D.S.B. C ®

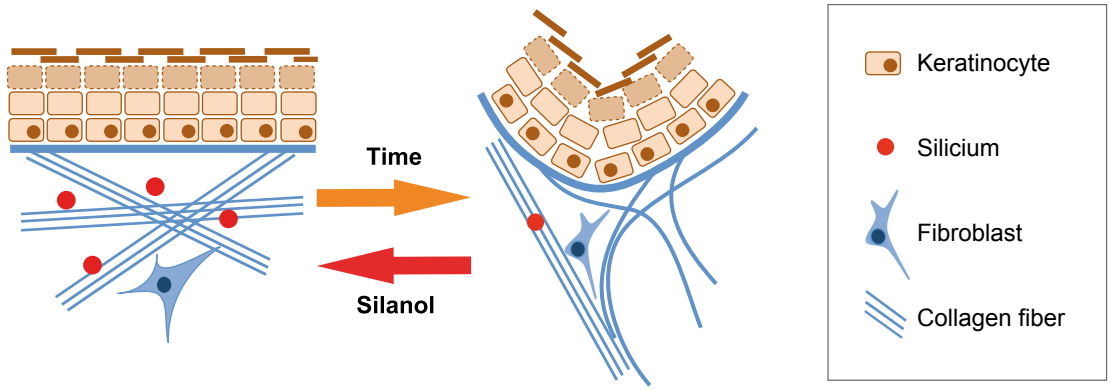
Soothing
Anti-inflammatory
Sensitive skin protection
Anti-acne
Moisturizing
Skin restructuration
Anti-aging

EXSYMOL
MONACO

D.S.B. C®

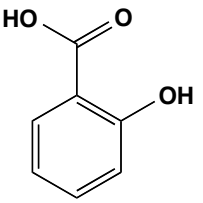
THE SILANOL TECHNOLOGY

Organic silicium is an essential component of the skin. Indeed, by interacting with structure proteins within the dermis such as collagen fibers, elastin and proteoglycans, the silicium insures an optimal skin organization and architecture. However, with age the amount of organic silicium naturally present in the skin tends to decrease, thus leading to an overall collapse of the skin architecture and will result in the apparition of wrinkles.
***D.S.B. C** is part of the silanol family. It is a compound that possesses an organic silicium core. A topic application of **D.S.B. C** on the skin will therefore replenish the skin natural pool of organic silicium. The skin will be rejuvenated, better organized and structured. Ultimately, the skin will become visibly younger.*



SALICYLIC ACID AND SKIN

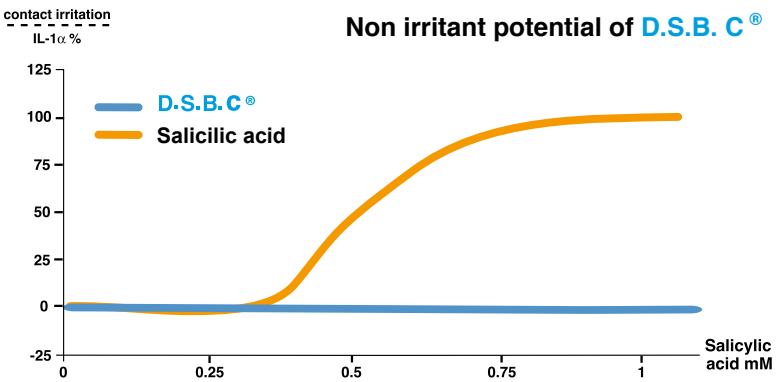
Salicylic acid is a strong anti-inflammation and soothing compound. When applied on skin, it can make redness fade away and reduce itching.
Salicylic acid has anti-bacterial properties and can therefore be used in the treatment of acne. It can also be responsible for skin peeling.
However, when used pure, salicylic acid may also be quite irritant for the skin.



Schematic representation of a molecule of salicylic acid.

SYNERGY BETWEEN SILANOL AND SALICYLIC ACID

***D.S.B. C** is the union of salicylic acid and the silanol technology.*
From this union results a real synergy. While salicylic acid stabilizes the organic silicium, hence insuring its efficacy, the organic silicium will, in turn, improve salicylic acid's efficacy and will negate its irritation potential.



3% D.S.B. C®
(Contains 1.2 mM salicylic acid)

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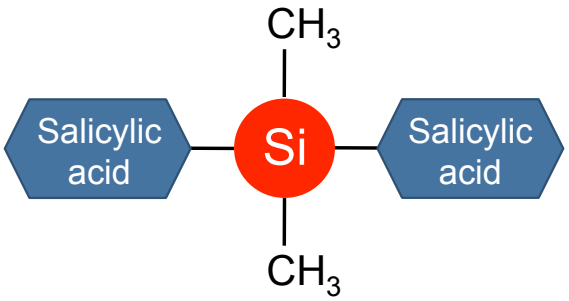
APPLICATIONS

INCI NAME : SILANEDIOL SALICYLATE

D.S.B. C is a silanol that combines the restructuring benefits of the organic silicium and salicylic acid for maximal anti-inflammation and soothing benefits.



SKIN BENEFITS

Reduces inflammation
Stimulates collagen production
Increases skin cell proliferation
Improves cell communication
Protects the skin from environmental stress

COSMETIC APPLICATIONS

- Soothing
- Anti-aging
- Anti-wrinkle
- Anti-acne
- Anti-redness
- Anti-itching
- Anti-irritation
- Oral care

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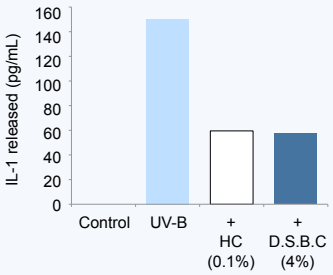
D.S.B. C®

D.S.B

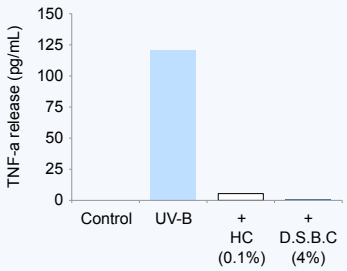
ANTI-INFLAMMATION

D.S.B. C has been designed for maximal anti-inflammatory efficacy. We therefore exposed human reconstructed epidermis (HRE) to UV and measured pro-inflammatory cytokine release.
The anti-inflammation capacities of D.S.B. C are as efficient as hydrocortisone (HC) in these experimental conditions.

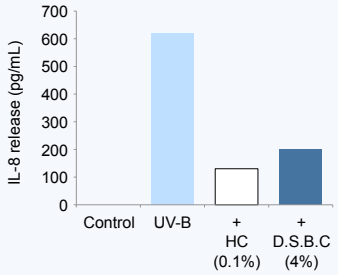
IL-1



TNF-α



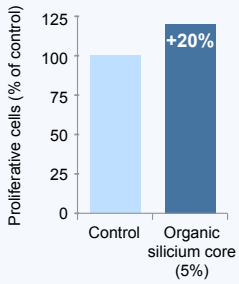
IL-8



D.S.B. C has extremely strong anti-inflammatory and soothing properties due to the combined benefits of organic silicium and salicylic acid.

METABOLISM STIMULATION

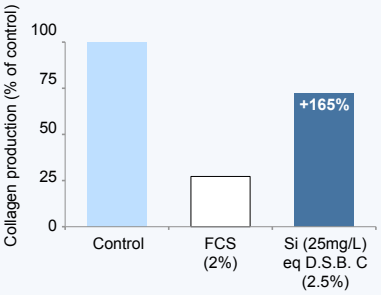
KERATINOCYTE PROLIFERATION



Treatment with **D.S.B. C** increases keratinocyte proliferation.

Skin renewal
Better hydration
Better protection

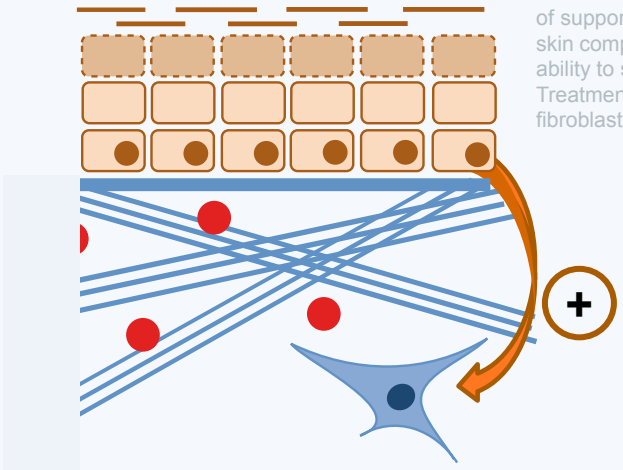
COLLAGEN PRODUCTION



D.S.B. C stimulates collagen production.

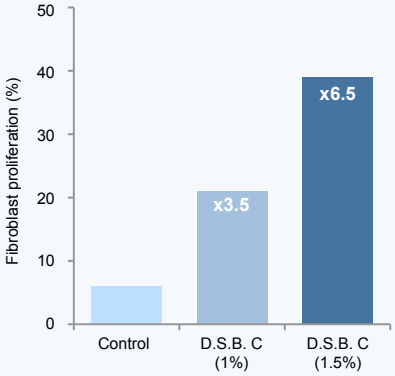
Denser and firmer skin

IMPROVED CROSS COMMUNICATION



Keratinocytes secrete cytokines responsible for supporting fibroblast proliferation

Cross-communication between the different skin compartments is a crucial factor for skin health as different cell types are capable of supporting the proliferation and the activity of cells from another skin compartment. Aged keratinocytes from the epidermis lose their ability to support fibroblast (dermis cells) proliferation.
Treatment with **D.S.B. C** improves keratinocyte's ability to support fibroblast proliferation.



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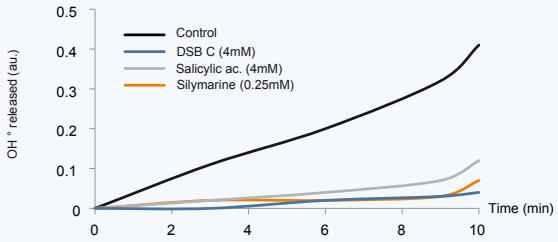
B. C®

PROTECTION AGAINST ENVIRONMENTAL STRESS (UV, TEMPERATURE…)

*When exposed to environmental stress, the skin will use several defense mechanisms. First, **D.S.B. C** will be responsible for a milder generation of free radicals in response to UV exposure for example. As a result, skin cell activities are preserved.*
*Additional and more specific response, can be triggered depending on the stress. When the skin is exposed to extreme temperature changes, **D.S.B. C** will stimulate the expression of heat shock proteins (HSP) in order to further protect skin cell proteins' activity.*

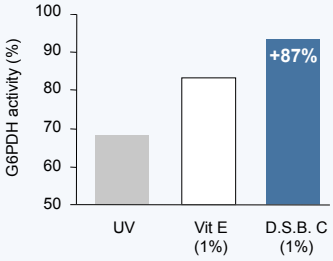
ANTI-OXIDATION FREE RADICAL SCAVENGING

D.S.B. C has good anti-oxidant properties so the skin is better protected.



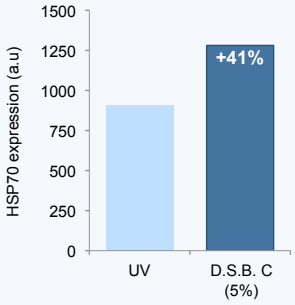
PROTEIN PROTECTION

D.S.B. C protects the activity of skin cell proteins (as shown by using a model protein) hence ensuring their proper function while exposed to environmental stress (UV or temperature by improving HSP expression).



STIMULATION OF HSP PRODUCTION

When exposed to extreme temperatures, skin cells produce HSP in order to protect their proteins.
D.S.B. C improves HSP expression hence improving skin cell resistance to thermal stress.

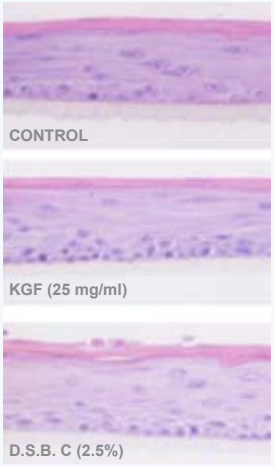


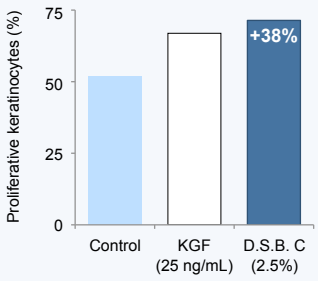
SPECIFIC BENEFITS: ORAL CARE

D.S.B. C has been assessed for its ability to stimulate mucous gum epithelium proliferation.

Treatment with **D.S.B. C** leads to an improved number of proliferating cells on the basal layer of the human reconstructed gum epithelium

D.S.B. C is therefore recommended for oral care products (tooth paste, etc.).





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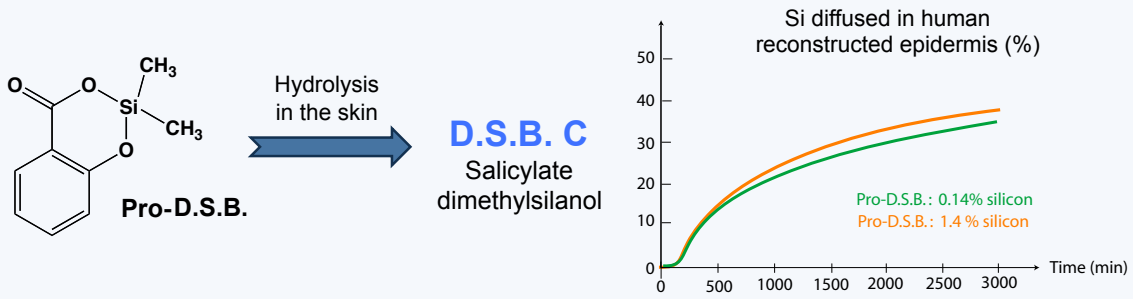
ALTERNATIVE PRODUCTS

*Two additional derivatives are available depending on the type of application. While D.S.B. C is best suited for water-based skin care formulae, **Pro-D.S.B.** is specially designed for anhydrous products (lipsticks, massage oils…). **CAPILLISIL** is highly concentrated and is therefore especially adapted for water-based hair care products.*

PRO-D.S.B. FOR OPTIMISED PRODUCTS

Pro-D.S.B. (INCI name: DIMETHYL OXOBENZO DIOXASILANE) is the precursor of **D.S.B. C** and is 15 times more concentrated in organic silicium (14.5g/kg). When this product is in contact with water (or alcohol) from the skin, it gets hydrolyzed and will form proper **D.S.B. C** (salicylate dimethylsilanol).

This additional reaction step *in vivo* allows a controlled release of organic silicium for further long lasting benefits.

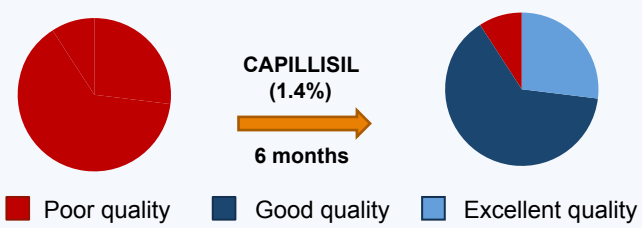


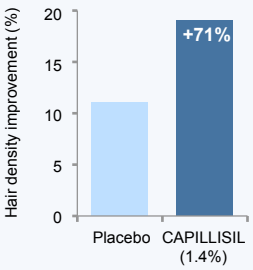
Pro-D.S.B. is especially recommended for oil-based products (massage oils, nail varnish, lipsticks, etc.) at a concentration of 0.2 - 1% for skincare and at 3 - 4% for haircare products.
Pro-D.S.B. must not be formulated in a water- or alcohol-based product.

CAPILLISIL FOR SKIN CARE PRODUCTS

CAPILLISIL (INCI name: SILANEDIOL SALICYLATE) is an extremely concentrated version of **D.S.B. C** as it has 30 times more silicium (30g/kg).
While **CAPILLISIL** is also suitable for skin care treatment, its very high concentration of silicium makes it especially adapted for hair care products as the silicium will provide hair with two benefits:

- **CAPILLISIL** will improve the scalp quality and architecture hence leading to a better hair quality, while decreasing hair loss. These benefits will lead to an improved hair density as shown on 22 alopecic men.
- **CAPILLISIL** will strengthen hair shafts by improving the interaction and the cohesion of keratin fibers.





CAPILLISIL can be formulated in any water-based formulation (lotion, gel, emulsion…) and the advised usage dose is 0.5 - 2% but can go as high as 3% for anti-hair loss products.

TECHNICAL CHARACTERISTICS

ANALYTICAL COMPOSITION

Dimethylsilanediol	0.36%
including silicium	0.11%
Salicylic acid	0.54%
Water (sq)	100%

PHYSICO-CHEMICAL CHARACTERISTICS

Limpid and colorless liquid
pH ≈ 5
Density at 20°C ≈ 1
Miscible with cold water, alcohol and glycols.

PRESERVATIVES

Different preservative systems are available in order to fit with your requirements. Please contact us for additional details about the available versions.

TOLERANCE AND TOXICITY STUDIES

D.S.B. C does not show any toxicity. Tolerance studies were performed using both *in vitro* (cell culture and reconstructed epidermis) and *in vivo* (human volunteers) methods.

FORMULATION

Advised doses: 3 to 6%.
No particular formulation restriction.

AVAILABILITIES

D.S.B. C is available in 5 and 30kg drums.

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