

## Cosmeceuticals Fact Sheet

Consumers spend billions of dollars each year on anti-aging skin care products. To help them make the best choices, dermatologist Patricia K. Farris, MD, FAAD, clinical associate professor of dermatology at Tulane University School of Medicine in New Orleans, offers her opinion on the effectiveness of cosmeceutical ingredients and the importance of product testing.

- Since cosmeceuticals are not subject to approval by the U.S. Food and Drug Administration (FDA), their benefits are not adequately tested in most cases and their claims may be greatly exaggerated.
- Cosmeceuticals are divided into categories based on their active ingredients:
  - Anti-oxidants can reduce the harmful effects of free radicals, which are molecules that injure the skin's cells, causing inflammation, increasing sun damage and contributing to the development of skin cancer.
  - Peptides are smaller proteins that stimulate the production of collagen and thicken the skin.
  - Growth factors are compounds that act as chemical messengers between cells and play a role in cell division, new cell and blood vessel growth, and in the production and distribution of collagen and elastin.
- The new trend in cosmeceuticals is combination products. These products may contain ingredients such as multiple anti-oxidants, retinol plus anti-oxidants, growth factors plus vitamin C and other unique combinations.
  - Although the individual ingredients in combination products have been studied, the combination of their active ingredients has not.
  - More rigorous scientific studies are needed to assure that the biologic activity is maintained when ingredients are formulated together.
- Despite the fact that consumer demand for cosmeceuticals containing "natural" or "organic" ingredients is high, the notion that these ingredients are safer than synthetic ones is a common misconception with no scientific data to support this claim.
  - Skin care products labeled as "natural" are less tested and scrutinized than are synthetic products and pharmaceuticals.

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- Most compounds as they exist in their natural state cannot be formulated into skin care products. They first must be chemically altered before they can be incorporated into cosmetics, thereby negating the claim of being “natural.”
  - Enhanced natural ingredients, which have been chemically altered, tend to be more stable, penetrate better and have more long-lasting effects on the skin than unaltered plant extracts.
  
- The key to evaluating the effectiveness of cosmeceuticals is understanding how they are tested.
  - Active ingredients are evaluated using polymerase chain reaction (PCR) testing, which is used to characterize biologic activity and determine if the ingredient is an anti-oxidant or anti-inflammatory.
  - The gold standard for dermatologists to confirm a product’s efficacy is an objectively designed study known as the double-blind, vehicle-controlled study.
  - Most cosmetic manufacturers use open-label user studies, where subjects apply test creams for a few weeks and then assess their improvement over baseline. However, these types of studies do not assess the vehicle’s effect and there are no objective measures.
  
- Dermatologists can recommend skin care products that have strong science behind them and have been proven safe and effective in human studies.
  
- Dr. Farris offers these tips when purchasing cosmeceuticals:
  - Ask yourself what the product claims to do and what kinds of studies have been performed.
  - Trust your instincts. If it sounds too good to be true, then it probably is.
  - Stick with products and brands that you know to be reputable. Well-known manufacturers have more money behind their active ingredients and product testing.
  - Beware of Web site claims, as many are biased even if they say they are objective.
  - For day, wear sunscreen and consider also using products containing anti-oxidants, as they have sun-protection properties. At night, use products containing retinoids, peptides or growth factors for their repair properties.
  
- Dermatologists can help consumers determine the best options for all their skin care needs.

*For more information on cosmeceuticals, visit the American Academy of Dermatology’s Web site at [www.aad.org](http://www.aad.org).*