The Dangers of Parabens

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by David Steinman

As regular readers of Organica know, I normally write a column which appears in this spot. However, this article by well-known journalist David Steinman came across my desk and he was kind enough to allow us to reprint it. David edits a terrific monthly newsletter called The Doctors' Prescription for Healthy Living (which is where this article is also destined to appear). I strongly urge all our readers to subscribe: it's available from Freedom Press, 1801 Chart Trail, Topanga, CA 90290.

David's article discusses the problems with parabens used as preservatives in cosmetics. Aubrey Organics® has never used parabens, nor do we accept raw materials that use them. In 1974 Aubrey created a natural cosmetic preservative with citrus seed extract and vitamins A, C and E. This is the only preservative we use in our hair and skin care products. Aubrey has always felt that the parabens were neither safe nor effective preservatives. The research presented below supports Aubrey Organics® and other natural cosmetic manufacturers who avoid parabens.

A Wake-up Call on Cosmetic Preservative Safety

Two recent reports raise disturbing questions about the safety of commonly used cosmetic preservatives. They also make very clear why smart consumers are seeking safe and natural preservative systems. The first report—a recent study from the journal Toxicology and Applied Pharmacology—raises disturbing questions about the safety of a group of commonly used cosmetic preservatives known as parabens. Consumers who check labels will see parabens listed on a wide range of cosmetic and personal care products.

Leave-on products such as facial makeup and skin lotions are of greatest concern because of the long exposure time and opportunity for migration via the skin into the bloodstream. The recently discovered estrogenic effects of certain synthetic chemicals, such as the parabens, and their subsequent effects on the endocrine system of humans and wildlife, is of growing concern—especially in relation to women's risk of breast cancer. Reproductive abnormalities in young boys exposed to such chemicals either prior to puberty or as fetuses also may increase risk for undescended testicles, testicular cancer, sperm abnormalities and prostate disorders.

Meanwhile, Thomas Connor, Ph.D., associate professor of environmental sciences at the University of Texas-Houston School of Public Health, claims in a preliminary report in Environmental and Molecular Mutagenesis that the preservatives methylisothiazolinone and methylchloroisothiazolinone have mutagenic and cancer-causing properties and should be carefully evaluated for safety.

The Paraben Paradox

For many years, parabens were considered among those preservatives with low systemic toxicity, primarily causing allergic reactions. However, as we have become aware that some synthetic chemicals mimic the female hormone estrogen, our

understanding of the toxic effects of both synthetic and natural substances has changed. Now, researchers from the Department of Biology & Biochemistry, Brunel University, Uxbridge, Middlesex, have found that alkyl hydroxy benzoate preservatives (namely methyl-, ethyl-, propyl- and butylparaben) are weakly estrogenic.

Although it is reassuring to note that when administered orally the parabens were inactive, subcutaneous administration of butylparaben produced a positive estrogenic response on uterine tissues. Although approximately 100,000 times less potent than 17 beta-estradiol, greater exposure to the parabens may compensate for their lower potency. The researchers conclude that, "Given their use in a wide range of commercially available topical preparations, it is suggested that the safety in use of these chemicals should be reassessed…" Kathon GC: Emerging Toxic Menace?

Earlier research has shown preservatives known commercially as Kathon GC, and by their scientific names as methylisothiazolinone and methylchloroisothiazolinone, alone could damage cell processes in ways that might lead to cancer. However, more recent research by Dr. Connor is the first to show properties of whole products containing these preservatives may also damage cell processes. Shampoos and conditioners often contain these preservatives. They are listed on labels. Using bacterial tests, Dr. Connor found three products using the preservatives had cancer-causing potential. "If an ingredient causes skin-sensitization and is mutagenic, that means that it may have the potential to cause skin cancer," cautions Dr. Connor.

An industry-funded Cosmetic Ingredient Review Expert Panel concluded that Kathon GC may be safely used in rinse-off products at a concentration not to exceed 15 parts per million (ppm) and in "leave-on" products at a concentration not to exceed 7.5 ppm. "Although it may be assumed that the ingredient is safe at these levels as far as mutagenicity is concerned, the fact remains that it is also a sensitizing agent and may affect some individuals even at these levels," says Dr. Connor. What's more, he adds, "It is probable that a person could use a shampoo, conditioner, styling gel and skin lotion one or more times in a single day, making the total daily dose substantial. Because many of these products are used by children and young adults, the potential for long-time exposure can be considerable." In addition, the ingredient is absorbed through the skin.

Dr. Connor has continued his research and is now analyzing additional data from more complex systems. Thus far, the results show that the higher the dose, the more likelihood of mutagenicity—although the results have not thus far been statistically significant.

Cosmetics and personal care products require preservatives or they will become contaminated with bacteria, and it would be irresponsible for companies not to use preservatives. The choice of preservatives, however, is especially important because this family of ingredients is, like fragrances, one of the leading causes of contact dermatitis—and, we now suspect, could potentially cause longterm health problems. Furthermore, cosmetics are not required to be tested for safety prior to being put into commerce.

Unpublicized Preservative Hazards

There are other hazards associated with preservatives that consumers are rarely told about. Some of the most allergenic and irritating preservatives release small amounts of formaldehyde, which is not only an irritant and skin sensitizer, but is cancer-causing and damaging to the nervous system.

Many cosmetic companies do not use such ingredients because they can make the eyes sting and irritate the skin. But many companies do, and health-conscious consumers should be able to identify these ingredients so they can avoid products containing them.

The following ingredients contain formaldehyde, may release formaldehyde, or may break down into formaldehyde: 2-bromo-2-nitropropane-1,3-diol · diazolidinyl urea · DMDM hydantoin · imidazolidinyl urea · quaternium 15.

Seekers of the most gentle yet effective cosmetics should limit their exposure to these chemicals. On the other hand, one of the arts of manufacturing cosmetics and personal care products is in formulating products to achieve an effective yet gentle balance of ingredients. Some of these chemicals may be used at such low concentrations that they are not allergenic or irritating to most people. They may still incrementally increase the consumer's overall cancer risk.

Safe and Effective Preservatives

The following ingredients—which research shows are both extremely gentle and effective—can also be used as preservatives and seem to cause the least irritation and fewest allergic reactions: ~~grapefruit seed extract · phenoxyethanol · potassium sorbate · sorbic acid ·~~ tocopherol (vitamin E) · vitamin A (retinyl) · vitamin C (ascorbic acid).

These are the preservatives that you should prefer whenever possible. In particular grapefruit seed extract appears to be an extremely potent and well-tolerated preservative. Its use in cosmetics was introduced into the United States by Aubrey Organics®.

Among companies that have long refrained from deliberate addition of the parabens, Kathon GC, and formaldehyde-releasing preservatives are Aubrey Organics®, Dr. Hauschka and Weleda. Each of these companies, whose products are available at health food stores and natural product supermarkets, offers consumers facial makeups, skin lotions, shampoos, conditioners and other personal care products with extremely safe, yet effective preservative systems.

The studies on the parabens and Kathon GC are preliminary. That means there is probably a great deal that is as yet unknown. For example, the researchers who discovered the estrogenicity of the parabens have further confirmed these effects in a subsequent study. They are now doing skin-painting studies. If these studies also show estrogenic effects, it would mean that the preservatives are toxic precisely in the manner as used by consumers. The most cautious consumers may prefer to avoid these preservatives altogether.

Some companies such as Aubrey Organics® not only have implemented policy guidelines that strictly prohibit the addition of such preservatives to their products,

they have also begun screening programs to further insure that their raw materials are free from these preservatives.