Salicylic Acid: A Multifunctional Cosmetic Ingredient

MAKING COSMETICS

Effects of Salicylic Acid on the Skin

- Keratolytic (exfoliation of skin cells) Moisturizing
- Facilitates skin penetration of other active ingredients
- Skin & hair conditioning effects Acidulant (acidifying effect)
- Anti-acne
- Anti-dandruff effects
- Anti-fungal
- Anti-inflammatory
- Analgetic
- UV-absorbing
- Anti-pruritic (anti-itching)

Willow bark contains salicin, which is degraded to salicylic acid after ingestion.

Salicylic acid occurs naturally in various plants, including black cohosh, blue flag, American pennyroyal, cassie, coca, glory lily, marigold, sea island cotton, plantain, rue, wintergreen, ylang ylang, and willow bark.

Willow bark used to be used to relieve pain and fevers. Later, it was found that willow bark contains salicin, which is degraded to salicylic acid after ingestion.

Although salicin, salicylic acid, and other similar salicylates can be obtained from plants by steam distillation, or by making hot water extracts, salicylic acid has also been produced by chemical synthesis for more than 150 years.

Since then, both salicylic acid and acetylsalicylic acid (Aspirin) have continued to be produced because of their simplicity, purity, and cost-effectiveness.

Salicylic acid is an aromatic acid. It's moderately soluble in hot water, glycerin, alcohol, acetone, ether, and fats or oils. Since salicylic acid is an acid, its solubility in water can be increased by adding sodium phosphate, borax, alkali acetates, or citrates.

Use of Salicylic Acid in Cosmetics

Salicylic acid has been introduced to a variety of cosmetic products and over-the-counter drug products because of its different properties and effects on the skin. The effects have been studied in both laboratory and clinical studies, making salicylic acid one of the most studied active ingredients in the cosmetic industry.

Keratolytic Effect

A major property of salicylic acid is its ability to remove skin cells from the upper layer of the skin (stratum corneum).

This keratolytic effect is dependent on the concentration of salicylic acid used in a cream. For example, a concentration of 10 - 15% salicylic acid shows a keratolytic effect after 2 or 3 days. At 1% and 5%, desquamation of skin cells is seen after 7 and 10 days.

Salicylic acid is widely used as an ingredient for peeling, other exfoliants, or abrasive skin treatments. Such peeling products contain salicylic acid at concentrations between 0.5 - 3%. Whereas, the upper limit of 20% is applied only in dermatological (prescription) products. The use of salicylic acid at this level has also been recommended for face masks. For anti-warts products, salicylic acid is usually used between 12 - 40%.

Besides removing old cells and debris from the skin, keratolysis also has the advantage to facilitate the penetration of other active ingredients into the skin. Salicylic acid is often added to skincare products that contain active ingredients to increase their absorption and efficacy.

Salicylic acid is also used in ant-dandruff products.

Salicylic acid is widely used in anti-inflammatory creams and ointments.

Anti-Acne Effect

Due to its keratolytic effect, salicylic acid has become a main ingredient to treat acne. Salicylic acid is approved for non-prescription anti-acne products at concentrations from 0.5 - 2%.

Besides keratolysis, the acidifying and anti-inflammatory properties of salicylic acid are believed to be responsible for the anti-acne effect that it has.

Additional Uses

Salicylic acid has also been proposed to have anti-fungus activity, though the fungistatic activity seems to be less as a stand-alone ingredient.

Since salicylic acid can increase the efficacy of other more potent anti-fungus agents, it's often added to anti-fungus creams as a booster.

Due to its effectiveness as a keratolytic agent and its anti-itching properties, salicylic acid is also used in anti-dandruff products. The Advisory Review Panel recommends that salicylic acid at 2 - 3% be placed in Category I for dandruff treatment. Similarly, in 1991 the FDA has approved salicylic acid for the control of dandruff, seborrheic dermatitis, and psoriasis.

Besides all these various effects, salicylic acid is also able to absorb ultraviolet radiation. As a consequence, it should be kept away from direct sunlight which, gives a pink color.

Although the anti-inflammatory and analgesic effects of salicylic acid are not as potent as acetylsalicylic acid (Aspirin), it still shows significant effects and is widely used in anti-inflammatory creams and ointments.

Precautions

To avoid excess peeling and/or irritation of the skin, salicylic acid should be used with caution when used with additional exfoliants. Like abrasive soaps, cleansers, alcohol-containing products, or other topical acne or peeling products that contain benzoyl peroxide, resorcinol, sulfur, or tretinoin. Soaps or cosmetics that dry the skin may also increase exfoliation and consequently skin irritation.