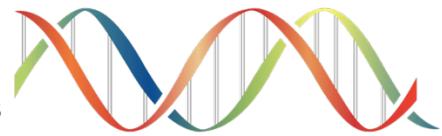




Community BioRefineries
The Epitome of American Innovation



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Community BioRefineries,

Cosmeceuticals: Be beautiful, and feel good about it!

"If you look good, you feel good, and if you feel good, you play good."
~Deion Sanders

Some months ago, we were contacted regarding cosmeceuticals; or more broadly, the ability of the CBR's Hemp-BioRefinery division to create a cosmeceutical product line using CBR's state-of-the-art pharmaceutical-grade equipment in its vertically integrated process line. A broad description of cosmeceuticals is "skincare products represent a marriage between cosmetics and pharmaceuticals". Using our pristine and undamaged proteins, starches, and oils to that end seemed like a logical progression.

There are the countless numbers of trials and paths to extract valuable properties in our explanation of using pharmaceutical-grade equipment to vertically integrated multi-step technologies. Currently, there are several companies making hemp-based cosmeceuticals. Their processing involves less than delicate steps to extract the desired hemp components, resulting in using damaged ingredients which have begun the rotting process. Unless chemically altered to mask the resulting nasty rotting odors, no one would touch their products.

The chemistry of cannabis is quite complex; the isolation and removal of the active components in cannabis in a pristine manner is complicated even today. For example, cannabis has no nitrogen and, therefore, is not an alkaloid. The 19th-century drug stores that had been so effective in separating the active properties from other plants could not identify its active element because cannabis does not have nitrogen. As most are aware, the premier agent in marijuana is the psychotropic chemical in *some* varieties of the plant called *delta-9-tetrahydrocannabinol* (THC), which was isolated and synthesized in 1964 and is the most pharmacologically active.

The CBR/HBR process enables the isolation and recovery of specific components of all plant matter, to include hemp. As such, we allow any THC present to transit the process via the waste sugar stream to be fermented into biofuels and subsequently burned up. We do not include THC in any of our hemp-based products beyond the stray 0.03% trace residual amount.

After over 35 years of research and development, our process uses no solvents, heat, chemicals, or pressure to extract ingredients, so when we were asked a question that initially stumped us: "Do you make cosmeceuticals?" Up until then, we'd never considered it so we sought to clarify the term "*cosmeceutical*:". It is a noun and we understood it to be a compilation of two components, 'cosmetic' and 'ceutical', from two separate and distinct industries: The Cosmetic Industry and the Health Industry.

A cosmetic, according to the Federal Food, Drug & Cosmetic Act (FD&C Act) defines cosmetics as "articles intended to be rubbed, poured, sprinkled, or sprayed on, introduced into, or otherwise applied to the human body." (<https://www.fda.gov/cosmetics/cosmetics-laws-regulations/cosmetics-us-law>). A 'ceutical' is a suffix meaning a refined healing item or therapy. As we considered the word and its concept, we thought, WOW, something to make you look good and feel good - a great combination, that our process is well-designed to create.

Therefore, a *cosmeceutical* is a cosmetic that has medicinal (healing) properties. Cosmeceuticals are cosmetic products that have therapeutic/medicinal or drug-like benefits. Cosmeceutical products are now being marketed simply as cosmetics.

After being asked by a cosmetics formulator, "do you/can you make cosmeceuticals?", she went on to say the cosmeceuticals market is enormous! Did you know the global cannabidiol, CBD skincare market in 2018, was worth \$710 million? Cosmeceuticals with cannabis components are projected to surge to \$959 million by 2024 to represent 10% of the total global skincare market, according to a report from Prohibition Partners.

Cannabidiol (CBD) is an active ingredient in cannabis (hemp and marijuana). CBD is an essential component of medical Marijuana and is derived directly from the hemp/cannabis plant.

The cannabis plant and seeds contain 21 essential amino acids and have heart-friendly Omega-3 and Omega-6 oleic acids, plus an outrageously nutritious protein that provides many health benefits.

These oleic acids are vital to our bodies *and* skincare. Cannabidiol modifies the level and activity of both oxidants and antioxidants. The cannabidiol acts like other antioxidants, interrupting the free radical chain reactions, capturing free radicals, or transforming them into less active forms.

Cannabidiol, more commonly called CBD cosmeceuticals, is a non-psychoactive cannabinoid located in cannabis plants related to most of the primary health and medical qualities of marijuana, yet without the high form THC (a psychoactive cannabinoid found in marijuana Sativa).

Now that Congress passed a bill to legislate the manufacturing of hemp, which is high in CBD and practically THC-free, we're most likely to begin seeing a lot even more of it in different items. Using CBD cosmeceuticals will not get you high, yet it's coveted for other factors.

When used in skincare products, the components' antibacterial properties might relax swelling, calm inflammation, reduce breakouts, and moisturize without clogging pores. CBD cosmeceuticals are also abundant in vitamins A, C, and E, which stimulate collagen and the cells responsible for maintaining skin firm and even healthy.

Some studies have found that CBD cosmeceuticals might lessen pain by lowering inflammation in the body's endocannabinoid system, which manages body immune system responses in the nerves. The possibility of a robust anti-inflammatory result is what skincare firms want when developing items to target irritated skin. Some studies have kept in mind that CBD cosmeceuticals might alleviate joint and muscle pain. A few businesses have produced body lotions with CBD that are intended to alleviate pain.

Browsing the growing market of CBD cosmeceuticals appeal and skincare items can be overwhelming, with many brand-new items and many at high cost. Sadly (as mentioned earlier), the CBD used in those cosmeceuticals was extracted by applying general industrial standards (heat and pressures) which damage the oil bodies of the CBD – causing it to begin the rotting process. Soon, it begins to have a nasty odor which must then be covered up with added chemicals. Who wants to spread something like that on their skin?

CBD oil extracted via the CBR/HBR process is totally pristine and undamaged, having never been exposed to heat, pressure, or chemicals.