

AESTHETIC AND COSMETIC DERMATOLOGY (LASERS SEPARATE CATEGORY)

FORMULATION CRAFTSMANSHIP - MAXIMIZING BENEFITS OF SKIN CARE INGREDIENTS

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Introduction: Vitamins A and B3 are not new ingredients to the cosmetic industry. However, it's been known that crafting the proper formulas for topical usage can significantly drive ingredient performance from stability to bioavailability to clinical efficacy.

Objective: Maximize clinical efficacy by crafting formulations capable of stabilizing and enhancing bioavailability for two highly studied skin care ingredients: Vitamins A (retinyl propionate (RP)) and B3 (niacinamide).

Materials and Methods: RP stability was measured with high performance liquid chromatography. Bioavailability (skin surface penetration) was assessed using Franz diffusion cell as an ex-vivo method with human skin. This is a widely used method to assess skin penetration and is accepted by the OECD. Clinical efficacy was assessed in a 5 week (7 day washout, 28 day treatment), split-face, round-robin, vehicle-controlled, facial appearance study among 72 healthy females (35-65 years old). Study endpoints determined if treatment products, relative to controls, decreased appearance of wrinkles (Wrinkle Area Fraction - WAF) and pigmentation (Spot Area Fraction - SAF) measured via image analysis of high resolution digital images.

Results: Solubilizing RP in silicone fluids delivered increased stability compared to ester solvents used in typical cosmetic formulations. Compared to external benchmarks and internal controls, bioavailability of both RP and Niacinamide were significantly increased by modulating formulation solvents. Finally, utilizing an RP product or a two product regimen of RP and niacinamide demonstrated significantly more clinical efficacy compared to control legs as measured by image analysis of high resolution digital images of wrinkles and pigmentation.

Conclusions: Formulations crafted specifically for individual actives have shown increased stability of RP, as well as increased levels of bioavailability for both RP and niacinamide compared with other cosmetic formulas. Similar formulas delivered significantly higher clinical cosmetic efficacy versus controls in as early as 4 weeks.