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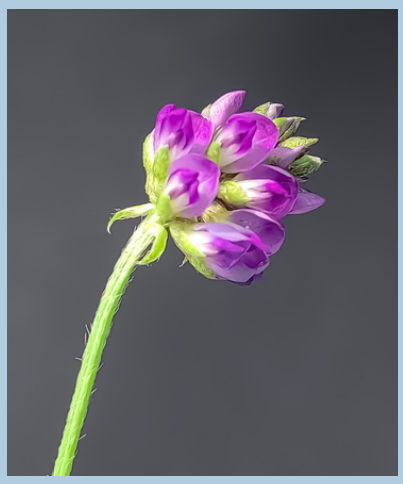
Bakuchiol Research Paper

APPEARS IN

Bakuchiol is a plant-based ingredient derived from the edible seeds of the plant Psoralea corylifolia. Bakuchiol is a Sanskrit name (of Indo-European origin) and has been used in Indian and Chinese medicine for its anti-bacterial and anti-inflammatory activities. Bakuchiol is commonly found in the essential oils extracted from plants and contributes to its aroma. Three Ships' Skin Hero utilizes this natural ingredient that is packed with hydrating and antioxidant properties.

BAKUCHIOL IS A PLANT-BASED ALTERNATIVE TO RETINOL.

Bakuchiol is a plant-based alternative to retinol. Retinoids are popular ingredients given their ability to reduce fine lines and wrinkles, and increase collagen production. However, retinoid therapy has undesirable side effects, including dryness, burning sensations, and irritation of the skin. Unlike retinoids, bakuchiol use does not result in undesirable skin irritation. However, similar to retinoids, bakuchiol does possess comparable antioxidant properties as retinoids and undergoes a similar gene expression pattern to retinol.



Bakuchiol is derived from Psoralea corylifolia, a plant native to India. Psoralea corylifolia, also known as the Bakuchi plant in Sanskrit, produces Babchi seeds. The seeds undergo a process of pulverization, where the seeds are broken down. The smaller seeds are percolated, and the liquid is collected. Methanol is added to the solution to extract the bioactive compounds of the Babchi seeds. Following separation, the organic layer is collected, and the solution undergoes further purification.

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ANTIOXIDANTS, SUCH AS BAKUCHIOL, ARE MOLECULES THAT NEUTRALIZE FREE RADICALS

The free radical theory, first proposed in 1954, postulates that aging is caused by free radical reactions. These reactions are irreversible and may be a result of environment, disease, and intrinsic aging. The theory suggests that an individual's lifespan can be increased by slowing the rate of initiation of random free radical reactions. A free radical is a chemical species possessing an unpaired electron. Reactive oxygen species are a type of free radicals that contain oxygen. Oxidative stress occurs when there is an imbalance between the generation of free radicals and the activity of antioxidant defense. Too much oxidative stress can result in cell damage; hence, the generation of too many free radicals can be harmful. Intracellular mechanisms can often reduce the damaging effects of free radicals; however, with age, endogenous antioxidative mechanisms may not work as effectively and oxidative stress is a more likely occurrence.

Antioxidants, such as bakuchiol, are molecules that neutralize free radicals, caused by extrinsic and intrinsic aging, by accepting or donating electrons. Antioxidants can directly react with free radicals by delocalizing the unpaired electron, or inhibit the activity of free radicals by generating enzymes (e.g. NAD(P)H) that provide an important defense against free radicals. As the name suggests, antioxidants prevent oxidative stress thereby reducing collagen degradation and reducing the appearance of fine lines and wrinkles.

SCIENTIFIC STUDY

Clinical Evaluation of Bakuchiol for Sensitive Skin

A study was done to research the effects of bakuchiol use as a cleansing agent and a moisturizing agent in subjects with sensitive skin. Patients had a history of eczema, rosacea, and cosmetic intolerance. Following the application of bakuchiol twice daily for four weeks, transepidermal water loss, tolerability, and efficacy assessments were done. Overall, the results indicated an improvement in visual smoothness, clarity, and radiance of the skin; moreover, skin moisture content increased. Therefore, the studies back the hydrating properties of bakuchiol and its effectiveness with sensitive skin.

Gene expression profiling of Bakuchiol and Retinol

Another study compared the gene expression profiling of bakuchiol relative to retinol using human dermal fibroblasts. The study found that both substances, despite not being structurally similar, are functional analogues. Both bakuchiol and retinol upregulated types I and IV collagen. Furthermore, following the application of bakuchiol twice a day for twelve weeks, there was an improvement in lines and wrinkles, elasticity, and a reduction of photo-damage. In samples where the fibroblasts were treated with bakuchiol, no undesirable effects – generally associated with retinol therapy – were observed.

All in all, the findings suggest that bakuchiol can function as a hydrating compound and includes anti-ageing properties with comparable benefits to retinol. Unlike retinol, however, bakuchiol is effective in individuals with sensitive skin conditions. Anti-aging products should decrease and eliminate the appearance of fine lines and wrinkles. To achieve this, hydration in the extracellular matrix must be restored. The research finds that bakuchiol upregulated collagen expression – the main structural protein of the skin –, improved elasticity, and reduced wrinkles found in the skin.