



Letter From The Editor

Over the last twenty years, vitamins B₅, C & E and UVB & UVA filters have been added to most cosmetics and toiletries, because of their ability to provide *protection* against the damaging effects the environment (sunlight, free radicals, pollution, dryness).

Other vitamins, such as Vitamin A and its derivatives, B₃, B₅, B₆ and C, were added because they can *correct* skin damage. Another important feature of vitamins is their ability to function as co-enzymes in carboxylation reactions, and nucleic acid & protein synthesis, contributing to the *reversal* of the damage caused as a result of chronologic and environmental aging.

Amino acids, which are the building blocks of keratin in hair, nails and skin proteins, were not widely used in cosmetics, because of some stability and animal sourcing issues. Unlike fat and starch, the human body does not store excess amino acids and must obtain them from daily consumption of food. In addition,

humans can synthesize only *non-essential* amino acids. The *essential* amino acids must be derived from the diet.

Past studies have shown that combining amino acids with vitamins, and in particular vitamin B₅ and certain amino acids, already present in hair, can improve the condition of hair. A new direction, which is taking place in skin care, is the combination of amino acids/peptides and vitamins in order to reverse wrinkles and enhance product performance.

In the current issue, we will review the role and benefits of vitamins and amino acids in skin care and in particular, the patented combination of the amino acid L-hydroxyproline, trademarked Lumistor™ and water soluble & oil soluble vitamins, covered by US patent No. 6,497,889.

THE ROLE OF VITAMINS & AMINO ACIDS IN SKIN CARE

Vitamins

Vitamins are naturally occurring ingredients, required for normal growth and maintenance of the body functions.

The most important benefits attributed to the use of vitamins in skin care are:

- Long lasting moisturization
- Prevention of environmental damage
- Co-enzymes in collagen formation
- Proliferation of fibroblast cells
- Increased skin elasticity
- Wrinkle Reduction.

Amino Acids

Amino Acids are the building blocks Skin, hair and nail proteins.

The benefits attributed to the use of amino acids in skin are:

- Components of the Natural Moisturizing Factor
- Enhanced moisture retention
- Building blocks of collagen
- Formation of basal layer.
- Anti-Wrinkling
- Provide energy and enhance the immune system



The Importance of Combining **Lumistor™** and **Vitamins** in Skin Care Products (US Patent No. 6,497,889)

Lumistor™ In Skin Care

- **Lumistor™** (L-Hydroxyproline) is an ideal additive because of its odor stability at high storage temperature of 40°C and a wide pH range.
- Nourishes dry skin and enhances its moisture retention from within
- Enhances the proliferation of epidermal keratinocytes
- Essential in basal layer formation and collagen synthesis
- Synergy with Vitamin C in collagen synthesis
- One of the major building blocks of collagen
- Enhanced penetration into skin when combined with Resilen™-200 (LMW sod. Hyaluronate)
- Reduces fine line and wrinkles

Benefits of the Combination **Lumistor™ & **Water Soluble and Oil Soluble Vitamins****

The Lumistor™ amino acid, water soluble and oil soluble vitamins interact and complement their activities in skin. Whereas the amino acid L-Hydroxyproline is a major constituent of collagen, vitamin C functions as co-enzymes in its synthesis.

Vitamin A In skin Care

- Anti-keratinizing. Regulates the growth and activity of epithelial cells
- Increases skin thickness and elasticity.
- Normalizes dry skin
- Reduces fine and wrinkles due to photodamage

Vitamin B₅ In Skin Care

- Promotes normal keratinization
- Stimulate fibroblast proliferation
- Strong moisturizer

Vitamin C & Derivatives in Skin Care

- Protection against UV radiation, due antioxidant activity
- Stimulation of collagen synthesis in conjunction with Proline and Hydroxyproline

Vitamin E in Skin Care

- Moisturization from within
- In vivo anti-oxidant
- Protection against environmental stress

In addition, L-Hydroxyproline and Vitamin A enhance the proliferation of the fibroblast cells, adding to the reduction of fine lines and wrinkles. Vitamins B₅ and E enhance the Moisturizing properties of Lumistor™ *from within*.

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