

Alpha Hydroxy Acids Glycolic Acid and Fruit Acids

Hydroxy Acids (AHAs), glycolic and fruit acids have certainly become the hallmark of the cosmetic industry's war on wrinkles. It has been said that they induce skin peeling (increased cell renewal) and, in doing so, achieve anti-aging benefits.

On April 6, 1994, Dr. John Bailey, acting director of the FDA's Office of Cosmetics and Colors, warned cosmetic chemists that the AHAs had clearly stepped into the region of "drug" jurisdiction. His concern was over the strengths being used by non-professionals and people with less than adequate training. He said that the "clear message" being given out to the consumer as product rivalry heats up is "higher percentages" are better.

An article in "Soap/Cosmetics/Chemical Specialties for September" written by former R&D employee for Richardson Vicks and Estee Lauder, Walter P. Smith, PhD, writes the following:

"Cell cohesion and skin pH changes induced by topical AHA treatment can last as long as several hours. This is certainly long enough to loosen keratin bonds and provide an initial burst in skin exfoliation. Additionally, changes in skin pH with lower levels of AHAs (3%, pH 3) do not significantly alter pH at lower levels of the skin (maximum depth, 3 to 5 layers). However, AHAs at 10% strength can alter skin pH up to 10 to 20 layers deep within the skin. This latter observation suggests that such high levels of AHAs may directly alter skin physiology. Twenty tape strips into the skin gets down to the viable layers. Here, critical enzymes associated with cell proliferation,

differentiation or inflammatory responses may be directly manipulated by pH changes.

Finally, we examined the ability of AHAs to alter normal exfoliation in a simple hyperproliferation model. We observed that with higher, irritating concentrations of AHAs, the amount of skin cells shed is elevated, and their form is also abnormal (italics added). Skin cells are shed in clumps, similar to the clumps observed in dandruff and other diseases (italics added) of cell differentiation. In this same system, lower levels of AHAs, which do not induce visible scaling, do not produce cell clumps of abnormal size."

Although the AHAs are being promoted as fruit acids the great majority are synthetically manufactured. The therapeutic index (remedial) for the natural sugar cane glycolic was the same as its chemical counterpart, but the natural ingredients "acted as skin-smoothing agents, reducing existing irritation. It is likely that these extracts contain natural soothing agents which can reduce the irritation potential of the hydroxy acids, yet not interfere with their stimulatory activity.

In conclusion, continual treatment with the low pH formulas with a high concentration of AHAs may alter various enzyme relationships. In addition, transforming growth factor (activation has been observed at pHs lower than 5. Chronic treatment with acids may activate this enzyme, resulting in proliferation and differentiation.

There are safe formulations with low concentrations available. Try low concentrations of natural sugar cane glycolic for best (and safe results).