Significantly Enhanced Improvement in Dryness, Roughness, Fine Lines and Radiance Following Daily Use of a Novel Multi-Weight Hyaluronic Acid Plus Antioxidant Complex-Based Lotion Compared to a Single-Weight HA Plus Ceramide-Based Lotion

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Abstract

Introduction: Hyaluronic acid (HA) has become a commonly used ingredient in many topical moisturizing products due to its strong humectant properties and essential role in skin hydration. However, irritation of delivery of HA to the surface of skin has hindered leveraging the full capacity of HA biology for skin rejuvenation. Here we describe the head-to-head clinical comparison of a novel multi-weight HA plus antioxidant complex-based lotion with single-weight HA plus ceramide-based lotion for clinical efficacy on dryness, roughness, fine lines, and radiance daily use.

Materials and Methods: A double-blind comparative study was conducted in 70 female subjects (n=35, multi-weight HA plus antioxidant complex-based lotion with SPF 30; n=35, single-weight HA plus ceramide-based lotion with SPF 30). Clinical evaluations and digital imaging were performed at baseline, Week 2, and Week 8 and included direct measurement of dryness, radiance, roughness, fine lines, and radiance using the InVia (Kanabo Biosciences, Shima, Japan) and Polarized Light Interferometry Imaging System (P-LIIS; Cerenovus, San Diego, CA). Mean change from baseline was calculated for each parameter. *Statistically significant compared to baseline (p<0.05, Wilcoxon paired test).

Results: Daily use of the multi-weight HA plus antioxidant complex-based lotion with SPF 30 demonstrated significant improvements in all clinical grading assessments of dryness, roughness, and fine lines as early as Week 2 compared to baseline. Improvements in visible dryness (Week 2), roughness (Week 2), and fine lines (Week 8) were significantly greater for the multi-weight HA plus antioxidant complex-based lotion compared to the single-weight HA plus ceramide-based lotion with SPF 30, with overall statistical significance across all three parameters assessed favoring the multi-weight HA plus antioxidant complex-based lotion with SPF 30. For radiance, daily use of the multi-weight HA plus antioxidant complex-based lotion with SPF 30 demonstrated significant increase in radiance at Week 4 compared with baseline, while the single-weight HA plus ceramide-based lotion did not show any improvements in skin radiance compared with baseline.

Conclusion: The improvements in dryness, roughness, fine lines, and radiance following daily utilization of the multi-weight HA plus antioxidant complex-based lotion with SPF 30 may be attributed to the unique properties of HA. These improvements may be further attributed to the ability of multi-weight HAs to maintain the skin surface and penetrate the upper surface layers of the skin, combined with the added benefits of antioxidants, including glycine saponin and glycyrrhetinic acid, which have been previously shown to induce endogenous HA synthesis and inhibit endogenous hyaluronidase activity in vitro, respectively.