soothed and healthy  
scalp*



## CONTEXT

Hair, as skin, is an integral part of Beauty and reflects overall well-being and health. The scalp and hair are continuously exposed to many stresses like pollution, UV, seasonal changes or the use of heat stylers. Nowadays, hair dyes have been becoming a new mean of expression and a way to be unique, however these products can be a source of stresses for the scalp. These several aggressions can **disrupt and disorganize the barrier function leading to the appearance of aesthetic consequences – sensitive, irritated, greasy scalp – and be the cause of unsightly dandruff.**

Microbiome also plays a crucial role for the maintenance of a healthy and comfort scalp. **It has been demonstrated that the presence of dandruff is correlated to a local microbiota dysbiosis, thus preserving the scalp integrity is essential for a balanced microbiota.**

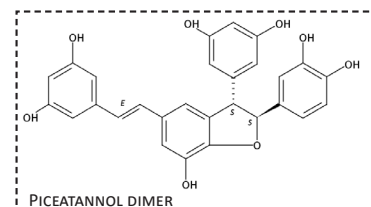
To ensure a balanced and comfortable scalp, it is fundamental to act on several factors influencing the development of dandruff as **the reduction of inflammations** caused by environmental stress or chemical agents formulated in hair products. In the long term,



**fortify the cutaneous barrier** ensures an effective protection and limits flaking. At the same time, the **reinforcement of the scalp natural defense** is primordial in cases of imbalance of the microbiota to fight against dandruff and recover well-being and serenity.

## DEFINITION

**SANISCALP®** is an active ingredient from passion fruit seeds, *Passiflora edulis*, enriched in piceatannol dimers and obtained by enzymatic bioconversion (Laccase Technology patented by Solabia). The dimerization enhances the biological activities of the polyphenol.



### PASSION FRUIT, BETWEEN SWEETNESS AND ENERGY

Belonging to the Passifloraceae family, the passion fruit, *Passiflora edulis*, grows on a tropical liana named passionaria. This exotic fruit has a juicy orange pulp composed of a large number of black seeds. Large flowers assorted the fruit, enclosing a beautiful crown of blue filaments, the passion flower.

Passion fruit contains numerous compounds and is particularly recognized for its richness in piceatannol. Analog of resveratrol, this polyphenol takes part of the stilbenoid family with antioxidant and anti-inflammatory properties.

The research on SANISCALP® is part of a sustainable process and particularly the **upcycling**. It consists in the promotion of by-products, pressed seeds, which was intended to be thrown and to give them a second life with an original added value.

## MODE OF ACTION

**SANISCALP® acts on the basis of a healthy scalp for a global action:**

- 1. Soothes the weakened scalp** by modulating inflammatory mediators PGE2, LTB4 and also IL18, after sensitization for a preventive and curative action
- 2. Improves the scalp barrier cohesion** by regulating epidermal differentiation to manage desquamation
- 3. Reinforces scalp natural defense** by limiting microbiota imbalances

**By protecting the scalp from inflammation and fortifying the barrier and the natural defense, SANISCALP® offers a complete anti-dandruff protection for a strong, healthy and comfortable scalp.**

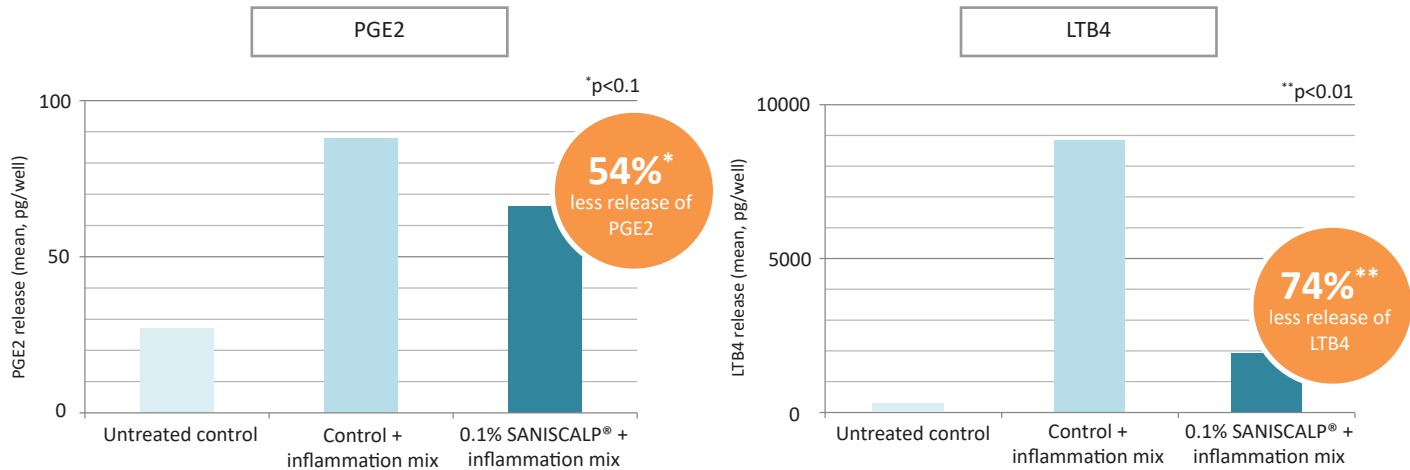
# PERFORMANCE

## 1. SOOTHES THE WEAKENED SCALP

### Reduction of inflammatory mediators release



**In vitro study** on peripheral blood mononuclear cells incubated with or without SANISCALP® at 0.1% for 1h in the culture medium. Addition of an inflammation mix [PMA (phorbol myristate acetate) + calcium ionophore] in the medium for 1h. Quantification of the inflammatory mediators activation, PGE2 and LTB4, by LC/MS analysis.

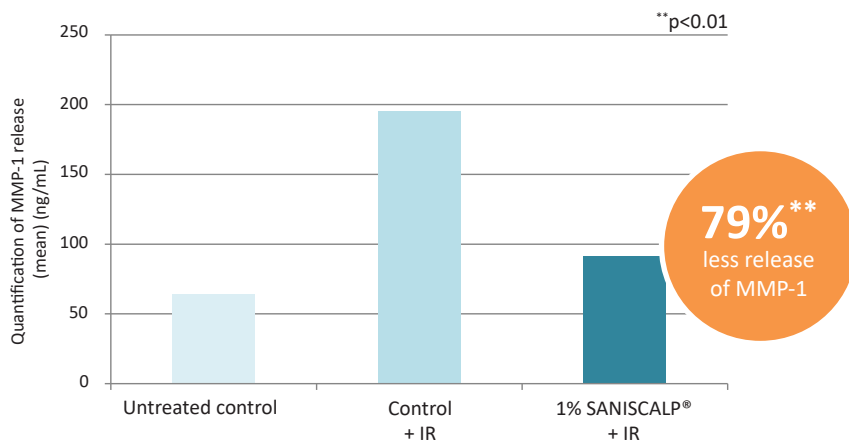


SANISCALP® helps to reduce the inflammatory mediators production, 54% of PGE2 less released and 74% of LTB4 less released, in stress conditions. SANISCALP® soothes the weakened scalp and protects it from environmental aggressions.

### Protection against physical stress



**In vitro study** on fibroblasts treated with or without SANISCALP® at 1% for 24h. At D1, infrared radiation (0.66kJ/cm<sup>2</sup>) for 1h. After irradiation, incubation of the cells for 48h with or without SANISCALP®. Quantification of the MMP-1 release by ELISA kit.



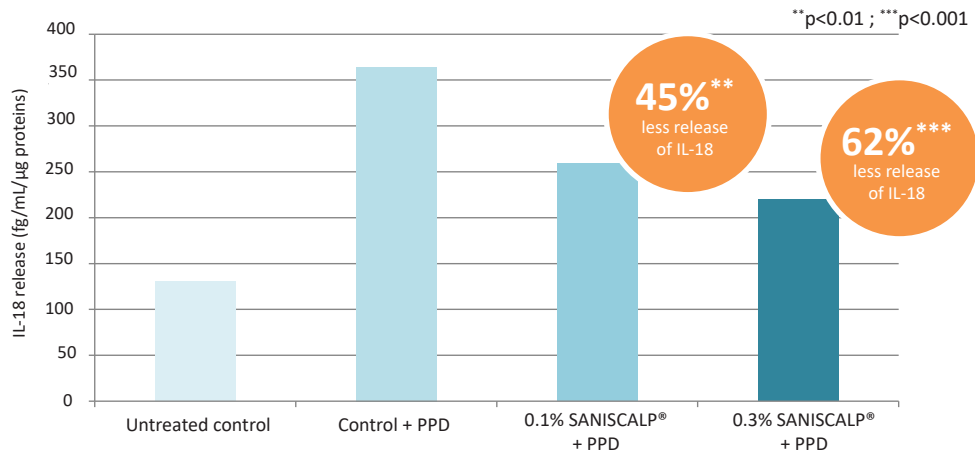
SANISCALP® significantly protects by 79% the cells subjected to infrared irradiations. It helps to protect the scalp from heat during the use of hair dryer, hair styler or prolonged sun exposure.

Hair dyes have been becoming, since few years, a new mean of expression but are also commonly used to cover white hair. Mostly, they are composed of a sensitizing molecule, the para-phenylenediamine also named PPD, which eases the penetration of pigments in the hair fibers for a long lasting effect. This compound can be the root cause of allergic reaction which leads to itching, redness or the appearance of dandruff.

### Protection against epidermal sensitization (preventive action)



*In vitro study on keratinocytes treated with or without SANISCALP® at 0.1% or 0.3% for 24h vs. Untreated control vs. Control + PPD. Addition of para-phenylenediamine (PPD) for 24h. Quantification of the interleukin-18 (IL-18) release by ELISA kit.*

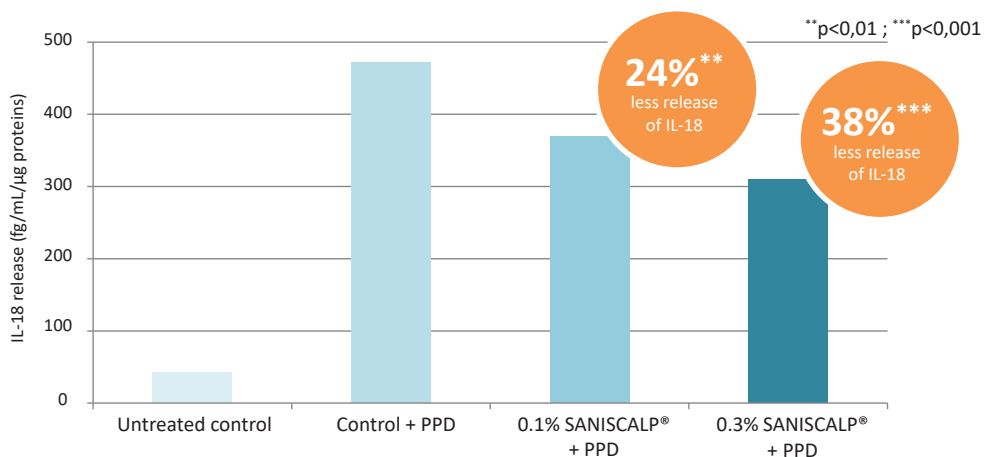


SANISCALP® significantly reduces IL-18 release by 62% for a **hair dye pre-treatment use**. It protects the scalp from chemical stress and inflammation due to hair dyes.

### Reduction of the inflammation after sensitization (curative action)



*In vitro study on keratinocytes treated with or without para-phenylenediamine (PPD) for 24h. Addition of SANISCALP® at 0.1% or 0.3% for 24h vs. Untreated control vs. Control + PPD. Quantification of the IL-18 release by ELISA kit.*



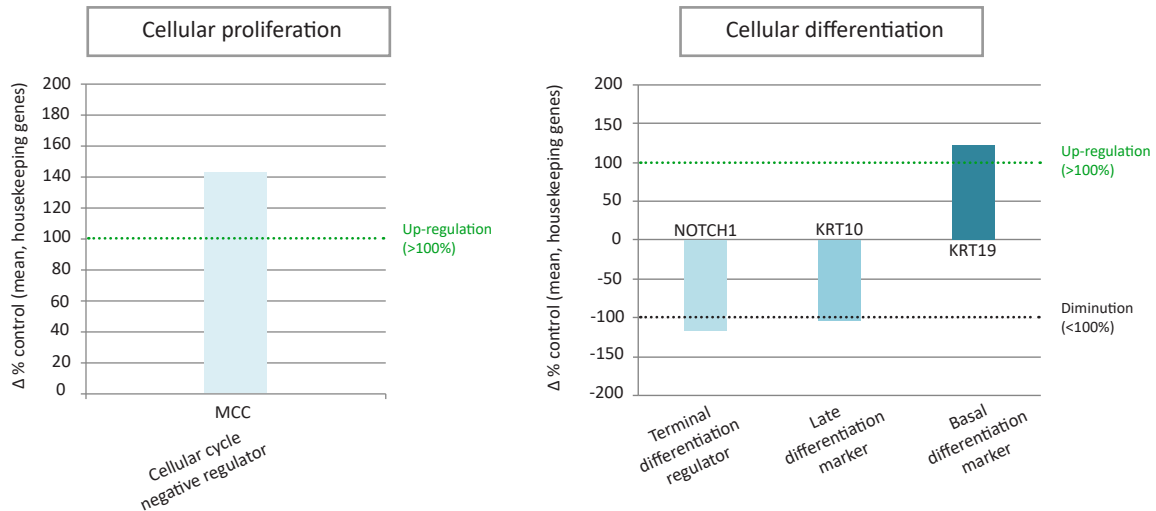
SANISCALP® significantly reduces IL-18 release by 38% for a **post-hair dye use**. It helps to repair the scalp from chemical stress and soothes it after hair dyes.

## 2. IMPROVES THE SCALP BARRIER COHESION

The scalp barrier is the first line of defense against environment. Its renewal, essential mechanism for a healthy scalp, is cyclical as the cells become differentiated and specialized from deep layers to superficial layers of the epidermis. They express specific markers according to their location and specialization state in the epidermis. Basal differentiation markers are expressed in deep layers whereas late differentiation markers are found in upper layers. Under stresses, the cellular renewal tends towards desynchronization and acceleration leading to a cell accumulation on scalp surface and dandruff development.



**In vitro study** on reconstructed epidermis incubated for 24h with SANISCALP® at 0.1%. Extraction of the mRNA and quantification of the relative expression of keratinocyte differentiation and proliferation markers by RT-qPCR (Reverse Transcription quantitative Polymerase Chain Reaction).



**SANISCALP® slows the cellular proliferation.**

**SANISCALP® balances the differentiation process** by decreasing late markers (NOTCH1 and KRT10) and increasing basal marker (KRT19).

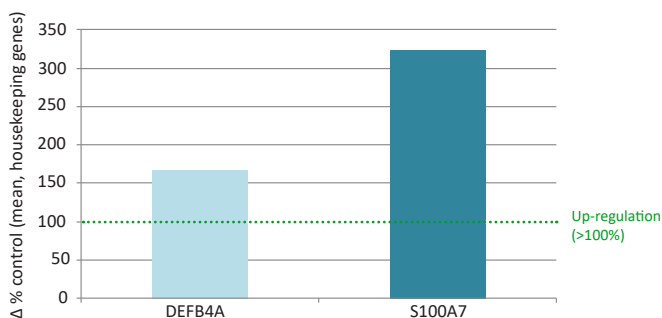
SANISCALP® enables to resynchronize the epidermal renewal by acting on the coordination of epidermal proliferation and differentiation processes. It helps to orchestrate the renewal mechanism in order to establish a robust scalp barrier.

## 3. PREVENTS MICROBIOTA IMBALANCES

Reinforces scalp natural defense



**In vitro study** on reconstructed epidermis incubated for 24h with SANISCALP® at 0.1%. Extraction of the mRNA and quantification of the relative expression of antimicrobial peptides (DEFB4A and S100A7) by RT-qPCR (Reverse Transcription quantitative Polymerase Chain Reaction).



**SANISCALP® increases the expression of antimicrobial peptides and thus innate immunity.**

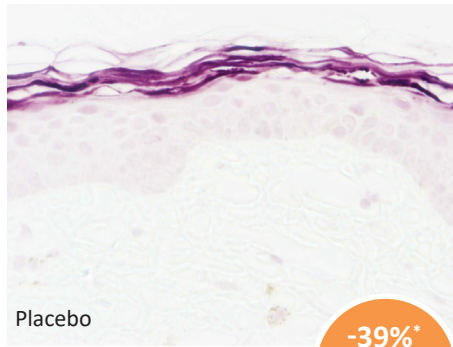


**Ex vivo study** on scalp explants. Topical daily application for 3 days of a cream containing SANISCALP® at 1% vs. Placebo. Quantification of antimicrobial peptide expression (S100A7) by immunolabeling and image analysis.

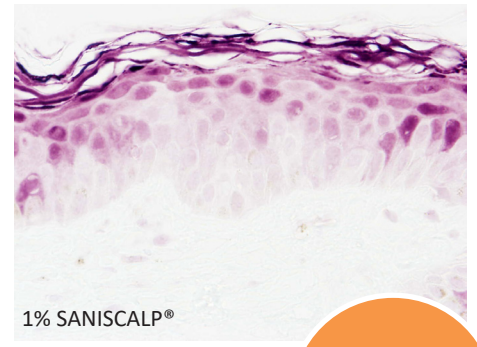
#p<0.1 ; \*p<0.05



Untreated control



Placebo



1% SANISCALP®

-39%\*  
expression of  
S100A7  
vs. Untreated  
control

+28%#  
expression of  
S100A7  
vs. Untreated control

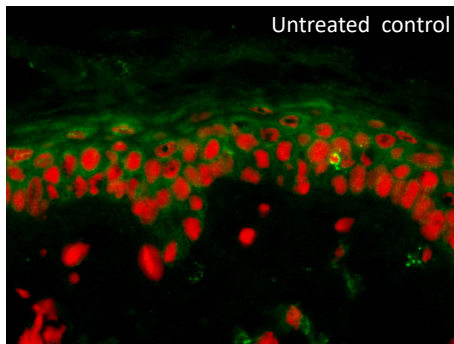
Antimicrobial peptide S100A7 in pink

SANISCALP® enables to increase the expression of antimicrobial peptide S100A7 and also activates its neosynthesis in the epidermis (110%\*\*\* (p<0.001) more expression vs. Placebo). This confirms the action of SANISCALP® on the reinforcement of the scalp natural defense.

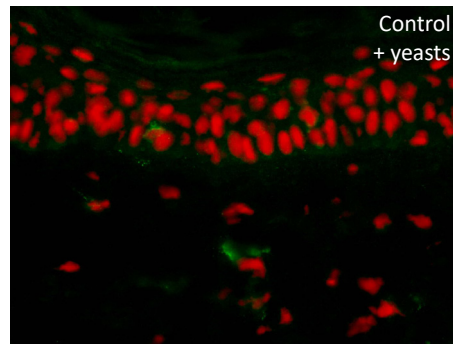
### Fortifies the scalp barrier



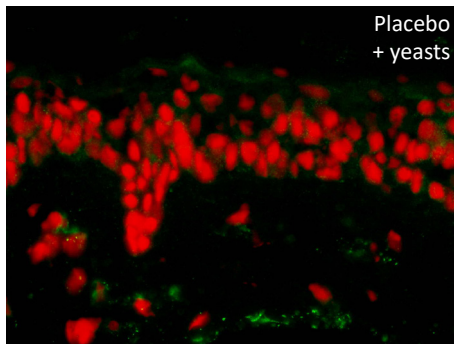
**Ex vivo study** on scalp explants. At D0, contact at the surface for 24h of 3 yeasts strains, naturally found in the scalp microbiota, with a ratio of 1:1:1 to mimic an imbalance of the microbiota: Malassezia globosa, Malassezia restricta and Malassezia furfur. At D1, topical daily application for 3 days of a cream containing SANISCALP® at 1% vs. Placebo. At D4, quantification of protein expression SPRR2 by immunolabeling and image analysis in the total epidermis.



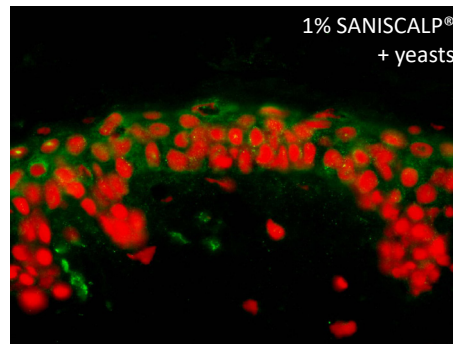
Untreated control



Control  
+ yeasts



Placebo  
+ yeasts



1% SANISCALP®  
+ yeasts

■ Cell nuclei  
■ SPRR2 protein

x5\*\*\*  
more expression  
of the SPRR2 protein  
vs. Control + yeasts

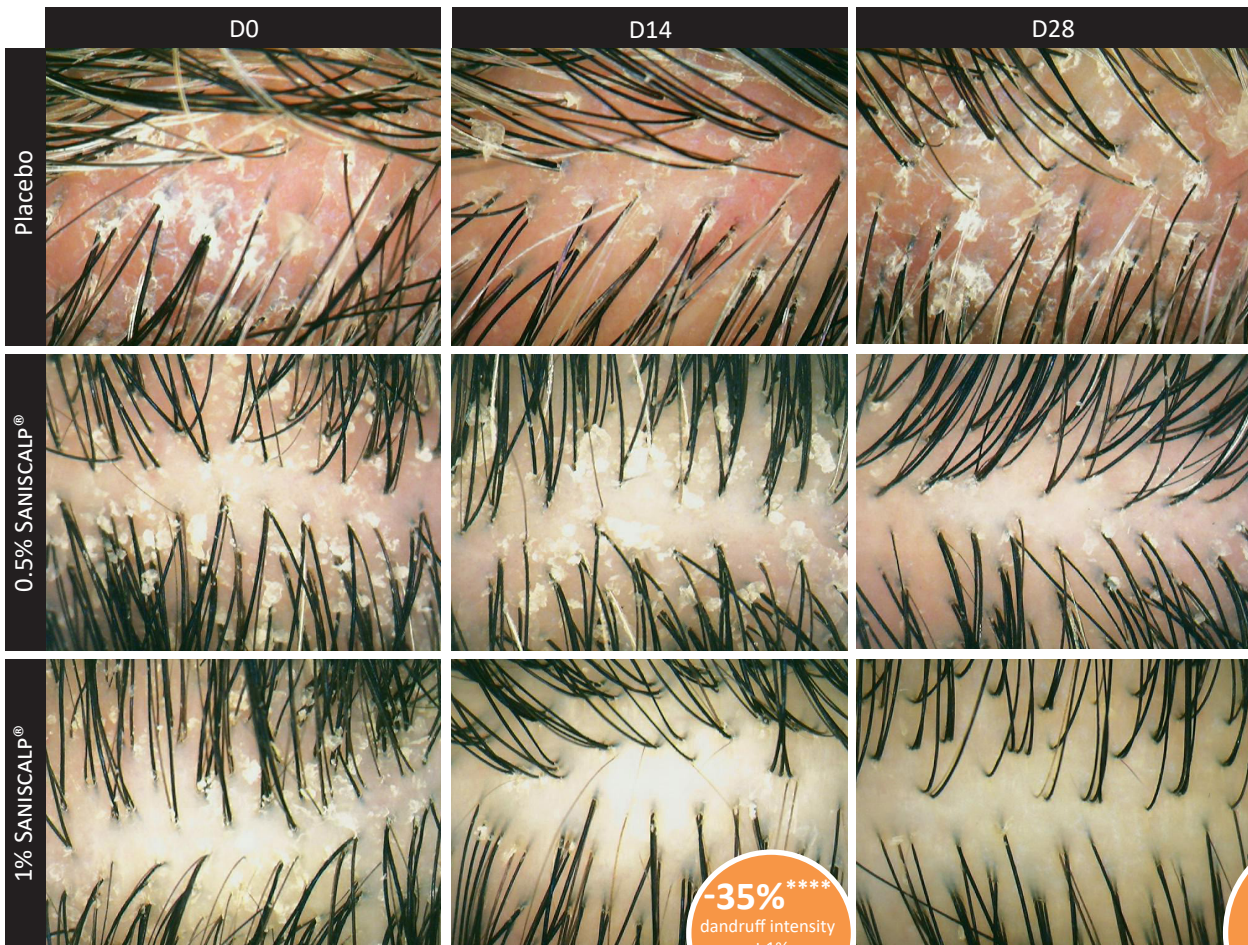
\*\*\*p<0.001

SANISCALP® helps to increase SPRR2 protein expression in the epidermis and thus improves the barrier structure (x3\*\*\* vs. Placebo + yeasts). It helps to fortify the scalp barrier and restores a good differentiation in case of microbiota imbalance.

## BEAUTY BENEFIT: ANTI-DANDRUFF EFFECT



**In vivo study** on 64 volunteers with an average age of 45 years old. Application of 5 mL of a non-rinsed lotion containing SANISCALP® at 0.5% or 1% vs. Placebo, after each shampoo for 28 days. Quantification of dandruff intensity with a 10-points scale and photographs.



\*\*\*\*p<0.0001

**-35%\*\*\*\***  
dandruff intensity  
at 1%  
on average  
vs. D0

**-54%\*\*\*\***  
dandruff intensity  
at 1%  
on average  
vs. D0

**Up to -78% of dandruff intensity after 28 days at 1% SANISCALP®  
95% positive responses**

SANISCALP® visibly reduces dandruff by 35% after 14 days. After 28 days, SANISCALP® reduces by 54% the dandruff intensity. The scalp looks healthy and purified.



**Consumer study** on 21 volunteers. Application of 5 mL of a non-rinsed lotion containing SANISCALP® at 1% after each shampoo for 28 days. Auto-evaluation.

**95%**

**“THE PRODUCT REDUCES THE DEVELOPMENT OF DANDRUFF  
BETWEEN SHAMPOOS”**



**90%**

**“THE PRODUCT REDUCES THE SCALP ITCHING”**

**85%**

**“THE PRODUCT REDUCES THE ADHERED (OILY) DANDRUFF”  
“THE PRODUCT REDUCES THE SCALP FLAKING AND LOOSE (DRY) DANDRUFF”  
“THE PRODUCT REDUCES THE SCALP IRRITATION CAUSED BY DANDRUFF”**

## ADDITIONAL INFORMATION

**INCI/CTFA name:** Propanediol (and) Water (and) Botrytis cinerea/Passiflora Edulis fruit extract/piceatannol ferment filtrate

(PCPC validation in progress)

**Preservative:** none

**Regulatory status:** authorized use in EU, USA, Japan and under conditions in Australia and Canada

**China compliance :** contact us

## APPLICATIONS

**Recommended dose:** 0.5% - 1%

**Anti-dandruff care**

**Sensitive scalp care**

**Pre and post-hair dyes care**

**Hair styling care**

## FORMULATION

**pH stability:** from 4.0 to 7.5

**Soluble** at 1% in water, glycerin, butylene glycol, alcohol solution at 20%

**Thermostability:** incorporate during cooling or in cold process (do not expose to a temperature higher than 40°C)

**Formulation example:**

SOOTHING &  
BALANCING FOAM  
ref.: 1721802/10  
REBALANCING HAIR FOAM  
LOTION

	INGREDIENTS	INCI name	%
A	DEMINEALIZED WATER	<i>Aqua</i>	Qsp 100
	PRESERVATIVE	/	Qsp
	ETHANOL	<i>Alcohol</i>	8.00
	1,3-PROPANEDIOL (CONNECT CHEMICALS)	<i>Propanediol</i>	3.00
	ORAMIX CG 110 (SEPPIC)	<i>Caprylyl/capryl glucoside</i>	1.00
B	NATPURE SOL (SENSIENT)	<i>Glycerin / Sucrose laurate / Sucrose dilaurate / Sucrose trilaurate / Hydrogenated starch hydrolysate</i>	1.00
	PERFUME EAU DOUCEUR NATFLOR (TECHNICOFLOR)	<i>Parfum</i>	0.10
C	SANISCALP® (SOLABIA GROUP)	<i>Propanediol / Aqua / Botrytis cinerea/Passiflora Edulis fruit extract/piceatannol ferment filtrate</i>	1.00
	TEFLOSE® (SOLABIA GROUP)	<i>Propanediol / Aqua / Rhamnose / Glucose / Glucuronic acid</i>	2.00
	NAOH, SOL AT 1%	<i>Sodium hydroxide</i>	Qsp pH

**Contact us**

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