



PROFILE

HARNESSING THE POWER OF CLEAN SCIENCE IN COSMECEUTICAL SKINCARE WITH TERRI VINSON

As a cosmetic chemist, I advocate for the addition of natural and laboratory synthesised (synthetic) ingredients in all my formulations. There are many 'natural' product ranges on the market that can be gentle and nurturing, but they may not be as effective as the synthetic alternative or create the same cosmeceutical 'punch' on the skin.

For me, the basis of successful formulating is to combine the very best of laboratory created ingredients with naturally derived ingredients and harness the two in synergy. The ultimate aim is to create effective products that:

- generate positive change;
- penetrate the skin for optimal delivery; and
- are cosmetically elegant to use for the consumer.

As a formulator, what I don't include in the product is often as important as what I do include. I have my own list of what I refer to as 'questionable ingredients'. These are chemical additives that I believe can be harmful to cells when allowed to accumulate over time. A compelling scientific study showed that women absorb over three kilograms of chemicals from cosmetics and toiletries annually.

As a brief overview, I advise customers to avoid the following ingredients in their cosmetic products:

1. Paraben preservatives
2. Artificial colour (FD&C dyes)
3. Artificial fragrance

4. Phthalates
5. SLS and other foaming sulfates
6. PEG
7. Propylene glycol
8. Isopropyl alcohol

I believe the terms 'natural' and 'organic' are often misrepresented and too loosely applied in the beauty industry. Natural is not always best and it is important to understand the concept of 'natural' in our industry and realise that natural ingredients can be harmful, irritating and even toxic. Arsenic, for example, is 100 per cent natural, but less than 1/8th of a teaspoon can be fatal. The beautiful oleander shrub can be organically grown, but may result in cardiac arrest if the leaves or flowers are ingested.

The term 'natural' in skincare means that the ingredient has been sourced directly from nature with minimal processing and without the use of chemicals. These ingredients may be solvents, essential oils, emollient oils and natural thickening gums. Only water, glycerin and ethanol are permitted for use in the manufacturing and purification process of natural ingredients.

The phrase 'natural organic ingredients' is often used for marketing claims. These ingredients are generally botanical oils and essential oils. In the skincare arena, a product should be certified organic to have these claims validated.

This ingredient must be completely natural and cultivated without the addition of any synthetic fertilisers

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or pesticides and without chemical processing used in the creation of the raw ingredient. The supplier must also be able to provide documentation to authenticate the organic claims right back to the farming source for the ingredient. It is also worth noting that even natural and certified organic ingredients are capable of creating an irritation response on the skin.

Many laboratory synthesised active ingredients used in skincare products are a bio-identical copy of their natural form. Examples include peptides, retinol, dl-tocopherol (vitamin E) and panthenol (vitamin B5). The nature-identical form will be 100 per cent pure and free of contaminants or pesticides as it is manufactured under sterile laboratory conditions. Another example is the cosmeceutical ingredient Phycosaccharide, an active ingredient identical to a

complex sugar produced by a marine microbe that promotes epidermal stem cell activation, barrier repair and reduces skin irritation.

This ingredient is copied in the laboratory to avoid depleting the marine environment of its natural resources where the ingredient exists in nature. In this case, the synthetic ingredient is effective, nature identical, pure and environmentally sustainable.

Decisions based on natural versus synthetic are personal. As a clean science formulator, I look at two factors:

1. The overall safety profile of the ingredient: Both natural (arsenic) and synthetic (parabens, PEG, artificial colour) ingredients can be questionable and even toxic. I recommend thoroughly reading scientific evidence based on the individual ingredient.

2. The benefit and effectiveness of the ingredient: If a particular ingredient is a laboratory made synthetic (e.g. peptides to minimise the appearance of wrinkles) and does not present as a questionable or potentially toxic ingredient, then it is, in my opinion, a perfectly valid and highly recommended addition to a product.

Natural is not always best. Clean science formulating uses the very best of both science and nature in synergy. Harnessing the positive attributes from both will result in a product that produces the best results with the highest safety profile. Ultimately our aim as scientists should be to produce the most ethical and safe products with the highest ingredient efficacy to make a real difference to the skin of our clients. **AMP**