

Active Beauty

Neosalyl™

The natural substitute for synthetic
salicylic acid for skin and scalp

Crafted by Green fractionation



Focus on the product

Beauty products consumers are looking for more natural products, massively rejecting chemicals, as they see natural ingredients as safe and trustable. This "Naturals" mega-trend keeps growing in any culture, and challenges the composition and origin of personal care ingredients. As of today, 3 out of 4 women are scanning product composition

Givaudan Active Beauty phyto-experts have crossed a new step with the switch from synthetic to natural salicylic acid production. They developed Neosalyl™: a 100% natural origin salicylic acid, obtained by means of green fractionation from the natural essential oil of Wintergreen (*Gaultheria spp.*).



Salicylic acid benefits

Salicylic acid (2-hydroxybenzoic acid or orthohydrobenzoic acid) is a β -hydroxy acid, and has been classified as a phenolic aromatic acid. Being lipid-soluble agent, salicylic acid is miscible with the epidermal lipids and sebaceous gland lipids in hair follicles.

It shows keratolytic and comedolytic properties, and can also decrease sebum secretion.

Pure salicylic acid is used as an anti-inflammatory and anti-microbial, and is listed as a natural preservative.

Due to its exfoliating properties, it is a safe and efficacious peeling agent for a large number of cosmetic purposes for skin and hair care.

Neosalyl™: 100% Natural and Pure

Wintergreen plant (*Gaultheria spp.*) is a small shrub widely spread in some forests, and is usually collected for the leaves rich in essential oil composed of methyl salicylate.

A gentle green fractionation process transforms the methyl salicylate by saponification followed by acidification and selective precipitation to obtain the pure natural salicylic acid (>98% measured by USP method).



Neosalyl™: 100% Guaranteed

Wintergreen leaves are collected in Southwest of China, in Yunnan province, by small farmers who locally and immediately produce the crude essential oil on fresh raw material. These small productions are collected to be homogenised and standardised into a 98% pure methyl salicylate essential oil.

The entire supply chain is fully traceable from the point of harvest to the distillation through a long term collaboration with the farmers since many years.

An exhaustive set of analysis named IDPack, including botanical observation, DNA analysis, GC/FID and isotopic ^{14}C measurement, enables to warranty the authentication of the raw material wintergreen and natural origin of salicylic acid from wintergreen.



Biological activity

Skin exfoliating benefits

In a blind clinical study on six volunteers, eleven randomised test sites were marked on the volar forearms, for untreated skin, placebo, retinoic acid (RA) and salicylic acid (SA) solution for 3 and 6 h.

Each site then underwent 25 *stratum corneum* tape stripping. Quantitative protein analysis from the tapes was then performed.

The vehicle contained 20% propylene glycol, 10% Etanol and 70% water, with 0.05% all-trans RA or 2% SA.

J.M. Waller et al. *Skin Pharmacol Physiol* 2006;19:283–289

Results: After 3 hours, SA was more effective in disrupting *stratum corneum* cohesion than RA, indicating that SA is an efficient keratolytic agent. After 6 hours, both products were similarly effective in keratolysis. With excellent skin acceptability, SA may involve the release of desmogleins, the disintegration of desmosomes, and the removal of intercellular lipids hence its clinical effectiveness in superficial conditions such as comedonal acne.

Neosalyl™ can therefore be used as a powerful skin exfoliating/pores unclogging agent in skin care formula.

Anti-microbial benefits (dermo-purifying)

Since decades, anti-microbial activity of salicylic acid has been described on many bacteria and fungi. As a recognised anti-microbial agent, it is listed as a **preservative** in most of the cosmetic positive lists in international regulations.

The cumulative properties of salicylic acid: exfoliation, anti-inflammatory and anti-microbial raise **Neosalyl™ as the perfect active for prone-to-acne skin condition.**

Blaskovich M. et al., *Scientific Reports*, 2019, 9:14658

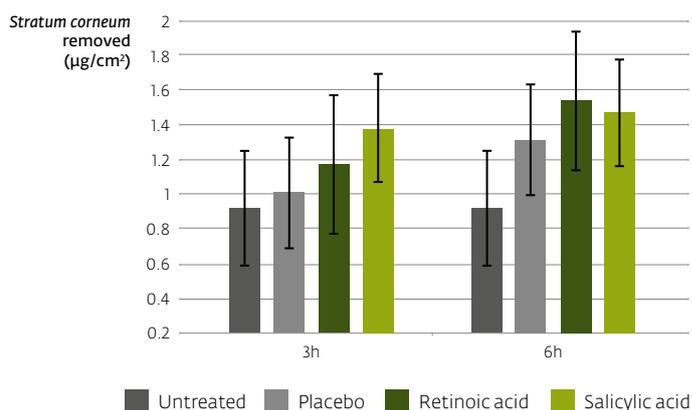
Hair shine and anti-dandruffs benefits

Neosalyl™ brings benefits to hair because its keratolytic action enhances shininess of the fibre and to the scalp by targeting many parameters of dandruffs conditions where sebum excess and the yeast *Malassezia* has been proposed as an etiological factor.

As a strong keratolytic, anti-sebum and anti-microbial agent, Neosalyl™ is a very good synergistic active for the treatment of dandruff condition.

Squire RA., Goode K., *J Dermatolog Treat.* 2002 Jun;13(2):51-60. Loden M., Wessman C., *Int J Cosmet Sci.* 2000 Aug;22(4):285-9. Quadri G., Cavallero W., Milani M., *J Cosmet Dermatol.* 2005 Jan;4(1):23-6.

Keratolytic effect of Salicylic acid compared to Retinoic acid (25 strips)



Minimum inhibitory concentrations of Salicylic acid (mg/mL)

<i>Propionibacterium acnes</i>	6
<i>Staphylococcus aureus</i>	32
<i>Staphylococcus epidermidis</i>	8
<i>Escherichia coli</i>	16

Summary



Technical information

INCI:	Salicylic acid
Origin:	Green fractionation
Preservation:	None
Appearance:	White to off-white powder
Solubility:	Soluble in ethanol
Dosage:	Depending on the desired benefit and local regulation
Processing:	Add Neosalyl at the end of the formula at room temperature in premix form to improve its solubility and at a pH between 3 and 5 for maximum efficiency.

Claims

Claims:	Exfoliating and keratolytic agent, dermo-purifying. Radiance & whitening, skin complexion balance. Anti-dandruff condition, Hair Shine. Preservative (anti-fungal, anti-bacteria). Soothing, anti-sebum.
Applications:	All type of products for skin lightening and brightening, skin renewal, prone-to-acne skin. Hair shampoos, conditioners for shine and scalp condition. Listed preservative for anti-microbial effect.

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