



### **Why is Chirally Correct better than natural?**

To put it simply, chemicals cause stress simply because they are not natural to our skin or body. Chemicals are often not recognized or utilized properly by the skin or the body. An example would be Lactic acid. Synthetic Lactic acid contains both the D and the L molecule. The body (and skin) only recognizes the L form. Natural Lactic acid contains only the L form, which is the one the body can use. It's obviously better to use the natural L form - why would you use the form in which one half of the molecules are ineffective? It is the same with vitamin E. Natural vitamin E is D-alpha Tocopherol. Synthetic vitamin E is DL alpha Tocopherol. The body can only use the D form. With the DL form you have half the molecules that are either worthless or can cause an allergic reaction. Artificial color and artificial fragrances (or flavors in food) are often not recognized by the body. This causes stress to our systems because the body doesn't know how to react to these ingredients and often stores them in an organ or fat. Over years these chemicals can accumulate and reach a toxic level. In short, they pollute our bodies and/or our skin.

How to identify Chiral Ingredients on the labels:

When a product is Chirally Correct, it means that it contains only the molecules with the ability to give the desired results (by the way, always identified on the product label by either an L, for the left side of the molecule or D, for the right side, before each of the ingredients). Take a look at the ingredient list of any of the products you are currently using and see if they contain any Chirally Correct ingredients.

### **Chirally Correct Cosmetic Formulations**

#### **Chiral Technology History**

The importance of Chirality was first recognized in the laboratory of the famous chemist Louis Pasteur in 1848. The word "Chirality" is derived from the Greek word chir, which means "hand". It refers to a mirror image phenomenon frequently found in nature, e.g., human hands, eyes and feet are identical opposites, or mirror images, of each other.

What is this Chiral Technology?

The human body is selective about which "part" of a given compound it can put to use and which is useless, or even harmful. Simply put, only the right shape works. Now imagine squinting through the lens of a high-power microscope at the two halves of a molecule. With the use of Chiral Technology, a molecule can be separated; one half is able to form a perfect bond with the skin's cells (or cell receptors), while leaving the other, ineffective half, behind. Using only the effective side of the molecule guarantees that each ingredient will have the greatest targeted benefits possible, and dramatically cuts down the potential for any adverse reactions. The human body recognizes natural, but does not recognize artificial chemicals.

Some examples of why this Chiral Technology is so important:

Thalidomide: the notorious drug that caused heartbreaking birth defects in the early 60's. It was

# skin solutions

prescribed for morning sickness to pregnant women. When scientists finally resolved the drug in 1979, separating its two "hands", they discovered that only the L form causes fetal deformities, while the D form and the racemic DL form both exhibited equal sedative activity. The drug had always been prescribed in its racemic form, which contained the L molecule responsible for birth defects. If they had chirally purified the drug, by removing the L form, Thalidomide may have been safe. Although recent studies indicate that this concept may not have been the final answer to the Thalidomide problem, (some believe it would not have made a difference) it is clear that a better understanding of Chiral Technology would have been significant. The bottom line? Important biological compounds exist in 2 mirror image forms and the actions and effects of the twins can be strikingly different when in the presence of other compounds which are themselves Chiral, like the human body. This applies equally to compounds intended for internal use and to topicals like skin care. If a product does not take the Chirality of its active ingredients into consideration it cannot be effective on a highly evolved, complex biochemical organ like human skin, of which its very structure is Chiral.

*To be truly effective, products must be Chirally Correct. Just as you cannot put your right hand into a left handed glove, your body will not accept a left handed compound to do the job a right handed one is supposed to do, and visa versa.* Chiral chemistry sets the rules that determine how or whether ingredients perform as desired or otherwise. While molecules of one hand are necessary to life (e.g. L-amino acids, certain D sugars, etc.) this selectivity means that the molecule of the opposite hand will usually exhibit different effects, ranging from useless to toxic, as in the case of L-Thalidomide.

Chiral Technology forms the basis of our High Performance Skin Care treatments. Using only the effective side of the molecule guarantees that each ingredient has the greatest targeted benefits possible. The result? Your skin will look healthy, soft, and feeling fresher than you've ever experienced before. Rarely will a client report sensitivities or allergic responses to these products.

## **Limonene (D and L difference):**

Limonene is an active compound in citrus fruits. In nature, Limonene always has both left handed (L) and right handed (D) molecules. Natural Limonene is DL Limonene. Let's compare the different properties & uses of these naturally occurring "twin-sided" molecules: D-Limonene (right-handed) is the version used for industrial cleaners & degreasers. It's used as a tire solvent (for recycling tires), it's known to cause allergic reactions, and it promotes mutations in human embryos & promotes free radicals. L-Limonene (left-handed) suppresses tumor growth (particularly melanoma) & fights free radicals. Would you prefer to have in your skin care - the natural Limonene with both the harsh D side molecule and therapeutic L molecule, or only the therapeutic L side? Those concerned about their skin would prefer only the L-Limonene in their products. Chiral technology makes it possible to give you a product that is better than natural because it separates the molecules allowing us to remove the undesirable side of the molecule and use only the desirable one.

Indications: "L"- "left" molecule, "D" - "right" molecule

L - Alpha Lecithin  
antioxidant, emollient, & antibacterial

# skin solutions

## L - Arbutin

melanin inhibitor reduces spots, melasma, & hyperpigmentation

## L - Ascorbic Acid

photo protective, collagen stimulating, & antioxidant

## L - Lactic Acid

speeds skin's metabolism, softens, exfoliates, & strengthens cell walls

## L - Retinol A

patented, uses benefits of retinoic acid  
(reduction of fine lines and acne) to penetrate without  
irritation

## D - Alpha Tocopherol

antioxidant, heals & repairs damaged tissues

## D - Beta Fructan

found in plants, helps skin to self-moisturize

## D - Beta Glucosamine

bolsters the skin's ability to moisturize, strengthen,  
& defend itself

## EGF Epidermal Growth Factor

stimulates new cell growth & repairs UV-damaged skin

## D-20 Heavy Water

reduces cellular stress, protects against bacteria,  
viruses, & radiation

## Spin Trap

uses free radicals to feed cellular growth,  
to attain more youthful and healthy skin