Retinol Benefits With A Natural and Safe Alternative

NovoRetin™, a plant-based alternative to retinol, can retain naturally occurring retinoic acid levels in the skin. This leads to retinol-like effects without the need to apply retinol on the skin, thereby preventing from retinol-induced side effects and formulation challenges.

Retinol is widely used in the cosmetics industry and is known as one of the most effective anti-aging agents. Along with its structurally similar counterparts, the retinoids, retinol is also known for its effectiveness in the treatment of pathological skin conditions, including acne, psoriasis, and ichthyosis. Despite their impressive benefits, the treatment with retinoids can cause side effects, such as skin sensitivity to sunlight, skin dryness, redness, and flaking. Therefore, it is often recommended to use retinoid-containing products only in the evenings and always in combination with a sunscreen. Further, the stability of most retinoids in formulations is challenging. These issues limit their long-term therapeutic application and largely exclude their potential in cosmetic applications. Thus, there is a strong need for natural and safe retinol alternatives, which can be used in cosmetic formulations.

PLANT-BASED, STABLE, AND WELL-TOLERATED

NovoRetin™ is an exceptional plant-based retinol alternative that provides strong anti-aging effects, skin brightening efficacy, and exceptional benefits for acne-prone skin. Based on an innovative mechanism, it can increase the naturally occurring retinoic acid in the skin, which results in retinol-like effects without necessitating topical retinoid application and thus completely avoiding retinoid-induced side effects. NovoRetin™ (INCI: Pistacia Lentiscus Gum/Pistacia Lentiscus (Mastic) Gum (and) Lecithin (and) Pentylene Glycol (and) Glyceryl Caprylate/Caprate (and) Caprylic/Capric Triglyceride (and) Aqua/Water) is derived from mastic, a resin from Pistacia lentiscus trees native to the Greek island of Chios. Mastic was the first natural chewing gum in ancient times and has been used consistently for medicinal and skincare purposes for centuries. However, its application in modern cosmetics has been restricted due to its water insolubility. This issue has been addressed by development of a unique delivery system to make mastic bioavailable for the skin. The resulting active ingredient can be integrated into water-based formulations and provides a stable alternative to retinol.

INHIBITION OF RETINOIC ACID DEGRADATION

Retinoic acid, the most potent metabolite of retinol, is primarily responsible for the impact of retinol on the skin. It can bind to specific nuclear receptors and thereby regulate gene expression. Given its crucial role in skin maintenance, retinoic acid is naturally present in skin cells, where it is degraded into its non-functional metabolite hydroxy-retinoic acid by enzymes of the cytochrome P450 family 26 (CYP26). A strategy to overcome these limitations is to increase the levels of naturally occurring retinoic acid within the skin by inhibiting its degradation by CYP26 enzymes (Figure 1). Consequently, CYP26 inhibitors, such as liarozole or talarozole, are being investigated in the pharmaceutical sector for the treatment of several dermatological disorders. NovoRetin™ acts as plant-based CYP26 inhibitor. As demonstrated in in vitro studies, it significantly diminishes the activity and gene expression of CYP26A1, a CYP26 isoform found in the skin. When tested in a 3D epidermis model, NovoRetin™ increased the expression of involucrin, a marker of retinoic acid activity, to a similar extent as the CYP26 inhibitor talarozole. Therefore, by inhibiting the breakdown of retinoic acid in the skin, NovoRetin™ produces beneficial effects akin to those of retinol applications.

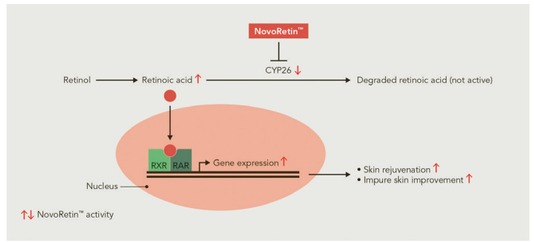

Figure 1: Mechanism of NovoRetin™ to increase naturally occurring retinoic acid in the skin.

POTENT ANTI-AGING EFFECTS

NovoRetin™ exhibits powerful anti-aging effects, as demonstrated in a placebo-controlled clinical study involving 18 women aged 42 to 70 years with crow's feet wrinkles and signs of photoaging. After 28 days of treatment with a cream containing 2% NovoRetin™ or a corresponding placebo cream applied twice daily on different facial and forearm areas, facial skin elasticity and forearm skin density in the areas treated with NovoRetin™ improved by 20.4% and 13.8%, respectively (Figure 2). A clinically proven advantage of NovoRetin™ over retinol is its capacity to immediately reduce wrinkles and skin roughness after a single application.

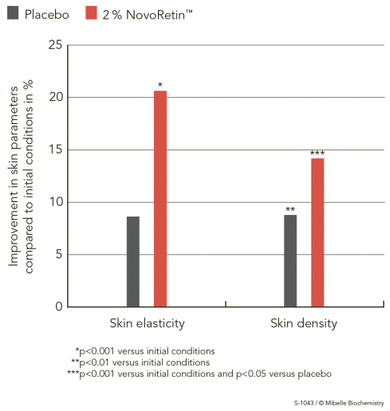

Figure 2: Improved skin elasticity and skin density after application of 2 % NovoRetin™ for 28 days.

PORE REFINEMENT AND BENEFITS FOR IMPURE SKIN

By enhancing retinoic acid in the skin, NovoRetin™ also offers beneficial effects for acne-prone skin. Multiple clinical studies in Asian and Caucasian panels have shown its anti-comedogenic effect and its ability to reduce shininess, pore size, and skin imperfections. For example, the use of 2% NovoRetin twice daily for 28 days in a panel of women with retentional lesions could reduce blackheads by more than 50% compared to initial conditions and placebo. In another study, treatment with a cream containing 2% NovoRetin™ for 2 weeks significantly reduced both pore count and pore volume by 30.3 % and 41.7 %, respectively. Unlike traditional retinol treatments, NovoRetin™ does not cause skin dryness but instead increases skin hydration. Pore refinement is an additional significant benefit not only for impure skin but also for aged skin where pores often appear enlarged.

SKIN BRIGHTENING

A new placebo-controlled study with 72 South Asian women aged between 18 and 40 years with phototype Fitzpatrick IV-V demonstrated the efficacy of NovoRetin in skin brightening. The volunteers used a cream with 2% NovoRetin™ or a corresponding placebo on the whole face twice daily for 28 days. Treatment with NovoRetin™ significantly increased the L* (lightness) factor measured by chromameter, as well as skin brightness and skin luminosity assessed by dermatological grading. This effect was also visible in images taken before and after the treatment with NovoRetin™ over 28 days (Figure 3).

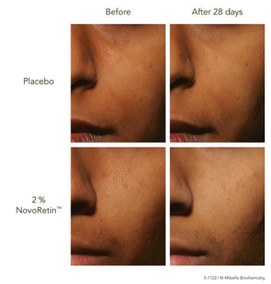

Figure 3: Visible improvement of skin brightening after application of 2 % NovoRetin™ for 28 days.

CONCLUSION

In conclusion, based on an innovative mechanism, NovoRetin™ is an ideal plant-based retinol alternative that can be used not only for anti-aging applications but also for skin brightening products and formulations for acne-prone skin. ■

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