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Equality of the Sexes

Over in the pharma industry, the spotlight is searing hot again on whether women are adequately represented in clinical trials for drugs.

This concern has persisted for decades. Now, there's a deadline looming. By August of this year, under what's known as Section 907 of the Food and Drug Administration Safety and Innovation Act (FDASIA), FDA must publish an action plan with detailed recommendations on how to improve the way researchers analyze clinical data on demographic subgroups, including women and minorities, in studies on drugs, biologics, and medical devices.

The main problem isn’t an insufficient number of female subjects in clinical trials. The problem is that many researchers are still not reporting outcome data according to sex. What does this mean? It means that, prior to releasing a drug, pharmaceutical companies may not have—or may not make public—the data necessary to warn consumers on how drugs may affect men and women differently. That information should be making its way onto drug dosage and warning labels, but, typically, it’s not.

The physiological differences between men and women can significantly manifest in drug reactions. Last year, FDA made the makers of the sleep drug Ambien halve the dosage required for women, compared to the dosage for men. The reason? Women metabolize and eliminate the drug more slowly than men do, resulting in increased and potentially hazardous morning drowsiness. Menstrual cycles and pregnancy can also affect how drugs behave in women. Also, diseases themselves impact the sexes differently in terms of risk, development, and symptoms, skewing clinical trial outcomes.

Lawmakers and activists alike are encouraging FDA and the NIH to revamp U.S. research guidelines. In April, a group of senators wrote to FDA asking the agency to require greater analysis of sex differences in clinical trials for new drugs, and members of Congress asked the GAO to take another look at how women are included in NIH-sponsored trials. Now there is bipartisan legislation on the table—the "Research for All Act of 2014," which would require "the inclusion and separate analysis of both male and female animals" in NIH-funded basic research, including studies that utilize tissues and cells, which would need to come from both male and female subjects.

NIH is listening. In an article published in the May 14 issue of the journal Nature, the NIH’s Janine Clayton and Francis Collins wrote that the NIH will now require researchers to include female animals in basic research, effective October of this year. This represents the biggest movement NIH has made on this issue.

Researchers may resist these changes at the start. "It's going to take awhile for the mentality of researchers and scientists around the country and the world to recognize that research has to be done differently," says Phyllis Greenberger, president and CEO of the Society for Women's Health Research (Washington, DC), a group that has been instrumental in advocating for sex-specific analysis and women's research since 1990. Factoring gender analysis into a study requires building it into the study model from the very beginning, she explains.

Could a push for sex-specific analysis in pharma research inspire changes in dietary supplements research, as well? The conversation is certainly relevant, as lack of sex-specific analysis is a problem "across all disciplines of health research," says Andrea Wong, PhD, vice president of scientific and regulatory affairs for the Council for Responsible Nutrition (CRN; Washington, DC). In fact, she says, the lack of sex-specific research "can be magnified in the dietary supplement category because there’s a smaller pool of funding available for dietary supplements research compared to drug research...and, consequently, less money available to investigate sex-specific differences."

Although the biological effects of supplements are less acute than drugs', sex-specific analysis is still important. Still, few supplement studies are designed from the get-go to study both men and women. The ones that do tend to be large-scale studies. Still, Wong says, it’s important that the supplements industry pursue sex-specific analysis to see how women and men respond differently to dietary supplement interventions, both in terms of safety and efficacy. Men and women have different needs when it comes to supplements, just as with drugs. "There are already differences between what men and women need for basic nutritional function," she points out. For instance, the Institute of Medicine’s dietary reference intakes (DRIs) already list different vitamin and mineral targets for each sex.

FDA’s August action plan for drug research will either be a step—or a leap—for women’s research. Hopefully, the supplements industry will follow.

Read the full version of this article at NutritionalOutlook.com/140711/Women

Jennifer Grebow
Editor-in-Chief
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Big Changes to China’s Supplement Laws

China is reforming its regulatory process for dietary supplements. As it stands today, both foreign and domestic dietary supplement companies must clear unwieldy—and often insurmountable—hurdles with China’s Food and Drug Administration (CFDA) in order to sell supplement products in China. In fact, many countries have stopped exporting supplements to China due to the country’s prohibitive product-registration process, according to the U.S.–China Health Products Association (USCHPA; Lewes, DE), a group devoted to promoting commerce between the two countries. But USCHPA reports that on July 1, China’s National People’s Congress passed draft reform of China’s Food Safety Law that would effectively turn China’s supplement-registration process into a notification-based system for some types of supplements.

“At this early time, what we can report is that the new law has a notification amendment, which will allow certain supplements to simply record their products with CFDA,” the association announced in early July.

A notification system is a big change for China, whose current supplement-registration process—deemed the “blue hat” system for the registration symbol’s blue hat logo—is onerous, lengthy, and expensive. USCHPA says the administrative process can take up to three years and can cost companies up to $100,000 per registration. A company must invest in the registration process for each product it sells, regardless of whether products contain similar ingredients. The process may also require companies to invest in clinical trials. According to USCHPA, under a notification process, companies would need to notify CFDA on new products entering the market, without having to go through pre-registration, similar to the U.S. DSHEA process.

Not all ingredients will be allowed to go through the notification process, however. Only select categories of ingredients would qualify for this route, says USCHPA’s executive director, Jeff Crowther.

“China’s FDA will only allow certain ingredients that are well documented for safety and efficacy, such as single-ingredient vitamins and minerals, to go through this notification system,” he says. “Blue hat registration will still be required for companies that have complex formulas or formulas that contain ingredients that are not yet available in the China market.” CFDA plans to release a list of approved ingredients that can be used in dietary supplements, Crowther says. Companies will also still need to undergo the blue hat system if they want to make a health claim for a product.

Opening the Playing Field

Currently, only select companies invest in blue hat registrations, USCHPA says. These companies now monopolize the supplements market in China. In a paper detailing the current problems with China’s dietary supplement process, the association wrote, “It is a well-known industry rumor that many of these domestic registrations are in fact being held by companies that look to sell them and make profits because transferring a registration from one company to another is faster than going through the entire process. Because the registration process is so costly in both time and capital, there are companies willing to pay for these ‘pre-registered’ products in order to expedite their entry to market.”

Foreign companies, too, are not willing to deal with what the association calls an “unreasonable regulatory system” in order to sell products in China. In fact, the association estimates that the U.S. dietary supplement industry alone is losing more than $8 billion in potential exports to China.

A notification system will help expand the playing field in China’s supplements market by simplifying the regulatory process and cutting companies’ financial burden and the time required to go through blue hat registration. The import channel would also unclog.

“At this time, Chinese domestic companies and foreign direct-sales companies hold the lion’s share of the market,” Crowther says. “A notification system will allow smaller and medium-size domestic and foreign companies to compete on a more level playing field. Reform of the system is widely supported by foreign companies, as well as many domestic companies.”

The potential for the China health products market is huge—both in terms of sales and healthcare cost savings for the country. Currently, China ranks fourth in sales ($15.8 billion in 2012), behind the United States, Japan,
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and Europe, USCHPA reports. “China’s huge market and consumer demand should already have made China the largest market for dietary supplements,” USCHPA underlines.

Revised regulations will also attract new investors to the Chinese market, Crowther says. Over the last five years, USCHPA has received many inquiries from companies looking to invest in China’s dietary supplement industry. U.S. investors, especially, may seek opportunities outside of America’s already mature supplements market, he adds.

Finally, revised regulations will clear up the currently “confusing landscape” of dietary supplements in China. For instance, some supplement products are sold as OTC drugs, some as blue hat–registered supplements, and some as general food. As USCHPA wrote in its “Export Potential Report,” sent to China’s Legislative Office of the State Council in April, “In fact, most consumers in China believe that health food products are a type of medicine due to their history of being sold in pharmacies as OTC, as well as some unscrupulous companies overstating their functions.”

—Jennifer Grebow

FDA Approves Three More Omega-3 Drugs. Is This Good or Bad News for Supplements?

Three more omega-3 drugs are now on the heart health market. In recent months, FDA approved AstraZeneca’s brand-name EPA/DHA drug Epanova, as well as two generics, all targeting hypertriglyceridemia (triglyceride levels equal to or higher than 500 mg/dL).

Until Epanova, GlaxoSmithKline’s Lovaza was the only EPA/DHA omega-3 brand-name drug on the market for hypertriglyceridemia. (One more brand-name hypertriglyceridemia omega-3 drug competes with Lovaza and Epanova. It is Amarin Pharma’s Vascepa, which contains EPA fatty acids only.)

FDA-approved in May, AstraZeneca’s Epanova now goes head to head with Lovaza, and the two will compete on bioavailability claims. Lovaza’s EPA and DHA omega-3 fatty acids are esterified. Before the body can absorb the esters, it must first convert (de-esterify via molecular cleaving) them into “free,” non-esterified form. Unlike Lovaza, Epanova’s EPA and DHA fatty acids are already in free form—and, the company says, thus more bioavailable.

In April, FDA approved two generic omega-3 EPA/DHA drugs: Omtryg by Trygg Pharma AS (jointly owned by Aker BioMarine ASA and Lindsay Goldberg LLC) and a generic from Teva Pharmaceuticals. Like Lovaza—and unlike Epanova—these DHA/EPA generic drugs are in ester form.

All of these drugs now contend for patients with hypertriglyceridemia—a condition that can lead to high cholesterol and heart disease, as well as obesity and diabetes. According to AstraZeneca, which bought the rights to Epanova from Omnthera Pharmaceuticals, nearly four million Americans suffer from severe hypertriglyceridemia, and this number is growing.

For the omega-3 supplements industry, what are the ramifications of a growing omega-3 pharma market? All of these firms—pharma and supplement—are fishing from the same supply pool, after all.

Harry Rice, PhD, vice president of scientific and regulatory affairs for the Global Organization for EPA and DHA Omega-3s (Salt Lake City, UT), says that the supplements industry stands to benefit from the consumer attention and research that drug companies will bring to omega-3s. “While a finite supply of fish oil coupled with pharma companies willing to pay the highest premiums may be perceived as a threat to the fish oil dietary supplement industry, the upside is that the pharma companies are investing heavily in research and education. This will result in a more educated consumer, not only about cardiovascular health, but for other health indications,” he says.

Research revelations from pharma firms will be of much use to supplement companies. One such example is an omega-3 drug, RX-10045, currently in Phase II trial and being developed by Auven Therapeutics/Resolvex Pharmaceuticals for eye conditions such as dry eye syndrome. The companies hint that there is great opportunity for omega-3s in this area: “The market for anti-inflammatory agents in ocular surgery is substantial, totaling approximately $800 million for corticosteroid and nonsteroidal anti-inflammatory agents (NSAIDS).”

Bob Green, chairman of Novel Ingredient Services (West Caldwell, NJ), the exclusive U.S. distributor for Norway-based omega-3 oils supplier GC Rieber Oils, comments on the influx of omega-3 pharmaceuticals. “Given the recent research that has been released or in the pipeline on the efficacy of high-potency omega-3 fish oils, it’s not surprising the pharmaceutical industry has jumped into this burgeoning fish oil market with both feet.”

—Jennifer Grebow

Raw-material competitors: Omega-3 pharmaceutical and supplement firms are now fishing from the same supply pool.

For supplements, what are the threats of a growing omega-3 pharma market?

Will Prickly Pear Trend in Beverages?

Always looking for the next food ingredient trend, market researcher Mintel just made a prediction that prickly pear cactus is on the rise. And with good reason.

Prickly pear cacti are drought-tolerant plants, meaning they can offer an advantage to farmers who are already facing the threat of uncertain global water security.
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Call or email us today to find out how AlaskOmega® can help define your brand’s commitment to ethical, sustainable Omega-3 sourcing.
Fermentation-Derived Stevia Getting Closer to Market

DSM (Parsippany, NJ) announced in June that it is preparing to add fermentation-derived stevia to its ingredients platform. The company said it recently applied for related patents, calling fermentation a "sustainable, efficient, and cost-effective process to meet market growth."

“DSM has filed a significant number of patent applications relating to fermentation-based production of steviol glycosides last year to secure its unique technology and significant investments,” said Greg Kesel, regional president Americas of DSM Food Specialties, in a press release. “As a next step, we will be piloting our technology in 2014 by making food-grade samples available to our customers.”

Fermentation, which creates glycosides that are “nature identical” to the glycosides obtained in traditional stevia leaf extraction, offers numerous, attractive benefits. More sustainable production is one. Fermentation cuts leaf, land, and water usage involved in traditional stevia leaf harvesting and extraction. In addition, suppliers can use fermentation to create only the target glycosides required, without necessitating leaf wastage in cases where obscure steviol glycosides are present in minute quantities in each leaf. In traditional extraction, this would require a higher number of leaves overall.

DSM joins a handful of companies looking to microbial fermentation for stevia’s future.

In late June, Stevia First (Yuba City, CA) announced it finished going through a preliminary GRAS assessment with GRAS Associates LLC for its fermented/enzymatically derived Reb A glycoside. In a press release, the firm said, “Additional data is required from Stevia First in order to obtain a formal GRAS approval, but the overall report concluded that a favorable GRAS determination could likely be achieved provided that Stevia First is able to provide additional data related to shelf life stability, final product specifications, certificates of analysis for multiple production lots, and other customary analytical reports, and pending final review of the application and FDA guidelines by its panel of experts.”

Without detailing specifics, in May Cargill (Minneapolis) and Evolva (Reinach, Switzerland) reported that their joint project to bring fermentation-based “minor” steviol glycosides to market reached another “technical milestone.” David Hensstrom, global business director for Health Ingredients, Cargill, commented, “We are encouraged by this project’s trajectory. We look forward to offering cost-effective, great tasting, minor steviol glycosides in the market in the near future.”

USA, South Korea Establish Organic Equivalency

Effective July 1, the United States and South Korea have an organic equivalency arrangement, meaning organic food and beverage processors in the United States and South Korea can export their products to either country without needing additional certification. It’s the fourth such agreement signed between the United States and foreign entities under the current administration.

Last year, the United States sent an estimated $35 million worth of processed organic products to Korea. An organic equivalency agreement makes these imports a lot easier for companies who would otherwise have to file extra paperwork, pay extra fees, and obtain organic certification from each country separately.

The agreement only covers processed foods (specifically, products containing at least 95% organic ingredients), but it does not extend to fresh fruits and vegetables. For all the other consumer products that can be certified organic in each country, two international certifiers—Quality Assurance International (QAI; San Diego) and Australian Certified Organic (ACO; Queensland, Australia)—are providing a solution.

The two certifiers say they will combine inspections in such a way that will save time and money over double certification from a USA-accredited body and a South Korean one. They will certify unprocessed and raw food, livestock, and agricultural and forest products.

U.S. manufacturers will likely know QAI as a local certifier; on the other hand, ACO, while based in Australia, is also competent in and accredited for South Korean organic certification.

—Robby Gardner

Fifty-seven percent of prickly pear launches in 2009–2013 were beverages.

Adding to the advantage of little watering, prickly pear cacti bear colorful fruits rich in calcium, magnesium, taurine, fiber, and numerous antioxidants. These fruits are also useful for their extractable pigments, including deep reds and oranges.

Mintel claims that less than 100 prickly pear products were launched between 2009 and 2013, but 57% of those were in beverage format. A significant portion of total product launches (26%) was in Mexico.

A number of ingredient suppliers are already marketing prickly pear cactus ingredients. Ecuadorian Rainforest (Belleville, NJ) offers prickly pear powder sourced from the whole fruit, and the company says its ingredient is well suited for jellies, teas, lotions, and beverages. The company’s prickly pear powder has bland taste—making it easy to pair with more flavorful ingredients—and a pale green color. It’s sourced from the immature fruits, but other suppliers are offering red prickly pear powder, too.

—Robby Gardner

DSM now joins a handful of companies looking to microbial fermentation for stevia’s future.

—Jennifer Grebow
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HEALTH CARE COST SAVINGS
Dietary Supplements for Smart Prevention

A new economic report shows that taking specific dietary supplements can provide significant individual and societal healthcare savings, by reducing the number of hospitalizations and other costly medical events associated with chronic diseases. The report looked at eight dietary supplement regimens and four conditions in a targeted population of U.S. adults 55+ who have the specific conditions or are at high risk for the disease.

**Supplements as interventions**
Taking any of these eight dietary supplements at preventive intake levels* has been shown to reduce the occurrence of medical events related to these four diseases in high risk populations.

**Event rate**
% of targeted population that will experience a medical event per year

*Source: Centers for Disease Control and Prevention

**Relative risk reduction**
The risk of having a medical event is reduced by taking these supplements.

**2013–2020 Cumulative Stats**
Medical events avoided
The number of medical events avoided between 2013–2020 if the targeted population used these supplements at preventive intake levels.

Avoided expenditures with supplementation
$12.1 – $35.1 billion
$9.8 billion
$31.0 billion
$6.8 – $15.0 billion

Net savings after cost of supplements
$3.9 – $26.6 billion
$7.8 billion
$7.7 billion
$4.8 – $12.2 billion

Savings yet to be realized
If targeted population takes supplements at preventive intake levels
$2.8 – $26.5 billion
~$7.8 billion**
$7.4 billion
$4.2 – $8.6 billion

**Notes:** Preventive intake levels identified in full report. **Dietary supplement regimens for osteoporosis apply only to women 55 and over.***With less than 1% currently using this supplement, nearly all of the net savings has yet to be realized. *Source: Smart Prevention—Health Care Cost Savings Resulting from the Targeted Use of Dietary Supplements—Frost & Sullivan, www.frost.com

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Dear FDA…

Two industry leaders offer advice to the next head of FDA’s Division of Dietary Supplements—whoever she or he may be.

BY JAMES J. GORMLEY

FDA named William Correll interim head of Dietary Supplement Programs, following the April departure of former division head Dr. Daniel Fabricant. Correll hails from FDA’s Center for Food Safety and Applied Nutrition and is a 23-year veteran of the FDA foods program. Correll’s term remains unknown until FDA names a permanent division head.

In May, we sat down with Dr. Fabricant to talk about his new role as CEO of the Natural Products Association (NPA; Washington, DC). This month, we chatted with two industry leaders about what direction they’d like to see FDA’s Dietary Supplements Division take, especially now that its leadership is undergoing a changing of the guard.

What words of advice would you offer to the next director of the Division of Dietary Supplement Programs?

Al Powers, recently retired as CEO of the NOW Health Group (Bloomingdale, IL): My advice would be to work collaboratively with the natural products industry to protect consumerism. Make consumer safety your main focus by devoting more resources to make an example of the bad actors. Actions taken against the bad actors will help compliance efforts in the long run. Reinforce the truth that has been stated by FDA in the past, that FDA has adequate regulatory enforcement power to protect consumers. We don’t need more laws, but better enforcement of existing laws.

Steve Mister, president and CEO of the Council for Responsible Nutrition (CRN; Washington, DC): We hope that the next director will be aggressive in terms of his or her enforcement actions against companies not following the regulations, particularly those who are illegally marketing drugs as dietary supplements, or stimulant products that have not gone through the New Dietary Ingredient procedures.

Where are the shortfalls at the FDA that need to be propped up or better funded?

Powers: The enforcement side. FDA already knows who the bad actors are, and they need to crack down on them.

Calls for more regulation that includes FDA registration or notification of all products in the industry are unnecessary and unfounded. Those who break the law will continue to break new laws.

Mister: CRN is a member of the Alliance for a Stronger FDA for the purposes of encouraging more funding for the agency to better protect consumers in all of the product categories that FDA oversees and regulates. FDA is the backstop when it comes to consumer safety. We understand the agency allocates its limited resources in a way that focuses on what it considers the riskiest problems, and because of that, supplements are often overlooked as the agency deals with other industries.

We need FDA to go beyond warning letters when stronger action is warranted, because without strong enforcement actions, responsible companies following regulations don’t have a level playing field, and bad actors leave consumers at risk and tarnish the reputation of the entire industry.
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What dietary supplement or ingredient problems or opportunities would you like the next director to focus on?

Powers: There is a tremendous opportunity to improve the health of Americans by encouraging prevention and wellness. FDA could make a huge impact by finding ways to get to "yes" instead of "no."

Americans want natural and safer products to support their health and the freedom to choose. FDA should support consumer access to health information and label claims that will empower people to lead healthier lives. FDA and the health industry should have a common agenda to work together for the common goal to improve the health of Americans.

Mister: The biggest problem right now is companies that are marketing illegal drugs and calling them dietary supplements. These companies are engaged in criminal activity that is extremely dangerous for consumers, and we need the agency to move more swiftly and to punish more harshly those companies that are found to engage in this kind of behavior. These tainted products are illegal and deserve more than warning letters from the agency because they risk the health of consumers and injure the image of the legitimate supplement marketplace.

We also hope the FDA will increase its enforcement of the New Dietary Ingredient (NDI) provisions of the statute. CRN has been vocal in its opposition to some of FDA’s interpretations of the law with respect to its draft guidance document, but the statute is clear that [companies] must [notify] the agency. Too many companies ignore this requirement, and several recent controversial ingredients illustrate why the NDI provisions are in the law to protect consumers from potentially unsafe new ingredients. Even while we spar with FDA on nuance, the requirements of the law should be enforced. Otherwise, it allows critics of DSHEA to question whether this law is appropriate for supplements. We hope that the new director will consider these issues as top priorities.

What do you hope Dan Fabricant’s move back to NPA will mean for NPA and the industry? How could his presence at NPA help in collaborative dealings with other associations and with FDA?

Powers: I hope it will lead to greater stature for NPA’s influence in Congress and a wider representation of membership in the natural products industry.

I think his key challenges will be: (1) Protect the industry from legislation that leads to unnecessary regulation, (2) Counteract the propaganda in the media that the dietary supplement industry is not regulated, (3) Increase NPA membership, especially in the natural food category, (4) Work with the trade associations and FDA to formulate a guidance document on NDIs that truly represents the intent of DSHEA, (5) Push for the ability to make science-based health claims for natural foods and supplements that will benefit consumers, and (6) Develop a definition of natural products that will protect and inform consumers who rely on our industry to be the gatekeeper.

I also would like to see NPA call for a ban on [genetically engineered] crops intended for human consumption and animal feed in the United States. This is the root cause of the GMO problem, and it would have broad support in our industry and with consumers. Radical action is necessary since GMOs are a constant threat to the sustainability of organic crops.

An award-winning health journalist and consultant, James Gormley has 20 years of experience in the natural products industry. He can be reached at jamesgormley01@gmail.com.
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With FDA’s Good Manufacturing Practices for dietary supplements effective for nearly a decade now, it’s time to accept that the cost of running a business in this industry has increased considerably from 10 years ago—not only due to rising wages or material costs but also the expense of maintaining a good quality-control system.

FDA’s cGMPs for dietary supplements (21 CFR 111) state that 100% of the ingredients in a product must be verified for identity by an appropriate, “scientifically valid” test method by the manufacturer. “The DS CGMP rule requires you to conduct at least one appropriate test or examination to verify the identity of any dietary ingredient,” FDA states. “It is up to you to determine the appropriate test(s) or examination(s) necessary to verify the identity of a dietary ingredient. In some cases, a single test or examination may be all that is needed to verify the identity of a dietary ingredient; in other cases, it may be necessary to conduct more than one test or examination.” According to FDA, tests should include at least one of the following: gross organoleptic analysis, macroscopic analysis, microscopic analysis, chemical analysis, or “other scientifically valid methods.”

Companies are at liberty to decide on a path of quality control and the types of technologies that make the most sense for the business. Fit-for-purpose testing is crucial. Like driving a nail into a piece of wood with a sledgehammer instead of a carpenter’s hammer, not adequately considering which testing technique is fit for purpose can be a waste of time, money, and energy if a different method would be better suited. Below is a quick overview of some of the methods available to industry today.

Test Methods

Over the course of 10 years, technology has changed the way we test samples to be compliant with cGMPs.

Newest on the scene is DNA testing for raw botanicals. DNA testing is gaining more interest from those looking to identify botanical materials to the species level where other techniques have failed. On occasion, other more-established techniques may fail due to poor quality material or lack of marker compounds that make up a fingerprint used for identity. DNA testing compares two short, specific DNA regions against a database of known reference samples and can sometimes “see deeper” than analytical techniques. The newest DNA testing techniques investigate multiple regions of the genome across a wide sampling of target species—including closely related and adulterant species—thereby not only identifying the test sample but also potential adulterants.

Several recent articles highlight cases in which DNA testing may not have been fit for purpose, however. In some of those cases, this was because some formal validation protocols were missing. For instance, in some cases, at the time the articles were written, no studies had been performed by the equipment manufacturer to indicate that the equipment used was suitable for plant DNA testing or anything other than R&D use.

Like any newer technique, DNA testing has some “application bugs,” such as those related to plant part differentiation and, in some cases, herbal products that contain plant metabolites. For instance, DNA testing can only be performed on raw, un-extracted materials (it does not work for extracts or extract powders). Also, DNA testing only shows the genetic barcode or fingerprint of the plant; the data will be the same whether the part tested is the leaf or root of the same plant. DNA testing will tell you if a plant part is the species Echinacea angustifolia, but it will not distinguish the plant’s part.

Despite the technology’s limitations, DNA testing is here to stay. Like all scientific techniques, it is reliable when performed on...
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appropriate material and is a useful technique to add to a strong arsenal of methods for cGMP compliance.

The other new kid on the block is FT-NIR (Fourier transform near infrared spectroscopy). While the technology itself isn’t new, it’s the computing power of today coupled with the technology of yesterday that allows purveyors of this technique to tout this method as one that enables manufacturers to save time and money, while at the same time providing a robust solution to quality needs. Methods are based on chemometric analysis, analyzing chemical-derived data. In today’s FT-NIR testing, the computer does 100% of the work, analyzing the sample against reference standards and giving operators a simple “pass/fail” answer, eliminating operator interpretation.

Other tried-and-tested methods are still valid, such as organoleptic testing, in which olfactory characteristics are combined with taste and visual characteristic testing to positively ID a raw plant. Microscopy is another nearly ancient technique still approved by the FDA in which microscopic anatomic characteristics of the plant material are used to effectively distinguish between disparate and closely related species in whole, cut/sifted, or powdered form. It has been shown that a simple and quick microscopic analysis of a raw botanical sample can reveal the presence of virtually chemically inert adulterants/contaminants, such as sand, dirt, cellulose, and soluble excipients—contaminants that may not be easily detected by alternative, more-technical routine analytical procedures such as HPTLC (high-performance thin-layer chromatography), UV/VIS (ultraviolet-visible spectroscopy), or HPLC (high-performance liquid chromatography) testing.

Still, the most popularly used testing technologies for cGMP compliance in laboratories today is HPTLC and HPLC.

HPTLC is the essential and most commonly used analytical tool to efficiently and accurately determine botanical identity and to authenticate other raw materials. It is by far the most globally accepted method for plant identity.

HPLC is one of the most commonly used and accurate analytical technologies employed to identify and quantify specific compounds in a sample. HPLC is the primary tool used to determine purity, compare claims by raw material suppliers, determine degradation of actives, test the shelf life of dietary supplements, and verify a product’s contents to its nutrition label claims.

In some regulatory markets, government bodies are still deciding which testing methods they will officially accept as part of quality control. In the United States, FDA says that as long as a testing technique is “scientifically valid,” it can be used. But, for example, the Therapeutic Goods Administration in Australia does not accept FT-NIR technology for ingredient identification.

**Weighing the Costs**
When it comes to deciding which testing technologies make the most monetary sense for your company, keep in mind where the cost of testing lies and what the needs of your company are. DNA testing, for instance, is limited to use only on raw materials, not extracts, so this may not be suitable for all needs.

FT-NIR can also save time and money because the educational entrance level for using this technology is low. Today’s computing power makes this technique largely automated, with the computer essentially doing 100% of the work. One doesn’t need to be a PhD chemist to run the machine and can hire another laboratory to review and advise on the data. All other testing techniques mentioned above require hiring scientists with a foundation in chemistry or biochemistry to perform. (Of note, some FT-NIR units, while very expensive to purchase, can be used on a pay-per-service basis. Also, some units of this sort are sold with reference libraries that theoretically enable a company to do comparisons on site; however, these reference libraries are limited only to the contents of the library that came with the machine, and there is no scientific oversight of the company’s process.)

Organoleptic and microscopy testing are by far the least expensive of testing techniques; however, they require experts with years of experience to perform with confidence. Time-tested equipment like HPTLC and HPLC, coupled with physical tests like organoleptic and microscopy, stand with proud posture as the most reliable and accepted techniques worldwide for cGMP compliance. Of the analytical techniques available today, HPTLC is the least expensive when one takes into account the cost of equipment, materials used, and the analysts needed to perform the analysis.

**Return on Investment**
Quality testing is undoubtedly expensive, but highly necessary. Without cutting corners, reducing compliance costs is a challenge. How does a company ensure quality control while still turning a profit? Of course, you could distribute this additional expenditure across the board by raising product prices—or, at worst, dip into your profit margin. Another option is to simplify your formulas and cease including ingredients that require advanced lab testing to verify and validate. FDA has made it clear that what is listed in ingredient label must be quantifiable—you must be able to indicate how much of the ingredient is present in your product. In order to measure many of these phytochemicals, new methods must be developed and sometimes require the most expensive of equipment to do so. None of those solutions may be ideal, however.

There are other ways to seek a return on your investment. Do not forget to make customers aware of all of the hard work you have put into your quality system. Advertise this as a part of your quality platform.

Remember that the investment you make in quality control can be leveraged with consumers. Through good marketing, make customers aware that you’re a company that invests in good quality management. In these times, when questions about supplement quality abound, customers will respond to a company whose product quality they can trust.
Botanicals to Watch

Four ingredients with strong promise and scientific support.

By Brien Quirk, Draco Natural Products

Consumer interest in natural health is driving the sales growth of many key botanical extracts. Four in particular—goji berry, reishi mushroom, ginger, and blueberry—have had strong sales in the past couple of years and are poised for even greater growth this year. Let’s take a look at the most significant science supporting these ingredients.

Goji Berries
Goji berries (Lycium barbarum) became popular several years ago through the spectacular marketing success of multilevel marketing companies who extolled goji berry’s benefits, including energy, immune function, eye health, and libido support. These benefits first became evident in traditional Chinese medicine; later, they were backed by scientific studies. The raw, dried berries are now widely available in grocery and natural food markets. GRAS status allows the extract to be used in food products, opening the door to many new products.

Goji berries are rich in polysaccharides, which are key active compounds in supporting immune health, as well as carotenoids, which support eye health. In a human clinical study for immune health, 60 older healthy adults consuming 20 ml/day of goji berry juice for 30 days had a statistically significant increase in the number of lymphocytes and levels of interleukin-2 and immunoglobulin G. Lymphocytes are white blood cells that fight against bacteria, viruses, and parasites. Interleukin-2 is a compound secreted by T-lymphocytes that directs the function of other T-lymphocytes. Immunoglobulin G is a type of antibody most abundant in the blood that helps neutralize diverse pathogens. Study subjects also reported improved general feelings of well being related to fatigue and sleep.

Reishi Mushroom
Reishi mushroom (Ganoderma lucidum) supplements are seeing greater use for immune-health support and for providing calming, anti-stress effects. In traditional Chinese medicine, the mushroom is used as a spirit tonic for its relaxing, tonifying (strengthening or improving) effect on the mind.

A study evaluated the anti-stress and immune-protective effects of a polysaccharide-rich reishi extract in 40 male football players training in high altitude–simulated conditions, such as low oxygen (hypoxia), for 28 days. The minimum dosage of reishi extract was 10 capsules/day, which the study researchers said helped to prevent one type of immune dysfunction of cell-mediated immunity—namely, a reduction in the decrease of T-helper cells to T-suppressor cells, indicating less immune depression. Another placebo-controlled clinical study on the same polysaccharide-rich extract showed that the extract was helpful in improving a form of mental fatigue and stress known as neurasthenia.

Ginger
Ginger (Zingiber officinale) is a food spice and supplement that is growing in popularity for supporting many health conditions, from stomach health and other digestive issues to joint comfort. In vitro studies have shown that ginger has potent effects on the inflammation-mediating enzyme cyclooxygenase 2 (COX) and lipoxygenase (LOX). A ginger extract standardized to gingerols provided significant pain and disability relief in the first three months at a dosage of 250 mg, four times/day, in 29 patients suffering from arthritis of the knee. For digestive health, 1,200 mg of a ginger supplement was shown to be effective for stimulating gastric function in healthy volunteers. A separate study found ginger helpful for relieving nausea from motion sickness.

Blueberry
Blueberry (Vaccinium corymbosum) was one of the first “superfruits” on the market, after a culmination of studies revealed many health benefits, from cardiovascular to antiaging...
and cognitive improvement. Fresh blueberries are seasonal, and frozen blueberries can be inconvenient to use on a regular basis. Thus, researchers have embarked on clinical studies to demonstrate the capability of blueberry polyphenol extracts to improve health, as the dietary supplement form may be a more convenient way for people to consume blueberry extracts regularly.

A clinical study on a blueberry flavonoid extract tested the extract’s cardiovascular health effects by measuring blood flow-mediated dilation at a lower dose (766 mg), as well as at two other higher doses. Researchers noted that only the lower, 766-mg dose was required to achieve the benefit. There were significant increases in blood flow and decreases in inflammatory neutrophil activity within 1-2 hours after consumption and after 6 hours post-consumption.9

Blueberries may also pose benefits for brain function and mood. A study on wild blueberry juice involving nine older adults who had early memory changes after 12 weeks showed improved paired associate learning and word list recall, and an increase in trends that suggest reduced symptoms of depression.10

While all of these herbs and foods have been used traditionally, their extracts and juice concentrates have made it possible for researchers to validate their uses in western evidence-based applications requiring more-rigorous scientific studies. With strong, evolving science, these four ingredients have a very high potential for promoting health.

View references at www.NutritionalOutlook.com/1407/BotanicalstoWatch

Brien Quirk is the director of R&D for Draco Natural Products (San Jose, CA), a botanical extracts, bioactives, and ingredients manufacturer for the dietary supplement, personal care, and food and beverage markets.
Still Sweet on Stevia

Stevia’s natural and healthy image continues to attract customers.

BY INNOVA MARKET INSIGHTS

Sales still look sweet for stevia as the natural sweetener continues to benefit from consumers’ desire for “naturalness,” as well as expanding regulatory approval. According to Innova Market Insights, food and drink launches featuring stevia rose a further 50% in 2013. Stevia products now account for 1% of all products that Innova Market Insights tracks (including non-sweetener products), up from just 0.6% a year earlier. North America—mainly the United States—is responsible for a dominant 40% of total global launches featuring stevia. Europe is in second place, at 27%.

In terms of product categories, soft drink launches accounted for a leading 22% of global stevia product launches, followed by confectionery launches (10%), specialist sports and energy products (9%), and table-top sugar and sweetener products (8%). Stevia products are still just a fraction of these products’ overall global markets, however. For instance, in the soft drinks market, stevia products accounted for a relatively modest 3% of total soft drink launches and less than 1% of total confectionery launches. Things look better in the sugar and sweeteners category, however, where stevia products represented a much more significant 15% globally, rising to nearly 30% in the United States and over 33% in Western Europe.

France has seen particular success in the table-top market. By the end of 2013, stevia sweeteners there commanded 36% of the nutritional sugars market (light sugars and sweeteners), ahead of sucralose and rapidly overtaking aspartame. The market-leading PureVia stevia brand was extended further in 2013 with a novel brown sugar and stevia blend offering 50% fewer calories. The range of stevia sweeteners in Germany also grew with the launch of Sweet Family Stevia Ge-lierzucker, a preserving sugar/stevia blend from Nordzucker.

One of the most interesting developments in 2013 stevia sweetener use was undoubtedly in the soft drinks market, with Coca-Cola’s launch of its first stevia-sweetened cola line, Coca-Cola Life. (Coke and Pepsi have used stevia in drinks for some years, but mainly in fruit drinks.) Launched in Argentina in summer 2013, Coca-Cola Life features a striking green label instead of Coca-Cola’s trademark red palette. Coca-Cola Life is sweetened with sugar and stevia and has 108 calories per 600-ml bottle, positioning its calorie content between Classic Coke (250 calories) and zero-calorie Diet Coke.

Rival Pepsi initially launched its Pepsi Next cola with stevia sweeteners and 30% reduced sugar in Australia only; in other markets, Pepsi Next uses alternative sweeteners. But Pepsi Next with stevia is gradually making its way to other countries, including France in 2013 and Canada, the Netherlands, and Finland in early 2014. Following this trend, Royal Crown Cola also launched a stevia-sweetened cola. Its Neo mid-calorie line with stevia debuted at the Anuga food trade show in October 2013.

Beyond colas, stevia is starring in a range of other prepared foods. In 2013 in Australia, the brand Fountain launched its SmartOp-tions sauces with stevia, claiming it is the country’s first no-added-sugar tomato and barbecue sauces.

Bakery products are also more widely reformulating with stevia. Recent launches include Primrose Bakery’s sugar-free Lemon & Poppy Seed Bundt Cake in the UK, sweetened with the Natvia brand of stevia. In Germany, the Natreen low-calorie brand introduced two reduced-calorie frozen cakes featuring stevia. These cherry and apple sponge cakes claim to be the first use of steviol glycosides in the frozen bakery market.

Stevia is increasingly blended with other natural sweeteners, including monk fruit (luo han guo) and agave syrup. A number of blended-sweetener products launched in the United States in 2013, including four new Natural Jones Soda lines sweetened with a proprietary blend of cane sugar, organic agave syrup, and stevia; Oogave’s Loca
Diet organic carbonates sweetened with agave nectar and stevia; and Be Well Nutrition’s Iconic drinks range, sweetened with a blend of agave, stevia, and monk fruit.

Stevia supply is sometimes an issue, as usage and demand increase. This may necessitate stevia’s use in more blends with other ingredients. Suppliers are also at the ready and are investigating options for utilizing other steviol glycosides apart from the most widely used steviol glycoside, rebaudioside A.

A more mainstream mixed-sweetener introduction came from Chobani, the U.S. yogurt brand that drove the dynamic Greek and Greek-style yogurt market. In late 2013, Chobani introduced its Simply 100 portion-controlled, six-flavor yogurt range featuring 100-calorie products with no artificial sweeteners but rather a blend of monk fruit extract, stevia, and evaporated cane juice. Also in the yogurt market, Andechser, the organic dairy specialist in Germany, launched a sugar-free yogurt line, which actually uses stevia in its name. The Andechser Natur Stevia Bio Joghurt range comes in two flavors: apple and banana/seabuckthorn berry.

Rising concern over the definition and use of the term natural hasn’t stalled consumer attraction to natural products, and stevia benefits from this allure. Also pushing stevia’s growth is ongoing research and development aimed at improving the range and properties of stevia sweeteners available and developing more product-specific solutions to help food and drink companies achieve good-tasting, cost-effective formulations with the required sweetness and calorie levels.

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The original quality HCA ingredient for weight management support since 1994, Citrin®, a natural extract from the fruit rind of Garcinia cambogia (Malabar tamarind) is available in convenient salt forms containing 50% and even 65% HCA content, for dietary supplement and functional food applications. Patented water soluble Citrin® K additionally contains the essential mineral nutrient potassium. GRAS affirmed Citrin® K is ideally suited for beverage applications, including sports nutrition products. **Our patents cover weight loss claims, the bioavailable composition and even the process in which HCA is produced.** Make the right choice, and accept no imitations.

www.sabinsa.com/citrin

Patents: US 5,783,603; US 6,770,782 B1; US 7,063,861 B2

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*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.*
Welcome to the 17th Annual Supplier Profile Directory
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2727 Marketing Services LLC

Category of Business
Marketing, Media, and ERP Services

Company Description
Every company, every brand, every ingredient, every technology has a story. 2727 Marketing Services LLC helps you find and communicate to the people within your target audience via the effective use of content marketing; integrated online, social, and print media; events; e-newsletters; infographics; and custom programs.

For companies launching new products, a venture between 2727 Marketing Services, The Danielle Lin Show, and Cornerstone Consulting brings ingredients, brands, and technologies to market quickly, efficiently, and within budget.

The team simplifies go-to-market plans. A typical solution includes ERP software to leverage your operations, a marketing plan to build audience and awareness, and consumer media to educate your customers and distributors. Our expertise makes the process fast, targeted, and effective.
Imagine

More...
Sales
Customers
Consumer Outreach
Brand Awareness
Data
Fun

Announcing a marketing & ERP venture between • 2727 Marketing Services, LLC, • The Danielle Lin Show, and • Cornerstone Consulting.

Contact us today to learn...more.

Jim Wagner: jwagner2727@comcast.net
Danielle Lin: daniellelinnews@gmail.com
David Boos: Dave@cornerstone1.com
ABH Nature’s Products Inc. will fulfill all your nutritional manufacturing needs, domestic or export. The company has the lowest manufacturing prices, while guaranteeing only the highest quality standards (cGMP in a pharmaceutical processing environment), reliability, and prompt service. ABH Nature’s Products Inc. is committed to producing the highest-quality formulations in nutritional vitamin supplement capsules, tablets, powders, and liquids for your customers in the world marketplace. The company provides customers with formulation consultation, custom blending, and laboratory services. All contract-manufactured products are prepared precisely to your label claim in the most efficient manufacturing environment. The company is also able to help you with all of your packaging needs, including label and packaging manufacturing.

Since its beginning in 1995, the company’s high quality standards have been trusted by their vitamin and supplement nutritional customers, including chain drug and natural food stores. Every aspect of the vitamin manufacturing and supplement manufacturing processes is tested and documented for safety. All nutraceutical manufacturing processes are reviewed on a regular basis to ensure that these processes meet and exceed stringent nutraceutical quality standards.

We can customize, formulate, and supply:
• Nutritional supplement tablets: glazed, film-coated, sugar-coated, enteric-coated, layered, time-released
• Chewable nutritional tablets for children and adults
• Hard gelatin nutritional supplement capsules: all sizes
• Nutritional liquid vitamins
• Organic formulations
• Kosher nutritional supplement manufacturing
• Nutritional liquid supplements
• Nutritional powder blends
• Sports-nutrition powder blends
• Sports-nutrition drinks
• Weight-loss and diet supplements
• Private-label vitamins
• Private-label supplements
• Multivitamins for children and adults
• Herbal Blends (Ayurvedic or Chinese herbs)
• Supplement formulations specific for physicians

We offer a complete range of services:
• Manufacturing and formulation of nutritional supplements and nutritional powders for sports and fitness
• Laboratory services
• Tableting and encapsulation
• Weight-loss herbas and minerals
• Bottle labeling
• Packaging and labeling capabilities: blister packs, bottles, retail cartons

Let ABH Nature’s Products’ years of experience and nutritional expertise provide your company with the competitive edge it needs to compete successfully in today’s nutritional industry.
Reliability, Quality & Competitive pricing combines with fast service.

Our areas of expertise include custom formulation and product development of dietary supplements in the form of tablet, capsule and premium blend preparation.

We specialize in:
- Chewable Tablets
- Time release Tablets
- Capsules
- Sublingual Tablets
- Drink mix and others
- Tablets

We also offer genuine technical advice to our customer for their manufacturing needs.

ABH Nature’s Products Inc. is the contract manufacturer of your choice.
ABS Corporation

“Looking Forward with Your Business”

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ABS Corporation
7031 N. 16th St.
Omaha, NE 68112

Telephone: 402/502-3156
Fax: 402/453-1052
Website: www.abs-corporation.com

Key Personnel
David Wood
President/CEO

Mandie Erdei
Customer Service Manager

Lace Fugleberg
Chief Financial Officer

ABS Corporation has invested in building partnerships with some of North America’s premier product visionary companies. Our campus, located in Omaha, NE, manufactures and packages many of the nation’s leading brands for multiple industries.

Our “Five Pillars” of business design emphasize on cGMP and the compliance requirements of FDA, USDA, EPA, and with facilities that are organic and kosher certified. We strive to offer our partners the latest technology to meet their needs. We stop at nothing to provide the highest-quality services and products.

Business Segments:
• OTC’s and NBE’s
• Drug
• Cosmetic/HBA
• Health and Sports Nutrition
• Veterinary
• Small and Large Animal Health
• Disinfectants/Sanitizers

Manufacturing Capabilities:
• Liquid
• Dry
• Capsules/Tablets
• Bolus (large tablets)
• Emulsions
• Creams/Gels
• Effervescent Tablet/Powder
• Treats
• Extrusion Production

Packaging and Filling Capability:
• Dry or Fluid
• Jars
• Packers
• Energy Shots
• Squeeze Tubes
• Packets
• Multi-dose Tablet Pouch
• Liquid Pouches
• Dry Pouches
• Stick Packaging
• Bulk Totes and Drums

Brand Design:
• Jason Westphal
• David Wood

Our team is committed to being your source; adding value to your business; and actively contributing to your success in the marketplace.

With every job, we not only want to earn your trust, but keep it as well.

• Expert Product Design
• Advanced Formulations
• Solving Product Challenges

Please contact our client management team for a complete list of services, capacity, and capabilities.
ADH Health Products Inc.
Prime Source of Quality Vitamins and Supplements

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Fax: 845/268-2988
Web Site: www.adhhealth.com
E-mail: info@adhhealth.com

Key Personnel
Balu Advani,
President
Ashwin Advani,
Director
Navin Advani,
Director

Description:
ADH Health Products Inc. specializes in custom formulations and contract manufacturing of dietary supplements and nutritional products. ADH manufactures products using GMP standards and is registered with FDA. ADH’s facility is subject to regular quality audits by third-party organizations such as NSF International and has received NSF’s prestigious GMP certifications and participated in NSF’s Certified for Sport program. Private label clients can choose from a complete line that includes all-natural, hypoallergenic, kosher, and vegetarian supplements available in capsules, tablets (including timed-release and chewable), powders, and liquids.

Facilities:
ADH manufactures its products in a state-of-the-art, 75,000-sq-ft facility, complete with in-house QC and microbiology labs where rigid testing is conducted during every phase of manufacturing—from raw material to finished product.

Products & Services
In 30 years of operation, ADH has formulated well over 1000 products for customers. ADH develops formulations to best suit customer needs for short lead time, offering small-batch sizes for clients who are looking to optimize on-hand inventory. In addition to product design and development, ADH also has full in-house graphic capabilities and can help clients create label designs.

YOUR ONLY CHOICE FOR CONTRACT MANUFACTURING

Find out why ADH Health Products has been a trusted source of quality supplements for three decades:

- Compliant with FDA and cGMP standards
- Offers a variety of delivery forms
- Distributes to more than 30 countries
- State-of-the-art facility

ADH offers the following turn-key solutions that can enhance your company’s success:

- Research & Development
- Product Development
- Regulatory
- Customer Service
- Packaging Solutions
- Fulfillment & Warehousing

ADH Health Products is your one-stop source that will exceed your contract manufacturing and private labeling needs.

PRIME SOURCE OF QUALITY VITAMINS, MINERALS & HERBS

Tel. 845-268-0027
Fax 845-268-2988
www.adhhealth.com
Aenova
Custom softgels plus so much more

**Corporate Headquarters**

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Web Site: www.aenova-group.com
E-mail: info.us@aenova-group.com

**Key Personnel**

Hans Engels,
CEO

Brad Carlson,
Vice President

**Description**

Aenova is a global leader in contract manufacturing of finished dose forms for pharmaceutical and nutraceutical products. Offering a large portfolio of services and manufacturing expertise at every stage within your product lifespan, from development to commercial manufacturing. With 20 manufacturing sites located throughout the United States and Europe, Aenova distributes products worldwide. Our core customer service foundation is built on a simple but important principle; consistently deliver high quality and excellent customer service. Operating under common cGMP practices backed by global and local regulatory agency approvals, quality is never an afterthought. Aenova stands by its strong financial performance, offering contract manufacturing supply stability in a wide variety of dosage forms such as, Softgel Capsules, Solids, Semi-Solids, Liquids and Effervescent products.

**Nutritional Supplements Made Easy**

Aenova’s custom manufacturing services can cover the entire lifecycle of your nutraceutical product or dietary supplement, from formulation to final dosage forms. With more than 4,000 employees and over 20 sites, we’re one of the leading companies in the industry and we’re committed to providing consistent quality and value in every batch. Contact us today...together we can make some wonderful products.

- **Solids**
  - Tablets
  - Hard Capsules
  - Granules
  - Pellets

- **Liquids & Semi-solids**
  - Pure or Colloidal Solutions
  - Emulsions, Suspensions
  - Ointments
  - Gels

- **Softgels**
  - EnteriGel™
  - VeganGel®
  - VegaGel™
  - Standard Softgels

- **Pre-mix Solutions**
  - Specialty Mixes
  - Lifestyle Mixes
  - Cosmeceutical Mixes
  - Nutritional Mixes

**Members of the Aenova Group**

C.P.M. • Dragenopharm • EVP • Haupt Pharma • Swiss Caps • SwissCo • Temmler

www.aenova-group.com » (786) 345-5500 » info.us@aenova-group.com
AIBMR Life Sciences
We Don’t Make Natural Products. We Make Them Better.

Description
AIBMR is an industry leader in natural products research and consulting, with a mission to put the science behind natural products.

Founded in 1978, AIBMR is the oldest, full-service natural products research institute in the world. With a team of PhD research scientists and Naturopathic Physicians, AIBMR can assist your company with:

- GRAS (Generally Recognized as Safe) Self-affirmations
- FDA GRAS Notifications
- FDA NDI (New Dietary Ingredient) Notifications
- Toxicological Safety Studies
- Manuscript Preparation and Publication in Peer-Reviewed Academic Journals

AIBMR also provides a host of other services to investigate the safety, efficacy, and mechanism of action of ingredients intended to be sold as dietary supplements or for the addition to foods or beverages in the United States.

Staying abreast of the ever-changing regulations surrounding the dietary supplement and functional foods industries is key to your success in the marketplace. AIBMR provides expertise in U.S. and foreign regulatory compliance, structure-function claims generation, product label reviews, and more.

At AIBMR, we maintain one of the largest private natural products research library holdings in the world. This collection, managed by a full-time librarian and support staff, allows us to conduct timely and cost-effective scientific literature reviews.

The breadth of knowledge and services available through AIBMR Life Sciences allows for convenient, centralized, and affordable support with your nutraceutical research and product development needs. Our clientele are worldwide, and include start-ups as well as Fortune 500 companies. Services are tailored to the individual needs of each client.

We invite you to tap into our natural resources to ensure that your products are safe and effective—and help you succeed in today’s highly competitive marketplace. Please visit our website or give us a call to learn more.

Additional Products and Consultation Services:
- cGMP consulting
- Product R&D
- Compliant Product claims development and substantiation
- U.S. regulatory compliance
- Nutraceutical products consulting
- Functional Food product consulting
- Monthly Service Contracts
- CRO Services

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E-mail: aibmrinfo@aibmr.com

Locations of Other Offices and Facilities
Seattle, WA
Bloomington, IN

Key Personnel
Alexander Schauss, PhD, FACN, Senior Director
John Endres, ND, Chief Scientific Officer
Description

AIDP Inc. is a leader in functional ingredients with access to the newest solutions for healthy aging and formulation challenges. With our vast resources, AIDP is ahead of the curve in identifying new product segments and developing proven compounds. With a newly developed lab and a PhD research staff, we can develop cost-effective, proprietary solutions to meet your needs.

Cognitive Health

Patented Magtein™ is the only form of magnesium shown to effectively cross the blood-brain barrier. It increases brain synaptic density by rejuvenating neural cells. Four published research studies in prestigious journals demonstrated Magtein’s ability to improve short-term and long-term memory, recognition, and learning, as well as its ability to alleviate anxiety and phobia, plus improve and reverse the effects of Alzheimer’s disease in animal models. Magtein is suitable for both the nutraceutical market and the food/beverage channel. It has a clean taste and is odorless, highly soluble, and safe. It is self-affirmed GRAS and available exclusively through AIDP.

Collagen Solutions

AIDP recognizes the importance of collagen and has developed several innovative solutions to capitalize on this important growing trend.

KoACT®, a patented combination of collagen and calcium, is clinically proven superior to calcium for improving bone mineral density. As baby boomer women pursue active lifestyles, it is critical that their bones remain strong. KoACT goes beyond calcium and has an additional benefit for skin health. KoACT is self-affirmed GRAS.

AIDP addresses the need for collagen from head to toe with the following new collagens:

- Instagen™, soluble, clean collagen
- Naticol™, clinically proven to improve skin for beauty
- Kollall-xs, clinically proven to improve joint pain

Plant Proteins

Gabiotein®, a sprouted rice protein, stems from unique, vertically integrated field-to-plant manufacturing that eliminates unnecessary processing steps, ensures against contaminants, and delivers the highest-quality product available. Gabiotein is available in organic and non-organic forms, in either beverage grade or food/bulk grade.

Advantein™ is a proprietary blend of pea and rice protein. Advantein’s amino acid profile delivers a complete protein.

AIDP’s pea protein is the best-tasting pea protein on the market, with a mild taste and smooth texture.
Making A Splash!
In Joint, Bone & Skin Health

Only AIDP’s clinically proven collagens cover you from head to toe.

**KoACT**
**Naticol**
**KollaGenII-xs**
**Instagen**

**BONE STRENGTH**
Improves bone strength over calcium

**BEAUTY FROM WITHIN**
Fish collagen, improves skin appearance

**JOINT HEALTH**
Relieves joint pain in 30 days

**BEVERAGE GRADE**
Instantly dissolving collagen

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat cure or prevent any disease.

www.aidp.com | T: 866.262.6699 | customercare@aidp.com
Description
Aker BioMarine Antarctic is a vertically integrated biotechnology company dedicated to the sustainable harvest of krill and development of krill-derived products. Its flagship ingredient—Superba™ Krill—is a pure, sustainable source of phospholipid-bound EPA and DHA omega-3 fatty acids and the naturally occurring antioxidant astaxanthin. Phospholipid-bound omega-3s are highly bio-efficient, resulting in the ability to provide more concentrated doses of EPA and DHA and smaller capsules that are easier to swallow. Plus, they do not cause digestive discomfort common to other omega-3 sources.

A Sustainable & 100% Traceable Supply Chain
Aker BioMarine takes its environmental responsibilities very seriously. The company’s proprietary Eco-Harvesting™ technology and on-board, ISO-certified processing result in the sustainable and 100% traceable harvest of Superba™ Krill. The Marine Stewardship Council (MSC) has granted MSC certification to Aker BioMarine Antarctic’s fisheries, an exclusive distinction that no other krill fishery has earned. MSC standards and requirements meet global best practice guidelines for certification and eco-labeling programs. Its certification is based upon: 1) the health of the krill biomass; 2) the impact on the environment; and 3) 100% traceability from sea to shelf.

Clinical Research
As part of an established commitment to substantiating krill’s health benefits, Aker continues to sponsor in vitro, in vivo, and human clinical trials on phospholipid EPA and DHA from krill oil. Thus far, this source consistently demonstrates a higher uptake of phospholipid omega-3 fatty acids, improved blood lipid profiles, and increased uptake of DHA in brain tissue compared to other omega-3 fatty acid sources. Aker BioMarine Antarctic has also developed the Aker Science Board (ASB), which is led by leading omega-3 researchers and scientists, to provide strategic guidance in council with Aker BioMarine Antarctic’s staff scientists. The focus is on ongoing studies on the biological benefits of existing products and to advise on the development of new products.

Our latest 300-subject clinical trial, published in the February 2014 edition of Nutrition Research, showed that Superba™ can significantly lower triglycerides and raise the omega-3 index.

Environmental Commitments
Aker BioMarine actively sponsors research on the health of the krill biomass. In addition to donating the use of its fishing vessel for one week every year for pure research, it collaborates with researchers at the Norwegian Institute of Marine Research, the British Antarctic Society, and MRAG. A recently completed 4-year study on the impact of its fishery on predator species that consume krill showed no negative impact from the krill fishery. This study was reviewed by the Antarctic Climate and Ecosystems Cooperative Research Centre, and by WWF-Norway. Believing in the importance of sharing best practices, Aker is a co-founder of the Association of Responsible Krill Harvesting Companies (ARK), a global krill industry association developed to promote research for the sustainable harvest of Antarctic krill and to generate scientific data from krill fishing operations in order to facilitate CCAMLR’s management of the krill fishery. CCAMLR, or the Commission for the Conservation of Antarctic Marine Living Resources, is a consortium of 25 member nations that regulate commercial activity in the Southern Ocean around Antarctica.

White Papers
Aker BioMarine has commissioned several white papers on subjects related to krill harvesting and science. Our “Krill Oil Monograph” showcases the latest science on krill, as well as Superba™ Krill, while our new sustainability white paper sums up decades of research, providing deeper insight into the krill fishery and its management. We will also be adding a white paper on the omega-3 index to the list in 2014. It will discuss the importance of the omega-3 index to the future of healthcare and why it matters which omega-3 source you use to raise your omega-3 index. Our white papers can be downloaded at www.superbakrill.com/scientific-papers.
Do you know where your marine omega-3s come from?

We do.

In fact, we know EXACTLY where our omega-3s come from:

64° 14’S 61° 36’W

See for yourself

You’ve got questions and we’ve got answers. To receive your “How to Speak Krill” kit, contact us today: info.us@akerbiomarine.com or visit us at www.superbkrill.com.

Superba™ Krill phospholipid omega-3s are certified by the Marine Stewardship Council (MSC) as being sustainable and 100% traceable, two elements that are driving 1/3 of consumers’ purchasing decisions in the marketplace today, and their influence in the omega-3 market is growing.

(1) MSC is the leading certification agency in the seafood market as ranked by a 2012 Accenture survey. (2) Today’s Dietitian January 2014 survey.

Visit us at SSW Booth #25125

www.superbkrill.com
Company Description
Albion Human Nutrition is the premier manufacturer of “Six Stage Chelates”; patented organic mineral amino acid chelates used in human nutrition products worldwide. Building a better mineral since 1956, Albion has applied its extensive library of research to offer a more effective, bioavailable and easily tolerated mineral to its solution providers. Placing a great emphasis on proven science, Albion’s research includes more than 125 peer-reviewed, published studies and over 150 US and international patents from manufacturing processes to food applications.

Major Markets
• USA
• South America
• Mexico
• Canada
• Europe
• Middle East
• South Africa
• China
• Taiwan
• Thailand
• Australia and New Zealand
• Central America
• India

Major Products
Ferrochel® (Ferrous Bisglycinate Chelate), TRAACS® (The Real Amino Acid Chelate System), Calcium, Magnesium, Iron, Copper, Manganese, Molybdenum, Zinc, Vanadium, Chromium, Dimacal® (DiaCalcium Malate), Dimagnesium Malate, CCM (Calcium Citrate Malate), Calci-K® Complex (Calcium Potassium Phosphate Citrate), Creatine MagnaPower® (Magnesium Creatine Chelate)

Specialized Services
• Customized mineral blends
• Contract mineral chelate manufacturing
• Contract spray drying

Founded
1956
American Laboratories Inc. (ALI) was founded in 1967 to provide enzymes, proteins, and flavors, always with the motto “Quality Ingredients You Can Trust.” More than 47 years later, we still hold true to the same principle. Since our founding, we have expanded our operations to include three separate facilities that total over 150,000 sq ft of production, warehouse, and office space. ALI strives for the highest quality, accuracy, and customer service. Our quality-assurance department conducts microbiological, chemical, and analytical tests at our in-house laboratories. Our regulatory department ensures compliance with FDA, USDA, EPA, EU, cGMP, and various other standards. ALI is proud to be known as an industry leader and currently offers more than 300 products to various industries in over 50 countries worldwide, including the nutritional, food, diagnostic, veterinary, and pharmaceutical markets.

**Products**
- **Enzymes**—Pancreatin, Pepsin, Bromelain, Papain, Fungal, Custom Fungal, Industrial, and Enzyme Blends
- **Flavors**—Beef, Pork, and Chicken Liver Powders
- **Protein**—Beef and Pork
- **Peptones**—Casein Hydrolysate, Microbiotone, and Proteose Micro
Description
Founded in 1997, Alkemist Labs is an independent cGMP contract laboratory specializing in routine QC/Compendial testing, method development, validation/verification services, and dedicated research services for companies throughout the food and beverage, dietary supplement, and cosmetic markets.

Alkemist Labs offers high-throughput HPTLC analysis for botanical ingredient identity testing of whole herbs and plant extracts, with a standard five business day turnaround time. In combination with HPLC, microscopy, and our on-site Herbarium, we offer the most reliable technical support and highest-quality services so that companies can achieve and maintain cGMP compliance.

Services Offered
Alkemist Labs offers analytical testing services for companies working from the soil to the store shelves, ensuring your ingredients and finished products are meeting specification.

Identify
Botanical Microscopy, HPTLC, HPLC fingerprinting, Composite Reference Botanicals (CRBs)

Analyze
HPLC, GC, UV-Vis, UPLC, and Wet Chemistry

Verify
The FDA requires brands to able to prove their label claims using scientifically valid methods. Alkemist Labs offers custom verification and validation services for your unique finished products.

The Alkemist Labs Difference
1. We are only a testing laboratory
2. Identification services to your genus, species, and plant part within your crude raw material, extract, and/or finished product/blend
3. Standard five business day turnaround time for routine ID
4. Full technical support and method transparency to support FDA requirements
5. We are open to facilitating discussions with all parties when testing discrepancies arise
6. We will review your or your suppliers’ methods for feasibility
7. We are a family-owned and -operated business in which all employees take personal pride in their work

Our mission is to be the leading laboratory for companies in the natural products industry by providing the highest-quality lab services and data integrity.

Our vision is to satisfy the demand for high-quality lab services with swift turnaround time, in an environmentally responsible way, while fostering growth of clients as well as growth of employees.
Confident in your claims?

Minimize uncertainty.
The FDA requires brands to be able to prove their label claims using scientifically valid methods. Armed with the Alchemist Certificate of Analysis you’ll finally have peace of mind that what’s on the label is in the bottle. Why? Because testing natural products is the only thing we do.

ALKEMIST LABS
714.754.4372 ALKEMIST.COM
Description
All American Pharmaceutical is one of a select few Informed-Choice registered supplement contract manufacturers in the United States. This distinction means AAP has strict FDA and cGMP manufacturing standards in place to ensure contaminant-free supplement manufacturing. It also means the AAP facility and raw materials are regularly tested for prohibited substances in sports—steroids and stimulants—that appear on the World Anti-Doping Agency prohibited-substance list.

As a full-service manufacturer of dietary and nutritional supplements, AAP specializes in producing private-label and custom formulations. From general health and sports nutrition to anti-aging and food products, AAP has the capability to produce liquids, capsules, powders, creams and tablets, from concept all the way to finished packaging.

Our Branded Ingredients
All American Pharmaceutical is one of the only manufacturers that also develops its own innovative compounds for supplement marketers to use in their own products. The company invests heavily in research and development.

Our current list of patented branded ingredients includes:
• Kre-Alkalyn® pH correct creatine
• Kre-Celazine® for joint health
• KarboLyn® next-generation carbohydrate
• ProtaLyn® protein powder
• Lyzme5® for weight loss and cholesterol support
• Aminozorb® branch chain amino acids
• Taxadrol® testosterone booster
• Glutazorb® stable, bioavailable glutamine

Quality Measures
As a contract manufacturer of nutritional supplements, we believe that it’s important that our customers and our customers’ customers have complete faith in the quality of our products. That’s why we go above and beyond minimum standards of quality, as well as enlisting third-party verification of our exacting processes through Informed-Choice certification.

Raw materials for customer products are sourced from across the globe. To ensure the authenticity, purity, and safety of these ingredients, each batch of material undergoes rigorous scientific testing by our quality-control experts. While most companies only randomly test samples of the raw materials in each lot they receive, AAP tests every barrel that comes in, every time. Each material is sampled and quarantined until it is completely verified. It’s also extremely important for our customers to know their products are manufactured in a facility that has appropriate quality controls in place to minimize the risk of cross-contamination among ingredients.
The ingredients in this capsule were tested 384 times more than the industry standard. 128 containers in the lot. Each container tested 3 times. That’s the AAP manufacturing standard.

To ensure product safety, purity and potency, we test every lot and every container of every ingredient we use three separate times. As a further safeguard, all ingredients are tested for heavy metals & banned substances (drugs). Find out more about ensuring your product’s integrity with AAP contract manufacturing, call us at 406/245-5793 or email at info@allamericanpharmaceutical.com. Or better yet, feel free to stop by our facility for a tour.

Sign up at allamericanpharmaceutical.com

Patented and patent pending ingredients Kre-Alkalyn®, Kre-Celazine®, Karbolyn®, Lyzme®, Glutazorb®, Aminozorb®, Taxadrol® and ProtaLyn®

Our contract manufacturing facility has the highest level of certification possible.
Alpha Packaging is a leading manufacturer of high-density polyethylene (HDPE), polyethylene terephthalate (PET) and polypropylene (PP) bottles and jars for the nutritional supplement, pharmaceutical, personal care, animal health, consumer chemical, and niche food and beverage industries. Sizes range from 1 ounce to 2 gallons, and include styles ideal for tablets and capsules; powders and granules; and liquids and lotions. We continue to work on sustainable packaging solutions, including bottles and jars with FDA-approved post-consumer resin (PCR) and lighter-weight options for the nutritional market. Alpha has seven manufacturing plants and one decorating facility in strategic locations across North America, as well as a manufacturing plant in The Netherlands. Alpha offers in-house tool-making capabilities, and can build everything from unit cavity molds to complete high cavity production tooling. Alpha is known as the leading manufacturer of wide mouth PET bottles for the rapidly-growing “gummy” sector. We have a full range of bottle and jar sizes in our stock portfolio, and can also build a custom jar, packer, oblong or cylinder for a minimal investment. Over the past year, Alpha has added substantial HDPE vitamin packer capacity to the Northeastern US. This includes new molds for a dozen sizes of bottles, ranging from 50cc to 950cc. Sizes up to 300cc are manufactured on brand new equipment using the Injection Blow Molding process. Larger sizes are Extrusion Blow Molded on high-cavitation equipment with brand new blow cavities. Production lines also feature state-of-the-art vision systems and leak detectors.

Major Markets:
- Nutritional Supplements
- Pharmaceuticals
- Personal Care
- Niche Food & Beverage
- Consumer Chemicals

Major Products:
- 900 stock bottles and jars.
- Custom styles in HDPE, PET, PLA and PP.
- Custom-colored PET packaging.
- High-quality container decorating on a variety of substrates.
Alpha delivers the nutritional packaging you need, no matter where you need it.

At Alpha Packaging we have a habit of answering our nutritional customers questions with a resounding YES! Uninterrupted supply chain? YES. Strategically-located facilities? YES. Consistency of product? YES. Extensive product line? YES.

Whether you market your supplements in tablet, capsule, powder, liquid or gummy form, we deliver exactly what you’ll need from our eight North American locations, or our European plant. No one serves more of the market than Alpha ... meaning you can always expect to get YES for an answer.

Visit our website for samples, or call your Alpha sales rep for pricing.
Anderson Global Group

Description
Brands, manufacturers, and scientists seeking nutraceutical ingredients are all hoping to find the same thing: unique, safe, and effective raw materials with impeccable quality specifications that are going to provide a competitive advantage that translates into positive sales growth. The Anderson Global Group team knows exactly what you want, and delivers accordingly. AGG has partnered with premium manufacturers from around the globe to deliver first-class nutraceutical ingredients that give AGG customers competitive advantages in innovation, price, quality, and service.

Featured Products
Solutex (Spain) – Premium Supercritical Omega-3 Oils
Specializing in concentrated omega-3 oils up to 90% EPA/DHA, Solutex provides the crème de la crème of omega-3 oils to the marketplace. Solutex offers maximum flexibility, potency, and quality to produce custom, premium omega-3 ratios.

CherryPURE® (USA) – Premium Tart Cherry
CherryPURE® Tart Cherry freeze-dried powder is the premier tart cherry source in the marketplace, supported by double-blind, placebo-controlled human clinical studies conducted by Texas A&M in the areas of muscle recovery under both resistance and endurance exertion platforms. A product of Traverse City, Michigan, CherryPURE® provides the highest levels of phytonutrients available, including anthocyanins, flavonoids, polyphenols, and naturally occurring melatonin.

EatLess™ (Korea) – Fermented Satiety Complex
Patent-pending EatLess™ fermented satiety complex has been one of the hottest ingredients in the Asian diet marketplace over the last several years. Backed by multiple human and animal studies, Eatless™ has shown to suppress appetite by impacting neuropeptide and hormone levels tied to appetite.

Polycan® (Korea) – The Future of Bone Health
Polycan® is a patented, soluble polysaccharide complex naturally fermented from a proprietary yeast clinically proven to support healthy bones. Polycan™ was granted a U.S. patent and GRAS status by FDA. Two 60-person, double-blind, human clinical studies are at the heart of the extensive Polycan™ research deck, with an additional human clinical study wrapping up in late 2014.

EnergySmart® (USA) – Sustained Energy Complex
A perfect ingredient base for Bars, Cookies, Workout Drink Mixes, Shots, and Baked Goods, EnergySmart® provides sustained, “no-crash” energy to any sports nutrition, diabetic, or energy formulation.

Celery3nB™ (India) – Premium Celery Seed Extract
The premier celery seed extract offered in the marketplace, Celery3nB™ is standardized to 85% 3nB and is a great candidate for addition to any product lineup across many applications, including inflammation, gout, muscle building, blood pressure, or cognitive formulas.
EatLess™
Fermented Satiety Complex

- Patented Yeast Hydrolysate Peptide Complex
- Published Human Weight Loss Clinical Studies
- 100% Natural Fermentation Source

WWW.ANDERSONGG.COM

THE AGG PORTFOLIO FEATURES EATLESS™ AND OTHER PREMIUM NUTRACEUTICAL INGREDIENTS.
AnMar International Ltd. is a supplier of nutraceutical ingredients – amino acids, herbal extracts, vitamins, and numerous products categorized as nutraceuticals. The company was founded in 1995 with the purpose of supplying raw materials of the highest quality, meeting USP, FCC, and other compendial standards.

Additionally, AnMar manufactures dry blends, makes granular forms of vitamins and amino acids for tableting and capsule filling and vitamin triturations (dilutions), and utilizes these same services for contract manufacturing and custom blending. AnMar’s main office and manufacturing are in Bridgeport CT, with warehousing in Bridgeport as well as New Jersey, Florida, and California. AnMar operates a satellite office in Shanghai, China.

The company’s best selling products are: VitaPress® (directly compressible Dicalcium phosphate), SpiraPure® (Spirulina), Vitamin B12, Methylcobalamin and Co-Enzyme B12 triturations, BioEnhanced® R-Lipoic acid, Green tea extracts, Vitamin E and Vitamin K2. SpiraPure® is a blue-green algae high in protein and omega fatty acids.
Arista Industries

The company also recently restructured its sales force and customer service department in order to maintain the high level of personal and professional service that is guaranteed. Arista customers know that each of their inquiries will be handled to their satisfaction. Offering quick responses to technical questions, prompt order processing, and accurate lead times is simply the way we do business.

Corporate Headquarters
Arista Industries
557 Danbury Rd.
Wilton, CT 06897

Toll Free: 800/255-6457
Tel: 203/761-1009
Fax: 203/761-4980

E-mail: info@aristaindustries.com
Web Site: www.aristaindustries.com

Locations of Other
Offices and Facilities
Long Beach, CA
562/438-8887

Key Personnel
Mary Ann Siciliano
National Sales Manager

Blake Hillyer
East Coast Sales Manager

Justin Hillyer
Regional & International
Sales Manager

Marlene Wright
West Coast Sales Manager

Description
With over 80 years of experience, Arista Industries has evolved into a top global supplier of specialty marine oils, natural vegetable oils, essential oils, butters, and powder-form oils. These ingredients are used in food, pharmaceutical, nutraceutical, and nutritional supplements, as well as cosmetic and personal care applications.

Arista started bringing in cod liver oil and vitamin A and D fish oils from Norway, and shortly thereafter became a highly regarded supplier of natural vegetable oils. Arista was one of the first suppliers of omega-3 fish oils in the early 1980s and has continued to offer top-quality marine oils.

ARISTA
FOR ALL-NATURAL OILS.

Arista is the name to remember when you’re in the market for all-natural, first quality marine and vegetable oils. From cosmetic and pharmaceutical applications to food and nutritional uses, we specialize in delivering the finest all-natural oils at remarkably competitive prices.

Vegetable Oils

Almond
Apricot
Argan
Avocado
Black Currant
Borage
Canola
Castor
Coconut
Evening Primrose

Flax Seed
Grape Seed
Hazelnut
Hemp Seed
Jojoba
Macadamia
Olive
Peanut
Perilla
Pumpkin

Rice Bran
Rose Hip
Sacha Inchi
Safflower
Sea Buckthorn
Sesame
Sunflower
Tea Tree
Walnut
Wheat Germ

Marine Oils

Cod Liver
Fish Liver
Omega-3 Acids
Salmon
Squalane
Squalene
Tuna

Fruit Oils

Cranberry
Raspberry
Blackberry

Specialty Butters

Avocado
Aloe
Illipe
Kokum
Olive
Sal
Others
Available

ARISTA
Since 1930
1-800-ALL-OILS
ARISTA INDUSTRIES, INC.
557 DANBURY ROAD, WILTON, CT 06897 • 203-761-1009 • FAX 203-761-4980
www.aristaindustries.com • info@aristaindustries.com
AppleActives Inc.

About AppleActiv:

AppleActiv is an all-natural ingredient from AppleActives, made from organic dried apple peel. Rich in antioxidants, AppleActiv supports a wide variety of age-related conditions and is clinically proven to support joint comfort and range of motion.

AppleActiv is produced in a GMP facility by Leahy Orchards, the parent company of AppleActives. Leahy Orchards is a family-owned and -operated business that is one of the largest producers of organic applesauce in North America. Leahy Orchards selects quality apples from orchards throughout Quebec and Ontario, Canada, and New York State.

Apples provide a wealth of nutrients that support a wide variety of physical functions. Apple peels are naturally rich in antioxidants, enzymes, vitamins, and minerals. In fact, a study comparing the nutritional content of apple flesh and apple peel showed that the highest phenolic and flavonoid content—including quercetin—is in the peels. The high level of phenolic compounds and antioxidant activity in apple peels together help keep inflammation within the healthy range, fight oxidative stress, and quench free radical activity in order to provide significant joint-health benefits.

One of the primary health benefits of apples—particularly the nutrients found in the peels—is joint health. The joint-health category has long been dominated by a just few frequently used ingredients. While these ingredients allowed formulators to develop products with some success, manufacturers have been waiting for something new to offer their customers.

While AppleActiv is one of the newest joint-health ingredients available today, it’s sourced from the fruit that customers have known and trusted longer than any other: apples.

AppleActiv only contains peels from certified-organic growers and carries the USDA certified-organic seal.

AppleActiv:

- Delivers the natural goodness of organic dried apple peels
- Contains a rich polyphenol blend with high levels of antioxidants, flavonoids, quercetin, triterpenoids, vitamins, and minerals
- Provides clinically supported joint-health benefits
The joint health appeal is in the peel

Organic apple peel is clinically proven to support joint health.* Introducing AppleActiv™, the joint-health ingredient made from 100% organic dried apple peels. Organic apple peels have a higher phenolic and flavonoid content than apple flesh and are rich in antioxidants. While most polyphenols have a bitter taste that requires masking, AppleActiv is a neutral-tasting, easy-to-use powder. For an all-natural ingredient clinically proven to support joint comfort and a healthy range of motion, head to the orchard instead of the lab.* Pick AppleActiv.

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.

www.appleactiv.com
AstaReal Inc.

Description
AstaReal Inc. is an industry leader in the research, development, and production of Natural Astaxanthin from *Haematococcus pluvialis* microalgae. The company grows its algae at state-of-the-art indoor sites in Sweden and Washington State, USA. Both AstaReal facilities utilize environmentally friendly, ultrapure photobioreactor cultivation technology to ensure the highest-purity astaxanthin product available.

The company’s globally recognized brand is AstaREAL®. The company maintains inventory of 10% astaxanthin oleoresin; 2% astaxanthin extract powder; 1.5% water-soluble, high bioavailable astaxanthin liquid; and 2-, 4-, and 6-mg astaxanthin softgels at its Burlington, NJ, GMP-compliant facility. Additionally, AstaReal offers red palm tocotrienol in 50% oil and 30% powder forms.

The company serves the North American and South American dietary supplement, functional food, beverage, and cosmetic markets. AstaReal Inc. is part of a global group of subsidiaries dedicated to the worldwide development of natural astaxanthin and is wholly owned by Fuji Chemical Industry Company, Ltd., of Toyama, Japan.

Products
- **10% Astaxanthin Oleoresin**—Ideal for softgels or hard capsules. Can be blended as well as a standalone formulation
- **2% Astaxanthin Extract Powder**—Ideal for blending, capsule filling, or direct compression
- **1.5% Water-Soluble, High Bioavailable Astaxanthin**—Ideal for ready-to-drink (RTD) beverages, food, and liquid nutraceutical supplements
- **30% Tocotrienol Powder**—Ideal for blending, tablets, or hard capsules
- **50% Tocotrienol Oil**—Ideal for dietary supplements, easy to encapsulate, and blends well with other oils
AstaREAL®
the most recognized brand of Astaxanthin on the market!

The Consumer’s Choice
• asked for by brand
• most trusted
• highest purity
• most researched

www.astarealusa.com
TEL: 877.385.4777
AuNutra Industries Inc.
Sciencee Herbal Ingredients

Description
AuNutra® Industries Inc. is a premium scientific herbal ingredients manufacturer and supplier. AuNutra® consistently delivers exceptional quality products with a strict emphasis on quality control. AuNutra’s® GMP, ISO 9000, and kosher certified manufacturing facilities produce high-quality botanical extracts and specialty ingredients using raw materials from all over the world. We produce our non-irradiated ingredients using steam and ozone sterilization that meet the strictest quality and safety requirements.

Services
- Product Availability: Over 300 ready-to-ship herbal ingredients
- Pricing and Samples: You can always get the most competitive pricing from us. Samples of most ingredients are always available.
- Global Sourcing: With our worldwide relationships and strong sourcing capacity, we can help you find even the rarest ingredients.
- Solutions: Our technical service team offers expertise in methods of extraction and specification-guided analytical testing.

Products
- Botanical Extracts and Powders
- Garlic Products
- Vegetable and Fruit Powders
- Organic Raw Materials
- Special Ingredients Research

Clients Served
- Dietary Supplements
- Food Ingredients
- Functional Beverages
- Sports Nutrition

Corporate Headquarters
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Fax: 909/628-8110
Web Site: www.aunutra.com
E-mail: info@aunutra.com

Locations of Other Offices and Facilities
Chino, CA, USA
Tel: 909/628-2600

Key Personnel
Ken Guest
VP and Sales Director

Jake Wiley
Sales

Stacia M. Makis
Sales
Leading Supplier of Ingredients

- Botanical Extracts and Powders
- Bee Products
- Vegetable and Fruit Powders
- Organic Raw Materials
- Special Ingredients Research

AuNutra Hot Materials

- Coleus Forskohlii 10% & 20% Forskolin
- Garcinia Cambogia P.E 50% & 60%
- Garlic Products
- Green Coffee Bean Extract
- Turmeric Root P.E. 95% Curcumin

Leading Supplier of Botanical Ingredients • More Than 300 Items Available in Stock
Asiamerica Ingredients Inc. are a global premium ingredients supplier geared towards enhancing human health and nutrition around the world, serving the nutritional supplements, food, pharmaceutical, beverage, cosmetic, pet food and personal care industries since 1993.

Over the years, Asiamerica has grown to become a leading supplier of **Vitamins**, **Nutraceuticals**, **Amino Acids**, **Mineral Nutrients**, **Botanicals**, **Extracts**, **Sports Nutrition Ingredients**, **Pharmaceuticals**, and **Food Additives**.

Our strong, long-term partnerships with our international suppliers enable us to deliver consistent, high-quality, highly competitive priced ingredients along with our exceptional service, expert information and on-time availability.

- Halal Certified
- Kosher Certified
- Non GMO
- ETO Free
- Non Irradiated Products

Asiamerica Ingredients, Inc. is a global premium ingredients supplier geared towards enhancing human health and nutrition around the world, serving the nutritional supplements, food, pharmaceutical, beverage, cosmetic, pet food and personal care industries since 1993.

See a detailed list of our product at:

www.asiamericaingredients.com

Asiamerica Ingredients, Inc. - 245 Old Hook Road - Westwood, NJ 07675 USA - 201.497.5993
Balchem, the global leader in choline, produces VitaCholine®, a line of high-quality choline salts made from natural L+ tartaric acid that can be used as an essential component of a wide range of dietary supplements and foods. Contact us and learn more about the many health benefits of VitaCholine and how we can help you deliver other vitamins, nutrients and pharmaceutical actives via the novel microencapsulated ingredient solutions in our VitaShure™, PharmaShure™ and PharmaSmooth™ product lines.

* 90% of people don’t get enough choline
* Six structure-function claims

Cognitive Function

Cardiovascular and Liver Health

Every Body

Fitness

Prenatal Health
Barrington Nutritional is a well-respected international distributor of choice for high-quality, science-based ingredients. Serving the nutraceutical, pharmaceutical, and functional food industries, we focus on minerals, excipients, and specialty ingredients to set your products apart from the rest. We provide a high level of product expertise and are dedicated to customer service, efficiency, and integrity. We partner with superior manufacturers in the industry and accept only top-of-the-line ingredients. We value the individuals of our team, who contribute to our continuous improvement. We are faithful to doing what is right for our customers, our partners, and the industry.

What’s New
Barrington is excited to offer Amizate® enzymatic salmon protein hydrolysate. Amizate® contains a full spectrum of 100% pure, natural, high-quality, marine-based amino acids, short peptides, and micronutrients required by the human body to synthesize new proteins and satisfy fundamental physiological needs. Amizate® is fully digested and ready for express assimilation to the blood stream.

BiAloe™ is an organic Aloe vera inner leaf freeze-dried powder. It is the highest quality, most bio-available, most immunomodulatory and has the highest total Acemannan content from aloe vera made today. BiAloe™ has a bioactive profile nearly identical to that of natural Aloe vera inner leaf gel. There is absolutely no other Aloe vera product on the market that can match the polysaccharide and acemannan content of BiAloe™. Additionally, BiAloe™ is water soluble, with no bitter taste, and is virtually aloin free, with no laxative effects, making it perfect for a multitude of product applications. BiAloe™ supports an already healthy immune system, gastrointestinal tract, and intestinal flora as a prebiotic.

Barrington also offers a full line of freeze-dried probiotics in single strains or tailor-made blends straight from our source in Clerici, Italy.

Specialty Products
- **ICL-IP Dead Sea Pericase’s full line of Ultra-Pure:**
  - Magnesium Oxide
  - Magnesium Hydroxide
  - Magnesium Carbonate
- **Divis Laboratories’ full line of:**
  - Beta Carotene
  - Lycopene
  - Lutein
  - Vitamin D3
- **Alga Technologies’ AstaPure™ Natural Astaxanthin in several market forms**
- **Nisso’s Hydroxypropyl Cellulose, USP and FCC**
- **Gadot’s full line of:**
  - Fully Reacted Mineral Citrates
  - Crystalline Fructose
  - Specialty Minerals
  - Phosphates
- **JM Huber’s full line of:**
  - Oyster Shell
  - Calcium Carbonate
  - Specialty Silica
- **PureFruit Monk Fruit Extract**
Barrington is a proud partner of these leading manufacturers:

- **Huber**: Calcium Carbonate & Oyster Shell Custom Granulations
- **GBi**: Fully-Reacted Mineral Citrates
- **alchem**: Coleus Forskolin & Vinpocetine
- **Tate & Lyle Purefruit**: Zinc Oxide USP • Low Lead
- **Truzox**: Hydroxypropyl Cellulose, USP & FCC
- **Sacco**: Probiotics
- **ICL Industrial Products**: Ultra-Pure Magnesium Oxide, Carbonate & Hydroxide
- **BiAloee**: Organic Aloe Vera Inner Leaf Freeze Dried Powder
- **Divis**: β-Carotene, Lycopene, Lutein, D3
- **Parviflora**: The Only Grass Based Probiotics
- **Regenasure**: Glucosamine
- **ALGA Technologies**: AstaPure® Natural Astaxanthin

For more information about our complete product line, please contact:

www.BarringtonNutritionals.com
(914) 381-3500 sales@barringtonnutritionals.com
Batory Nutra

Description
Welcome to Batory Nutra, created as a dedicated division of Batory Foods in order to provide an enhanced focus on fulfilling the needs of our dietary supplement customers. At Batory Nutra, a focus on customer needs begins with a strong platform of vendor relationships built on mutual trust. Strong vendor relationships allow Batory Nutra to stand behind a high level of quality and reliability when supplying ingredients to our customers through our distribution services.

Although this unique division was officially launched in 2013, Batory has been serving the dietary supplement and nutritional markets since the company was founded in 1979. Our ability to serve nutraceutical customers was further strengthened in 2006 with the acquisition of Ingredients International.

Batory Nutra is ready to work with you as a trusted supply partner. Focused on the dietary supplement market, our nationally dedicated sales team is experienced in serving a customer base that answers to its own unique set of regulations, policies, and opportunities.

Behind the scenes at Batory Nutra, customers reap the benefits of the reputation, strengths, and well-developed networks of our parent company, Batory Foods. With a dedicated documents team, Batory Nutra can rapidly respond to customer documentation requests, and our streamlined documentation process helps ensure product integrity, quality, and safety.

A national network of over 30 local distribution centers, combined with an advanced logistics system, allows for just-in-time delivery of almost any order size, from a bag to a pallet or mixed-truckload. Whether a company is large or small, or manufacturing capsules, tablets, softgels, gummies or a supplemental beverage, Batory Nutra has the focus, market insight, supply, and systems integrated into one operation to ensure excellent service for your nutraceutical ingredients.

Choosing a supplier that carries many of the ingredients you need simplifies and streamlines your purchasing process. Batory Nutra is ready to be your ingredient source partner in the nutraceutical market.

Corporate Headquarters
Batory Nutra
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Toll-Free: 800-451-9067
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Web Site: www.batorynutra.com

Key Personnel
Craig Glover,
General Manager
Welcome to Batory Nutra, created as a dedicated division of Batory Foods in order to provide an enhanced focus on fulfilling the needs of our nutraceutical customers. While our unique division was officially launched in 2013, Batory has been servicing the dietary supplement and nutritional markets since the company was founded in 1979. Now, with a nationally dedicated sales team focused on the U.S. dietary supplement market, Batory Nutra serves national and regional nutraceutical manufacturers with an abiding commitment to excellent customer service.
TWICE AS NICE!
Nutritional Outlook wins again!

Two Time Winner
BEST TRADE PUBLICATION
WPA Maggie Awards Non-Paid (Circ under 50,000)/Trade

Nutritional Outlook
Best Formulations
Quality Pharmaceutical and Nutraceutical Manufacturer

Corporate Headquarters
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Fax: 626/912-8881
Web Site: www.bestformulations.com
E-mail: sales@bestformulations.com

Key Personnel
Eugene Ung
CEO
Robin Koon
Executive Vice President

Description
Best Formulations is a leading contract manufacturer of prescription, OTC, vitamin, and nutraceutical products. We are an FDA-licensed drug manufacturer and are cGMP-certified by both the NPA and NSF. Our mission statement conveys the importance of quality and our customers:

“To develop and maintain mutually beneficial relationships with our employees, customers, and partners by providing the highest-quality products and the Best customer service.”

Facilities
Our state-of-the-art, 120,000-sq-ft manufacturing facility and full in-house laboratory allow us to schedule flexible production runs to get your products to market faster, without sacrificing quality.

Statistics
Founded in 1984, Best Formulations currently employs a team of over 300 trained chemists, formulators, machine operators, engineers, quality-control lab personnel, and support staff. We are highly committed to having the highest quality and best customer service in the industry.

Products and Services
Best Formulations manufactures all products in house to keep a close eye on quality and maintain competitive prices. We’re also on the forefront of developing cutting-edge nutraceutical products, including V-Gel™, the first truly viable, non-animal–based soft gel–encapsulation technology.
Bioactive Resources LLC
Industry Leader in Quality and Service

Description
A full-service supplier of dietary supplements, functional food ingredients, dry beverage ingredients, custom formulations, and premixes. The Bioactive Resources management team has more than 50 years experience in the nutraceutical industry. Our quality control and quality assurance department includes FTIR identification tests, in-house microbiology, density, moisture and particle analysis. We are NSF, Kosher and Organic Certified.

Manufacturing Capabilities
• Blending
• Milling
• Sieving
• Particle reduction

Products
• Fruit and vegetable powders
• Fruit juice and vegetable juice powders
• Botanical powders
• Botanical extracts
• Water-soluble ingredients for beverages/snacks/bars
• Smoothie and shake mixes in bulk

Value-Added Services
• Sterilization By: Heat/Steam treatment
• R&D food lab
• Microbiological testing
• Custom formulation and premixes
• Identity testing by FTIR
• Physical testing

Industries Served: Nutraceutical, food and beverage, pet food, and cosmetic.

Clients Served in: USA, Canada, Africa, Asia, Australia and Europe.
ANNUAL SUPPLIER PROFILE

BIO-CAT

Description
BIO-CAT, the enzyme industry’s service leader, brings 25 years of experience to the biotechnology industry, dedicating our business to providing customers with the very latest enzyme technology and custom formulations. Our extensive range of products, from single- to multi-enzyme blends, serves various food, industrial, agriculture, and other commercial markets. BIO-CAT maintains ISO 9001:2008–certified facilities in Virginia featuring state-of-the-art laboratories for scientific research, product development, and on-site quality testing to better serve customers.

BIO-CAT’s enzymes and our ability to perform enzyme custom formulations provide ingredient companies with efficient, cost-effective means to achieve their goals. BIO-CAT’s line of proteases, cellulases, amylases, and other enzymes is food-grade certified, and a wide variety are non-GMO. We work with our R&D lab to evaluate enzymes for ingredient development applications. We stand ready to work closely with you, addressing your specific objectives and unique applications criteria.

Corporate Headquarters
BIO-CAT
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Fax: 434/589-3301
Web Site: www.bio-cat.com
E-mail: info@bio-cat.com

Key Personnel
Ed Schuler
CEO and Founder

Chris Schuler
President and Founder

Chris Penet
Vice President

“High quality enzyme products, purchased only from verified sources.”

877.912.4622 • www.bio-cat.com

ISO 9001:2008 Certified Facility • HALAL and KOSHER Certified Products • GMP Compliant Ingredient Supplier of Enzymes
**Biocatalysts Ltd.**

**Description**
Biocatalysts Ltd. is a specialty enzyme development and manufacturing company based in the UK, with an American subsidiary (Biocatalysts Inc.). With more than 30 years of experience in the enzyme market, Biocatalysts has acquired a wealth of knowledge in different commercial and non-commercial enzymes and their features, applications, and benefits. This depth of market knowledge represents one of Biocatalysts's key capabilities: it helps us to deliver fast and effective enzyme solutions for our customers.

**Off-the-Shelf Enzymes**
Biocatalysts has a wide range of standard enzyme products, each optimized to a particular application to achieve desired results (e.g., increased yield or producing new and exciting flavors).

**Customized Enzymes**
When one of our standard products is not suitable, we use our wealth of enzyme expertise to produce a unique, customized product (e.g., converting a liquid enzyme into a powder product).

**Enzyme Development and Manufacture**
At Biocatalysts, we understand that differentiation from your competitors is a critical success factor—but how can you be different when you buy the same enzymes as everyone else? Biocatalysts has developed the tools and expertise to rapidly and cost-effectively develop and manufacture novel enzymes for our customers.

**Corporate Headquarters**
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E-mail: sales@biocats.com

**Locations of Other Offices and Facilities**
Chicago, IL, USA

**Key Personnel**
Huw Neale
Business Development Manager
Natalie Savich,
US Technical Sales Manager

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Do you want to know how you can differentiate your product using enzymes?

Biocatalysts can offer you speciality enzymes to do just that, whether it’s one of our off-the-shelf enzymes or a truly unique enzyme developed and manufactured specifically for you.

We work closely with our customers and provide technical support over various sectors, including but not exclusive to:

- Dairy.
- Non Dairy Protein e.g. peas, rice etc.
- Fruit & Vegetable Processing.
- Beverages.
- Flavours.
- Biomarine.

Whether you want to produce a non-cloudy fruit juice, a good tasting whey hydrolysate, a specific flavour or something else, Biocatalysts will exceed your enzyme expectations.

For further information please call +44(0) 1443 843712 or email our dedicated team at sales@biocats.com

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Our factory is Kosher and Halal Certified

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For nutritional insights, visit NUTRITIONAL OUTLOOK.
ANNUAL SUPPLIER PROFILE

Biotron Laboratories Inc.

Corporate Headquarters
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Centerville, UT 84014

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Fax: 801/298-8800
Web Site: www.biotronlabs.com
E-mail: info@biotronlabs.com

Key Personnel
Dr. Gameil Fouad, President
Rheda O. Fouad, CFO
Bob Bemenderfer, Plant Manager

Description
Since 1979, Biotron Laboratories Inc. has specialized in manufacturing mineral amino acid chelates and complexes according to proprietary enzymatic processes. Our approach is to explore mineral nutrition from all angles—chemically, structurally, and clinically—resulting in unparalleled, organically bound mineral nutrients.

Branded Ingredients:
Ferractiv® is a unique iron multi-mineral amino acid chelate which has been clinically proven to be well tolerated. A study of 60 healthy, premenopausal women in a randomized, double-blind, placebo-controlled trial showed statistically significant reduction in uncomfortable side effects when subjects were given an equivalent amount of iron as Ferractiv® compared to ferrous sulfate, one of the most commonly used iron sources.

Cytocal® is a novel multi–amino acid chelate, delivering 15% elemental calcium in a proprietary matrix. The data collected from a randomized, double-blind, crossover clinical study show that Cytocal® has a significant impact on the body’s response to oral dose calcium when compared to calcium carbonate USP. The effects of increased calcium absorption occur faster and persist longer when compared to oral calcium tablets prepared with the inorganic calcium source.

NUTRITIONAL OUTLOOK • JULY/AUGUST 2014
BioCell Technology is in the business of researching, developing, branding, and distributing innovative, science-based raw material ingredients that have applications in nutrition, health, and beauty. The company does not sell finished products, but rather licenses its branded ingredients to leading consumer packaged goods companies for use in their finished products. As a steward of quality and integrity, we believe that licensing is the best way to ensure the quality, safety, and efficacy of the innovative finished products that contain our branded ingredients in the market. Each of our branded ingredients has a trademarked logo of authenticity that is proudly displayed on the labels of finished products utilizing BioCell Technology ingredients and marketed by leading consumer packaged goods companies under their own brand names or formulas.

**Services/Products:**

**BioCell Collagen®**
BioCell Collagen is a science-based, clinically tested dietary ingredient that promotes active joints, youthful-looking skin, and healthy connective tissues. Unlike other collagen and hyaluronic acid ingredients on the market, BioCell Collagen contains a patented composition of naturally occurring hydrolyzed collagen type II, chondroitin sulfate, and hyaluronic acid in a highly absorbable matrix form that has been the subject of numerous human clinical trials, including trials on safety, efficacy, and bioavailability. BioCell Collagen supports the body’s regenerative ability to maintain healthy connective tissues, not only to promote joint mobility and youthful-looking skin but also to protect and help the recovery of musculoskeletal tissues such as tendons and ligaments after intense exercise or sports activity. Thanks to a patented BioOptimized™ process, BioCell Collagen was shown to be effectively absorbed by the body. Various studies, including five human clinical trials, support the safety and efficacy of BioCell Collagen. BioCell Collagen is self-affirmed GRAS, holds multiple U.S. and international patents, and is available for both oral and topical applications.

**i-Sabi™ Wasabia Japonica**
i-Sabi™ is a natural dietary supplement made from the rhizomes of pure Wasabia japonica. i-Sabi™ provides a full spectrum of phytochemicals called isothiocyanates (ITCs) that support your immune system, detoxify and maintain healthy liver function, and provide strong antioxidant activity for cellular health. i-Sabi is laboratory tested and has been shown to exhibit the following properties:

- Supports Liver Health and Detoxification
- Supports Healthy Immune Function
- Supports Brain Health
- Supports Cellular Health
- Potent Antioxidant Support

**EstraFlex™ CMO Esterified Fatty Acid Carbons (EFAC)**
EstraFlex™ is a complex blend of cetylated fatty acids, including cetyl myristate, cetyl myristoleate, cetyl oleate, cetyl palmitoleate, and cetyl palmitate. Mechanism of action of these esterified fatty acids may include the modulation of the immune system in a beneficial way. EstraFlex™ CMO is an all-natural, bovine-derived ingredient aimed at improving flexibility and mobility of the joint.
Feed Your Skin & Joints!

BioCell Collagen®
The #1 Selling Collagen & Hyaluronic Acid Ingredient

PROVEN. EFFECTIVE. FAST ACTING.

BioCell Collagen® is a breakthrough patented dietary ingredient that provides a highly absorbable matrix of collagen and hyaluronic acid (HA). As we age, we experience the deterioration of our connective tissues and the loss of collagen and HA. Taking a supplement of natural BioCell Collagen helps to counteract these negative effects. More than 20 published studies, including 4 human clinical trials, support the effectiveness and safety of BioCell Collagen. BioCell Collagen is non-GMO and free of gluten, soy, shellfish, fish, egg, milk, peanuts and sugar.

NOT JUST A BLEND
A Natural Synergy Unlike Any Other:

Hydrolyzed Collagen Type II
Hyaluronic Acid
Chondroitin Sulfate

Intersted in using BioCell Collagen in your next formulation? Please contact us through our website www.BioCellTechnology.com

THE INGREDIENT LEADING BRANDS TRUST
Bioenergy Life Science Inc. is an integrated life science company whose core technology is centered on the five-carbon carbohydrate, D-Ribose. D-Ribose is vital for the cellular synthesis of ATP (adenosine triphosphate). Bioenergy Ribose® is widely used in food and nutrition products for energy enhancement. It helps accelerate energy recovery and improves endurance in muscles where energy stores have been depleted, reduces fatigue, and alleviates muscle stiffness.

Athletes and Exercise
For serious athletes, recovery time is paramount. High-intensity exercise drains muscle energy pools, contributing to delayed-onset muscle soreness (DOMS), exertional fatigue, loss of peak performance, and tissue damage. For those who exercise more sporadically, prolonged muscle soreness and fatigue can also be debilitating. Clinically proven Bioenergy Ribose shortens recovery time, enhances endurance, reduces muscle soreness, and limits the onset or severity of fatigue for athletes of all levels.

General Nutrition
A randomized, placebo-controlled trial of Baby Boomers complaining of persistent fatigue showed that Bioenergy Ribose reinvigorated subjects, providing them with new energy and greater exercise tolerance. In the two-week study, subjects were given 3-g doses twice per day of either Bioenergy Ribose or dextrose. Results were evaluated using submaximal cardiopulmonary exercise tests given at baseline, one week, and two weeks. The results were overwhelming! The Bioenergy Ribose–supplemented group improved in three major measures of fitness and exercise tolerance key to overcoming fatigue.

Product Development Support
Bioenergy Ribose can be formulated in a variety of functional foods, beverages, sports nutrition, dietary supplements, and other nutritional product applications. The Ribose Formulation Center works to confidentially help clients identify new opportunities to use and contain ribose, as well as with product development, claims and technical support.

Bioenergy Ribose Ingredient Attributes
- Grade A Level Certification from British Retail Consortium (BRC).
- Bioenergy Ribose is white to slightly yellow in appearance; imparts a mildly sweet flavor; is highly soluble in hot and cold liquids; and has a melting point of 85°C.
- Bioenergy Ribose is the only ribose solution to receive a GRAS (Generally Recognized as Safe) affirmation “no questions” letter from FDA.
- Bioenergy Ribose is non-GMO, kosher, and halal, and has a natural certification.
- Bioenergy Life Science has several patents covering broad applications for D-Ribose in nutrition.
- Food application studies are available upon request.
THEIR SECRET TO BETTER ENERGY

WE COULD ALL USE BETTER ENERGY.
Bioenergy Ribose naturally helps rebuild energy stores, reduce muscle soreness, and provide sustainable energy for your entire day. Elite athletes like Olympian Susan Fancia use Bioenergy Ribose to sustain their energy and recover quickly for the next challenge. And if it helps star athletes, imagine how well Bioenergy Ribose can help the rest of us feel.

Add Bioenergy Ribose to your products and join the team that’s helping people discover the secret to better energy.

Join Team Ribose Today!

1.877.4RIBOSE
ribose@bioenergyls.com
www.bioenergryribose.com
Biotropics Malaysia Berhad

**Description**

Biotropics Malaysia Berhad (Biotropics) was incorporated in February 2007 to develop and commercialize Malaysia’s bioresources into superior natural health products. At Biotropics, we are driven by our philosophy to turn yesterday’s traditional approach to health and well-being into tomorrow’s innovative health solutions by verifying time-honored traditions through modern science.

Biotropics is involved in R&D, bio-prospecting, agronomics initiatives, pre-clinical and clinical research, commercial extraction, manufacturing, and marketing of high-value natural health ingredients for local and international markets.

Physta® (for men’s health, energy, and vitality), Lineminus™ (antioxidant, anti-wrinkle, and cognition), and Scalpro® and Acnaed™ (for scalp and skin health) are branded health ingredients which are ready to market as an ingredient for all-natural dietary supplements, nutraceuticals, functional food or beverages, personal care products, and cosmeceutical applications.

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**A clinically proven Tongkat Ali Extract**

- Natural solution to optimize testosterone

**TURN IT ON.**

Increase Energy • Enhance Sexual Potency • Boost Metabolism • Improve Fertility

- Patented
- 10+ clinical trials
- Standardised
- Sustainably-sourced raw material from Malaysia
- Water soluble
- Support testosterone level

*This statement has not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.
Blue California
A Perfect Blend of Science and Nature

About Blue California
Blue California is a BRC-certified manufacturer of highly purified botanical extracts and specialty ingredients. We are committed to establishing the highest industry standards for our natural ingredients using the best raw materials from around the world. Our innovative approach to product research and development has earned us recognition within many industries for the quality and value of our ingredients. We offer full R&D services, from concept to full-scale ingredient production and finished products. We are proud to meet our customers’ demand for validated quality and better value.

Innovation and R&D Services
Blue California offers extensive R&D services to the nutraceutical, food, cosmetics and flavor industries for the development and manufacture of unique natural ingredients, from isolated, high-purity, single compounds to complex botanical extracts based on our customers’ specifications and requirements.

Quality Control
Our in-house quality control laboratory is equipped with HPLC, UV, FT-NIR and PPSL screening. Our certificates of analysis are based on assay results from our own laboratories with third party certification. Independent validation for active ingredients, heavy metals, pesticides and solvent residue are part of our quality control program. Third party lab reports are available to customers upon request.

Unique Ingredients
Blue California uses innovative biotechnologies and processing systems, including plant extraction and fermentation, to produce safe natural ingredients, free of pesticides and other contaminants, that meet the strictest quality and regulatory requirements for the different industries and markets we serve.

Natural Stevia Extract – Reb-A 99%
Blue California’s trademarked high purity Reb-A received the FDA’s GRAS notice in 2009 confirming our natural zero-calorie sweetener as a safe food ingredient. Reducing sugar calories without sacrificing taste is a major step in the right direction to help children eat healthier foods and snacks.

Natural L-Theanine 98%
FDA GRAS since 2010, Blue California’s L-TeaActive® is the first natural L-Theanine confirmed as a food ingredient for use in foods and beverages. L-Theanine helps reduce stress and anxiety, safely and naturally. BRC, Kosher and Halal certified.

Please visit our website for additional information on our products and services: www.bluecal-ingredient.com or contact our sales department.
Cactus Botanics

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E-mail: info@cactusbotanics.com

**Key Personnel**
Carol Cheow
President

Product quality is ensured by both in-house labs and reputable third-party labs. The firm’s warehouses, both in the western and eastern United States, provide U.S. customers with added convenience.

Cactus Botanics’ key products are:
- Astaxanthin
- Brown seaweed extract fucoidan
- Zeaxanthin
- Lutein
- Rehmanniae powder extract
- Milk thistle extract silymarin
- Epimedium extract icarrins
- Ginseng extract series
- Stevia leaf extract

Cactus Botanics also develops and markets various fruit juice powders, amino acids, vitamins, and biochemical products for dietary supplements and foods/beverages.

With proficiency in production and logistics, combined with industry expertise, Cactus Botanics confidently provides competitive strengths to our customers.

Please e-mail us at info@cactusbotanics.com for more information.

**Description**
As a botanical extract expert, Cactus Botanics has cultivated a global reputation supplying superior-quality ingredients. The company is U.S. FDA registered, ISO 9001:2008, organic certified (EU Regulation 834/2007 and NOP USDA), and kosher and halal certified. All of its operations are cGMP compliant. Its raw materials are clinically proven to support human health.
Captek Softgel International Inc. is a leading, FDA-compliant contract manufacturer and distributor of specialty softgel formulations in the nutraceutical sector. Captek provides customized, hard-to-make formulations under contract manufacturing relationships for leading global brands. Captek features high-efficiency encapsulation lines operating 24/5, capable of producing over 2.5 billion softgels annually. Our facility encompasses approximately 85,000 sq ft of production, analytical laboratory, pilot laboratory, and warehousing space. Captek fully complies with FDA cGMPs and has been independently certified by NSF International.
Capsugel is a global leader in delivering high-quality, innovative dosage forms and solutions to the health and nutrition industry. The company’s Hard Capsule business offers customers the broadest portfolio of products and services. The Dosage Form Solutions (DFS) business utilizes proprietary technologies from formulation to commercial manufacturing, delivering full dosage forms. Capsugel applies Six-Sigma principles throughout the organization to deliver the highest quality standards in the industry. With products and services supported by customer service and technical support teams, Capsugel is committed to outstanding customer experience. Headquartered in Morristown, N.J., Capsugel serves more than 4,000 customers in more than 100 countries. For additional information, visit www.capsugel.com.

Diverse capsule line – Capsugel was awarded the first Non-GMO Project verification for plant-based vegetarian capsules—becoming the first empty capsule products to receive this approval in the industry. Additionally, Capsugel’s entire plant-based portfolio is vegetarian, vegan, gluten-free, non-GMO, kosher, and halal certified and contains no preservatives, sugars or starches. Capsugel’s product line includes two-piece gelatin capsules, HPMC and pullulan vegetarian capsules, fish gelatin capsules and innovative liquid delivery solutions. Many sizes and colors are available to meet the industry’s unique needs, as well as custom color and print options to extend brand appeal.

- Vcaps® Plus HPMC vegetarian capsules
- DRcaps® acid-resistant capsules
- Vcaps® vegetarian capsules
- Plantcaps® pullulan capsules
- Coni-Snap® hard gelatin capsules
- DuoCap™ capsule-in-capsule technology
- Licaps® liquid-filled capsules
- OceanCaps™ fish gelatin capsules
- XPress-Fit®/Press-Fit® gel caps
- Coni-Snap® sprinkle capsules

Liquid-filled capsules – Meeting the consumer’s preference for liquids and improved bioavailability, Capsugel developed its innovative Licaps® liquid-filled capsules. To help companies build a better supplement, Capsugel provides finished-form, liquid-filled capsules using customers’ proprietary formulas in both gelatin and plant-based options. Customized, targeted delivery and formulation support are also available to help reduce time-to-market and optimize bioavailability. From formulation to packaging, Capsugel offers full turnkey solutions to help take a product idea from concept to consumer.

Equipment and Support – Capsugel offers technical solutions to get the job done, including bench top and semiautomatic capsule-filling equipment that help improve your company’s capsule-filling capabilities. Technical support is available to customers to help improve productivity.

Business and marketing support – Capsugel can help identify new market and product opportunities in the wellness and specialty markets and works with customers to build solutions to help capitalize on those opportunities. Capsugel partners with customers to provide business solutions, from branding to navigation of regulatory roadblocks.

Industry leadership – Capsugel is committed to supporting the quality growth of the dietary supplement industry. Capsugel is active in associations such as the Natural Products Association (NPA), the United Natural Products Alliance (UNPA), the American Herbal Products Association (AHPA), the American Botanical Council (ABC), and more than 25 other organizations globally.
With the Vcaps® Plus capsule from Capsugel, everyone’s happy. Marketers can take advantage of the growing vegetarian and non-GMO consumer markets, and consumers can choose the perfect supplement delivery solution for them. Visit capsugel.com today.
For over 35 years, CapsuleWorks has been a leader in the nutritional supplement industry, setting the standards of excellence for quality, efficiency and service. State-of-the-art facilities, superior manufacturing technology, rigorous quality control, and unparalleled production capacity enable CapsuleWorks to deliver superior quality supplements at highly competitive prices.

CapsuleWorks Sets the Standards for High-Quality Nutritional Supplements

All CapsuleWorks products are processed in the USA under the watchful eyes of our quality control experts at our ultrasophisticated facilities conveniently located throughout the country. CapsuleWorks’ in-process quality control system ensures that every supplement manufactured meets the highest standards for quality, purity and performance. This consistency is assured through the use of the finest quality raw materials and rigorous product testing before, during and after manufacturing.

- Processed in the USA under the tightest regulations
- Quality Control follows established Pharmacopeia methods such as USP, BP, EP as well as AOAC and FCC if available
- In-process quality control so you know you have the finest quality products

Supplements that Pass Test…After Test… After Test…No other manufacturer offers higher quality products

Our labs are analytical environments with highly trained laboratory analysts working with the latest analytical equipment. Each raw material ingredient is tested for identity and purity, against requirements found in globally recognized standards as stated in the United States Pharmacopeia (USP), the European Pharmacopeia, and others. CapsuleWorks’ highly automated plant reduces actual material handling and dramatically decreases the possibility of contamination by limiting human contact. Our extensive building automation system monitors and controls all environmental conditions in the facility, resulting in uniform product processing throughout the year.

Leading the Way with Cutting-Edge Nutritional Formulations

CapsuleWorks is proud to offer a wide array of high quality nutritional products. Each of our products are made using the finest raw materials, the most advanced manufacturing processes and the strictest of quality controls.

You’ll Find Us Very Competitive

CapsuleWorks has long enjoyed a solid reputation for outstanding customer service. From initial inquiry and order placement, to final shipment and delivery, you can be certain that every aspect of your order will receive meticulous attention. We continue to work diligently and tirelessly to satisfy your every expectation.

CapsuleWorks features:

- Round-the-clock production
- Extensive inventory with over 300 vitamins, minerals and herbal supplements in stock including softgels, tablets and capsules
- Products that are processed in the United States

The establishment of a truly state-of-the-art manufacturing environment — complete with the most current and cost-effective technology —allows CapsuleWorks to continually operate at peak efficiency.

The result is a highly effective operation that manifests itself in the most competitive price points for our customers without sacrificing the slightest measure of product integrity.
At CapsuleWorks, every order, no matter how large or small, gets our undivided attention.

You can count on us to manufacture the highest quality nutritional supplements... in tablets, capsules and softgels. Our extensive facilities and state-of-the-art laboratories across the USA mean you can rely on us for testing, labeling and warehousing, too.

Every CapsuleWorks product is subjected to numerous quality assurance tests and checks throughout the manufacturing process. As an added measure, we follow United States Pharmacopoeia (USP) standards, when applicable.

Our A-Z product line, low minimum quantities (hundreds of skus have just one case minimums) and affordable pricing make you more competitive and take the strain off your bottom line. Save even more with discounts on multiple skus.

Put the power of the number one vitamin and supplement manufacturer to work for you. Call CapsuleWorks today and let us give your orders the attention they deserve.
Cargill is utilizing consumer insight, and regulatory and scientific expertise to develop and market products that help customers capitalize on the growing demand for healthier, great-tasting consumer packaged goods. We provide food, beverage, and dietary supplement solutions relevant to some of today’s most pressing health concerns, including heart health, bone health, digestive health, and weight management.

Some of Cargill’s health-promoting ingredients and specialty sweeteners include:

- **CoroWise™ Cholesterol Reducer™** brand plant sterols are now an ingredient in a growing number of foods, beverages, and supplements. Plant sterols have been clinically shown to lower cholesterol, are backed by an FDA heart health claim, and are recommended by the National Cholesterol Education Program (NCEP) of the National Heart, Lung, and Blood Institute of the National Institutes of Health.

- **Oligo-Fiber™** inulin, known as the “invisible fiber,” can be incorporated into almost any food or beverage without affecting taste or texture. Inulin is recognized as a prebiotic ingredient that supports the natural, healthful bacteria in the lower GI tract. Research also indicates that inulin may enhance dietary calcium absorption, particularly among preteens and postmenopausal women.

- **Zerose™** erythritol is a bulk sweetener that has zero sugar, zero calories, and zero aftertaste. It tastes about 60 to 70 percent as sweet as sugar, provides bulk, and masks the aftertaste of intense sweeteners. It is suitable for dental health, weight management, and sugar avoiders.

- **Truvia®** natural sweetener is a great-tasting, natural, zero-calorie sweetener made with rebiana, the best-tasting part of the stevia leaf. Unlike stevia used in dietary supplements, which typically includes a mixture of many components from the stevia leaf, rebiana comes only from the best-tasting components and is a high-purity sweetener that is consistent in quality.

- **Treha™** trehalose is 45% as sweet as sugar. It does not brown like sugar, and has very low hygroscopicity (moisture attraction), so it stays free-flowing and dry. Treha works well as a protein stabilization addition (beverage, surimi) and is used in foods as a sweetener, a stabilizer, a thickener, and a flavor enhancer. It is also used as a cryopreservation additive, where it protects cells from the effects of freezing and drying.

- **Xtend™** sucromalt is sweetener that provides carbohydrates without the peaks and valleys in blood sugar. It is a fully caloric, low-glycemic sweetener, and it is ideal for use in foods where a balanced release of energy is desired.
Steady energy. Sugar reduction. Sweet!

Xtend® Sucromalt

Slowly digestible sweetener provides steady energy from carbohydrates without peaks and valleys in blood glucose.

Xtend® sucromalt offers a sweetening solution that provides all the ease and functionality of comparable syrups, with a sugar content of ~50%. It contains slowly digestible carbohydrates that deliver a balanced release of glucose, making Xtend® sucromalt ideal for consumers who want sweetness, steady energy, and sugar reduction.

Partner with Cargill to add the power of Xtend® to your brand.
866-456-8872

collaborate > create > succeed™

www.cargillfoods.com
Certified Nutraceuticals Inc.
Healthy Living through Innovative Technology

Description
Founded in 2000 under the name Collagen Nutraceuticals Inc., Certified Nutraceuticals Inc. supplies patented ingredients to the natural supplement and skincare industries, offering consumers around the globe access to products that promote health and wellness. Through extensive research and cutting-edge technology, Certified Nutraceuticals develops products of incomparable quality, with an emphasis on collagen supplements, pomegranate extracts, olive leaf extract, grapevine extract, and Telos95™ Telomere Health Support.

Ingredients
- **KollaGen II-xs™** - (Patented) U.S. chicken collagen Type II. This supplement is clinically proven effective for supporting the repair of cartilage and for supporting those with arthritis.
- **H.A.95™** - (Patent Pending) Natural hyaluronic acid sodium extracted from rooster comb (food grade). Benefits for skin, eye function, and healthy joints, and provides lubrication to every cell in the body.
- **PomEllagic 40 & 70™** - Patented ellagic acid extract powder providing the health benefits of pomegranate and focusing on cardio health.
- **TendoGuard™** - Patented advanced collagen recovery compound. A dietary supplement formula made of a perfect blend of eggshell membrane and avian sternum cartilage containing collagen Type I, Type II, Type V, and Type X; hyaluronic acid; chondroitin sulfate; and mucopolysaccharides. Naturally contains anti-inflammatory and antibiotic compounds to support tendon recovery and to maintain healthy and strong mechanical properties of tendon, bone, and joint functions. Clinically proven effective.
- **KollaGen I.V.X HEM™** - (Patent Pending) 100% avian eggshell membrane powder. Powerful compounds account for 15%–20% of the total collagen. (100 parts Type I collagen: 1 part Type V collagen and contains the rare Type X collagen.) Type V collagen is required for assimilation of Type I collagen, while Type X collagen protects other important tissues. Clinically proven effective.

New Launches
- **Telos95™** (Patent Pending) **Telomeres Health Support** – Clinical research confirms the efficacy of Telos95™ for halting telomeres shortening.
- **Revers-e-vine™** (Patent Pending) – A powder extract blend of red wine, red grapes, and grapevines. This extract naturally contains resveratrol, viniferin, and oligostilbenes. These active polyphenols are scientifically proven to reduce cell oxidation and stimulate the SIRT1 enzyme.
- **Olea25™** (Patent Pending) – A granule powder containing a minimum 25% hydroxytyrosol, a powerful antioxidant with an ORAC value of 68,000 (15 times higher than green tea and three times higher than CoQ10). Applications for cardiovascular and DNA health. Our advantage is our unique production and purification technology.
Concentrated Aloe Corp.

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Concentrated Aloe Corp.
123 N. Orchard St., #4A
Ormond Beach, FL 32174

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Web Site: www.conaloe.com
E-mail: sales@conaloe.com

Key Personnel
Barbara Roman,
Vice President of Sales

Greg Bentley,
Director of Sales & Marketing

Description
For over 25 years Concentrated Aloe Corporation (CAC) has supplied natural raw materials to quality manufacturers throughout the world. CAC ensures quality, provides a secure source to guarantee consistency, offers technical assistance and has built a reputation for dependability.

With one eye focused on sustainability and the other on superior materials CAC is proud to introduce organically grown “Solar Powered Dehydrated Aloe Vera”. This 200X Aloe Vera Powder has it all! Our patented solar dehydrators utilize the sun’s energy to dry the inner fillet gently. This preservative-free powder retains its large polysaccharide chains and has the same molecular weight distribution as a fresh fillet.

Look to CAC to provide you with not only aloe vera powders, gels, concentrates and oil extracts but exotic oils, butters and herbal powders from around the world. CAC is a credited source for Kava, Nopal, Nangai, Moringa, Tamanu, Shea and Cocoa Butter.

Natural raw materials are what CAC sells but not the only thing that CAC delivers.

NEW

SOLAR POWERED
Dehydrated Aloe Vera

- Good Stability
- Preservative Free
- Free of Carriers
- Organically Grown
- Competitive Pricing
- Same Molecular Weight (Daltons) Distribution as Fresh Fillet

Nil Carbon Footprint

- Nopal
- Nangai
- Tamanu
- Kava
- Aloe Vera
- Moringa

For more info call
1.800.638.0082
1.386.673.7566

Visit us or contact us at
www.conaloe.com
sales@conaloe.com

Serving all the process industries in virtually every industrialized country, Ross can offer experience and production capacity that no other manufacturer of specialty mixing and blending equipment can match.

In the United States alone, Ross operates five plants dedicated to engineering, R&D, manufacturing, and process testing. Overseas, Ross sanitary equipment is manufactured in three of our own plants, and in numerous other plants under license.

The Ross Test & Development Center, located at the company’s corporate headquarters in Hauppauge, NY, is the industry’s best-equipped laboratory for process testing. Each year, hundreds of Ross customers visit our test center to confirm their equipment selections and optimize their processes.

The driving force in sanitary mixer/blender design.
Ross design innovations have led the evolution of sanitary rotor/stator mixers, multi-agitator mixers, sanitary blenders, and high-speed solid/liquid injection technology.

- **Ribbon Blenders** - superior quality, priced far below others! Up to 1000 cu ft., with dozens available for immediate shipment.
- **Vertical Cone Screw Blenders** - space-saving design with fast, complete discharge.
- **Batch Rotor/Stator High Shear Mixers** - for dispersions and emulsions.
- **In-Line Rotor/Stator High Shear Mixers** - single-stage and multi-stage models for fine emulsions and dispersions.
- **Ultra-High Shear In-Line Mixers** - new rotor/stator designs generate higher tip speeds and more intense shear.
- **SLIM Solid/Liquid Injection Technology** - eliminates the persistent clogging of conventional eductor-based systems.
- **Multi-Agitator Mixers** - 1 gallon to 1000 gallons capacity. Change-can designs available.
- **Advanced Control Systems** - from single-axis to multi-axis designs.

Equipment purchase or in-plant trial/rental.
Ross can provide the equipment to meet your need for increased mixing capacity. Ross maintains the industry’s largest fleet of rental mixers and blenders, with many sizes and configurations in stock for immediate delivery.

Many customers choose our rental option to put capacity online to meet short-term demand or for pilot-testing new products. An in-plant trial/rental can also provide an opportunity to test new equipment on your process line prior to purchase.

Contact Ross for information or to schedule a no-charge test.
Click on www.sanitarymixers.com. Or contact Chris Ross: 800/243-ROSS / mail@mixers.com.
"Join the ultra-high shear revolution."

When Ross introduced the first **Ultra-High Shear Mixer**, we revolutionized high speed, high shear mixing. Operating with tip speeds up to six times higher than conventional rotor/stator mixers, these mixers can produce sub-micron emulsions and dispersions faster than any conventional rotor/stator design.

Today, in applications from foods to pharmaceuticals, coatings and adhesives, the results include smaller particle sizes, tighter particle size distributions, greater throughput – and superior end-products.

Patent No. 5,632,596: X-Series
Patent No. 6,241,472: MegaShear
Patent No. 6,000,840: PreMax

Christine Banaszek
Applications Engineer
Employee Owner

Ross Ultra-High Shear Mixers produce ultra-fine emulsions and dispersions in inline (A-C) and batch (D) applications. Many models also allow you to fine-tune shear to mix shear-sensitive materials safely.

See the newest generation of rotor/stator mixing technology.

Visit highshearmixers.com/ultra
Or call 1-800-243-ROSS

Scan to learn more.
Free Tag Reader: http://gettag.mobi
Chemistry Nutra
Specialty ingredients for human performance

Description
Chemistry Nutra offers cutting-edge, science-based nutritional supplement ingredients that address a variety of nutrition and performance-related concerns, including cognitive health, women’s health, weight management, anti-aging, and sports performance. We offer valuable assistance in developing unique, value-added, and profitable nutritional supplement products utilizing our thorough knowledge of nutrition science, formulation creativity, and targeted marketing. Chemistry Nutra manufactures the highest-quality specialty nutraceuticals in our own FDA-inspected production facilities located in Italy and Brazil.

Specialty Ingredients
SerinAid® Phosphatidylserine (PS) — Focus Your Mind™
A multitude of scientific studies have shown that Phosphatidylserine (PS) can significantly help maintain and improve mental performance, help improve mood, and make a valuable contribution to lowering both physical and psychological stress. The loss of cognitive ability is often an unfortunate component of the normal aging process. SerinAid® has been scientifically proven to be beneficial in maintaining youthful mental performance, preventing the loss of critical-thinking skills, improving mood, and reducing the stress generated from our extremely fast-paced world.

IronAid® Iron Protein Succinylate (IPS) — Iron for Life™
For many people, iron deficiency and anemia are serious conditions that require nutritional or even clinical intervention. Compared to other traditional iron compounds, IronAid® Iron Protein Succinylate (IPS) offers safe, superior gastric tolerability and also superior absorption. Clinical studies involving more than 3000 people have shown an absence of gastric side effects in nearly all of the subjects.

AlphaSize® Alpha-Glyceryl Phosphoryl Choline (A-GPC) — Growth through Science™
Alpha-Glyceryl Phosphoryl Choline (A-GPC) is recognized as the “premier” choline donor, especially compared to other forms of choline that have reduced bioavailability. It is a very unique nutrient that can significantly increase acetylcholine levels in the brain. In fact, AlphaSize® Alpha-Glyceryl Phosphoryl Choline (A-GPC) is considered to be one of the most effective brain nutrients in the world and is widely used in clinical settings involving cognitive dysfunctions of various kinds. AlphaSize® also has interesting utility in “mind-to-muscle” sports nutrition formulations, where it acts to optimize muscular power output and also sharpen agility.

PhosphoLean® N-Oleoyl-PE + EGCG — Advanced Appetite Control™
Recent research involving the manipulation of appetite has shown that suppressing appetite and thus reducing the intake of food is an effective means of controlling energy balance. PhosphoLean® N-Oleoyl-PE+EGCG is a proprietary mixture of N-oleoyl-phosphatidyl-ethanolamine (NOPE) derived from soy phospholipids and epigallocatechin gallate (EGCG) from standardized green tea extract. PhosphoLean® is the “next generation” nutritional supplement compound for advanced appetite control and weight management, and can also aid in combating the stress of reduced-calorie diets.

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Web Site: www.cheminutra.com
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Key Personnel
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Brand Director

Tito Sanchez,
Sales Manager

Janet Baker,
Office Manager

Association Memberships:
IFT, NSCA, ACSM, CRN,
AOCS, ISSN, ILPS, and AOAC

JULY/AUGUST 2014 • NUTRITIONAL OUTLOOK
Today more than ever, “energy” is the overwhelming consumer buzzword, and a myriad of nutritional products contain so-called “energy” ingredients.

**AlphaSize® Alpha-Glyceryl Phosphoryl Choline** is science proven to deliver “true” energy.

A-GPC, an advanced choline donor, is considered to be one of the most effective brain nutrients in the world, and is used widely in clinical settings around the world involving memory loss, cognitive dysfunction, and dementias of various kinds.

As a sports nutrition nutraceutical, AlphaSize® A-GPC acts to optimize muscular power output, sharpen agility, and also delay mental fatigue. This is related to its involvement with motor unit activation of muscle fibers and subsequent muscle contraction.

Contact us today about adding AlphaSize® to your formula.
Chemical Solutions Ltd.
Confidence. Trust. Reliability.

Description
Chemical Solutions Ltd. (CSL) is an independent testing laboratory specializing in trace level elemental analysis. Established in 1995 and providing testing through inductively coupled plasma/mass spectrometry (ICP-MS) since 1997, CSL is solely committed to the analysis of metals, minerals, and other elements. It is with this dedication that CSL has emerged as the leader in trace elemental testing.

Capabilities
Types of Samples Analyzed:
• Herbs and botanicals
• Vitamin products
• Nutraceuticals
• Functional foods
• Finished products and raw ingredients

Methodology
• ICP-MS: Used to assay trace and ultra trace elements at part-per-billion (ppb) levels or lower

Commonly Analyzed Elements
• CA Prop 65 metals
• Heavy metals
• Minerals

Quality Program
Chemical Solutions is committed to the production of analytical data of the highest quality and to the continuous improvement in all areas of its operation. Only officially approved procedures and techniques are used, when available. Analysis is performed with an emphasis on exacting quality, timeliness, and legal defensibility.

In order to ensure quality, the lab undergoes audits by FDA every two years, in addition to its FDA registration. The facility is inspected by the PA DEP every three years to maintain its National Environmental Lab Accreditation Certification (NELAC), which is held to the standards of ISO/IEC/EN/17025. Other accreditations include environmental certifications in the states of PA, MD, and VA, and ISO/IEC/EN/17025.

CSL is the only laboratory in the United States that is accredited to the four standards of USP <232>/<233>, USP <1225> and USP <1226>.
SAFE?

Is your product a close call?

As the leading provider of heavy metal analysis, Chemical Solutions will give you the fast, reliable data you need to make the right decision.

colorful ball symbol and text: chemical solutions ltd.

273 MULBERRY DRIVE, SUITE 9 ■ MECHANICSBURG, PA 17050 ■ www.chemicalsolutionsltd.com
PHONE 717-697-7536 ■ FAX 717-697-4800
CONNOILS

A Global Manufacturer, Distributor, and Supplier of Nutritional Products and Raw Materials Serving the Nutraceutical, Cosmeceutical, Food, Beverage, Health and Beauty, and Pet Industries

Description

We are a global manufacturer, distributor, and supplier of nutritional products and raw materials serving the nutraceutical, cosmeceutical, food, and pet industries.

Don’t let the “oils” in CONNOILS fool you. Although we are a distributor of a large variety of bulk oils, we are better known for our ability to produce oil powders. We work with our customers’ R&D departments to help customize powder solutions for their product formulation needs. Whether the customer opts for a standard powder held in inventory or a custom blend of their own, CONNOILS is there to ensure well-educated decisions are being made. We don’t accept feedback that a product didn’t perform as intended; we get to the right people to investigate further. There are numerous product options available, and we’re here to work with our customers to ensure they can bring a sound product to market.

In addition to our oils, oil powders, softgels, and specialty items, education is our value-added service. Nutritional oils have many different physical and chemical characteristics. Even in the same oil seed family—for instance, sunflower oil—there are a variety of options available. These options, while beneficial in some formulations, may cause others to react negatively. We can help identify the best oil or powder for the intended application.

If we don’t know the answer immediately, we’ll spend our time getting the answer for the customer, leaving them to do what they do best. We maintain memberships in organizations such as AOCS (American Oil Chemists’ Society), where we keep up on our education, learning about current trends in edible oil processing and refining, identifying product adulteration, factors affecting the stability and stabilization of edible oils, and evidence for the effectiveness of omega-3 fatty acids on neurological functions. We work with agriculturalists and on relationship building at annual programs such as the Oil and Grain Summit, where we stay up to date on topics such as plant husbandry, understanding how genes and soil types impact the nutritional makeup of different oils, estimates of future global food production so we can explain to our customers the rise and fall of commodity oil prices and how to be prepared, and the healthcare cost savings resulting from the targeted use of dietary supplements.

CONNOILS isn’t just a manufacturer and raw-material supplier. Call us and find out how our staff can assist your team in selecting the right materials for your product needs.
CSI Biotech Company, Ltd.
Fish Collagen Peptide For Happy and Healthy Life.

CSI Biotech Company, Ltd., specializes in the manufacture of fish collagen peptide extracted from tilapia scales. Finished products are food and cosmetic grade. Our ingredient is white, with no “off” odor, and is water soluble. Applications include beverages, dietary supplements, and skin care products. Our fish collagen peptide has a high protein content, with a hydroxyproline content above 12%.

We welcome you to contact us for detailed information and to try our premium-quality fish collagen peptide.

CSI BIOTECH CO., LTD.
#2 South Road, Minying Industrial Park, Suixi, Zhanjiang, Guangdong, China.
Tel: +86 759 7710806 Fax: +86 759 7710816
Website: www.csicollagen.com E-mail: info@csicollagen.com

Hate Fishy Smell And Off Odor? Then Try Ours!
Corbion

Description
Corbion is the global market leader in lactic acid, lactic acid derivatives, and lactides, and a leading company in functional blends containing enzymes, emulsifiers, minerals, and vitamins. Building on the strong legacy of the Caravan and Purac brands, we offer a broad portfolio of vitamin and mineral premixes, functional ingredients, bakery mixes and bases, and emulsifiers, as well as safety and preservation applications. We deliver high-performance bio-based products made from renewable resources and applied in global markets for bakery, dairy, confectionery, beverage, meat, and culinary. We use deep market knowledge, agility, and dedication to deliver on ever-changing market demands. Corbion products have a differentiating functionality in all kinds of consumer products worldwide. Powered by nature, designed by science, and delivered through dedication.

Products
Nutrivan®
Consumers are looking for added nutrition from the foods they already consume. As a manufacturer, you need a partner who can help you deliver on consumer needs by creating cost-effective fortification blends that meet your specific requirements. The Nutrivan® line of vitamin and mineral premixes aids in bringing this added nutrition to your products. Let us create a completely customized blend to meet your specific needs, or choose from an already developed blend targeted to specific health benefits.

All of our raw ingredients are subjected to a rigorous approval process to ensure they are of the highest quality. This process includes on-site inspections, Certificate of Analysis value verification, compliance with FDA specifications, and required third-party audits. Additionally, every final Nutrivan® product is tested in house to validate the vitamins and minerals present. This information is documented and presented on a Certificate of Analysis for each product.

Corporate Headquarters
Corbion Caravan
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Lenexa, KS 66215

Toll-Free: 800/669-4092
Fax: 913/888-4970
Web Site: www.caravaningredients.com

Key Personnel
Bill Gambel
Vice President of Sales, Food Ingredients

Tom Douglass
Director of Fortification
At Corbion, we provide food solutions that nourish the world. Our innovative ingredients, which offer unsurpassed safety and freshness, initiate a love affair between our customers’ products and consumers. By combining the industry knowledge and scientific creativity of our Caravan and Purac teams, we are able to offer industry-leading clean label technology and sustainability gains. Our future-focused thinking impacts every industry from baking, dairy and confectionery to beverage, meat and culinary. Nobody has your best interests or your bottom line at heart, like Corbion.
**DSM Nutritional Products**
The global leader in nutritional and nutraceutical innovation

**Description:**
DSM Nutritional Products, the global leader in nutrition and nutrition innovation is the world’s premier producer of bulk vitamins, carotenoids, omega 3 & 6, nutraceuticals and custom nutrient blends to dietary supplement, food and beverage, feed, and personal care product manufacturers.

DSM Nutritional Products has global research and development capabilities and an international network of technical service, production and distribution facilities and has a major sales and marketing presence in more than 100 countries. In addition to its vast ingredient portfolio, DSM provides unparalleled processing and manufacturing expertise in developing innovative formulations that provide optimum performance and health appeal.

DSM Nutritional Products provides a solid platform for technological innovation and new product development. Utilizing its extensive resources, DSM keeps its customers ahead of the ever-changing marketplace, anticipating customer needs as nutritional trends develop and customer demands evolve.

As a leader in nutritional research, DSM Nutritional Products works in conjunction with major universities throughout the world and actively assists industry in developing new, beneficial products for the marketplace.

**Products:**
- **Water-soluble vitamins:** Ascorbic acid, calcium pantothenate, D-panthenol, pyridoxine (Vitamin B6), cyanocobalamin (Vitamin B12), folic acid, biotin, thiamine (Vitamin B1), riboflavin (Vitamin B2), Rocoat-coated B vitamins.
- **Fat-soluble vitamins:** Vitamin A palmitate, Vitamin A acetate, mixed tocopherols, Vitamin D3, Vitamin K1.
- **Carotenoids:** Beta-carotene, lycopene, lutein, zeaxanthin, apocarotenol, canthaxanthin.
- **Long-chain polyunsaturated fatty acids:** Omega-3 LC PUFA, Omega-6 LC PUFA
- **Quali®-Blends nutrient premixes:** Vitamins, minerals, amino acids, nucleotides and nutraceuticals. Available in both liquid and dry forms. Standard and custom formulations.

**Recent Developments:**
DSM’s extensive portfolio of nutritional ingredients for food, beverage and dietary supplement applications includes:
- **Fruitflow®** scientifically substantiated natural solution for healthy blood flow
- **resVida®** high potency resveratrol providing red wine’s health benefits
- **redivivo®** lycopene pure lycopene for prostate and heart health
- **FloraGLO®** Lutein natural lutein essential to skin and eye health
- **OPTISHARP™** Zeaxanthin pure zeaxanthin essential to eye
- **life’sDHA™** sustainable and vegetarian source of algal DHA Omea-3
- **Meg-3®** Omega-3 EPA/DHA fish oil Omega-3
- **geniVida®** soy-free pure genistein for reduction of menopausal symptoms and support of post-menopausal women’s bone health.
- **All-Q®** Coenzyme Q10 with exceptional bioavailability
- **Fabuless®,** the breakthrough satiety ingredient
- **PeptoPro®** hydrolyzed casein peptide, predigested protein for performance, endurance and recovery
- **OatWell®** oat beta glucan for cholesterol reduction, blood glucose control and general gastrointestinal health

DSM offers these and many other nutrients created to provide optimum performance and health appeal in a broad range of supplement applications.
For more information, please contact DSM Nutritional Products.
With an omega-3 product portfolio that includes market leading products life’sDHA™ and MEG-3, DSM is the global leader in providing omega-3 nutritional solutions. From foods and beverages to supplements and infant formulas worldwide, DSM has a solution to fit every omega-3 need.
Divis Laboratories (USA), Inc.
Ingredients VITAL to Life

U.S. Headquarters
Divis Laboratories (USA) Inc.
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Florham Park, NJ 07932

Tel: 973/993-1060
Fax: 973/993-1070
Web Site: www.divisnutraceuticals.com
Email: customer.service@divislaboratories.com

Manufacturing
India, Germany, United States

Global Presence
United States, Mexico, Canada, Europe, India, Asia Pacific

Key Personnel
Heinz Niggli, Vice President
Steve Geiger, Director of Sales
Denise Catini, Director of R & D

Apocarotenal
Astaxanthin
Beta Carotene
Canthaxanthin
Lutein
Lycopene
Vitamin A
Omega-3
Vitamin D2
Vitamin D3

Above products are offered in “spray-dried” and micro encapsulated (beadlet) forms, as well as in liquid forms such as Solutions, Suspensions and Emulsions.

Divis products are well established in the Nutraceutical and Feed Industry. We go beyond standard products and are launching innovative new products to meet the ongoing demand for new applications from the market.

With our significant capabilities of customer support, we have established Divis Nutraceuticals as a Total Solution Provider.

The given expertise in chemical synthesis, the know-how in formulation, an optimized supply chain, cost efficient operations and the “do-it-right-the-first-time” principle, Divis established the base for a long-term, reliable cost competitive supplier.

We are Divis Laboratories USA.

FDA Inspected
GFSI Certified
ISO 9001, 14001 Certified
OSHAS 8001 Certified

973-993-1060
divisnutraceuticals.com

JULY/AUGUST 2014 * NUTRITIONAL OUTLOOK
INGREDIENT SUPPLIER

Ecuadorian Rainforest LLC
South America and Beyond

Description
Ecuadorian Rainforest, LLC, is your premier supplier of nutraceutical ingredients from South America and beyond. Since 1997, Ecuadorian Rainforest has been the essential provider of over 1,000 all-natural fruit, herb, marine, spice, and vegetable ingredients. With over 10 years of working with a variety of natural ingredients, Ecuadorian Rainforest remains one of the industry’s most reliable suppliers of all-natural ingredients.

Associations
Natural Products Association, American Botanical Council, Institute of Food Technologists

Services
• Star-K kosher certified ingredients
• Conventional and wild harvested ingredients
• Published white papers on superfruits, South American ingredients, all-natural sports nutrition, and more
• Bulk and specialty ingredient supply
• Custom formulation and manufacturing (Private Label)

Quality Assurance
Meeting state and federal food and drug regulation says you are committed to passing a periodic review to ensure that your business continues to operate. However, when a company creates its own standards and enforces them on a weekly basis, that company is committed to the clients themselves and to the quality of what people put into their bodies. Ecuadorian Rainforest exemplifies the latter scenario. Take note of some of the ways in which we define and enforce rigorous standards of quality for our products:

• The institution of an internal Quality Control Program to ensure products are free of toxins and undesired byproducts
• Alliances with scientific laboratories to enforce rigorous testing procedures
• Weekly testing for microbial pathogens and heavy metals such as lead, cadmium, arsenic, and mercury.
• Microbiological testing (total plate count, yeast and mold, coliforms, E. Coli, and Salmonella)
• Random testing of material’s moisture content
• High-Performance Thin Layer Chromatography (HPTLC) testing for initial approval and supply
• High-Performance Liquid Chromatography (HPLC) testing for powdered extracts
• Prevention of all sub-potent and contaminated materials from entering products
• Regular testing for proper identification and chemical efficacy

Major Products
Maca Root, Yucca Root, Blueberry, Chia, Cat’s Claw, Mangosteen, Nettle Root, White Kidney Bean, Yacon, Cascara Sagrada

Superfruits: Acai, Goji, Maqui, Mangosteen, Pomegranate

Herbs from the Amazon: Boldo Leaf, Calaguala Root, Chanca Piedra, Clavo Huasca, Espinheira Leaf, Gervao Herb, Manayupa, Suma Root

Weight Loss: Cha de Bugre, Green Coffee Bean Extract, Irvingia Gabonensis, Hoodia Gordonii

...and many more ingredients from around the world!

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Key Personnel
Marlene Siegel, President
Steve Siegel, Vice President

ANNUAL SUPPLIER PROFILE

NUTRITIONAL OUTLOOK • JULY/AUGUST 2014

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Description
Since our inception in 1954, Elizabeth has become the premier global supplier of compression tooling, rotary tablet presses, spare parts, and services to the rotary tableting industries. Our range of powder-compression technologies include Elizabeth Carbide Die compression tooling, Elizabeth Scheu & Kniss replacement parts and services, Elizabeth-Hata tablet presses, and, more recently, the Eliza-Press series of manually operated presses. Elizabeth’s customers are world leaders in the pharmaceutical, nutritional, battery, powdered metal, ceramic, electronics, automotive airbag, nuclear fuel, and confectionery industries.

Elizabeth is your global partner for precision compression tooling and tablet press spare parts. With modern manufacturing centers in America, Europe, and Asia, and our network of experienced customer service and sales staff, you can count on Elizabeth to support your needs before, during, and after your purchase.

As worldwide capabilities have steadily grown, the company continues to thrive based on its founding principle—the Elizabeth philosophy of Complete Customer Satisfaction. Elizabeth is dedicated to providing the best possible products and services through an unequaled level of satisfaction, trust, communication, and customer service.

“We do not simply take orders; we help our customers make good decisions.”
TABLET PRESS PARTS YOU NEED, WHEN YOU NEED THEM

REPLACEMENT PARTS, TURRET REPAIR OR REPLACEMENT, AND ON-SITE SERVICES. ELIZABETH HAS WHAT YOU NEED.

THE SOURCE YOU CAN TRUST FOR QUALITY REPLACEMENT PARTS.

CALL US OR VISIT OUR ONLINE PARTS CATALOG TODAY.
502-635-6303 TABLETPRESS.COM

Your Global Source for Tableting Solutions
ESHA Research

Genesis® R&D: Your software solution for formulation, analysis, labeling, and compliance

**Description**

For three decades, Genesis® R&D Product Development and Labeling system has been the go-to software for simplifying all facets of food product creation—everything from conceptualization to regulatory compliance and Nutrition or Supplement Labeling.

And it’s so simple. Enter ingredients, and the program analyzes your recipe.

Genesis® cannot replace lab analysis for absolute accuracy, but it offers you the ability to virtually create foods or supplements and tweak ingredients over and over again, without sending out to the lab each time you make a change.

At the core of this nutrient analysis program is an extensive database tailored specifically to the needs of the food manufacturing industry. Included in the database are herbs, vitamins, minerals, and processing items such as gums, bases, preps, colors. For each item in the database, information on up to 163 nutrients and nutrient factors is provided.

With Genesis® R&D, users can quickly generate camera-ready Supplement Facts (and Nutrition Facts) labels in a variety of formats, including standard (with proprietary blend option), split, dual recommendation, aggregate, and more. Each of the formats conforms to DSHEA regulations.

In addition, a variety of reports lets you easily visualize and share data.

Genesis® R&D is used by over 90% of U.S. top food producers and developers.

ESHA Research, makers of Genesis® R&D, has a reputation of being a customer-friendly company. We have a staff of customer support and technical support personnel who answer questions and tackle problems by phone, e-mail, and online chat.

Each purchase of Genesis® R&D includes one full year of Priority Support. With this, you have access to technical support, customer service, data researchers, dietitians, and people knowledgeable about regulations and research and development needs. Priority Support includes automatic program updates, feature updates, database updates, bug fixes, and more.

**ESHA Research**

**Corporate Headquarters**
ESHA Research
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Fax: 503/585-5543

Web Site: www.esha.com
E-mail: jill@esha.com

**Key Personnel**
Scott Hadsall
Product Consultant

Chris Eakin
Product Consultant

Stephanie Fitch
Product Consultant

---

**Supplement Facts**

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Amount Per Container</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Carbohydrate</td>
<td>2 g</td>
<td>1%</td>
</tr>
<tr>
<td>Sugars</td>
<td>1 g</td>
<td></td>
</tr>
<tr>
<td>Vitamin A</td>
<td>12000 IU</td>
<td>250%</td>
</tr>
<tr>
<td>Vitamin C</td>
<td>25 mg</td>
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</tr>
<tr>
<td>Iron</td>
<td>9 mg</td>
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</tr>
<tr>
<td>Thiamin</td>
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<td>Riboflavin</td>
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<tr>
<td>Niacin</td>
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<tr>
<td>Tryptophan</td>
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<tr>
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<tr>
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<td>Selenium</td>
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</tr>
<tr>
<td>Copper</td>
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</tr>
<tr>
<td>Manganese</td>
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</tr>
<tr>
<td>Chromium</td>
<td>100 mcg</td>
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</tr>
<tr>
<td>Molybdenium</td>
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<td>100%</td>
</tr>
</tbody>
</table>

Proprietary blend of herbs: 50 mg

*Thiamin is a cobalamin of the form. Daily Value not established.
THE NEW LABELING REGULATIONS ARE COMING.

Be prepared. Use Genesis software.

Even now, we’re tracking changes and setting up testing protocols to ensure your transition to the new labeling laws will be smooth. Whether they’re finalized tomorrow or in a month, or next year, we’ll be ready.

Genesis product formulation and labeling software has been the top source for government compliance since its introduction 25 years ago, and it will continue to be so into the future.

Don’t wait for the storm to hit. Call us now to make sure your business is ready for what’s next.
You can make a difference in the lives of children in need. Make a donation today!
vitaminangels.org

The Power of Vitamins
45% of child deaths are attributable to undernutrition. Vitamins fill the gap for those experiencing food insecurity.

Our Programs are Our Priority
Over 90% of our revenue goes back into our programs. 4-star rating from Charity Navigator.

25 Cents Can Save a Life
One dose of vitamin A, twice a year can reduce child mortality by 24%.

Working at Home and Abroad
Vitamin Angels operates in about 45 countries and over 35 U.S. states.

Vitamin Angels is a Non-Profit Organization Distributing Vitamins and Minerals to Children and Mothers in Need.
Extracts & Ingredients Ltd. supplies Botanical Extracts—Liquid and Powder, nutritive oils, certified-organic products, and special excipients and additives to the personal care, cosmetic, nutritional supplement, and food industries on a global basis. The company also offers Carrageenan, fruit purees and powders, as well as electrolytes and electrolytes blends containing magnesium chloride, potassium chloride, and calcium chloride. All forms of pomegranate derivatives are a specialty.

In addition, E&I Ltd. produces and markets finely micronized powders using patented Vortex technology. These include calcium phosphates, micronized phytosterols, creatine monohydrate, and other customized materials.

**Featured Categories**
- Pomegranate Derivatives
- Micronized Phytosterols
- Olioil-based, “PEG”-free Surfactants and Emulsifiers
- Jojoba Oils
- Castor Oil Derivatives
- Nutritive Oils and Butters
- Food Ingredients
- Derma-Actives
- Licorice Root and Chicory Derivatives
- Natural Alpha Bisabolol
- Organic Essential Oils and Floral Waters
- Botanical Extracts—Liquid and Powder
- Seaweed and Algae Products
- Raw Herbs and Botanicals
- Fruit and Vegetable Powders, Concentrates, and Purees
- Antiperspirant Powders
- Mineral Ingredients

**Corporate Headquarters**
Extracts & Ingredients Ltd.
(Div. of Morre-Tec Industries)
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Union, NJ 07083

Tel: 908/688-9009
Fax: 908/688-9005
Web Site: www.morretec.com
E-mail: dfondots@morrectec.com

**Key Personnel**
Leonard Glass, President
David Fondots, Vice President, Sales & Marketing
Fette Compacting America
North America’s leader in precision tablet-press technology

Description
Fette Compacting America, North America’s leader in precision tablet-press technology, is a subsidiary of German manufacturer Fette GmbH, providing new and used machine sales, technical assistance, machine installations, training and seminars, validation, maintenance, spare parts, and tooling.

Fette’s groundbreaking FE Series of tablet presses—including the brand new FE75—delivers unprecedented levels of productivity, flexibility, and availability. FE Series Tablet Presses offer easily detachable, FDA-certified product contact parts comprising high-performance polymer and featuring the company’s signature Tri.Easy design, affording 360° access to innovative filling systems for easy, reliable feeding; increased product output; and fast format and product changeover.

FE75 Tablet Press
- Ideal for large batch production. Can produce more than 1.6 million tablets/hr
- Double-sided rotary press can be equipped with up to 115 punch stations
- Only double-sided rotary press of its size that enables users to press single- and double-layer tablets, as well as powder
- Pneumatically controlled tablet scrapers guarantee constant surface pressure and minimize product loss
- Footprint of only 2 m²

FE55 Tablet Press
- Unrivaled ratio of punch stations–to–footprint for an increase in production output of up to 50%
- Ability to produce single- and double-layer tablets and direct pressing—the only machine of its compact size to offer all three capabilities
- Dust-tight, through-the-column discharge assembly for good, out-of-specification, and sample tablets
- Equipped to handle 90% of the most common tablet formats
- Reverts to normal operation in just over 4 seconds
- Turret setup featuring smooth-running pressure rollers automatically driven into parking position for easy turret change

FE35 Tablet Press
- Single rotary tablet press that can be fitted with up to 51 stations to produce up to 367,000 tablets/hr
- Novel, internal tablet discharge for guaranteed uninterrupted production
- New, flexible vacuum cleaning system for short cleaning cycles
- Turret removal in 15 minutes involving only 10 components and zero tools

Other Tablet Presses

Clients Served
Fette provides tablet-press equipment to the world’s largest nutritional, pharmaceutical, food, and industrial manufacturers.
NEW FE SERIES

+ **TRILEASY Design** - Simplicity as a key to efficiency
+ 360° accessibility
+ Guaranteed easy and safe operation

www.fette-compacting.com

Fette Compacting America, Inc.
400 Forge Way
Rockaway, N.J. 07866
Phone +1 973-586-8722
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www.fetteamerica.com
Principles
Providing quality control, from field to consumer, Fruit d’Or Nutraceuticals, a division of Fruit d’Or, supplies rich, high-potency, organic, all-natural cranberry fruit powders and cranberry seed oil for the health and nutrition industries. Our mission is to produce and promote high-quality fruit ingredients for food, beverages, and nutraceuticals, while reducing the environmental impact. Through an environmentally friendly approach, we meet and surpass the standards of environmental and sustainable development.

We have designed an organic brand called Cran Naturelle, which is the purest, all-natural, high-quality cranberry powder in the market. Cran Naturelle is also clinically studied and tested. Our state-of-the-art manufacturing process delivers the highest level of proanthocyanidins (PACs), while maintaining the natural integrity of the fruit. The commitment to quality, science, and innovation sets Fruit d’Or Nutraceuticals ingredients to a higher standard, helping manufacturers create superior end-products that are tried, tested, and true. Today, Fruit d’Or is the largest supplier and processor of both cranberries and blueberries in the world. We invite you to join our team and grow together to become involved in the next-generation cranberry company.

Process
We pride ourselves on our quality assurance, quality control, and manufacturing processes. We meet or exceed cGMP standards. Unlike those of other cranberry suppliers, our fruits are grown without GMOs or nanotechnology, fossil fuel fertilizers, or sewage sludge, and without toxic and persistent synthetic pesticides, herbicides, fungicides, or fertilizers. There are no irradiation, preservatives, chemicals excipients, colors, flavors, or chemical additives used.

Products
Our main focus is supplying all-natural, full-spectrum organic cranberry ingredients. Products include:
• 100% Whole Cranberry All-Natural Fruit Powder, guaranteed to contain the highest potency of PACs than all other all-natural cranberry ingredients
• Patented Organic Cranberry Sports Protein Powder, derived from the seed of the cranberry. A complete protein that contains 25% protein, 16 essential amino acids, 8 branch-chain amino acids, phospholipids, potassium, and high amounts of fiber
• Organic Pure Cranberry seed oil, cold-pressed from the seed without chemicals, excipients, or high temperatures. Ideal for the cosmetic industry as a rival to palm oil and known for its high level of tocotrienols
• Organic Tea Powder, custom-formulated for the beverage industry. For functional medicinal use, containing the highest potency of PACs than any other cranberry tea powder

Support
We offer our customers assistance with support in the following areas:
• Educational material is offered to sales and marketing teams
• Development of strategic promotional marketing campaign to generate sales for both manufactures and retailers
• Investment towards research and science to demonstrate the health benefits beyond UTI
• Establishing higher quality assurance standards to guarantee purity potency and safety for consumers
• Collaborating with third-party accredited labs to establish new test methods for measuring bioactives of cranberry such as proanthocyanidins
CRAN naturelle™

Organic

Raising the bar of quality.

Your guarantee of potency, purity, safety.

Setting higher standards against the competition in the cranberry industry.

Discover the Cran naturelle™ Advantages

• ORGANIC Whole Food All Natural
• Pure, Clean, Fresh
• No Pesticides
• Non-GMO Verified Approved
• No Flow Agents
• Free of Lubricants
• Highest Potency of all Natural PACS

www.CranNaturelle.ca

Contact:
Stephen Lukawski
Sales & Marketing Business Development
(239) 248-7118
Stephen@crannaturelle.ca
Description:
For today’s fast-paced and ever-changing marketplace, the need for a dependable, versatile, and validated contract manufacturer is immense. At GMP Labs®, we meet that criterion. GMP stands for Good Manufacturing Practices and is representative of our commitment to quality and excellence. We are renowned in the nutraceutical industry for the superior quality of our products and quick turnaround. Our team of qualified professionals, which includes biochemists, PhDs, and medical doctors, will offer innovative solutions for your specific needs. A professional staff and our trademarked personal service have played a key role in establishing GMP Labs as a leading contract manufacturer of quality nutritional supplements, vitamins, and homeopathic drugs.

Services/Products:
GMP Labs™ offers a complete range of manufacturing and packaging services, from initial development to finished product:

Tablets
- Capacity exceeds 500 million/month
- Customizable tablet shape

Two-Piece Capsules (Gelatin and Vegetable)
- Capacity exceeds 400 million/month

Powdered Drink Mix Blends (cGMP techniques)
- Capacity exceeds 1,000,000 kg/month
- V-Blending
- Planetary mixers
- Ribbon blending

Liquid
- RTD (ready to drink) supplements
- Premium health juices
- Herbal tinctures
- Oxygenated water

Soft Gels
- Capacity exceeds 10 million/month

Blister Cards with Multiple Configurations, Bottle Filling and Labeling
- Fully automated lines
- Flexible run sizes

Big-Container Filling
- From small jars to large buckets
- Ideal for protein powders

On-the-Go Single Servings
- Powder stick packs, packets, and sachets
- Tablet/capsule packets
- Paper, cellophane, and foil
- Great for product samples
GMP Labs® is a leading high technology contract manufacturer and packager of dietary supplements and homeopathic drug products.

GMP Laboratories of America offers a complete range of manufacturing and packaging services in its state of the art 100,000 square-foot premises. We provide high speed hard shell encapsulation, softgel encapsulation, tablet compression, product development, powdered drink mix blends, liquid shots and RTDs, blister card packaging, bottle packaging and packet packaging. For more information about our services, please call us at (714) 630-2GMP. For an online tour of our facilities, please visit www.gmplabs.com.

Custom Manufacturing & Formulations
- Capsules  •  Soft Gels  •  Tablets  •  Powders  •  Liquids
Complete Packaging Service: Bottles, Jars, Blister Cards

GMP LABORATORIES OF AMERICA, INC.

Excellent Service • High Quality • Prompt Turnaround
2931 E. La Jolla St., Anaheim, CA 92806 • 714-630-2467
www.gmplabs.com

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**Description**

With over 20 years of experience, Gnosis is a biotechnology company specialized in the manufacturing and sale of fermentation-derived raw materials and natural finished products for the pharmaceutical, nutraceutical, cosmetic, veterinary, and agricultural industries.

Successful integration of R&D centers and GMP-approved manufacturing facilities enables Gnosis to constantly develop and introduce innovative, industry-leading products to its customers, merging excellence in biotech innovation and constant evolution in nutraceutical applications. The company also offers tailor-made industrial manufacturing of intermediates and active ingredients.

Gnosis’s primary branded proprietary ingredients for the nutraceutical industry include:

- **Probiotics:** BIOOptima® *S. boulardii*
- **Folate:** Quatrefolic®
- **SAM-e:** Adomet™ (S-adenosyl-methionine powder), Adogran™ (SAMe granular), Adomix™ (SAMe dried mix), AdOral™ (oral dissolving tablets), Soloesse™ (all-natural tablets), SamEspresso™ (mouth-soluble granulate), Samedrink™ (effervescent tablets), and SupereSSe™ (enriched natural yeast)
- **VitaminK2:** VitaMK7® (menaquinone7) and K2&Olive™

Closely connected to the scientific community of universities and clinical centers, Gnosis experts are constantly engaged in supporting and defining health claims for products whose efficacy and safety are supported by clinical studies.

The Gnosis Group includes a European manufacturing network made up of three operating divisions: the R&D Centre in Desio (Milan, Italy); production plants in Bellinzona (Switzerland) and Pisticci (Matera, Italy); and three commercial operations located in Italy, the United States, and China.
Adomet™
S-adenosyl-methionine

The Methyl donor for life

Mood
Liver
Joint

Tablets - Capsules - For beverage

SAMe Granular
SAMe Dried Mix
Effervescent Tablets
Mouth-soluble granulate
Enriched natural yeast
All-Natural Tablets

Gnosis USA Inc.
169 N. Main Street
Doylestown, PA 18901 - USA
Tel 215.340.79.60

www.gnosis-bio.com
At Gold Coast Ingredients, we take great pride in our products and the way we do business. We manufacture Natural, Organic, and Non-GMO Flavors that take your most delicious ideas and translate them into a universal language for the world to enjoy.

Our team is constantly finding ways to improve the way we do business, from using state-of-the-art technology to improving our manufacturing standards by becoming IFS certified. As a leader in the Natural and Organic flavor industry, we have a reputation for unsurpassed customer service, and we pride ourselves in delivering quality products consistently and without compromise.

Our library includes a full line of flavors, offered in a wide range of formats: Liquid, Powder, Spray Dried, Emulsion, and advanced extraction methods. Whether the goal is sweet, savory, bakery, beverage, nutraceutical, dairy, food service, or prepared meals, your success is our goal!

Gold Coast Ingredients—Where Science, Nature, and Knowledge are brought together for your success.
Flavors Preferred
By Those Who
Know the Difference

GOLD COAST
ingredients, inc.

2429 Yates Avenue, Commerce, Ca
goldcoastinc.com 323.724.8935 800.352.8673
An Ingredient Supplier

For 28 years Grain Millers has been a leading manufacturer of conventional, organic, non-gmo and gluten free whole grain ingredients used in cereals, breads, bars, beverages and many other products produced around the world. These grains include oats, corn, wheat, barley, triticale, rye, flax and ancient grains which we mill into microground to coarse flours, flakes, brans and meals. Our portfolio of products also includes a wide range of natural dietary fibers derived from oats to improve functionality and nutrition. Grain Millers also provides dairy ingredients such as butter, cheese, cream, and dairy powders such as lactose, whey and buttermilk. Grain Millers sells a variety of specialized ingredients such as organic industrial alcohol, soy beans, legumes and tapioca starch.

Wholesome, Healthful Ingredients

At Grain Millers we sell ingredients we’re proud of: the kind we’re serving our kids. Our selection of products is brought together by this common theme of quality, from our whole grain flours to our unique chemical-free, natural oat fiber.

- Grain Products
  Oats, Corn, Wheat, Barley, Rye, Triticale, Flax and Ancient Grains
- Fiber Products
  Insoluble & Soluble natural oat fiber
- Dairy Products
  Concentrated and Isolated Dairy Powders
- Specialty Products
  Organic Alcohol, Ancient Grains (Quinoa, Chia, Amaranth, Teff), Legumes

Certified Organic

Most of our products can be purchased in both organic and conventional versions. When purchasing Grain Millers organically certified products you know that the product hasn’t been treated with chemicals, pesticides, or un-natural additives. All organic products are sourced from organically certified farms, which grow only non-genetically modified crops without the use of pesticides.
“Your Whole Grain Solution”

Conventional & Organic

- Oats
- Wheat
- Barley
- Rye
- Corn
- Flax
- Multi-grain Blends
- Oat Fiber
- Contract Blending & Packaging

For more information, please contact us at:
West Coast 800-443-8972
Midwest & Canada 800-232-6287

visit us at www.grainmillers.com

EUGENE, OREGON U.S.A.
ST. ANSGAR, IOWA U.S.A.
YORKTON, SK CANADA
Looking for a way to deliver that healthy edge?
Scientists at Grain Processing Corporation (GPC) recognize the challenges of formulating for a nutrition-conscious market and are proud to provide practical solutions to help meet your product development needs. GPC continually expands its line of specialty carbohydrates with ingredients designed to meet customer-specific needs.

Want to add a healthy label claim without sacrificing flavor?
GPC’s TruBran® corn bran delivers an exceptionally high level of dietary fiber and is easily incorporated into a variety of applications such as nutritional bars and beverages, snacks, cereals, baked goods, tablets, capsules, granulations and other fiber-fortified products.

Need to improve texture or reduce calories from fats and oils?
With an unmatched product line, GPC MALTRIN® maltodextrins and corn syrup solids are the gold standard for the industry. They are easily digestible carbohydrates for use in various applications including nutritional and sports beverages, infant formulas, nutritional bars, frozen desserts and healthy snacks. They build solids, improve texture and product stability, moderate sweetness and aid in the dispersion of other ingredients. Their clean flavor profile, low hygroscopicity and high solubility also make them ideal for spray drying flavors, colors and fruit juices. Quick-dispersing versions are also available.

Want more solutions for more applications?
GPC nutritional starches range from basic unmodified starches to very specialized starches with enhanced functionality. For use in a myriad of applications, we can offer the correct starch solution for the specific function desired.

Spress® Pregelatinized Corn Starches NF are used for granulations, direct-compression tablets, capsules, dry blends and roller compaction. They are white, free-flowing starches with binding, lubricating, disintegrating and bulking properties.

PURE-COTE® film-forming starches are designed for coating applications, oral thin films, capsules and any applications where clear, flexible films are required.

PURE-DENT® corn starches provide binding, carrying, lubricating and disintegrating properties for tablets, capsules, granulations and dry blends.

By coupling exceptional products and unparalleled service, GPC is the preferred source for specialty nutritional ingredients worldwide.
At GPC, our TruBran® corn bran offers an incredible 85% total dietary fiber (TDF) with minimal impact on product taste or texture. TruBran® corn bran’s high TDF not only allows significant fiber addition, but helps improve digestive health, contributes to healthy label claims and is gluten free for use in baked goods, batters and braidings, snacks, cereals and more. Need formulation help? Give our team of technical experts a call at 563.264.4265.
ANNUAL SUPPLIER PROFILE

GWI (Green Wave Ingredients)

About GWI
Founded on the principles of reputable partnerships, trust, quality, value, and longevity, GWI’s goal is to become one of America’s leading distributors and suppliers of nutritional and proprietary branded ingredients. Operating from its Southern California headquarters, The Ingredients Superstore prides itself on keeping over 200 products in stock and ready for immediate delivery.

Our mission is to provide reliable, high-quality, and competitively priced nutritional raw materials and other fine ingredients from world-class manufacturers, with a focus on customer-valued distribution services.

Our vision is to be a world-class organization that creates value and exceeds the expectations of our customers and employees through market leadership and operational excellence.

Corporate Headquarters
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Fax: 562/207-9780
Web Site: www.gwiusa.com
E-mail: sales@gwiusa.com

Locations of Other Offices and Facilities
Edison, NJ, USA
888/550-3606

Key Personnel
Jim Schultz, CEO
Jennifer O’Brien, Marketing Coordinator
Alice Chin, Director of Quality Control

When your Supply Chain leads to business success you are working with GWI.

Check us out today for over 200 ingredients and supply chain solutions on www.gwiusa.com.
**INGREDIENT SUPPLIER**

**Hangzhou Skyherb Technologies Co., Ltd.**

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**Locations of Other Offices and Facilities**
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**Key Personnel**
Yundong Shao,
President

### Description

Skyherb manufactures and distributes herbal extracts and raw material for food and dietary supplements. Our operations are strictly ISO 14001, ISO 9001, HACCP, and cGMP compliant, as well as organic, kosher, and halal. Our safety-ensured production processes guarantee high-quality products.

### Services

With the largest extraction facility in the region, Skyherb utilizes highly sophisticated extraction methods and purification processes. Whether you need to respond to changing market trends or enter new and emerging markets to stay competitive, our in-house regulatory team can help you achieve your goals. We share with our valued customers the latest intelligence, guidance, and up-to-date information on markets, prices, products, and technology. Our marketing team advises customers on a wide range of sectors.

### Products

**Branded Ingredients** – Apple extract (Apphenols), grape seed extract (FitGrape/NeuGrape), green coffee bean extract (GCBest/GCBev), soybean extract (SoyGD),

**Organic Extracts** – Organic Extracts – Apple, green tea, Rhodiola rosea, grape seed, green coffee bean, ginseng

**Other Key Extracts** – Maca, acerola cherry, artichoke, astragalus, bilberry, chamomile, apigenin, betulinic acid, chlorogenic acid, luteolin, phloretin

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**We keep a short product list so you may have a reliable supplier in the long run**

**Green coffee bean extract**
- Self-confirmed GRAS
- Water-extracted
- Supported by science study

**Grape seed extract**
- Champagne-origin
- High OPC (Oligomeric Proanthocya-nidins) content
- Supported by identification method

**Panax ginseng extract**
- Stable Supply
- Low Pesticide Residue

**Organic extracts**
- Apple extract
- Chamomile extract
- Ginseng extract
- Grape seed extract
- Green coffee bean extract
- Green tea extract
- Rhodiola extract

*Contact us for more organic products
E-mail: sales@skyherb.cn

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NUTRITIONAL OUTLOOK • JULY/AUGUST 2014

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Helios Corp. is a multinational company that specializes in developing nutritional ingredients backed by multiple human clinical studies. We set the bar high with standards that reflect the ever-changing landscape of the FTC and the FDA. Our clinical research enables companies to make stronger structure function claims with their finished products. Helios CORP’s evolving science demands constant review of new ideas, technologies, and research. This provides our customers and potential customers an advantage over other companies that stay committed to older technologies and science.

3) Omega Clear Calamari Oil. Calamari runs 2:1 higher in DHA: EPA. Consumers are accustomed to the claims/benefits of EPA for cardiovascular. Omega clears provides the cardio benefits with a similar level of the EPA but also shows a significantly high level of DHA, thus providing both benefits of cardio and the ocular/brain benefits of a high DHA oil. The consumer could experience dual benefits utilizing Omega Clear Calamari oil.

Helios Corp. is a multinational company that specializes in developing nutritional ingredients backed by multiple human clinical studies. We set the bar high with standards that reflect the ever-changing landscape of the FTC and the FDA. Our clinical research enables companies to make stronger structure function claims with their finished products. Helios CORP’s evolving science demands constant review of new ideas, technologies, and research. This provides our customers and potential customers an advantage over other companies that stay committed to older technologies and science.

1) EstroG-100. This game-changing product for menopause works six times faster than black cohosh and is not estrogenic, unlike products such as soy genistein and hops extract. EstroG-100 has an acknowledged NDI from the FDA and a NPN number from Health Canada, plus, 3 human clinical studies and 10 support studies.

2) TransportC-PLUS. When consumed virgin Vitamin C breaks down very quickly due to the inability to withstand oxidative stress in the blood stream. So virgin C doesn’t last very long. TransportC-PLUS is 300% more bio available than regular Vitamin C so it stays in the body significantly longer and provides Vitamin C longer, so the benefits of extended performance.

For more information: estrog100.com

EstroG-100® from Helios Corp is an active ingredient that is clinically proven to work on the toughest symptoms of menopause in 7-10 days, providing an advantage over other nutra ingredients that work in 42-50 days. Speed-of-action is a priority to women. In fact, EstroG-100 shows performance benefits 6x faster than Black Cohosh with no links to liver toxicity or estrogenicity.

EstroG-100 is an excellent, next-generation menopause solution replacement for retailers and manufacturers alike.

Finished products containing EstroG-100 are currently available through CVS, Walgreens, Whole Foods, Sprouts, Meijer, Doctor’s Best, Swanson Nutrition, NOW Foods, and Life Extension.

VITAMIN C

This high absorption Vitamin C is truly Next Generation. When utilized in beverage form or effervescence, you bring the clinical evidence of increased Vitamin C Bio availability by 300%, as compared to virgin Vitamin C.

FOR INQUIRIES: helioscorp.net | Michael Jeffers [mjeffersnutra@aol.com]
Hilmar Ingredients delivers the promise of dairy – whey protein and lactose, powerhouse ingredients for nutrition and function. Working on a nutritionally enhanced product? Wake up consumers by offering foods fortified with Hilmar whey protein, the complete protein delivering high-value nutrition to help build lean muscle.

Hilmar Ingredients can make it all possible…we offer technical, processing, and formulation assistance.

Fortification with Hilmar whey protein provides a positive nutritional advantage – the highest-quality protein source with abundant amino acids and digestibility. Hilmar whey protein also delivers bland flavor, emulsification, heat and acid stability, and spoon-stirrable dispersibility. Give us a call to fortify your foods and beverages with Hilmar whey protein.

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Hilmar, CA 95324

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E-mail: info@hilmaringredients.com

Location of Manufacturing Sites
Hilmar, CA
Dalhart, TX

Key Personnel
Grace Harris,
Director of Applications and Business Development

Gwen Bargetzi,
Director of Marketing

Wake up to whey protein fortification

On-the-run breakfast items can be made more nutritious. Fortify them with Hilmar Ingredients whey protein to turn popular baked goods into better-for-you options.

Whey protein delivers:
- Complete protein with high biological value
- Hunger satisfaction
- Reduced use of carbohydrates

Give us a call or learn more at:
hilmaringredients.com
Toll free: 888.300.4465
HerbaKraft

Description
Now in our second decade, HerbaKraft, established in 2004, is a NSF-registered company and a leading manufacturer, importer, and distributor of premium botanical ingredients to the nutraceutical, food and beverage, and cosmetic industries.

Our mission is to provide only lab-validated, authentic botanical species in extract and powder forms.

We offer timely, hassle-free delivery through our world-class logistics and maintain a fully stocked warehouse at our facility in Piscataway, NJ. We provide detailed documentation, as needed to meet cGMP standards, so our customers know they are consistently getting the highest-quality ingredients on the market today.

HerbaKraft’s management constantly travels globally to inspect source materials and nurture relationships with farmers and growers. By doing so, we obtain great pricing, as well as tremendous botanical knowledge. We are also able to ensure that material is grown and processed according to regulations. Because of the nature of how we handle our global relationships, we can vouch for and verify our source material, as well as easily and swiftly trace material back to its origins.

Our proprietary branded ingredients:

- **Maca6™** — Our excipient-free Peruvian maca extract is obtained by a special dehydration technique ensuring high-purity glucosinolates.
- **Eurylife™** — A lyophilized, proprietary extract of *Eurycoma longifolia*, an herb shown to revitalize energy, stamina, and strength in today’s active male
- **GCBfit™** — Our state-of-the-art, chloroform-free green coffee bean extract standardized to 50% chlorogenic acid and caffeine to promote significant weight loss
- **Curcusol™** — Standardized curcumin extract using ethanol, an eco-friendly Class III solvent, for inclusion in healthy beverages, food, and capsules
- **Mi-Selein™** — Environmentally friendly, odor-free selenium ensuring optimum nutrition to enhance functional foods and supplements
- **bromOgest™** — An intelligent, multi-functioning natural enzyme complex derived from pineapple to support a healthy digestive tract

Our team of dedicated professionals is ready to assist you in your search for unmatched quality, service, and pricing.

In addition, HerbaKraft is distinctive in its expertise in Ayurvedic knowledge and botanical supplements. As more consumers who engage in yoga learn and follow Ayurveda, the time is right to deliver modern, superior-quality Ayurvedic supplements.
INTRODUCING

Mi-Selein™

• Made in the U.S.A.
• Environmentally Friendly

Odorless Selenium - Making Your Brand Better

Formulators and consumers have long been a bit frustrated due to selenium’s natural odor. HerbaKraft and its team of phytochemists have created a technological breakthrough:

Mi-Selein™, an odorless selenium in the preferred form, L-selenomethionine.

The seleno-compounds, primarily L-(+)-selenomethionine, are generally recognized as safe and effective forms of nutritional and preferred selenium supplementation.

Until the development of Mi-Selein™ technology, the process of obtaining selenomethionine yielded an impure product with a strong garlic-like odor, and characteristic taste, which limited the marketability of selenium containing food supplements.

Mi-Selein™ is the first selenomethionine that significantly prevents formation of the garlic-like odor producing by-products. The other important advantage of Mi-Selein™ is that it is obtained in an environmentally friendly process, which is so important to modern consumers.

craft. certify. deliver.

Reign the market with ingredients derived through methods exceeding safety standards and regulatory requirements.

Our Flagship Products:
Ashwagandha GCBfit™
bromOgest™ EuryLife™
Curcosol™ Maca6™
Guggul Mi-Selein™
Sesamin White Kidney Bean

www.herbakraft.com | info@herbakraft.com | toll free 1.855.999.HERB
121 Ethel Road West, Unit 6, Piscataway, NJ 08854 | Tel 732.463.1000 | Fax 732.463.3336

FDA Disclaimer: These statements have not been evaluated by the Food & Drug Administration. These products are not intended to treat, cure or prevent any disease.
Since 1993, Herbally Yours Inc, has been the forerunner of contract custom manufacturing of dietary supplements and personal care products. Our prestigious facility is NSF cGMP, NSF for Sports, USDA Organic, Kosher certified, and FDA registered.

Herbally Yours is a research and development analytical laboratory with complete turn-key contract manufacturing facility specializing in dietary supplements and skin care products. All products and ideas start in the lab, and are analyzed by our analytical team. We have extensive experience and knowledge in formulation and reverse engineering, as well as testing protocol.

Our manufacturing capabilities consist of liquid products, creams and lotions, powders, capsules, botanical extracts, skin care and more. Our high standards for protecting our customers’ products and methods are exclusive of our need to offer fast turn-around times, with competitive pricing. As a result of our commitment to exceeding expectations, we have cGMP certification through NSF International and are registered and inspected by the FDA, so we can continue to assure our customers of product identity, strength, composition, quality and purity.

With an innovative analytical laboratory and extensive experience in formulation of new products, reverse engineering; developing new technologies and creating consistent results, we set the new standard of excellence for quality, efficiency and service.

Your manufactured product will be custom and as unique as your company. As a boutique manufacturer of custom formulated products, we never offer private label or develop our own line of products. At Herbally Yours, we hold all formula sacred and confidential. Together, we will meet your expectations, and help you to exceed your potential, with confidence and pride.
quality - innovation - accuracy - confidence

Turn-key, custom, **contract manufacturing**, of dietary supplements and skin care products.

From formulation to finish, our mission is to make analytically sound products, that exceed your expectations.

**Contract Manufacturers**

of quality and excellence!

PROUD TO BE:
NSF cGMP certified through NSF International and NSF for Sports, USDA Certified Organic processor, Kosher authorized, and FDA registered and inspected

Creative Solutions
Herbally Yours houses a research and development analytical laboratory, within a complete turn-key contract manufacturing facility, specializing in dietary supplements and skin care products.

We have a dedicated team of professionals that have developed unequalled proprietary formulas, processes and methodologies.

A solution center for all companies, from those looking to make an existing product better or add to their product line, to the start up company looking to completely create a new product concept and develop a brand.

Visit us! At SupplySide West, Engredea, or Ingredient Marketplace, or call us at any time to schedule meeting and tour of our manufacturing facility.

www.herballyyours.net
Honeyville Inc. is your one-stop-shop for all your dry ingredient needs! Honeyville’s state-of-the-art grain-milling facility sources quality grains and then formulates, cleans, polishes, cracks, rolls, mills, and blends grains for leading national brands.

At Honeyville’s TempSURE® facility, flours, powders, and dry ingredients go through a natural heat process to reduce and kill harmful bacteria and pathogens. TempSURE® heat treatment keeps ingredients in their original packaging and makes flours, powders, and dry ingredients safe for consumption.

Additionally, Honeyville boasts a large and innovative mixing and co-packing private-label facility, which formulates, mixes, and blends just about any dry ingredient for customers all over the globe. Honeyville then packs the ingredients in cups, pouches, bags, cartons, and more.

Through Honeyville’s massive supply chain network, products are shipped and fulfilled using Honeyville’s multiple distribution centers. Still family-owned, Honeyville Inc. has been in business since 1951 and continues to grow while still maintaining the core family values of honesty, integrity, and putting people first.
Innophos Inc. is a global producer of performance-critical and nutritional specialty ingredients, with applications in pharmaceutical, food, beverage, dietary supplements, and oral-care end-markets.

Services:
Innophos delivers for customers by building on the strengths of our pharmaceutical and nutritional ingredient operations, which include: technical expertise, global distribution, high-quality products, and supply chain advantages.

Products:
Excipient brands include A-TAB®, DI-TAB®, TRI-TAB®, CALIPHARM® and NutraTab™ calcium phosphates, our award-winning VersaCal Clear™ for fortification of clear beverages; AMT/Kelatron and Chelated Minerals International’s line of mineral amino acid chelates - which includes K-Pure™ Chromium, Zinc, Magnesium; and Triarco’s patented enzyme blends that enhance metabolism and muscle function, Aminogen® and Carbogen®.

Innophos’ range of nutritional products, global presence and formulation capabilities provide important benefits in growing sports nutrition, dietary supplements, and fortified beverage markets.
Innovative Food Processors Inc.
Powder Product Innovation | Particle Engineering

Description
Innovative Food Processors Inc. (IFP) takes pride in 30-plus years of collaboration and partnership with leading global food, dietary supplement, sports nutrition, and medical food companies. We offer customized particle-engineering support and turnkey powder product manufacturing services. We are experts in every stage of the powder product development process.

Our two high-capacity manufacturing sites are equipped with advanced fluid-bed batch-processing technologies. Contract manufacturing services include leading-edge agglomeration and microencapsulation capacities. We offer versatile retail packaging solutions, including the popular stick pouch technology. We also offer functional ingredients under the PrimeCAP® and Insta® brands.

- NSF Registered cGMP for Dietary Supplements and SQF Level III
- QAI Organic Certified

Services
Custom formulation and manufacturing of functional beverages, sports/nutrition supplements, and medical foods containing high-value ingredients such as fibers and prebiotics, antioxidants, probiotics, natural high-intensity sweeteners, proteins, vitamins and minerals, and amino acids.

Product Development
Formulation | Application Support | Finished-Product Concepts
Process Development | Qualification & Validation
Bench Top | Process R&D

Contract Manufacturing
Particle Engineering | Agglomeration | Encapsulation
Controlled Release | Dosing | Flow Control | Ingredient Isolation | Instantizing

Versatile Packaging Solutions
Canisters | Jugs | Stick Packets | Sachets

PrimeCAP® Encapsulated Ingredients
- Off-the-shelf ingredients for food and nutrition applications
- Caffeine – For energy bars and confections
- Vitamin and Minerals – Masked and stabilized

Instantized Ingredients
- Insta® Rice, corn, and potato (as carrier for sweeteners and probiotics)

Clients Served
- Functional Beverages
- Fortified Foods
- Food Ingredients
- Medical Foods / Meal Supplements
- Sports Nutrition
We Define, Develop and Deliver

HIGH PERFORMANCE POWDERS

with precise composition, tailored sensory characteristics and optimized functionality.

Turnkey Services
Product Development | Manufacturing & Packaging | Quality Management

Agglomeration | Encapsulation
Particle Engineering | Particle Coating | Granulation | Dosing

Specialty Ingredients
PrimeCAP® Encapsulated Ingredients | Insta*Thick® Gums & Starches

NSF Registered for Dietary Supplements and SQF Level III Certified.

ifp
innovative food processors
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www.ifpinc.biz • 800.997.4437
INGREDIENT SUPPLIER

ANNUAL SUPPLIER PROFILE

Ingredia Dairy Experts
The essence of milk

Description
Ingredia Dairy Experts is a European dairy industrial group founded in 1991. It develops and produces milk powders, milk proteins, functional systems, and innovative bioactives for the food and health & nutrition industries throughout the world.

Ingredia Inc., the American subsidiary of the group, is in charge of promoting and distributing the company’s products and solutions in the US, Canada, and Latin America. Ingredia Inc. also offers contract manufacturing capabilities thanks to its blending facility located in Ohio.

Upon request, Ingredia’s expert research and development team can provide technical assistance and help develop targeted functional solutions to meet customers’ specific needs.

Product Ranges
Thanks to soft and non-denaturing technologies, Ingredia can provide customer with native and non-denatured ingredients, presenting a structure close to the one naturally present in milk. Based on this, Ingredia offers a wide range of solutions to create innovative, healthy and value-added end-products in a variety of applications (from cultured dairy to sports nutrition and everything in between).

In this regard, the group’s activities were split into three Business Units

- Liquid milk and dairy powders from our farms by Ingredia Essential
- All-native functional and nutritional proteins by Ingredia Functional
- Unique natural bioactive ingredients for the Health & Nutrition industries by Ingredia Nutritional

New! Supply of U.S.-origin dairy ingredients thanks to a partnership with Cayuga Milk Ingredients
Ingredia Dairy Experts products come from several manufacturing sites worldwide, and 2014 marks the year when they will be able to offer U.S.-origin products.

As the exclusive distributor and agent on the dry ingredients offerings from Cayuga Milk Ingredients, a farmer-owned dairy company located in the Finger Lakes region of New York State, Ingredia will strengthen its position both locally and globally by increasing the volumes of dairy powders and milk proteins (MPC – MPI) available. Thanks to its technological expertise, Ingredia was also able to help CMI design a cutting-edge processing facility for the production of superior quality, nutritious milk ingredients. This new supply of locally produced specialized dairy ingredients is expected to open new opportunities for Ingredia and notably on the domestic market, where the need for specificities such as the Grade A certification for cultured dairy applications may have hindered business until now.

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Fax: 419/738-4426
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E-mail: ingredia-america@ingredia.com

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E-mail: ingredia@ingredia.com

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Hervé Gasnier
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Thomas Lacronique
Business Unit Director,
Ingredia Nutritional

New! Supply of U.S.-origin dairy ingredients thanks to a partnership with Cayuga Milk Ingredients

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Your partner in the United States

- A local blending facility
- A dedicated Ohio-based team
- A new local supply through our partner, Cayuga Milk Ingredients

21 milks producers members of Cayuga Marketing Inc
36,000+ cows (rBST-free available)
1 drying tower

Milk protein concentrates & isolates
Non-fat dry milk & Skim milk powder
Whole milk powder, Powder blends
Liquid cream, Etc.

Milk powders and dairy ingredients from our farms

- ESSENTIAL

Native milk proteins & functional systems for the Food and Nutrition Industry

- FUNCTIONAL

Unique natural bioactive ingredients for Health&Nutrition Industries

- NUTRITIONAL

www.ingredia.com
Javaplant

Description
Javaplant was established in 2000. Javaplant specializes in Indonesian botanical extractions and is the first to introduce vacuum-dried extracts. Javaplant is GMP-certified, ISO-certified, kosher-certified, and U.S. FDA-registered. Javaplant has two production lines and overall output is 115 metric tons of extract per month. Javaplant has been supplying worldwide customers in pharmaceuticals, nutraceuticals, cosmeceuticals, foods, and beverages. Javaplant’s major products are curcumin, grape seed, green coffee, tongkat ali, black tea, and green tea. Javaplant offers a wide range of extract types: dried powder, liquid, concentrate, and paste. Javaplant also offers different kinds of extract classifications: standardized, basic ratio, customized, powdered blend, custom premix, and tailor-made.

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Marketing Manager
INTRODUCING
XANTHORRHIZOL 30™
A new addition to JAVAPLANT HIGH-PROFILE EXTRACTS.

A 30% Xanthorrhizol Extracted
From Curcuma Xanthorriza.

100% Made in Indonesia
By JAVAPLANT.

XANTHORRHIZOL 30™ IS MANUFACTURED
WITH QUADRA PERCOLATION SYSTEM.
- A Unique Technology For Concentrated Purity.
  It is available in Vacuum Dried Powders and
  Purified Essential Oils.

Applications
- Skin care  ·  Oral care  ·  Health supplements

You Might Also Like These
- Curcumenes  ·  Turmerones  ·  Gingerol  ·  Zederone

Javaplant is a manufacturer and supplier of Indonesian origin botanical
extracts for Pharmaceuticals, Nutraceuticals, and Cosmeceuticals.

javaplant.co.id  javaplant@me.com
For almost 30 years, Jost Chemical Co. has manufactured high purity mineral salts for the nutritional, clinical nutritional and pharmaceutical markets. Jost’s 300,000 square foot manufacturing site in St. Louis is FDA registered and operates under bulk pharmaceutical cGMP. Jost is a trusted, global supplier of products that meet or exceed USP/NF/EP/FCC standards, are fully reacted, lot-to-lot consistent, and have very low levels of vagrant metals including Pb, Hg, Cd, As, etc. Jost also manufactures a family of Ultra-Pure calcium salts with very low levels of aluminum.

Our wide selection of 250+ products includes ascorbates, citrates, fumarates, gluconates, lactates, malates, nitrates, phosphates and sulfates. Products manufactured by Jost are Kosher and Halal certified, allergen free, and GMO free.

Jost is now manufacturing microencapsulated high purity mineral salts including copper gluconate 20%, ferrous fumarate 60%, ferrous sulfate dried 60%, magnesium oxide 40%, manganese sulfate 50%, and zinc oxide 50%.

Jost manufactures products with particle sizes ranging from free-flowing granular to ultrafine (< than 6 microns) powders for improved suspension of insoluble minerals.

Products are typically packaged in fiber drums, bags, cartons and super sacks. Custom packaging is also available. Jost routinely ships orders from one drum to a truckload.

Custom Products

Jost is committed to working with our customers to provide value added solutions and personalized service. Our experienced and dedicated technical staff responds quickly and thoroughly to customer requests for technical information, customer requested testing, etc. All products are completely tested in-house.

Key Products:
- Calcium Citrate – USP/FCC
- Calcium Magnesium Citrate
- Calcium Phosphate Tribasic NF/EP/FCC
- Copper Gluconate - USP
- Cupric Oxide Purified
- Ferrous Fumarate – USP/EP/FCC
- Magnesium Citrate Tribasic – USP
- Magnesium Lactate – EP
- Magnesium Phosphate Dibasic USP/FCC
- Manganese Citrate – USP/FCC
- Zinc Ascorbate Purified
- Zinc Citrate USP Low Lead
- Zinc Gluconate- USP
- Zinc Oxide USP Low Lead
Jost Chemical Co. is highly rated as the go-to source for high purity mineral salts for nutritional, clinical nutrition, pharmaceutical and other specialty applications. Our FDA registered site manufactures 250+ products under cGMP that routinely meet very low levels on Pb, As, Hg, and Cd. Jost also developed technology to produce ultra-pure calcium salts with Al levels of 5 ppm or less. Our products meet USP/EP/JP/FCC requirements and are Kosher and Halal certified. Contact Jost for assistance in meeting custom purity requirements.
Jiaherb Inc.

About Us
Jiaherb Inc. is the largest herbal extract manufacturer from China offering more than 300 ingredients. Since arriving in the U.S. in 2008, the company has expanded its sales and support staff to ensure unparalleled customer satisfaction and increased options for product development. We collaborate with our customers to ensure our superior raw materials are backed by complete regulatory documentation and uncompromised service and support.

Our Manufacturing Facilities
Jiaherb’s 350,000 sq. ft. NSF-GMP-certified state-of-the-art manufacturing facilities are located in Xi’an, China. With over 500 employees and an extraction capacity of more than 600 botanicals per year, Jiaherb has also earned many quality, food, and environmental management certifications. Jiaherb’s streamlined manufacturing process and vast inventory allow us to fulfill client orders worldwide very efficiently. With distribution facilities in New Jersey and California, we ensure fast turnarounds for the North American market.

R&D/ Quality Control
Our dynamic R & D team is dedicated to providing clients with the highest quality ingredients and customized solutions. Jiaherb’s scientists and production team use state-of-the-art equipment to streamline the manufacturing process and carry out precise testing to conform to our stringent standards and certificates of analysis. Jiaherb has earned an industry-wide reputation for maintaining the highest level of quality control throughout all stages of production.
Lonza is a leading manufacturer of Carnipure™ L-carnitine, a conditionally essential ingredient that enables the generation of energy from fat. Carnipure™ tartrate and Carnipure™ crystalline are self-affirmed GRAS for use in certain conventional foods as a dietary source of L-carnitine. Both are bright white, pH- and heat stable, highly water soluble and form colorless solutions. They can be used in dietary supplements in the form of tablets, capsules and powders as well as in beverages, bars, dairy and other food products.

DHAid™, a concentrated and purely vegetarian source of omega-3 docosahexaenoic acid (DHA). It is produced from a proprietary strain of microalgae through a controlled fermentation process. DHAid™ is an environmentally friendly source of DHA as it is manufactured using renewable resources. DHAid™ is available in liquid and powder forms, non-allergenic, free of potential contaminants, uses no chemical solvents for production and is GRAS affirmed.

ResistAid™ is a proprietary natural immune support ingredient made from larch trees that grow in abundance in the United States. ResistAid™ consists of the soluble polysaccharide arabinogalactan and bioactive polyphenolic flavonoids, and thus has antioxidant capacity. ResistAid™ is formulated to deliver triple-action immune benefits year round. ResistAid™ is highly soluble, dissolving completely in hot or cold water. It is stable at a wide range of temperatures and pH. In beverages, it keeps its functionality and neither degrades nor hydrolyzes. ResistAid™ is certified Kosher and self-affirmed GRAS.

For over 40 years, Lonza has been a leading supplier of the Vitamin B₃ ingredients, Niacin and Niacinamide. Both are essential vitamins that must be taken through diet or supplementation. They are used in dietary supplements, food, personal care, pharma and animal nutritional markets.

Memree™ brand covers a line of products that includes high-quality, soy-based phosphatidylserine (PS). MemreePS™ can be used for cognitive health applications. MemreePlus™ is a proprietary blend of PS and phosphatidic acid (PA). Phosphatidic acid is a precursor for many important phospholipids. MemreePlus™ has been shown to reduce cortisol levels; cortisol is a hormone that is associated with stress, as well as impeded recovery after exercise. Memree™ products are Kosher and GRAS affirmed.
Metabolic Technologies Inc.
Dedicated to Research. Committed to Your Health.

Description
MTI is a research-driven company that is dedicated to the development of credible, safe, and effective nutritional products. The company was founded in 1990 by university professors Steven L. Nissen, DVM, PhD, and Naji N. Abumrad, MD. Their research ultimately led to the discovery of HMB and its effects on health and performance. Since the innovation of MTI’s first product, HMB, more studies and development have occurred creating the latest derivative of HMB, BetaTOR (HMB free acid). MTI also provides clinical and laboratory research support. MTI is committed to delivering quality products that are backed by credible, scientific evidence.

Products
HMB is a metabolite of the essential amino acid leucine. This nutritional supplement works by increasing muscle protein in two ways. First, HMB decreases protein breakdown caused by intense training at a molecular level by disrupting proteolysis through the ubiquitin-proteasome proteolytic pathway, the proteolytic enzyme that breaks down muscle protein. HMB also stimulates protein synthesis in the muscle by multiple mechanisms, including the mTOR pathway. Studies have shown that supplementing with HMB during training helps improve strength, endurance, and reduces recovery time.

MTI has brought a new derivative of HMB to the sports nutrition market, BetaTOR. BetaTOR is the pure, free acid form of HMB. Published studies of this new delivery form have shown that BetaTOR has a faster absorption, increased blood levels of HMB and increased clearance to tissues. The results from using BetaTOR attest to what the scientists thought, this new delivery form is superior to the CaHMB form.

For more information, please visit www.hmb.org and www.betator.com.
Athletes are all about strengthening their results. They strive to perform better everyday and know that they need to have the right training, nutrition, and supplements to optimize their results.

Studies have shown that supplementing with HMB during training is proven to increase strength, improve endurance, and aid in a faster recovery. Read about the science behind the product. Check out HMB.org to see why so many elite athletes take HMB.

Then let HMB strengthen your sales and their results. Contact us to see how HMB can improve your sales.

Visit www.HMB.org/no
At National Enzyme Company, our story begins as a pioneer in enzyme research and supplement development nearly a century ago. Now, as the most experienced enzyme supplement manufacturer, our digestive and systemic products are the most trusted and proven in the market. Because of our proven market results and the successes of our customers, we've continued to grow to meet the dietary supplement needs beyond enzymes.

While “enzyme” is our middle name, we also offer comprehensive manufacturing services for probiotic, vitamin, mineral and botanical supplements—if you can imagine it, we can create it. Our innovative product development is based upon independent research and published studies, providing scientifically supported formulations with superb marketability.

Independently certified for cGMP compliance by NSF and TGA, NEC has the expertise to produce a broad range of dietary supplements, and we can help you create robust, profitable products that can impact the nutritional industry in a positive and progressive manner.

We take the utmost pride in fulfilling orders with superior quality standards and attention to detail. Our quality control processes are unparalleled in the industry and provide our customers with peace of mind. In addition, we take extensive measures to be FDA compli-
ant, with our commitment to transparency and defendable claims being widely known and respected. Moreover, we believe in the power of education and support our innovation with science.

NEC offers state-of-the-art manufacturing facilities with blending, encapsulation, tableting, bottling, convenience packaging and labeling capabilities. Our customer-driven technology includes an industry-first website where you can place orders, find real-time status updates on existing orders and access past order records.

Let us work for you and help grow your business with our formulations expertise, regulatory oversight and comprehensive marketing solutions.

- Product Development
- Custom Formulation
- Blending
- Encapsulating
- Tableting
- Bottling
- Labeling
- Convenience Packaging
- Private Label Program
- In-House Graphics
- Fulfillment

Key Personnel
Anthony Collier,
President & CEO

Charlie Amidon,
Chief Operating Officer

Demetrius Bledsoe,
Director of Sales

Melony Fuller,
Director of Marketing & Formulations

...there’s more to our story.

Get your product catalog!
Natoli Engineering Company, Inc.
Delivering Unparalleled Quality

Description
Natoli Engineering Company, Inc., is a world leader with 40 years of experience delivering tablet-compression products and services to pharmaceutical, nutritional, confectionery, industrial, and veterinary industries around the world. Natoli’s commitment to providing the highest-quality products and expert technical services ensures customers get the most from their investment.

Punches and Dies
Natoli manufactures a variety of top-quality tablet-compression tooling, including carbide-tip, multi-tip, micro-tab, rotating heads/tips, IMA Comprima tooling, Kilian type, 3D exotics, die table segments, and more—all available for worldwide delivery. We keep 18 different grades of steel on hand at all times—the largest inventory and selection in the industry—to ensure consistent quality and availability. Natoli also offers a variety of specialty tool coatings and treatments to meet your specific needs.

Tablet Presses and Replacement Parts
Natoli offers a diverse line of tablet presses to meet specific tabletting needs, from full-size industrial machines to benchtop models. Our single-station R&D laboratory presses present new opportunities for formulation development and are offered in manual and automatic options, with data-acquisition capabilities. One of the most economically efficient tablet presses on the market, the NP-500, is a double-sided rotary press designed to compress tablets requiring deep fill and extended dwell time. Visit www.natoli.com for specifications, photos, and videos.

Services and Training
Our technical services experts lead the industry in training and have decades of professional experience to help you with tablet design, steel and coating selection, and troubleshooting. Additionally, the Natoli Scientific and Natoli Metallurgy divisions were founded to solve your most complex compression tooling challenges. Natoli Scientific uses research and testing to find proactive and customized solutions to combat common manufacturing issues, such as wear, sticking, picking, capping, lamination, and tablet press tool binding. Natoli Metallurgy’s on-staff metallurgists are dedicated to providing services that bring the highest return on your tooling investment. These services include material selection, wear testing, and steel failure analysis.

Tablet-Compression Accessories Catalog
We publish the only comprehensive accessories catalog in the industry. It features hundreds of products to help you clean, lubricate, maintain, store, and analyze your equipment to prolong tool life, support your investment, and increase productivity. Printed, digital, and interactive online catalogs are available, at no charge, at www.natoli.com.
Nippi Collagen

TruMarine™ Collagen – Setting the Standard for Marine Collagen Peptides

TruMarine™ collagen is an all-natural, high-quality bioactive extracted from pure marine sources. At Nippi Collagen, we offer highly soluble Type I collagen peptides sourced from sustainable fish using a proprietary extraction and manufacturing process that uses no harsh chemicals or solvents. Type I collagen makes up 80% of our body’s collagen glycoproteins and is present in our skin, connective tissue framework, bones, joints, cornea, and blood vessels. TruMarine™ collagen consists of small peptide molecules characterized by improved bioavailability and digestibility and contains a high concentration of high-nitrogen amino acids—most importantly glycine, proline, and hydroxyproline that have specific nutri-functional properties to support health and beauty.

TruMarine™ fish collagen is a superior alternative to bovine, porcine, and chicken collagen and the low molecular weight of TruMarine™ allows it to be absorbed at a higher level, leading to improved collagen synthesis in joint tissue, bones, and skin dermis.

Products

TruMarine™ collagen peptides are extracted from select scales and skin of fish and are offered in a variety of grades and forms. Our Premium Select™ grade is produced exclusively from sustainable fish providing the highest quality and purest source of collagen available on the market. This non-GMO ingredient is the basis for working with the “best of nature,” while minimizing our environmental impact.

TruMarine™ is virtually tasteless and odorless, allowing it to be easily added as a supplement to food and beverages or for use in cosmeceutical and nutraceutical applications.

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Vice President & General Manager
Lauren Clardy,
VP Marketing & Business Development

NUTRITIONAL OUTLOOK • JULY/AUGUST 2014

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**ANNUAL SUPPLIER PROFILE**

**Natreon**

**BACKGROUND:** Natreon, Inc., a 16 year old company located in New Jersey, is focused on developing and marketing Ayurvedic products backed by extensive research, high degree of standardization, multiple clinical studies, safety studies, and intellectual property.

**PATENTED PRODUCTS:**

- **Capros®** is a superfruit antioxidant (ORAC<sub>FN</sub> of 47,000 μmoles TE/g) and a next generation heart health product. It has anti-hyperlipidemic, anti-inflammatory and blood flow improvement properties. Reduces HbA1c and improves endothelial function. Vegetarian, organic and non-GMO. Water soluble and stable. Backed by 8 clinical studies. FDA GRAS. May be combined with CoQ10 and Omega-3s for added benefits.

- **Sensoril®** is the best-selling Ashwagandha, derived from leaves and roots of *Withania somnifera* with 11 year market history. Contains the highest levels of bioactives. Has anti-stress, anti-hyperlipidemic, cognition enhancing and anti-inflammatory properties. Available as organic and non-GMO. Supported by 7 clinical studies. Ideal for anti-stress, cognition, sports nutrition, adrenal support and heart health products.

- **PrimaVie®** is Purified Shilajit from the Himalayas, containing DBPs, DCP and Fulvic Acid and several trace minerals. Is a mitochondrial energy booster. Increases testosterone levels in oligospermic subjects. Synergistic with CoQ10 and Ubiquinol. Increases ATP levels, level of fitness and metabolic equivalents. Excellent for sports nutrition and male health formulations.

- **Crominax<sup>®</sup> 3+** is a chromium III-Shilajit-polyphenol complex with improved bioavailability of chromium. Designed to offer pharmaceutical grade content uniformity in the finished capsules or tablets. Reduces blood glucose levels, especially post-prandial, and improves endothelial function as well as cardiovascular health. Significantly improves arthritic conditions in dogs. Economical.

- **TruFulvic<sup>®</sup>** contains a minimum of 70% of Fulvic Acid and equivalents, derived from Shilajit and is a mitochondrial energy booster. It contains several amino acids and 40+ minerals, many of them trace minerals. Choice product for sports nutrition and male health formulations.

- **AyuFlex<sup>™</sup>** is a clinically proven, water-soluble, vegetarian, organic, non-GMO product for joint health. Decreases WOMAC & VAS scores and knee swelling index significantly in moderately osteoarthritic subjects. Increases pain threshold and tolerance force in healthy volunteers. Is a super antioxidant with ORAC<sub>FN</sub> value of 36,000 μmoles TE/g. Improves endothelial function and lipid profile and decreases hsCRP and HbA1C. It truly is a next generation joint health product.

---

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Rick Kaiser,
V.P., Sales & Marketing

Aparna Kalidindi, Pharm.D., BCPS,
Manager, Technical Sales & Marketing
The Next Generation Heart Health Ingredient

- Vegetarian, from Edible Fruits
- Organic, Non-GMO, Water-soluble, Stable
- Improves Lipid Profile & Endothelial Function
- Improves Blood Flow
- Antioxidant, ORAC\textsubscript{FN} 47,000 \textmu moles TE/g
- Suitable for Solid Dose, Liquid & Powder Formulations
- Production of NO & Glutathione by >50%
- Inflammation (hsCRP by 50%)
- Prevents Damage to Heart Muscle
- Glycosylated Hemoglobin

Does YOUR Heart Health Product measure up?

*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.
Naturex Inc.

**Description**
Naturex manufactures natural specialty ingredients for the Food & Beverage, Nutrition & Health, and Personal Care industries. Naturex employs over 1600 people and has 17 production units located in Europe, the United States, Brazil, Australia, Morocco, and India. The group also has several 25 sales offices worldwide.

Naturex expertise and technologies maximize the full potential of botanicals. Our Nutrition & Health department develops botanical extracts and natural ingredient concepts backed by scientific studies for pharmaceutical, dietary supplement, and nutraceutical applications.

**NAT activ®**
A line of botanical extracts known for their health benefits, for nutraceutical product manufacturers. Thanks to its broad and diverse sourcing program and using the most sophisticated technologies, Naturex is able to harness the benefits of plants and provide value-added extracts.

**NAT life®**
A line of branded ingredients backed by our own scientific studies, specifically for the dietary supplements and functional food and beverage industries.

- **Flowens™**
  A 100% all-natural cranberry ingredient clinically shown to improve Low Urinary Tract Symptoms (LUTS) associated with Benign Prostate Hyperplasia (BPH). A daily dose of both 250 and 500 mg of Flowens™ improve IPSS and uroflowmetry markers resulting in a better quality of life without unwanted sexual side effects.

- **Svetol®**
  Most studied and proven green coffee bean extract for weight loss and increasing lean body mass. The latest published *in vitro* study shows that Svetol® increases the lipolytic activity by 124% vs. control in fat cells and supports its use in fat-burning formulations.

- **Pacran®**
  Made from the full spectrum of cranberry, Pacran® is a patented ingredient. Pacran® is the most extensively studied and scientifically proven cranberry product for urinary tract health.

- **Cereboost®**
  An innovative ingredient for brain health. The clinical study was performed with Cereboost® proves its efficacy with regard to cognitive performance.

- **Powergrape™**
  A natural grape extract for better performance and recovery.

- **Lifenol®**
  A patented female hop cone extract studied for its action on menopause-associated discomforts, especially hot flashes.

- **Cyracos®**
  A traditional and efficient lemon balm extract that helps to relieve stress and regain serenity and wellbeing.

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COO Americas – Asia/Pacific
David Yvergniaux,
Sales Director, Nutrition and Health

**Founded**
1992
Flowens™, a proprietary blend of full spectrum cranberry purposely built and clinically shown to naturally improve men’s urinary health

A daily dose of 500 mg of Flowens™ for 6 months:

- Significantly improves IPSS (International Prostate Symptom Score) by 44% vs. baseline
- Leads to a statistically significant improvement in all uroflowmetry measurements
- Improved quality of life without unwanted sexual side effects.
Nebraska Cultures
Probiotics of Choice

Description
Nebraska Cultures is proud to celebrate its 34th year as a leader in the probiotic industry. We are the exclusive supplier of the newly unveiled ProDURA™ Bacillus coagulans strain, the DDS-1 strain of L. acidophilus (The Proven Probiotic®), as well as a complete line of custom-manufactured and stabilized cultures.

Khem Shahani, PhD, founder of Nebraska Cultures, isolated the DDS-1 strain of L. acidophilus in 1959 at the University of Nebraska. For the next four decades, Dr. Shahani conducted pioneering research in the fields of lactic acid bacteria and enzymes, establishing himself as the world’s leading authority on L. acidophilus. He went on to publish more than 200 scientific papers in peer-reviewed journals, consult for international agencies, and collect top industry awards for his achievements.

Products and Services
- The DDS-1 strain of Lactobacillus acidophilus – as produced by Dr. Shahani, backed by over 40 years of scientific research
- ProDURA™ B. coagulans
- Dr. Shahani’s® Legacy Blends: Pro-Traveler™, Kid-Kare™, and Digestion-Plus™, all research-based.
- A complete line of custom-manufactured probiotic strains
- Custom blending & formulation
- New product design & consulting

Recent Developments
ProDURA™, the new strain of Bacillus coagulans, is now GRAS-affirmed! ProDURA™ is available exclusively from Nebraska Cultures and is still demonstrating superior resilience to harsh manufacturing conditions in the class of spore-forming probiotics. The newest information on our ongoing thermal-resistance tests is available on the Nebraska Cultures website.

A clinical trial with the DDS-1 strain of Lactobacillus acidophilus, as produced by Nebraska Cultures, in the area of Lactose Intolerance is nearing completion and publication. Full results will be available soon. The viability and persistence of DDS-1 throughout the digestive tract was recently confirmed by a human clinical trial conducted under the guidance of noted probiotic researcher Dr. Robert Hutkins. More research, some with prebiotics, is in development.

The “Khem M. Shahani Professorship in Food Science and Technology” at the University of Nebraska continues to promote the advancement of science and public awareness in the field of probiotics.
Indestructible Strength

ProDURA™ Bacillus coagulans is a unique spore forming bacteria, available only from Nebraska Cultures, Inc., continuing Dr. Shahani’s legacy of producing the most effective, stable and potent probiotic strains available. ProDURA™ is a remarkably resilient strain of probiotic bacteria; strong enough to withstand processing and even stomach acid, yet bioavailable for the work it is meant to do.

A probiotic able to withstand the harshest environments

- No loss in potency at room temperature for 3 years
- Survives at temperatures up to 110°C – great for use in processed food, softgel, and gummy applications
- Highly resistant to stomach acid and bile
- Proven effective in multiple scientific studies
- Superior heat resistance as compared to other commercial strains
- Well-suited to extrusion processing as used in pet foods & treats

[877] 377-4242
www.NebraskaCultures.com
Nexira

Description
Founded in 1895, Nexira is a global leader in natural ingredients and active botanical extracts for food, nutrition, and dietary supplements.

Nexira built its reputation as the world leader in acacia gum and now manufactures a wide range of natural ingredients with recognized health benefits. We operate on 5 continents, with 10 subsidiaries, 8 manufacturing plants, and an extensive network of partners in more than 80 countries.

Nexira’s portfolio of products includes highly functional and nutritional ingredients, antioxidants, and active botanicals for weight management, anti-stress, sports nutrition, digestive health, and cardiovascular health.

With its new state-of-the-art botanical extraction facility in Europe, Nexira has expanded its production capacities and enriched its portfolio with high-quality botanical extracts (acerola, guarana, green tea, green coffee, passion flower, etc.) and the flagship brand Exocyan™, a cranberry extract standardized in polyphenols and proanthocyanidins (PACs).

Products
The company also offers premium ingredients with recognized health benefits:

- **Cacti-Nea™** – A cactus fruit extract with weight-management properties
- **NeOpuntia™** – A patented, healthy, lipophilic fiber from cactus leaves
- **ViNitrox™** – A nitric oxide booster and healthy performance enhancer
- **ID-alG™** – A seaweed extract clinically tested for weight management
- **Exocyan™** – A cranberry extract standardized in proanthocyanidins (PACs)
- **Fibregum™** – A clean-label, soluble dietary fiber with proven prebiotic benefits

Composed of three divisions—Food, Health, and Technology—Nexira offers global expertise, from raw material sourcing and proprietary processing technologies to formulation support.

With 119 years of experience, this family-owned company continues to reinvent its business and drive it to new heights of performance with innovative products, customer partnerships, and global supply assurance.
The most attractive isn’t always the most extractive.

“Beauty’s only skin deep.” What’s true for people is even more so for natural raw materials like acerola berries. That’s why we not only search around the world for the best varieties, we thoroughly test what we find for the highest levels of vitamins and other nutrients. And we keep these levels high throughout the extraction process. Are there easier ways? Probably. But that’s not how you get to be a global leader in naturally sourced ingredients.

To discover how our products can help make yours better, we invite you to visit our website: www.nexira.com. Or call us at (800) 872-1850.

Acerola Berry (Malpighia glabra linne)
Next Pharmaceuticals

Description
Next Pharmaceuticals develops innovative, natural, raw materials for the dietary supplement, food, and beverage industries. The company’s seven patented and proprietary ingredients address many of today’s most prevalent and chronic health issues, and significantly expand the selection of self-care products. These branded ingredients also provide powerful product differentiation for the finest consumer products throughout the United States, Australia, Canada, and Europe. Next Pharmaceuticals has been repeatedly recognized by leading national health and wellness media, as well as leading experts in their respective health fields.

Branded Natural Ingredients
Sytrinol® for Cholesterol
- Supports healthy cholesterol levels
- Provides a powerful blend of polymethoxylated flavones
- Provides tocotrienols from Malaysian red palm oil

Seditol® for Restful Sleep*
- Helps people fall asleep faster and stay asleep longer
- Reduces the fatigue typically associated with poor sleep

Relora® for Stress and Weight Management*
- Alleviates stress, curbs stress-related eating, and promotes weight management
- Quiets the hypothalamic-pituitary-adrenal axis without causing drowsiness
- Demonstrates 18% decrease in cortisol in double-blind, placebo-controlled study

Nexrutine® for Joint Health Related to Over-Exertion and Exercise*
- Inhibits the gene expression of the COX-2 enzyme
- Does not promote negative side effects associated with COX-2 inhibition
- Helps avoid and relieve the general aches and pains associated with physical activity and over-exertion

Citrofen® for Joint Health
- Promotes joint health and weight management
- Decreases joint discomfort and increases joint mobility

Citri-Z® for Heart Health
- Inhibits Tumor Necrosis Factor-α, a major pro-inflammatory cytokine
- Exclusively provides polymethoxylated flavones (PMF) and other bioflavonoids

Chromulin® for Improved Metabolism*
- Assists in carbohydrate, lipid, and protein metabolism, thereby aiding in weight management
- May improve insulin sensitivity

*Kosher Certified by KOF-K
Love your

Sytrinol soft gels are manufactured exclusively by:

www.sytrinol.com  |  831-621-8712
Nosco

**Company Description**
Nosco is a full-service packaging solutions provider serving more than 350 customers in the Healthcare Industry since 1932. Let our team of Packaging Engineers help you comply with industry regulations and enhance your brand image by helping you design and develop product concepts that pop on retail shelves. Ultimately, it’s our duty to provide customers with packaging that improves the Marketing, Reputation and Shelf Appeal of their products.

**Major Markets**
- Pharmaceutical
- Natural Health
- Personal Care

**Major Products**
- Labels
- Folding Cartons
- Pre-printed Lidding
- Blister Cards
- Multi-Panel Labels

**Specialized Services**
- Graphic Design
- Package Engineering
- Technical Support
- On_Demand Solutions™
- Brand Protection
- Item Level Serialization

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**Corporate Headquarters**
Nosco
651 S. ML King Jr Ave
Waukegan, IL 60085

Tel: (847) 504-6409
Web Site: www.NoscoNaturalHealth.com
E-mail: banderson@nosco.com

**Locations of Other Offices and Facilities**
2199 Delany Road, Gurnee, IL 60031

1100 Venture Court, Ste.100,
Carrollton, TX 75006

1504 Grundy’s Lane, Bristol, PA 19007

**Key Personnel**
Russell Haraf,
President

Craig Curran,
VP - Sales & Marketing

Kregg Albrecht,
VP - Solutions Engineering

Scott Booth,
Regional Packaging Leader

Brent Anderson,
Packaging Advisor

Bill Nimmer,
Prepress/ArtFlo Manager
PERFORMANCE ENHANCING PACKAGING

Printed packaging solutions from design to completion for labels, cartons & lidding to help Natural Health brands stand out.

1:1 Custom Solutions
- Graphic design services
- Package engineering
- Material application testing
- Specification development
- On_Demand Solutions™

Product Lines
- Labels
- Folding cartons
- Pre-printed lidding
- Blister cards
- Multi-panel labels

Nutratheine
Packaging Supplement
100 Tablets

Nosco®
complete packaging | individual solutions™
ANNUAL SUPPLIER PROFILE

Healthco

Description
Since 1991, Healthco®, a division of NOW® Foods, has been providing health product retailers and manufacturers with superior bulk and raw materials, private label services, dietary supplements, and natural sweeteners. We offer an extensive selection of value-driven, science-based products and with reliable customer service.

Healthco believes that quality products begin with the best raw ingredients. From our GMP-certified facility, we manufacture and test all raw materials and finished products to ensure identity, purity, and potency. Many products utilize patented, trademarked, and branded ingredients. Direct importing, state-of-the-art manufacturing technology, extensive quality control, and long-standing vendor relations allow Healthco to offer a wide range of nutritional products at competitive prices.

Whether you’re looking for bulk powders or finished, shelf-ready formulas, Healthco offers one of the industry’s most extensive inventories. Our highly-skilled QC/QA department holds all raw material providers to meticulous quality, safety, and purity standards, and all raw materials are thoroughly inspected upon arrival. Raw materials have to pass tests for microbial contamination in our on-site testing facility. This is one of the ways we ensure that customers are provided with products that are safe, highly stable, and fresh through the best-by date.

Healthco’s private label program makes it easy to tailor one’s own line of premium natural health products, and can be completely personalized to fit a company’s image. We offer hundreds of popular products to choose from with low minimums. Creating one’s own line of products is easy to start. From choosing the best products and formulas, to developing a label that jumps off the shelf, Healthco’s team will guide customers through each step of the private label process.

Healthco offers a unique stevia extract, available in bulk or private label formats. Known as Stevia FSE™ or BetterStevia™, this raw material undergoes a natural de-bittering process, which yields a smoother and cleaner taste profile than any other stevia currently on the market. It is also one of the very few certified organic and GRAS (Generally Regarded As Safe) stevia extracts available for use in vitamin supplements, foods, and beverages.

Corporate Headquarters
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Fax: 630/545-9080
Web Site: www.healthco-intl.com
E-mail: info@healthco-intl.com

Key Personnel
Regina Flight
Private Label Supervisor
Donna DeSantis,
Sales Executive
Dan Richard,
National Sales Manager
Go Ahead - Indulge!
(We Use Zero-Calorie Stevia FSE™)

Stevia FSE™
natural sweetener
Unique Enzyme-Treated Organic Stevia Extract

Developed by: Healthco™
Exclusively distributed by: STAUBER
Offering bulk ingredients, supplements, personal care and private labeling services.
800.477.3949 www.healthco-intl.com

www.StauberUSA.com
Contact, Shari Eisenman
Seiswein@stauberusa.com
614-441-4233

Unique Enzyme-Treated Stevia for reduced bitterness. Works as a stand-alone sweetener or in combination.

USDA Organic / GRAS / NON-GMO Verified / Kosher
60-100 Times Sweeter Than Sugar
Full Spectrum Herb / Zero Calories
NuLiv Science USA Inc.

Description
NuLiv Science specializes in the research and development of proprietary and clinically proven nutraceutical and cosmeceutical ingredients through a unique platform of traditional and modern scientific processes. Since 1997, we have been serving our customers’ sourcing and research needs with an emphasis on quality and efficacy. By combining the history of traditional Chinese medicine and the thorough analysis of modern science, we are able to deliver unique, validated compounds targeted toward everything from absorption enhancement to sports performance. Our clientele base, from large MLMs to natural health practitioners, are as diverse as our botanical ingredient offerings. Whether you're just starting out in the industry or are looking to expand into a new vertical, we can assist you along the way. Our research team and network of scientific advisors can help with formulations, efficacy, and standardization analysis and production of high-potency extracts. Our branded ingredient line includes AstraGin, ActiGin, OsteoSine, InnoSlim, ImmuProp, and our Prime mushroom line.

AstraGin — A U.S.-patented ingredient for enhanced nutrient absorption, AstraGin has shown in multiple studies to help aid the uptake of amino acids such as arginine and tryptophan as well other as other vitamins and minerals. Utilized by some of the biggest brands in the sports and body building category, AstraGin can help energize your product lineup. Self-affirmed GRAS, kosher certified.

ActiGin — A proprietary, high-sports performance nutraceutical that is the culmination of seven years of research. Multiple studies, including a randomized human clinical trial, have shown ActiGin can increase glycogen storage and delivery to muscle tissue as well as reduce muscle damage in rats and humans during and after high-intensity physical activities.

Verbasnol — A proprietary verbascoside ingredient isolated from the Rehmannia plant, shown in multiple studies to aid with acne and male-pattern balding through inhibition of 5-alpha reductase.

PRIME mushroom line — We have been marketing and supplying high-quality mushroom extracts since 1997. We test each production batch for heavy metals, pesticides, and standardization levels to ensure it meets your specs. Those who want maximum efficacy and quality in their mushroom formulas choose NuLiv.
Nutraceuticals International Group

Slimpro® – Weight Management (appetite control, satiety, curb sweet hunger). Slimpro® (patent pending) is a fish peptide enriched with BCAAs. It works naturally with the human physiology by increasing the hormones CCK and GLP-1, which further sends messages to the brain to control hunger. www.slimpro.eu

Saffr’Activ® – Stress & Mood (depression and mood enhancement), Brain & Nerves (cognitive function). It is an all-natural extract derived from the red stigmas of Crocus sativus (saffron flower). Saffr’Activ offers anti-stress benefits and has been documented as a unique solution to fight against light depression and mood. www.saffractiv.com

α-LACYS RESET® – Weight Management (fat burning), Sports Nutrition (recovery, strength training), Antioxidant, Women’s Health (antiaging, menopause). It is a patented, synergistic combination of ALA and cysteine that modulates cell redox balance (reduction and oxidation) by controlling and neutralizing more radicals related to intense training, aging, and general disorders.

SynBalance® – Allergy Reduction, Antioxidant, Antimicrobial, Body Defense, Heart Health, Digestive Health (intestinal disorders, intestinal microflora). A range of selected probiotic bacteria guaranteed to be allergen free. It is obtained in very high concentration and with very good manufacturing yields using pharmaceutical technologies and is characterized by very good stability.

ExceptionHYAL® – Oral Health, Anti-Inflammatory (joints, skin) Joint Health, Antiaging, Skin Moisturization, Gastrointestinal Protection. This pure sodium hyaluronate is suggested for regeneration of synovial fluids, healing promotion, and antiaging.

SelectSIEVE® Apple PCQ – Weight Management, Drainage, Menopause, Glucose Absorption, Glycemic Index Control. The ingredient is derived from 100% apple juice through an eco-sustainable process and comprises three primary functional polyphenols: phloridzin, chlorogenic acid, and quercetin.

SelectSIEVE® Bergamot – Antioxidant, Heart Disease, Cholesterol Management, Hypoglycemic. This ingredient is derived from 100% bergamot juice whose natural hypolipidemic, hypocholesterolemic, and hypoglycemic effects are well known. It is standardized with polyphenols that have been recognized to be responsible for “statin-like” action, without the typical side effects of statins.

SelectSIEVE® Olive – Antioxidant, Anti-Inflammatory, Antimicrobial, Heart Health. It is an extract containing highly concentrated flavonoids from the olive, universally recognized to help maintain heart health, to reduce atherosclerosis, to improve the LDL:HDL ratio, and to activate endogenous antioxidant enzymes.


NaturSyn® PowerUP - optimize performance, improve male infertility, reduce the prostatic & UTI risk

NaturSyn® Beaulixir - Especially designed to help recover hair and skin health affected by impaired and unbalanced physiology.

Nutraceuticals International Group® now represents Omni Flavors! At Omni Flavors, they take their flavors seriously. They believe that isolating and reforming flavor molecules is both science and art. Their flavor know-how has enabled the company to innovate ahead of its competitors and craft the most inimitable Flavors in the Flavor Industry.

Natural & Artificial Flavors - 100% water soluble – FCC Approved – Custom blends

Contact us for your flavor needs.
Nutraceutix contract manufactures superior probiotics and premium-controlled delivery nutraceuticals for quality-conscious brands. For products that are “Better for the Brand, Better for the Retailer, Better for the Consumer,” Nutraceutix leverages an unmatched collection of process and technology patents and patents-pending collected during 25 years of experience in the nutraceutical industry. As a prime manufacturer of probiotic products, Nutraceutix controls the production process of over 20 beneficial, naturally occurring organisms. Nutraceutix is recognized for its patented LiveBac® processing for extended product shelf life, and its patented BIO-tract®, BIO-tract II® and Viablend® delivery technologies that ensure the effective delivery of probiotics and other sensitive payloads past stomach acids to optimal sites in the intestinal tract.

Nutraceutix also manufactures effective, controlled-delivery (once-daily, extended-release) forms of custom nutritional supplements.

Products
Nutraceutix-made products are selling in thousands of leading retail outlets for some of the world’s most-recognized brands today. Products are available in bulk powder; tablets; capsules; and fully finished, labeled bottles.
Nutraveris

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Web Site: www.nutraveris.com
E-mail: contact@nutraveris.com

Key Personnel
Cédric Bourges
CEO

- Find the right strategy to authorize your innovations.
- Develop your clinical studies in order to prove the efficacy of your products.
- Prepare and submit your health claim + NOVEL FOOD applications files.

NUTRAVERIS is the leading European consulting company regarding Scientific & Legislative affairs in Nutrition and Health. Our mission is to support successful business strategies in Europe with scientific and regulatory services. We support innovation, formulation and scientific substantiation for our customers as well as we validate the Legislative status of your products and make them authorized in all Europe.

With a strong team of scientific and regulatory experts and a unique and real-time database, Nutraveris helps you to:
- Review the scientific state of the art (efficacy-safety)
- Formulate the best product in order to differentiate you from others.
- Analyze the regulatory compliance of your composition and communication.

Get your products authorized in Europe!

- Regulatory Expertise and approval: Formula & Communication
- Scientific substantiation: Efficacy & Safety
- Prepare & submit your regulatory files: Health claim & Food Safety
- Scientific and regulatory intelligence in the Nutraveris On-line database.

Contact our experts now: +33 (0)2 96 76 54 87
contact@nutraveris.com
Nutralliance Inc.

Nutralliance is a supplier of premium ingredients to the food, nutritional, pet and pharmaceutical industries. Our company prides itself on the ability to cater to our customers’ specific needs while maintaining our focus on integrity, honesty, and commitment to high-quality product standards delivered at a competitive price and in a timely manner.

Incorporated in 2002, Nutralliance is owned and operated by Brian Salerno, a veteran of the nutritional industry since 1989. The addition of another industry veteran Michael Sodaro in 2011 further strengthens our position in the industry, with his extensive knowledge of the natural vitamin E and natural beta carotene markets. It is through their vision and dedication that we have established what has proven to be a valuable asset for supplement manufacturers.

We are pleased to announce the recent launch of our SunE900™ and Sunvitol™ lines of natural vitamin E from sunflowers as well as our BetaCarogen™ natural beta carotene. Feel Free to contact us for pricing, documents, and samples. We look forward to your inquiries!

We are pleased to promote our line of Sunvitol(TM) non-GMO vitamin E and mixed tocopherol powders as well as our new line of natural mixed carotenoid blends. Feel free to contact us for pricing, documents, and samples. We look forward to your inquiries.

Proudly Representing

Advanced Organic Materials (AOM) is an Argentine company dedicated to transforming regional crops into valuable ingredients. Their products are used around the globe in food, feed, cosmetic, pharmaceutical and biofuel industries.

- SunE900™ Natural Non-GMO Vitamin E from Sunflowers
- Tocomix 50/Tocomix 70 Natural Mixed Tocopherol Oil
- Tocomix 70P Natural Non-GMO Mixed Tocopherol Oil

Bio-gen Extracts Pvt. Ltd., India, established in the year 2000, is a GMP Certified fine chemicals company that specializes in the process development and manufacture of Active Pharmaceutical Ingredients, Therapeutic Enzymes, Specialty Polymers & Nutraceutical Raw Materials.

- Natural Beta Carotene
- Lycopene
- Lutein
- Zeaxanthin
- Mixed Carotenoid Blend

With a unique vision of conducting business, Gelnex has become one of the largest global manufacturers of gelatin. Throughout its history, the company has positioned itself as a leader in its segment through product quality, consistency and performance.

- Pork Skin Gelatin 8 & 40 Mesh
- Beek Skin Gelatin 8 & 40 Mesh
- Hydrolyzed Collagen
Non-GMO & Soy Free
All Natural Vitamin E from Sunflowers

SunE900™

• Non-GMO Verified
• d-alpha tocopherol
• Kosher Certified
• Soy Free
• Oil and Powder form
• Halal Certified

Also offering a complete line of vitamin E and mixed tocopherol oils and powders as well as many other premium ingredients. We look forward to your inquiries.
Nutrition 21, LLC

Description
Nutrition 21, LLC develops and markets nutritional ingredients with health benefits that have been substantiated by extensive clinical research to the food, beverage and dietary supplement industries. The company’s newest ingredient, Nitrosigine®, is a patented complex of bonded arginine silicate and has been FDA accepted as a New Dietary Ingredient. Nitrosigine® has been scientifically engineered to provide the benefits of arginine and silicon, with additional benefits from the unique combination. The results of a clinical study presented at the renowned Experimental Biology 2014 annual meeting support the use of Nitrosigine® as a bioavailable source of arginine and silicon. The clinical study validates preclinical findings and confirms Nitrosigine® as an effective ingredient in products for sports nutrition, men’s health and cardiovascular health. Manufactured in the U.S., Nitrosigine® is a safe, non-stimulant ingredient that’s easy to formulate into new and existing sports nutrition products.

Not all chromium is the same. Nutrition 21’s Chromax® chromium picolinate is supported with over 50 human clinical studies, GRAS doses up to 2000 mcg per day and 35 non-rejected DSHEA claims. Chromax® chromium picolinate is a perfect nutrient to formulate into products positioned to address health and lifestyle issues that are of increasing concern to consumers, such as cognition function, weight management, food cravings, mood and support for healthy glucose metabolism. With more than 20 active and pending patents, Chromax® chromium picolinate, made in the U.S., is a clinically efficacious form of dietary chromium that has been reviewed extensively for safety and efficacy. The body of scientific evidence provides our customers with marketable substantiated claims and numerous health benefits for the consumer.

With many years of biotechnology and pharmaceutical experience, Nutrition 21’s scientific platform and process creates unique, patentable products that are safe and clinically effective. Rigorous preclinical and clinical trials are a key part of Nutrition 21’s product development strategy to ensure product safety and consumer trust. Nutrition 21 currently holds over 100 domestic and international issued and pending patents. Many support unique compositions and uses and claims associated with sports nutrition, men’s health, glucose metabolism, weight management, brain health, and cardiovascular health.

Introducing Nitrosigine®, an FDA accepted new dietary ingredient for use in pre-workout products for sports nutrition. Nitrosigine® is a patented complex of bonded arginine silicate, scientifically engineered to deliver benefits to consumers engaged in fitness training programs. Manufactured in the U.S., Nitrosigine® is a safe, non-stimulant ingredient that’s easy to formulate into new and existing sports nutrition products.

Co-Promotional Opportunities
- Targeted awareness campaign to fitness-focused individuals, generating millions of consumer impressions per month
- Integrated program with major consumer publications (Flex, Muscle & Fitness) communicating the powerful benefits of Nitrosigine® directly with readers
- Dedicated consumer website: www.nitrosigine.com
- Co-promotional opportunities for our key customers, helping drive sales for products formulated with Nitrosigine®
- Ongoing clinical studies for additional claims

The Science Behind Nitrosigine®
- Nitrosigine® has been clinically shown to significantly boost nitric oxide (NO) levels,* a key factor in increasing blood flow to working muscles.
- Nitrosigine® has been engineered to take effect in just 30 minutes with results lasting up to 3 hours** – after a single dose.
- Nitrosigine® pre-clinical data demonstrates superiority over Arginine HCl in blood flow markers, with added benefits of significant silicon absorption.* Blood flow was 4x greater than Control and blood vessel relaxation was almost 5x greater than Arginine HCl.**
- With continued use, nitric oxide levels build over time,* leading to even better blood flow and vessel flexibility.**

Nitrosigine® – The New Standard for Pumped Results™
Organic By Nature Inc. (Long Beach, CA) entered the industry in 1993 and quickly set a new standard of pure, potent, and cutting-edge nutritional products. As the “one-stop-shop” company, we supplement our organic- and cGMP-certified contract manufacturing services with an extensive list of organic raw materials.

**Blending:** Our trained staff has many years of experience and can expertly accommodate the most complex formulas. Strict quality control verifies the identity and consistency of the blended materials.

**Custom Formulation:** With multiple product offerings on the market, consisting of over 50 unique products, Organic By Nature Inc. has the experience and knowledge to take the guesswork out of creating a new product or product line. Our experienced R&D and marketing teams can formulate and develop prototype products for your marketing needs.

**Encapsulation:** We utilize premium two-piece gelatin or vegetarian capsules in multiple sizes to meet various requirements. Meticulous quality-control procedures are in place to guarantee the uniformity and quality of the capsules produced.

**Powder Filling:** Our correct-climate and moisture-controlled facility ensures the freshness of the powder, from bulk packaging into finished products.

**Tablets:** Organic By Nature Inc. can accommodate your custom tablet-manufacturing needs. We are fully equipped with a line of tablet machines capable of producing various-size and -shape tablets.

We understand the time-sensitive nature of contract manufacturing and have gathered a talented pool of professionals to run our advanced equipments and facility. Our trained cGMP-certified and dedicated staff collectively provides experience from all facets of the health industry and product knowledge that is so critical in producing high-quality products. From product conception, formulation, sourcing raw materials, blending, and packaging, we can confidently fulfill your custom manufacturing needs.

With exporting experience in over 60 countries located in all regions of the world, Organic By Nature Inc. can accommodate your international inquiries for whole-food nutrition supplement products and services.

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Web Site:  
www.organicbynatureinc.com  
E-mail:  
gwong@organicbynatureinc.com

**Key Personnel**  
Gerry Wong, General Sales Manager
THE ONE STOP SHOP

for all your Organic, Natural & Whole Food supplement needs

With over 20 years of experience in manufacturing premium quality supplements, Organic By Nature, Inc. understands the need for timely, efficient and accurate work. Our GMP, Organic and Kosher Certified Southern California facility is staffed with skilled and experienced specialists ready to execute your contract manufacturing needs.

GMP Contract Manufacturing & Raw Materials

Southern California Based Custom Manufacturer
- Organic Certified
- GMP Certified
- Kosher Certified
- Over 20 Years Experience

Contract Manufacturing Services
- Powder Filling
- Tablets
- Capsules
- Blending
- Bottling
- Pouching
- Turn Key Products

Call us at (800) 452-6884 or visit us at organicbynatureinc.com to get information & quote on your project today!

Your new COMPETITIVE ADVANTAGE.

Organic By Nature, Inc. has built a reputation on being a superior source for all green food/superfood ingredients. Over the years, we have expanded our raw material offerings to include organic algae products, concentrated vegetable powders, fruit powders, sprouts and several patented, one-of-kind components. Utilizing our experience, relationship with growers/processors and intelligent inventory control, Organic By Nature, Inc. has developed a line of standard organic certified pre-blends. These pre-blends reduce the costs of sourcing, processing and blending of individual raw materials.

We are proud to offer these blends for your next private label project or addition to your current formula, please contact us for more details.
Organic Technologies

Description
Since our founding in 1981, Organic Technologies has been serving the custom manufacturing needs of the nutrition and health supplements industry. Under management of the second and third generations of the Wiley family, we continue to be a privately held, family-owned, and family-operated ingredients supplier serving customers worldwide. Our product lines include plant sterols, sterol esters, natural mixed tocopherols, natural fish oils, and omega-3 essential fatty acid concentrates in both ethyl ester (EE) and reconstituted triglyceride (rTG) forms.

Services
For over 30 years, we have provided manufacturing expertise in fine distillation, separations, and purification for a variety of customers in the nutrition and health markets. Manufacturing capabilities include high-vacuum distillation, hydrogenation, esterification, chromatography, crystallization, deodorization, extractions, and various separations. We maintain a full-service analytical lab with GC-FID, GS-MS, HPLC, and wet analytical capabilities. We offer bulk truck and rail car logistics, as well as over 150,000 sq ft of GMP warehousing on site at our GMP manufacturing facility. Our manufacturing facilities have been certified by NSF International to meet GMP for dietary supplements (21 CFR 111).

Products
We offer a full range of long-chain EPA and DHA omega-3 essential fatty acids from a 100% domestic U.S. supply chain. Our AlaskOmega® line of natural fish oils, highly concentrated ethyl ester, and triglyceride products are caught in Alaska from sustainable fisheries and carefully refined in our modern GMP natural products refinery in Coshocton, Ohio. Products are available in bulk 190-kg drums or 900-kg totes, and are compliant with the GOED monograph.

AlaskOmega® Omega-3 Ethyl Ester Products (EPA/DHA)
- 30% Total Omega-3
- 360/240
- 400/200
- 460/180
- 460/240
- 400/300
- 570/230
- 600/200
- 100/400

AlaskOmega® Omega-3 Triglyceride Products
- Natural Alaskan Fish Oils
- Concentrated Omega-3 Triglyceride (rTG) concentrates

Sterol and Sterol Ester Products
- 95% Plant Sterols (free) in prilled and micronized powder
- 95% Sterol Esters

Natural Mixed Tocopherol Products
- 45% Natural Mixed Tocopherols Powder
- 50% Natural Mixed Tocopherols Oil
- 70% Natural Mixed Tocopherols Oil
- 90% Natural Mixed Tocopherols Oil
Your Source for NATURAL Science-Based Specialty Ingredients

For further information email dean@pnibrands.com or visit pnibrands.com
Pacific Nutritional Inc.

Pacific Nutritional is a recognized leader in custom contract manufacturing of dietary supplements in capsules, tablets, and powders. We offer formulation expertise, laboratory analysis, a variety of packaging services, and inventory management. Certified Kosher, USDA Organic, and NPA GMP.

**Corporate Headquarters**
Pacific Nutritional Inc.
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Vancouver, WA 98682
USA

Toll-Free: 360/253-3197
Fax: 360/253-6543
Web Site: www.pacnut.com
E-mail: sales@pacnut.com

**Key Personnel**
Michael Schaeffer
President
Tina Mori
VP Sales & Marketing

**Product Development**
Formulation Expertise:
- Botanical Extracts
- Multivitamins
- Probiotics
- Fiber Formulas
- Digestive Aids
- Enzymes
- Detox
- Children’s Products
- Women’s Health
- Men’s Health
- Pet Supplements
- Sports Formulas

**In-House Lab for Analytical Testing**
Process Controls to Ensure Product Quality:
- Microbiological Screening
- Dietary ingredient identification by IR spectroscopy
- Botanical ingredient identification by HPTLC
- Mineral and metal analysis by AAS and ICP-MS
- Assay and Potency verification by High Performance Liquid Chromatography (HPLC) and UV-Vis spectroscopy

**Supply Management**
From Raw Materials to Finished Product:
- Inventory Management
- Blanket orders
- Stocking programs
- Client-owned supplies

- Fulfillment Services
- Standard monthly deliveries
- Drop shipments
- Warehousing and distribution


Your Partner: From Start to Finish
Our formulation, laboratory, and manufacturing capabilities enable you to deliver top-quality products to your customers.

**Custom Formulation**
Formulation expertise and product development

**In-House Laboratory**
Lab analysis and testing through all product phases

**Manufacturing**
Capsules, tablets, powders, fully customized packaging

**Supply Management**
Inventory management and fulfillment services

For a full list of services and capabilities, visit our website at: www.pacnut.com
“Enjoy a little more... Absorb a lot less!”

Phase 2 Carb Controller®

We love our carbs! Sometimes, a little too much.

Phase 2®, the original, clinically studied white kidney bean extract, partially blocks the enzyme that digests starch, enabling us to enjoy some of our favorite carbs without the full caloric impact.

Contact us to find out how you can incorporate Phase 2 in a dietary supplement, food or beverage to reach the growing number of consumers pursuing a low-carb lifestyle.
Sales@pharmachemlabs.com; 1-800-526-0609; (201-246-1000 outside the U.S.)

These statements have not been evaluated by the FDA. This product is not intended to diagnose, treat, cure, or prevent any disease.
Pharmachem Laboratories Inc. (Kearny, NJ) is a family of companies specializing in the manufacture and supply of custom and branded nutritional ingredients, as well as process services. The Company, founded in 1978, is a NOP-certified organic handler and processor providing its customers with a variety of ingredients—vitamins, minerals, herbs, and botanicals—to produce the purest, most wholesome dietary supplements and food products.

Pharmachem is a vertically integrated company, focused on adding value to its ingredients at every step in the production process.

Pharmachem provides a variety of ingredients, including vitamins, minerals, herbs, and botanicals. In addition, the company is the developer of the Three Phases of Weight Control™: Phase 1 Hunger Controller™, Phase 2 Carb Controller™, and Phase 3 Sugar Controller™, Prenulin® Natural Glucose Control. Through a division, Proprietary Nutritional Inc., Pharmachem also markets several other proprietary brands: Benexia™ Chia; the Berry-Max® line of fruit concentrates, including Cran-Max® Cranberry Concentrate; Celadrin® Joint Flexibility & Relief; InoCell™ Natural Protection (Inositol & Cal-Mag IP6); Lactium® stress management through nutrition; Perluxan® Hops Extract.

Markets
Natural products, food and beverage, pet, private label and direct sellers.

Services
Pharmachem is a global leader in application-specific processing of healthy ingredients, including:

- Custom extraction
- Fractionation
- Fermentation
- Drying
- Liquid-to-powder conversion
- Granulation
- Agglomeration
- Blending
- Nutrient fortification
- Ready-to-drink powders
- Beverage processing and packaging
All ingredients are standardized for specific potency, solubility, direct compression, and disintegration characteristics.

**Quality Assurance and Certification**
Pharmachem is a multicertified manufacturer operating cGMP facilities to produce the highest-quality ingredients. Specific qualifications include:

- NOP certified organic
- NSF certified
- HACCP
- AIB Superior
- Kosher
- Halal

Contact the Solutions Team at ask@pharmachemlabs.com, or call 1-800-526-0609.
PLT Health Solutions  
Growth Through Innovation

Description

PLT Health Solutions is a trusted discoverer, developer, and marketer of high-quality, scientifically-supported ingredients that enhance health and functionality. As a leading ingredients innovator, PLT’s global network of strategic partnerships provides unique access to impactful solutions. By delivering an unsurpassed mix of expertise, resources, and service, PLT Health Solutions is committed to helping both its strategic partners and valued customers grow.

In today’s ever-changing marketplace, it has become increasingly important for manufacturers to find a competitive edge as they formulate new or existing products. Whether it’s a product to help optimize the manufacturing process, increase functionality or incorporate healthful ingredients to add value to your formulations, PLT has many solutions to meet your needs.

PLT – Partners in Progress

PLT is your partner in all aspects of product development. In every project, our goal remains the same: to provide our customer with the best solutions coupled with unsurpassed service.

The team at PLT provides valuable assistance with ingredient selection, concept development, new technologies and marketing savvy, all with the assurance that our products are backed by research and documentation.

Products

PLT Health Solutions specializes in clinically-supported, science-based nutraceuticals, fruit and botanical extracts, natural colors and flavors, natural antimicrobials, novel delivery systems, and hydrocolloids. Our ingredients cover a wide range of specific applications. Whether you are looking for innovative ingredients for heart health, cognitive, satiety, immune health or bone health, PLT has the solution for you.

PLT’s portfolio of brands includes Earthlight™ Whole Food Vitamin D, Benecarb® Glycemic Balance Complex, AprèsFlex® for joint comfort, Zembrin® for stress relief, Xanthigen® for healthy weight, Wellmune WGP® for immune health, Satireal® for satiety, Lipowheat® natural ceramides for skin health, MegaNatural® BP grape seed for heart health, Rhodio-Life™ for sustained energy, eatFresh™ Natural Antimicrobial and Vibrant Harvest™ Whole Food Powders.
You Need Market-Ready, Science-Based Ingredient Solutions

When you’re sourcing ingredients for your new products, you have a set of criteria for selection and a series of expectations for supply. At PLT Health Solutions, we have a stage-gate development process for our ingredients that might not be too different from yours. That means we understand the market drivers, the intellectual property, the science and claim potential, formulation development, regulatory issues and the logistics of consistent, high-quality commercial supply.

Our goal is to make sure that our ingredients are buttoned-up and ready for your product development process from day one.

SUPPORT FOR FOOD & BEVERAGE AND SUPPLEMENT PRODUCTS

Today, PLT Health Solutions can help you deliver innovation across a number of health & wellness platforms with over 20 proprietary branded ingredients that are either market or scientific leaders in their categories. That ingredient portfolio is growing every month.

If you’ve never worked with PLT before, we invite you to take a look – to see how our scientific, product development and sales teams can help you build your brands.
Polyphenolics
Realizing the Health Benefits of the Grape

Description
Polyphenolics was founded in 1996 as a nutritional ingredient business within Constellation Brands Inc., one of the largest wine companies in the world. The business unit, Operations and Research and Development are located at Mission Bell Winery in Madera, CA, to coordinate and facilitate shipments to Polyphenolics’s many customers in dietary supplements, functional foods, and beverages. Polyphenolics is a science-driven organization and has research grants to various well-known universities to provide clinical science and development of grape extracts. Polyphenolics markets its products under the brand name MegaNatural®.

Key Personnel
Anil Shrikhande, Ph.D., President
Rich Miller, Sales Manager
Jessica Ornelas, Customer Service Advocate
Steve Kupina, M.S., Director of Technical Sales
Robert Sambueso, Director of Operations
Debra Cerda, Marketing Specialist

GRAS
Polyphenolics MegaNatural® seed and pomace extracts are FDA No-Objection GRAS. The petition was reviewed by the FDA and issued a No-Objection certificate to market the products.

GMP
Polyphenolics maintains high-level quality-management systems, including ISO, Cal/OSHA programs, and third-party certification, ensuring that we manufacture consistent quality and maintain traceability of manufactured lots.

Technologies, Patents/Intellectual Property, New Products
In 2003, Polyphenolics developed a proprietary patented winery process utilizing extraction with hot water. This process eliminates the use of industrial solvents used by other manufacturers. This U.S. Patent: 6,544,581 provided improved product quality in antioxidant value and solubility standards in beverage systems. In 2006, Polyphenolics introduced its MegaNatural®-BP, a unique grape seed extract which was researched for human clinicals at the University of California, Davis, Department of Preventative Cardiology, which shows that a 150-300 mg per day dose reduces pre-hypertension from 8-12 mm systolic blood pressure and 5-9mm diastolic blood pressure after six weeks of study duration. US Patent 7,651,707 B2, “Method for Lowering Blood Pressure in Pre-Hypertensive Individuals and/or Individuals with Metabolic Syndrome” was issued and world-wide intellectual property has been filed for protection of these key findings. US Patent 7,767,235 B2, Composition of MegaNatural®-BP and US Patent 8,075,929 B2 Exclusive production process have also been granted.

Peer-reviewed research publications on mechanism and actual clinicals have been published and can be requested from Polyphenolics or viewed on the corporate website. Call to request specific information from customer service. Major Markets Herbal Supplements, Functional Beverages, Functional Foods

Major Products
MegaNatural®-BP Grape Seed Extract
MegaNatural®-GL Grape Seed Extract
MegaNatural®-Whole Red Grape Juice Extract
MegaNatural®-Red Wine Grape Extract with trans-Resveratrol

MegaNatural® Gold Grape Seed Extract
MegaNatural®-GSKE Grape Pomace Extract
MegaNatural®-Red Wine Grape Extract

Corporate Headquarters
Polyphenolics
Division of Constellation Brands Inc.
12667 Rd. 24
Madera, CA 93637

Tel: 559/661-5556; 866/308-7678
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Website: www.polyphenolics.com

Distributors
U.S.
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Tel: 800/546-6113
Website: www.bdnutritional.com

PLT Health Solutions
Tel: 973/984-0900
Website: www.plthealth.com

Beck Western Brokerage
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Website: www.geelawson.co.uk

Eastern Europe
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Skype: ibcc,nsvast.ibcc
E-mail: ibcc@ibcc.hr
Website: www.ibcc.hr
The only grape seed extract clinically proven to support healthy hearts

Your heart loves with every beat. So love it back with MegaNatural®-BP from Polyphenolics.

MegaNatural®-BP is uniquely positioned as the subject of two double-blind, placebo-controlled human clinical trials conducted at UC Davis. Both studies found that MegaNatural®-BP supports blood pressure within the normal range* – with no adverse side effects.

Manufactured through a patented extraction process, MegaNatural®-BP is a group of structurally unique low-molecular weight compounds with dramatically increased absorption. Along with a healthy diet, regular exercise and achieving a desirable weight, MegaNatural®-BP can give your heart the clinically proven support it deserves.*

To learn more about using MegaNatural®-BP in your dietary supplements, functional foods or beverages, call 866.308.7678 or visit us at www.Polyphenolics.com.

- Proprietary water extraction process (U.S. Patent 6,544,581 B1)
- Clinically proven (U.S. Patent 7,651,707 B2)
- Unique composition (U.S. Patent 7,767,235 B2)
- Exclusive production process (U.S. Patent 8,075,929 B2)
- No chemical solvents
- 100% water-soluble
- FDA No-Objection GRAS

* This statement has not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Poms & Associates

Description
Poms & Associates is a commercial insurance broker based in Woodland Hills, CA (near Los Angeles). Our dietary supplement industry practice specializes in the nutritional products and dietary supplements industries, including, but not limited to, contract manufacturers, wholesalers, distributors, and retailers. We have a long customer list in those specialties, and will provide references if requested. We are proud members of the Consultants Association for the Natural Products Industry (CANI) and American Herbal Products Association (AHPA). Our dietary supplement practice industry leader is Greg Doherty, CPCU, ARM.

Being a specialist in your industry, we know which insurance markets will provide the best coverage at the best price in these tough times. The hot button in the industry is the prohibitive cost of product liability insurance. The key to mitigating the cost of this coverage is seeking competitive quotes from all viable insurance companies (although there are only a handful currently offering coverage). Companies in the industry also need to be very aware of the ingredient exclusion that each insurance company attaches to their policy.

We also place and service all other commercial insurance, including property, umbrella, automobile, directors and officers, employment practices liability and a full range of employee benefits products.

About Greg M. Doherty — Greg M. Doherty is a senior consultant and account executive for Poms & Associates Insurance Brokers Inc. Greg has three decades of experience with some of the world’s largest brokerage and consulting firms, including Marsh Inc., Alexander & Alexander, Clifton & Company, and Johnson & Higgins. Greg has extensive technical knowledge including property, casualty, workers’ compensation, aviation, international, environmental, and all forms of professional liability insurance.

Getting the right product liability insurance for your supplements can be as complex as making them. It takes someone who really knows and understands your industry.

Greg Doherty has specialized experience in the supplements industry that ordinary insurance brokers don’t. So he can answer questions others can’t, like:

- How many carriers can provide a quote for me?
- Are all my ingredients covered in a policy?
- How can we reduce our premiums?

Greg is the recognized authority in product liability coverage and knows how to help you maximize your coverage and minimize your costs. That should help you sleep better than melatonin.

Call Greg direct today at (800) 316-4210 or visit him on the web at www.gregdoherty.net
How can we make your next project a success?

Ask PHARMACHEM

Do you need a Specialty Ingredient, in a unique form?

Thinking about a line extension? Creating more value per product? Improving flavor and taste?

We help our customers with these questions every day. We can help you, too.

Just ask us!

Contact the Solutions Team at ask@pharmachemlabs.com or call 1-800-526-0609.
Prinova

Description
Prinova provides the highest quality and broadest selection of ingredient and flavor solutions to the global food, feed, and wellness industries.

Services
Prinova is your singular source for both in-stock and custom solutions such as liquid vitamin blends, proteins, aroma chemicals, botanicals, sweeteners and a full spectrum of flavor formats, including FlavorArmor, our own line of encapsulated flavors.

Prinova’s commitment to innovation is displayed through our recent enhancements in our facilities — most notably to a newly constructed, state-of-the-art blending facility and a redesigned R&D Applications Laboratory. Prinova’s manufacturing facilities are BRC grade A certified and adhere to current good manufacturing practices in order to achieve the highest level of quality and food safety. Let our experts guide you through every step of the product development process – from raw material consultations to formulation and fortification.

Products
With strategic stocks in 15+ global distribution centers and exceptional inventory management systems, Prinova ensures continuity of supply. We provide valuable market insight and industry trends through offices in China and other key ingredient-producing countries throughout the world. Our immense purchasing power provides you with top quality ingredients at highly competitive pricing. As a result, we are the leading US provider of ascorbic acid (vitamin C), B vitamins and amino acids.
Our strength in food ingredient distribution combined with nutritional blending expertise provide customers a unique solution to their fortification and label claim needs. Prinova offers custom multi-component dry and liquid premixes to meet any desired end-use specification. Add it all together and you have everything you need to create successful products while saving money. One more thing that makes Prinova your secret ingredient.

VISIT US AT SSW BOOTH# 28089

630.868.0300 prinovausa.com
PJ Noyes Company, Inc.

Locations of Offices and Facilities:
P.J. Noyes Company
89 Bridge St. Lancaster, NH, USA
603-788-4982

Corporate Headquarters
Nipro Diagnostics
2400 NW 55th Court
Fort Lauderdale, FL 33309
Toll Free Number: 800/522-2469
Telephone: 603/788-4592
Fax: 603/788-3873
Web: www.pjnoyes.com
Email: info@pjnoyes.com

Key Personnel
Jennifer Cusick
Director of Sales Operations
Kimberly Daly
Account Manager

Proven Resource
“I am delighted to know the executive officers and managers and staff of PJ Noyes. Our products are in an important performance category that is revolutionizing the way pain is diagnosed and treated. Our long term relationship with PJ Noyes is at the highest degree respect and understanding. The upper management has succeeded in balancing firm control of operations but an earthy refreshing personalized approach that instills confidence and encourages everyone in every job capacity to be and do their very best. Every manager and staff member in each department has a true sense of fully embracing the essence of pride in ownership. The impeccable nature of quality of products made and service rendered each and every day, with every product they make puts PJ Noyes in a unique class of distinction by itself. We are delighted to be a long-term partner from both a business and personal perspective.” - Lou Paradise, Topical BioMedics

Certifications/Memberships/Awards
NSF ® Certified, GMP for Sport
Life Science Reader CMO Leadership Award – 2011/2012 Outstanding Regulatory Compliance
Contract Packaging Association Member
CM&P Magazine Honor Roll – Top 3 CMOs – May/June 2011

Major Markets Served
OTC
Homeopathics
Health Beauty Care
Dietary Supplement
Vet/Pet

Description
As a leader in the contract manufacturing and packaging industry for over 150 years, P.J. Noyes prides itself as a premier cGMP, FDA registered, reliable and experienced turn-key solution partner to small and mid-sized companies. With dedicated account management, we can help your project with formula and process development, multi-stage batching, multiple packaging options, and a commitment to delivering a consistent, high-quality product in a timely manner at competitive costs.

Capabilities
Liquid, lotion, creams, gels, compressed, non-coated tablets, and capsules (sizes 00,0,1) in a variety of packaging (bulk, bottles, tubes, jars, pouches and packets). Batch sizes range from pilot batches to large scale production.

Advantages
A variety of capabilities, flexible to work with small, start-up projects to large scale production. We are committed to provide excellent customer service and the highest quality products available.
Custom Manufacturing and Packaging

Extensive expertise in developing, manufacturing and packaging:
- LIQUIDS
- LOTIONS
- TABLETS
- CAPSULES

For more than 150 years, P.J. Noyes Company has been committed to the highest standards of quality, customer service and value.

For a FREE quote visit us at www.pjnnoyes.com

- DIETARY SUPPLEMENTS
- NUTRACEUTICALS
- COSMETICS
- OTC PHARMACEUTICALS
- HOMEOPATHICS
- PERSONAL CARE PRODUCTS

P.J. NOYES
A Nipro Diagnostics Company
89 Bridge St.
Lancaster, NH 03584 USA
(800) 522-2469
Piveg Inc. manufactures, formulates, and markets carotenoids for the dietary supplement, functional food, and beverage markets under the AstaMarine (Astaxanthin), MariLut (Lutein and Lutein Esters), and MariZ (Zeaxanthin) brand names.

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Fax: 858/436-3071
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E-mail: info@piveg.com

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Fax: 858/436-3071
Web Site: www.piveg.com
E-mail: info@piveg.com

Key Personnel
Roberto Espinoza
CEO
Gen Lipkovicius
International Marketing Manager
Ryan Mangan
International Sales Coordinator

Founded in 1959, Piveg Inc. operates globally providing high-specification ingredients for the Nutraceutical, Pharmaceutical, Agricultural, Food and Beverage, Feed, and Cosmetic industries. As a vertically integrated corporation controlling the entire production process, Piveg is equipped to provide high-volume, customizable products with guaranteed annual supply. All products and facilities are fully certified to comply with the highest standards of quality in the world.
Ruspak

Description
For many nutraceutical, dietary supplement, and pharmaceutical manufacturers, Ruspak is their exclusive packager. Others work with the company to supplement in-house capabilities or to test market packaging concepts. Customers work directly with one of the owners, who have more than 25 years of package experience and decision-making authority to make things happen quickly.

For more than a half century, Ruspak has supplied pouches, bottles, blisters, strip packages, overwrapping, and cosmetic packaging to leading nutraceutical and pharmaceutical manufacturers. Secondary services, such as shrinkwrapping, labeling, cartoning, and building in-store displays, are also offered, as is design service.

Whether you manufacture tablets, capsules, liquid, gels and ointments, or powders and granules, you can count on Ruspak for quality, reliability, security, confidentiality, and on-time delivery.

The bottom line is that Ruspak wants to earn your business.
Sabinsa Corporation
Our Innovation Is Your Answer®

Description
Sabinsa Corp., founded in 1988, is a manufacturer and supplier of herbal extracts, cosmeceuticals, minerals, and specialty fine chemicals. Sabinsa’s mission is to provide alternative and complementary natural products for human nutrition and well-being. Over the past 20 years, Sabinsa has brought to market more than 100 standardized botanical extracts and privately funded several clinical studies in conjunction with prestigious institutions in support of these products. Its present operations have grown to employ 1000 people worldwide in 10 manufacturing, R&D, and/or distribution facilities. Additionally, botanical cultivation efforts undertaken by the organization now total nearly 40,000 acres to ensure sustainable supplies of key products. All products intended for human consumption are certified Kosher and Halal.

Industries Served
Sabinsa’s mission is to be a responsible biotechnology-based research, manufacturing, and marketing company, supplying the finest raw materials to provide innovative solutions to the dietary supplement, cosmetic, specialty chemical, and pharmaceutical industries. Sabinsa’s specialized services include custom product development, technical support and testing lab facilities, assistance in clinical evaluation, and protocol implementation. Sabinsa has established offices in the United States, Australia, China, Europe, Japan, and South Africa. Sabinsa also has agents that represent its product line throughout South America and Far East Asia.

Science and Technical Merit
Emphasis on developing and bringing to market products with scientific and clinical substantiation is Sabinsa’s core business philosophy and is in large part responsible for fueling the company’s ongoing commercial success. With more than 100 scientists working full-time and conducting ongoing research both in India and the United States, Sabinsa continues to
Proprietary/Intellectual Property
Sabinsa currently owns over 90 U.S. & international patents and has 100 pending patent applications worldwide. The company is also a three-time recipient of the prestigious Thomas Alva Edison Patent Award, given annually by the New Jersey R&D Council in recognition of the most revolutionary product innovations and important scientific breakthroughs originating in New Jersey. The company also has many recognized trademarked ingredients such as Bacopin®, BioPerine®, Boswellin®, Citrin®, Cosmoperine®, Curcumin C3 Complex®, Curcumin C3 Reduct®, DigeZyme®, Fabenol®, FenuFibers®, Fenusterols®, ForsLean®, Gugulipid®, Gymnema Sylvestre GS4®, LactoSpore®, Momordicin®, Picroliv®, Resvenox®, Saberry®, Salaretin®, Selenium SeLECT®, Silbinol®, and Venocin®.

Application Specialties
Committed and dedicated to the principles of innovation, tradition, and research, Sabinsa supplies high-quality, innovative, and standardized herbal extracts, phytonutrients, probiotics, enzymes, spice extracts, minerals, specialty chemicals, and fine chemicals for applications in dietary supplements, functional foods, pharmaceuticals, and cosmetics. The natural extracts and phytonutrients are derived from botanicals with a long history of traditional food, medicinal, and cosmetic use. Every product is backed by application-oriented scientific research. Sabinsa Corp. has developed novel approaches to retaining the biological activity of these ingredients while simultaneously addressing formulation challenges and product safety criteria.
San Joaquin Valley Concentrates

**Company Description**

It all started in 1996, when San Joaquin Valley Concentrates (SJVC) began producing dark red grape colors. Constant growth now gives SJVC the world’s largest supply of grape color under contract. All of their natural colors are processed at the Fresno, California facility using state-of-the-art equipment and technology. Today, SJVC is constantly growing and changing the game of natural colors.

SJVC’s colors are true game changers in the natural red color market. The superior color stability, ample supply, and long-term pricing of their natural colors will enable you to gain a competitive advantage in your marketplace.

SJVC has a wide range of color intensities and shades. SJVC’s natural colors are made from blends of Rubired grape, purple carrot, and purple sweet potato. The Rubired grape varietal, grown in the heart of California, is unique to SJVC. Its complex molecular structure makes it more stable than berry fruits and European grape skin extracts. SJVC’s superior fruit and vegetable quality enables production of the most stable anthocyanin colors available in the market. All colors are available in liquid and crystal form.

SJVC’s natural crystal colors provide unique benefits to their customers. They are pure and dried into a crystalline form without the use of any carriers. The absence of a carrier and the low usage rate provide insignificant caloric value to a food or beverage formulation. SJVC’s patented drying technology produces crystal colors that provide the same shade and color stability as the equivalent liquid color. Crystal colors are completely and easily soluble with much less dusting than spray dried colors. Crystal colors provide immense color intensity and have an extended shelf life of 5 years when stored at ambient conditions.

All SJVC’s natural colors are OU Kosher and Halal certified. SJVC’s facility is FSSC 22000 certified.

**Corporate Headquarters**
San Joaquin Valley Concentrates
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Fresno, California 93727 USA

Phone: 800/557-0220
Fax: 559/458-2564
E-mail: inquiries@sjvconc.com
Website: www.sjvconc.com

**Key Personnel**
Joe Rossi
Vice President & General Manager

Alice Conley
Customer Service Manager

Thomas Lampe
Director of Business Development

Kai-Mei Loo
Technical Relations Manager &
Asian Sales

**New Products/Technologies/ Patents**
- Non-spray dried crystal color
- Patented belt dryer
- State-of-the-art processing and extraction

**Major Markets**
- Beverages
- Confections
- Nutraceuticals
- Fruit preparations
- Smoothie mixes
- Functional foods

**Global Capabilities**
All international sales are coordinated through our USA office in Fresno, California. Please contact Alice Conley at 800-557-0220 ext. 2557.

**Major Products**
- Crystal Red Grape
- Red 8,000
- Crystal Purple Grape
- Purple 8,000
- Crystal Purple Carrot
- Purple Carrot
- Crystal Purple Sweet Potato
- Crystal Merlot Shade
- Merlot Shade
- Crystal Zinfandel Shade
- Zinfandel Shade
- Crystal Rosé Shade
- Rosé Shade
- ActiVin™ Grape Seed Extract
Let Us Change Your Color Game
With Our Natural Anthocyanin Colors

OU KOSHER
SO₂ FREE
COLOR STABILITY
ZERO CALORIES

CRYSTAL & LIQUID
CARRIER FREE
AMPLE SUPPLY
LONG-TERM PRICING

SAN JOAQUIN VALLEY CONCENTRATES
5631 E. OLIVE AVE., FRESNO, CA 93727
TOLL FREE: (800) 557-0220  E-MAIL: INQUIRIES@SJVCONC.COM  WWW.SJVCONC.COM
Soft Gel Technologies, Inc.® specializes in providing premium quality dietary supplements in a soft gelatin capsule delivery system. We are a full-service contract manufacturer dedicated to the production and marketing of branded products and custom turnkey formulations. We have earned many U.S. patents, most of which are for significant technological breakthroughs in the area of nutrient bioavailability. We obtained GMP certification through the NPA and NSF, including NSF’s Athletic Banned Substances program, known as GMP for Sport™.

Services
- Custom formulation and contract manufacturing
- Develop production technologies that maximize a formula’s effectiveness
- Accommodate small production runs
- Extensive marketing and educational support of branded products
- Part of a global network of companies with an international sales team

Products
- **Perluxan® softgels** contain a unique botanical anti-inflammatory agent derived from hops resin extract clinically demonstrated to relieve minor joint pain quickly. The formula is standardized to contain high concentrations of alpha acids, which reduce pain-causing compounds in a short time with a low dose. This specialized hops extract provides a safer approach to soothing aches from overexertion of everyday activities and effectively calms the body’s minor pain cascade.

- **Injuv® softgels** contain a low molecular weight, naturally-derived hyaluronic acid complex for skin and joint health with proven absorption and bioavailability. A proprietary enzyme-cleaving technique allows it to have a low molecular weight for the highest possible absorption. With its low molecular weight, Injuv is able to be absorbed by the intestinal tract, enter the bloodstream and move to its target sites. It is clinically shown to increase skin smoothness and firmness. Injuv helps skin and joints stay hydrated from the inside out.

- **CoQH-CF®** is a targeted and highly beneficial antioxidant solution providing a stabilized and protected form of Kaneka QH™ ubiquinol in a softgel using our crystal-free technology. Ubiquinol is an important nutrient that should be seriously considered for optimum health, longevity, and vitality. CoQH-CF® soft gels provide a highly efficient platform for delivering the reduced form of CoQ10 for maximum utilization. Supplementing with this form makes CoQ10 more readily available to those who need it most—the late middle-aged to elderly and individuals suffering from oxidative stress conditions.

- **Sytrinol®** is a patented blend consisting of citrus extracts and red palm oil that contains polymethoxylated flavones (PMFs) and tocotrienols. It promotes cardiovascular health and supports healthy cholesterol levels. In a clinical trial, softgels manufactured by Soft Gel Technologies, Inc.® exhibited enhanced bioavailability of the key active ingredients found in Sytrinol®—specifically, the two PMFs tangeretin and nobiletin. Compared to powder-filled hard shell capsules, the softgel form of Sytrinol® was significantly more bioavailable in healthy adults. Next Pharmaceuticals is the exclusive raw material supplier of Sytrinol®. Soft Gel Technologies, Inc.® is the exclusive manufacturer of Sytrinol® softgels.
A Singular Focus

We make softgels. Various shapes, sizes, and colors. Custom and stock formulas. Solvent-free. That’s all we do. In a GMP-certified U.S. facility. We do one thing and we do it well. By choosing us as your softgel contract manufacturer, you can concentrate on what you do best.

If we may have your attention for a moment, we’ll make you the center of attention. Contact us today.

Delivering custom and branded softgels, naturally.”
Steviva Ingredients

Description
As consumers weigh in on healthier food choices, they are studying labels. Many of them are looking for natural claims.

This is when it’s helpful to have stevia in the food designer’s toolkit. Extracted from the leaves of the South American plant Stevia rebaudiana, this high potency sweetener has 200 to 300 times the sweetness of sugar.

Steviva Ingredients offers sweeteners and bulk ingredients designed specifically for different food and beverage applications, including:
- Fructevia™
- SteviaSweet 95-60™ stevia extract
- SteviaSweet RA98™ stevia extract
- Stevia Blend™
- Stevia Blend™ 100 mesh fine powder
- Erysweet™ non-GMO erythritol
- Erysweet™ non-GMO 100 mesh fine powdered erythritol
- Nectevia™ stevia-fortified agave nectar

In addition to offering all-natural sweetening options that are GMO-free, pesticide- and petrochemical-free, soy-free, corn-free, and allergen-free, Steviva Ingredients has the expertise to deliver consumer-preferred, naturally sweetened applications in the most efficient way. Steviva’s natural-sweeteners specialists work with food developers to deliver food and beverage products that are healthier for consumers, with a natural sweetener cost that is in line with more traditional sweeteners.

Call 310/455-9876 for information on formulating with Steviva Ingredients natural sweeteners.
I NEED A LOW-CALORIE SWEETENER FOR MY

NATURAL
110-CALORIE
STRAWBERRY
RAISIN
OATMEAL
NON-GMO
SOY-FREE
CRUNCHY
CHEWY
CORN-FREE
ALLERGEN-FREE

NUTRITIONAL BAR.

We can help. Hands-on application support is our specialty.

Let’s face it, working with non-sugar sweeteners isn’t always intuitive. That’s why, when it comes to helping food developers incorporate natural sweeteners into their applications, we never leave customers to fend for themselves.

At Steviva, our technical teams work with our customers through the full product development process to help them deliver winning products cost-effectively – from bars to beverages, low-carb products to confections.

So when it comes to creating healthier consumer products, don’t just make the natural choice, make the logical one: Steviva.

All natural + Chemical-free extraction

For more information or to order a sampler kit, call 310-455-9876 or visit www.stevivaingredients.com
Stryka Botanics has taken pride in offering the highest quality ingredients for the Nutraceutical, Food, Beverage and Cosmeceutical industries. With more than 20 years as a leading supplier of ingredients we have positioned ourselves to providing our customers with the quality material they demand. As the company has grown, we have made large investments in expanding our facility, additional equipment, inventory and personnel to serve our clients needs quickly. With locations on the East and West Coasts, we are able to deliver the quality product you need in a timely manner.

Stryka Botanics has an extensive product list of over 2,000 different ingredients to fulfill your material requirements. From Herbal powders, extracts (Standardized and Ratio), Vitamins and Amino Acids, including Kosher Certified products, we are truly a one stop shop. In addition to the ingredients, Stryka Botanics will custom blend to your specifications, thus saving you time and money. We offer high volume discounts as well as a rebate program to save you additional money on your ingredients. Order size is never a problem. We can fill orders from the smallest quantity to the largest and there is never a re-pack fee.

Markets Served
As a truly global organization, Stryka Botanics proudly serves the United States, Canada, Europe, and other Countries.

Industries:
• Nutraceutical
• Pharmaceutical
• Beverage
• Functional food
• Sports nutrition
• Private-label dietary supplement
• Contract dietary supplement
• Pet food and feed
• Cosmeceutical

Products/Services
• Botanical powdered extracts (both Standardized and Non-standardized)
• Nutritional ingredients
• Vegetable and fruit powders
• Vitamin powders
• Amino acids
• Custom blending available to customer specification
Suzanne’s Specialties

Description
Suzanne’s Specialties has been supplying alternative sweeteners to the health food industry, as well as the industrial and institutional food markets, since 1984. Our entire product line, including brown rice syrup, honey, tapioca syrup and agave syrup, is available as Organic, with most having a conventional version as well. Suzanne’s promises that all of our products are made with only the highest quality organic and all-natural ingredients, which will give your formulas and applications “Sweetness The Way Mother Nature Intended™.”

With distribution facilities on both the East and West coasts along with a variety of pack sizes, Suzanne’s Specialties has a number of options available to serve your company’s specific needs.
TSI USA Inc.

Description
TSI is a world-class manufacturer of innovative and functional health products for human consumption. TSI strives to build the highest-quality products that maximize and maintain active, healthy lifestyles for consumers.

Since 1996, TSI has excelled in the innovative development and quality manufacture of active ingredients and finished dosage products. TSI supports customers in over 34 countries with state-of-the-art manufacturing, global sales, distribution, and regulatory support.

Services
- Cutting-edge Innovation ingredients have applications ranging from sports nutrition to cardiovascular health to bone & joint health
- Capabilities include formulations, in-house manufacturing, analytical testing, custom blends and granulation, finished dosage form capabilities, as well as regulatory assistance
- Reliable customer service and support provided by TSI operated sales offices in the United States, Australia, China, Europe, and Japan
- International R&D team creating innovative solutions for cutting-edge market development
- International cGMP-certified production
- Reliable logistics and warehousing worldwide
- We own and operate our own dedicated manufacturing facilities, maintaining complete control over the ingredients we produce—from start to finish. Every batch of ingredients we provide is subject to rigorous quality-control tests in our state-of-the-art laboratories and testing facilities.

Products
We offer a wide variety of functional and proprietary ingredients, please contact us directly or visit our website (www.tsiinc.com) for a complete listing

Nutraceuticals:
- Peak ATP® Adenosine 5’Triphosphate Disodium
- PUREFLEX® Chondroitin Sulfate
- Ostivone® Ipriflavone
- GlucosaGreen™ Vegan Glucosamine
- Glucosamine

Botanicals:
- MSV 60® Dan Shen Extract
- Promilin® Fenugreek Extract
- Ginkgo 24/6/5™
- Opteava™ Green Tea Extract
- Noto-G™ Panax Ginseng
- RusperinC™
Oral administration of PEAK ATP® adenosine triphosphate helps to optimize athletic performance through three distinct mechanisms:

1) ATP is involved in anabolic signaling, resulting in increased lean body mass and muscle thickness*; 2) ATP improves blood flow, resulting in improved oxygen and nutrient delivery to the muscle*; 3) ATP increases muscular excitability resulting in significant gains in strength and power.*

Available exclusively from TSI Group, PEAK ATP® is a patented nutraceutical ingredient providing explosive muscular power and reduced fatigue.*

Fuel the success of your next sports supplement with PEAK ATP®.
US Pharma Lab Inc.
Advancing the Science of Global Nutrition

Description
US Pharma Lab is a custom formulator of dietary supplement ingredients and a contract manufacturer of nutritional products. Headquartered in North Brunswick, NJ, the company comprises seven manufacturing facilities located in the United States, India, and China. US Pharma Lab is FDA audited and NSF certified for cGMP compliance. The company has a highly qualified team of scientists who provide the expertise needed to manufacture custom formulations to the specifications of each valued client. By effectively managing the development and manufacturing of nutritional products, US Pharma Lab is the right partner for those who need the best in formulation science.

Services
Custom Designed Nutritional Formulations
- Precision Premixes
- Triturations
- Microencapsulations
- Value-Added Granulations

Research & Development
Solutions for Formulation Challenges:
- Directly Compressible
- Reproducible Flow Behavior
- True Content Uniformity
- Ready-to-Use

Analytical Testing
The fully equipped and modern laboratories offer:
- Vitamin and amino acid analysis on HPLC
- Mineral analysis on ICP-OES, ICP-MS
- Botanical identification/standardization – HPLC, GC, UV
- Endotoxin testing – LAL method
- Heavy-metal analysis on ICP-MS
- Testing of aflatoxins – B1, B2, G1 and G2 by HPLC
- Pesticides residue analysis - USP, AOAC, EPA on GC and HPLC
- Microbiological contamination testing
- Irradiation and radioactive testing on PSL
- Residual solvent analysis according to ICH guidelines – Q3 on GC
- Identification of raw materials and finished products – FTIR

Custom Manufacturing/Packaging
- Dosage Forms: Capsules, Tablets (Tri-Layer, Bi-Layer, Timed Release, Orally Dissolving, Chewable)
- Packaging Choices: Bottles, Boxes, Blisters, and Canisters
- Printing: Custom Labels and Boxes

Quality You Can Count On
US Pharma Lab’s strength is in its strict adherence to quality protocols. Each of the company’s facilities has been FDA audited, as well as NSF certified for cGMP compliance. US Pharma Lab’s fully equipped chemical and analytical laboratories allow for a full range of assay testing as well as any client-specific testing required. The in-house laboratory performs analytical testing of raw materials, in-process samples, and finished goods.
US Pharma Lab formulates custom premixes for the nutritional industry. Our formulators have the expertise to design custom granulations, triturations and micro-encapsulations that ensure the consistency of actives throughout your premix. Key to this is our understanding of even particle size distribution throughout each blend. You can trust in our 20 years of experience solving the industry’s most complex premix challenges.

Custom formulated homogeneous premixes and triturations include an assortment of:

- Vitamins
- Minerals
- Botanicals
- Amino Acids
- Specialty Ingredients

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HACCP Plans
Allergen Control
Foreign Material Control
Dietary Supplement 21 CFR Part 111 Compliance

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ANNUAL SUPPLIER PROFILE

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Committed to Innovative Products at Competitive Prices™

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QUALITY AND RELIABILITY
As a leader in the nutraceutical industry since 1996, Vesta prides itself as a premier cGMP and FDA-registered, full-service provider. Our broad selection of quality nutraceuticals coupled with our competitive prices and on-time delivery are certain to reduce your costs and escalate your customers’ confidence in quality. You expect reliability; you demand quality. Vesta Pharmaceuticals adheres to the strictest industry standards for quality assurance and control. We fortify industry standards with our rigorous QA/QC processes to guarantee the highest levels of quality, consistency, and reliability in every product and service we provide.

Services and Products
Vesta Pharmaceuticals is a full-service contract manufacturer of herbal, vitamin, mineral, and dietary supplements. Vesta’s services include packaging, manufacturing, technical support, and full-market support. We also offer a comprehensive package of nutritional products. In addition, Vesta’s capabilities include custom and stock formulations that satisfy the most discerning tastes. Our nutritional formulations, specialized blending techniques, and high-speed, state-of-the-art packaging line are sure to please. Whether for tablets, capsules, powders, or blends – we have the experience to deliver them all. Our modern packaging equipment can supply your products in bottles, blister packs, or unit doses. Vesta Pharmaceuticals manufactures all products in house and guarantees quality and complete satisfaction.

Raw Material Sourcing
Vesta Pharmaceuticals has years of helping customers source their raw materials. We strive to find the best quality raw materials on the market. We can help with much sought after, quality products like SAMe, Vitamin K2, Nattokinase, and Hyaluronic Acid to name a few.

Global Capabilities
Vesta is an Indiana company, but with international reach for nutraceutical contract manufacturing needs and logistics. We have strong relationships with 10 countries, to ensure that your product obtains a significant market share.
For more than a decade, Vidya Herbs Pvt. Ltd. has served the nutrition, supplements, nutraceuticals, and cosmetics industries as a world-leading manufacturer of plant extracts, essential oils, and oleoresins.

The natural ingredients market is expanding quickly. Vidya is able to meet growing demand and provide customers with quality and insights on trends and research.

The company now operates three manufacturing facilities, including a supercritical CO₂ extraction facility and a state-of-the-art research laboratory.

With its recent acquisition of a large manufacturer of flavors and spice extracts in India, Vidya Herbs has further increased its own manufacturing capabilities and product range. For example, Vidya Herbs is now able to manufacture and supply approximately 70 tons of turmeric material per year.

Vidya Herbs offers a wide range of products, including for anti-inflammatory, weight management, brain health, natural energy, or other health concerns. The company’s broad portfolio makes it easy for customers worldwide to find quality material for all of their needs.

**Top Products:**
- Turmeric
- Nattokinase
- Bilberry (by HPLC)
- Konjac
- Ashwagandha
- Mucuna
- Bacopa
Virginia Dare

Corporate Headquarters
882 Third Ave.
Brooklyn, NY 11232

Toll-Free: 800/847-4500
Tel: 718/788-1776
Fax: 718/768-3978

Web Site: www.virginiadare.com
E-mail: flavorinfo@virginiadare.com

Mission Statement
To provide our customers, both domestic and international, with the highest-quality products, best-in-class capabilities and service, and the business insights necessary to create successful new consumer products.

Description
Virginia Dare is a Brooklyn, NY–based flavor and extract company originally founded in 1835. The company evolved into the Virginia Dare company in 1923, with a focus on creating and supplying flavors for the food, beverage, nutritional products, dairy, bakery, sweet goods, pharmaceutical, and oral-care industries. Well known for our vanilla extracts and tea concentrates, Virginia Dare has an extensive line of much-sought-after, great-tasting, high-impact, cost-effective flavors. Our product applications experience, proprietary masking technology, and natural and organic regulatory knowledge are second to none in the flavor industry. We take great pride in being able to supply the newest, trendiest of tastes in flavors, as well as traditional, classic-tasting flavors.

Our sales, business development, and marketing teams understand the importance of speed-to-market product development, and offer guidance in trend tracking, consumer insights, and, most notably, an understanding of the Hispanic consumer.

Our customer service department is staffed by people that truly care about and are responsive to our customers’ needs.

Virginia Dare is proud of our long heritage, respectful of the social and natural environment in which we operate, supportive of our employees and customers, and passionate about success.

Masking flavors are unique, multifunctional blends of flavor ingredients designed to improve flavor, mask off notes, and reduce objectionable bitterness. Masking flavors are available in liquid and dry, natural, all natural, N&A and organic compliant forms.

Tel: 718-788-1776 • flavorinfo@virginiadare.com • www.virginiadare.com
Japan’s health and functional ingredients market is growing rapidly. Leading international companies exhibiting at Hi Japan 2014 are part of this evolution, including DSM, Rousselot, Nexira, Meiji, Morinaga and Chr. Hansen. Hi Japan is the no.1 market place for sourcing innovative & natural ingredients for supplements. It unites suppliers, distributors and buyers seeking to take this industry into the future, in a market at the epicentre of innovation.

800+ LEADING EXHIBITORS

40,000+ TOTAL ATTENDEES

90% STAND SPACE SOLD

€12.74bn VALUE OF JAPANESE HEALTH FOOD MARKET

Register to attend for free at www.hijapan.info/eng
Vitatech Nutritional Sciences Inc.

Description
Vitatech Nutritional Sciences Inc. is a 60-year, U.S.-based manufacturer and innovator of dietary supplements and nutritional products. We formulate, manufacture, and package nutritional solutions in powder, two-piece capsule, and tablet form in a FDA-licensed, cGMP, NSF Certified for Sport pharmaceutical environment.

Products and Services
Powders, two-piece capsules, tablets, capsule banding, enteric coating, and formulation

Focus
• Building your business success
• cGMP compliance
• Herbs, herbal extracts, and concentrates
• Clean formulations

Vitatech Exemplifies
• Trust
• Established history
• Containment testing (microbiological and heavy metal)
• High-volume/high-speed equipment
• Dedicated team of professionals

Transform Your Vision into Reality with Vitatech Expertise
Vitatech invests in the most advanced equipment, technology, and processes—and, most importantly, dedicated professionals: real people with purpose. We offer market-specific formulation and marketing counsel for healthy business success. Vitatech’s comprehensive quality-assurance program and strict cGMP-certified controls ensure that client products meet the most exacting standards.

Technologies, Experience, Capabilities
Vitatech’s high-speed encapsulation machines are built for precision. Monitored by our quality-control inspectors, our technology ensures uniform end-products and accurate fill weights every time, producing tamper-resistant, two-piece capsules—including banded capsules—and reducing costs by operating at peak efficiency.

• World-class, high-volume powder blending
• High-speed, computer-controlled tabletting
• High-volume, water-based continuous coating systems
• Pharmaceutical laboratory—licensed since 1954
• In-house analytical laboratory
• Comprehensive quality-assurance program
• Gusset bag and daily pack powder-filling capability

MAJOR MARKETS
• FDM
• Private label
• Multilevel
• Direct selling

GLOBAL REACH
We serve private-label clients in over 22 countries.
Contract Manufacturing | Private Label
“Proudly Serving the Natural Products Industry”
Powders • 2-Piece Capsules • Tablets • Gusset Bags
Analytical Laboratory • Capsule Banding
Enteric Coating • Packaging

A TRADITION OF EXCELLENCE®
FDA registered manufacturing since 1954
Leader in sustainable green practices
Commitment to cGMP compliance
NPA Gold Seal
NSF Sports Certification

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NUTRITIONAL SCIENCES, INC.
www.vitatech.com

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Description
For over 50 years, The Wright Group has launched product lines and concepts that provide profitable solutions for clients applying functional ingredients in innovative food, beverage and supplement products. One example, the High DHA Omega-3 School Lunch Pizza positioned for the children’s nutrition market, has generated considerable interest and is a must see for all marketing managers and product developers in our industry.

The Wright Group’s talent and passion is focused on formulating fortification systems that help super brands develop the health products that have been embraced by markets around the globe. For more information about the High DHA Omega-3 School Lunch Pizza and other novel product concepts, visit the New Innovations portion of www.thewright-group.net.

Products
Wright offers a variety of fortification options to enhance an array functional foods and beverages. SuperCoat® microencapsulations offer superior nutrient protection, taste and odor masking, as well as extended stability and shelf life. In addition, SuperCoat® flavor microencapsulation offers sustained and extended flavors release, especially in confectionary applications, and can be utilized to create SuperBlend® valued-added premixes in applications that may adversely affect nutrient potency and performance. SuperCoat® and SuperBlend® offer excellent function and flexibility in a variety of fortified foods, beverages, and wellness products.

SuperCoat® Omega – 3, Wright’s most recent innovation using proprietary SMART™ microencapsulation technology, provides a tasteless, odorless, ready-to-use functional dry powder with excellent process properties that can be used in a range of bakery products, functional foods, and nutritional supplements. The Wright Group’s SuperCoat® Omega-3 helps take the guesswork out of developing shelf-stable end-use omega-3 products.

Nutritional supplement applications can benefit from our SuperTab® direct compressible granulations, which delivers even particle distribution, high bulk density for consistent compression, and excellent flowability in multivitamin and other tableting applications.

Services
With such a diverse portfolio of products, Wright is one of only a select group of manufacturers with the resources and technology to deliver independent manufacturing of custom premixes, microencapsulates, and granulations. But we also understand that superior service is just as important as technology and expertise. That’s why Wright delivers quality-assured custom blends, microencapsulations, and granulations within two to four weeks of order placement. In addition, we provide you with prompt quotations, fortification technical assistance, and support documentation to help you efficiently deliver your products on time.

Quality Assurance
To ensure that only the finest nutritional ingredients are produced, we employ a rigorous quality assurance program throughout every step of our manufacturing process. The Wright Group is a globally certified FSSC-22000 organization. The company is also ISO 9000 certified, a proud member of GOED, FPA-SAFE, Star-K Kosher, Halal and GMP compliant. In addition, Wright possesses its own in-house quality assurance lab and delivers certificates of analysis for every order. Additional testing, including microbial analysis, is also available.
blending performance and stability

In an industry where blending is the standard, one company’s brand of custom nutrient premixes is consistently separating itself from the pack. The Wright Group’s SuperBlend® premixes gives you the flexibility to use any combination of SuperCoat® microencapsulated nutrients for standard uncoated powders as well as uncoated nutrients in your blend. This flexibility works to counter ingredient reactivity, instability and offensive sensory characteristics that cause problems for your product development team.

In addition to helping you put out better products, SuperBlend® works to control costs by consolidating multiple custom nutrients into a concentrated single-step, pre-weighed ingredient that gives you consistency with every batch. When nutrient performance and stability matter to you, your team and your market-focused products, choose Superblend®.

Call us: (800) 201-3096
Visit us online: thewrightgroup.net
Agri-Mark Whey Proteins

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Agri-Mark Whey & Dairy Proteins
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Onalaska, WI 54650
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Fax: 608/783-9778
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World Class Whey Protein Concentrate & Dairy Product Solids
Agri-Mark Whey Protein Concentrate (WPC) and Dairy Product Solids (Whey Permeate) are manufactured at the cooperative’s cheese manufacturing plant located in Middlebury, Vermont. With cheese making operations beginning in 1994 and whey processing added in September 2000, the plant’s processing equipment incorporates the latest in cheese making and whey processing technology.

Ingredient Showcase
Details, Details, Details!
No one does it better than Nutritional Outlook when it comes to serving manufacturers the in-depth information they need on the research, news, and developments concerning condition-specific health ingredients and industry services. With our newest offering, Ingredient Showcase, we’re packaging that information up for you in a tidy, attractive product: Ingredient Showcase.

Each month, our editors will cull the very best of our editorial to find one article that readers shouldn’t miss. The Ingredient Spotlight newsletter will bring that article to you, directly. No more searching; no more looking around. This is the article you can’t afford to miss.

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Contamination Control

Protecting the workplace gets easier with modern accessories for health product manufacturing.

BY ROBBY GARDNER, ASSOCIATE EDITOR

Barring the unlikely event that your manufacturing plant is totally foolproof, keeping things contamination-free is an ongoing process. In an increasingly global marketplace, there is always a risk of contamination in the workplace, and manufacturers should never settle for a risk to the health of their end-use customers.

From protecting the ingredients themselves to the surfaces they land on, a little investment in sanitation can go a long way. And simple accessories can do a world of good.

Metal Detection

The large tablet and capsule machines that sit inside of dietary supplement factories run on a lot of power and a lot of metal. Companies that make these machines offer warranties, repairs, and even routine check-ups because wear and tear is a likely occurrence over time. The frightening risk with these and other processing machines, such as millers, is flaking metal, and no one wants that getting packed inside of finished goods.

As a safety measure for tablets and capsules specifically, Mettler-Toledo LLC (Columbus, OH) is introducing a Tablex Pro metal detector that can fit onto any tablet or capsule press.

“The metal detector uses radiofrequency to detect metal,” says Oscar Jeter, national sales manager for Mettler-Toledo’s Safeline detection systems. “It creates a small magnetic field which will be disturbed if metal is present in a tablet (or capsule). The system detects that disturbance and rejects the tablet as contaminated.”

Where some metal detectors may be intended for just sample batches, the Tablex Pro can be used non-stop for 100% product inspection. It eliminates the need for additional product inspections later on, and for that reason it may provide cost savings. At just 145 pounds and sitting on caster wheels, this inspection metal detector is mobile for easy transport and cleaning.

Boot Scrubbers

Strangely enough, the debris on one’s shoes can give rise to product contamination, especially if workers are moving between production areas where ingredients must be kept separate. For these chance occurrences, boot and shoe scrubbers have a legitimate purpose in manufacturing plants.

Boot and shoe scrubbers are mechanized machines that are available in a variety of sizes and styles, with some even accommodating tall boots through the use of automated side brushes. These scrubbers can remove pathogens such as Salmonella or E. coli, and they can do away with potential allergens. They present a wise investment for companies that produce products both with and without allergens under the same roof.

Boot and shoe scrubbers aren’t required under current food safety laws, but their use may help companies achieve independent food safety certifications. One of the latest developments in this category is the XBW scrubber from Meritech (Golden, CO). This high-volume, walk-through machine can handle up to seven pairs of feet per minute.

Test Kits

The most scrupulous of manufacturers will want to consider using test kits on their ingredient shipments and any of their shared manufacturing surfaces. A variety of test kits are available for detecting countless potential contaminants, including pathogens and food allergens that should not be present.

This August, FDA begins strictly enforcing gluten levels on products making gluten-free claims, so related manufacturers ought to consider purchasing gluten test kits. Now available from Emport LLC (Pittsburgh), these handy little test strips can detect gluten traces in ingredient batches and even on manufacturing surfaces. There’s nothing worse than an accidental gluten trace in a batch of another ingredient, or traces of gluten left on what should have been a properly cleaned manufacturing surface.

Other test strips and similar devices can answer virtually every other need of a manufacturer—some even check water quality for unwanted microbes. For the manufacturer who wants this variety without an assortment of devices, Hygiena’s (Camarillo, CA) EnSURE test kit presents a viable option.

Regardless of the contaminant, a sanitation equipment supplier is available to meet just about every manufacturer need.
Starting into a mix vessel, watching stubborn agglomerates of calcium phosphate swirl in a liquid batch with slow agitation, refusing to break down and disperse—clearly, you have a mixing problem.

This particular challenge can certainly be solved by switching to more advanced rotor/stator mixing technology. Still, although high-speed, high-shear dispersion will prevent those agglomerates from forming, is this really the best possible solution? Not necessarily.

Years ago, when markets were less competitive and production less demanding, process engineers could afford to think of individual process steps—like mixing—distinctively rather than in a broader context. Back in the day, engineers narrowly defined their mixing challenges as “the dispersion of calcium,” for example, or “the emulsification of flax seed oil.” They focused on flow rates, the application of shear, controlling heat buildup, and achieving a tight particle-size distribution.

Today, competitive pressures require us to think of mixing as a component of a much bigger picture. Our goal is not just to disperse calcium without creating agglomerates, or to emulsify flax or fish oil without damaging the omega-3 fatty acids within. Instead, we must think about what the needs of the overall business are—for every batch henceforth. We need to accomplish those process steps perfectly and exactly the same way every time, with:

- Complete control over the process and for all of the company’s recipes
- Relentless effort to prevent microbiological contamination
- An equipment solution that benefits multiple process lines when possible
- Airtight documentation and accountability for every batch leaving the plant

If these requirements sound familiar, they should. Essentially, these are what current Good Manufacturing Practices (cGMPs) are all about.

For forward-thinking manufacturers, cGMPs aren’t just about compliance; rather, they are part and parcel to developing superior manufacturing practices that will benefit the company overall in the long run.

Good mixing strategies not only make production more consistent and reliable, they also ensure an end-product that is safer and more likely to be effective and pleasing to consumers. Making strategic equipment choices is all about looking forward and turning the expense of compliance into an investment in the future.
Two Perspectives on Mixing
To optimize the mixing process and derive the greatest possible competitive advantage from a process change, you must examine every mixing challenge on your process line from two perspectives:

1. **Close-up perspective:** What are we trying to accomplish at the point of mixing, where agitators contact ingredients? What specific mixing or blending challenges must we overcome? Which combination of mixing technology and technique is most likely to meet our process goals?

2. **Wide-angle perspective:** What opportunities and added features are available to optimize this mixing process, integrate it into surrounding process functions, help satisfy regulatory requirements, and deliver a business advantage?

These perspectives are distinctly different, but they are not independent. We often choose between several promising mixing strategies based on the value they offer in a larger business context.

Where Two Perspectives Merge
All manufacturers in natural foods share a common future: evolution will continue to advance toward more disciplined and sophisticated production, more pressure to comply with cGMPs, and more intense competition.

Yet every manufacturer is unique. For example, each manufacturer must find a balance that matches the company’s production goals as well as its culture and business environment, weighing the value of absolute repeatability versus the value of human judgment and direct control on the process line.

Finding the right balance is vitally important—and this is why every equipment choice must be considered carefully from both a close-up perspective and wide-angle, business-savvy perspective.

The three processing scenarios illustrated on the following pages, drawn from in-plant trials, field experience, and tests conducted in the Ross Test & Development Center, reflect two of the most common mixing and blending challenges that manufacturers in natural foods face today: high-speed dispersion of hard-to-disperse powders and high-speed blending of high-value, shear-sensitive ingredients.

**Scenario 1**

**Your Mission:** Eliminate the formation of agglomerates in a fine-dispersion, medium-viscosity product

**Product:** Liquid dietary supplement for bone and joint support

**Major Dry Ingredients:** Calcium, glucosamine, chondroitin, magnesium, inulin

**Minor Dry Ingredients:** Iron, zinc, manganese, copper, silica, boron, chromium, selenium, vanadium, vitamin D3, molybdenum, iodine, stevia (leaf extract)

**Major Liquid Ingredients:** Water, glycerin, flax seed oil

**Minor Liquid Ingredients:** Flavors, colors

**Mixing Challenge:**
- Calcium and other minerals in a dry state form agglomerates in a liquid batch with low-speed, low-shear agitation.
- Inulin is an oligo-fiber that also requires accelerated dispersion to prevent formation of floating agglomerates.
- Flax seed oil requires emulsification at lower temperatures to prevent polyunsaturated fats from oxidizing.
- Also, all liquid flavors and colors are made in an alcohol or glycerin base and require emulsification to disperse properly.

**Close-Up View:**
A high-shear rotor/stator mixer is a logical choice, as both dispersion and emulsification require particle-size reduction. The intense mechanical and hydraulic shear applied by a rotor/stator generator breaks down agglomerates and droplets much more quickly than traditional alternatives such as propellers, turbine agitators, and even high-speed saw-tooth dispersers.

Thanks to the new generation of multi-stage rotor/stator generators developed in recent years, many configurations of rotor/stator design are available, including various combinations of size and tip speed, shear rate, and flow rate. The best choice depends on the ingredients involved and the level of shear required to reach the target particle-size distribution quickly, without degrading shear-sensitive ingredients.

Fine dispersions often present the additional challenge of dispersing powders such as soluble fibers, gums, non-calorie sweeteners, and minerals into a liquid batch while preventing the formation of agglomerates or “fish eyes.” Agglomerates and fish eyes are notorious for forming when powders are simply...

*Continued on page 22E*
poured into a liquid batch, even when the batch is vigorously agitated. Once formed, agglomerates and fish eyes can be extremely difficult to break apart and disperse completely, requiring a long mix cycle—in this case, overnight, requiring a third shift in the plant!—and driving up costs.

A rotor/stator mixer can provide the necessary shear to accomplish the goal of fine dispersion without agglomerates. Switching to a rotor/stator mixer equipped for inline powder injection can accelerate the process dramatically. By injecting hard-to-disperse powders directly into a liquid stream in the high-shear zone of a rotor/stator generator, solids are dispersed instantly—and agglomerates and fish eyes never have a chance to form.

**Wide-Angle View:**

- **Portability** – Because a SLIM (Solid/Liquid Injection Manifold) device can disperse fine powders so quickly, the unit does not have to be dedicated to a single process line. Configured in a self-contained, portable package, a single SLIM unit can serve multiple process lines. The one pictured at right is easily moved from line to line. It also includes a recirculating tank that provides the option to disperse ingredients in multiple passes through the high-shear generator for a highly controlled mix before diverting the material into a larger vessel for further mixing or pumping downstream.

- **PLC Control (Programmable Logic Controller)** – The design of the onboard control system provides another opportunity to boost product consistency and lower the risk of operator error. The value of a PLC-based control rises as the complexity of the process rises and operators are increasingly challenged to keep up. A PLC control with an intuitive touch screen interface can easily accommodate many mixing steps and frequent changeovers from one line to another, while reducing the burden on operators to get every process step exactly right.

“THINK BIG WHILE YOU’RE STILL SMALL”

By Sonja T. Sladic, Chairman of the Board, Zane Product Development Inc.

As the market for natural foods continues to grow, competition will become even more intense. In this environment, small, entrepreneurial manufacturers are racing to develop their products, expand their distribution, and build their customer base. The main focus varies from company to company—some concentrate on R&D, for example, while others devote more energy to retail marketing and channel development. But despite those differences, virtually all manufacturers have this in common: they are thinking like small companies and putting off essential management development until later.

Many believe that such cGMP-driven practices as process validation, batch controls, rigorous sanitation, QA/QC control, and front-end documentation of all incoming ingredients are what big companies do. But the truth is that developing all those standards and processes is much easier if you start now, when you’re working with a relatively small number of ingredients and the scale of your production is limited. Here are some strategies—for both processes and equipment—to help you think big while you’re still small.

- **Automate your production to reduce the risk of human error.**
- **Enclose your mix vessels.** Monitor temperature and other parameters with sterile probes within the vessel instead of sampling manually and risking contamination.
- **If you’re working with temperature-sensitive natural ingredients like fish oil, flax oil, pine bark extract, or ginger root extract, equip your mix vessel with a thermal jacket for precise heating and cooling during the mix cycle.** Use digital controls to ensure that you will never overcook your ingredients and diminish the nutritive value of your end-product.
- **Buy mixing equipment that offers great versatility.** Multi-agitator mixers with separately controlled agitators allow you to complete multiple mixing steps in a single unit—without having to transfer the product from one piece of equipment to another. This lowers the overall cost of equipment, helps prevent contamination during the transfer, speeds up the end-to-end process, and makes your process line more flexible.
- **Make sure your controls are designed for robust data capture so you can document every batch and sail through your next FDA inspection with no problem!**

Think holistically. Don’t focus on product development or marketing at the expense of production. You must develop your production, too, and the best time to start is right now. It will be much harder and more costly to do so later on, when you’re not a “small company” anymore.
Your Mission: Eliminate the formation of agglomerates in a fine-dispersion, low-viscosity mix of heat-sensitive, high-value ingredients

Product: Liquid “mood food”
Major Liquid Ingredients: Water, mango-steen, and elderberry juice concentrates
Major Dry Ingredients: Vitamin/mineral blend
Minor Dry Ingredients: Malic acid, citric acid, acetyl L-carnitine, and plant extracts: Pycnogenol, 5-HTP (Griffonia seed extract), Bacopa monnieri, luo han guo, chamomile flower, lemon balm, and ginger root extracts

Mixing Challenge:
- Dry vitamin/mineral blend forms agglomerates in a liquid batch with low-speed, low-shear agitation.
- Proper temperature control is needed to avoid overheating polyphenols, bioflavonoids, and other heat-sensitive components.
- To ensure that each serving delivers proper amounts of vitamins, minerals, and active ingredients, homogeneous mixing is critical.

Close-Up View:
Botanical extracts are used for their antioxidative and bioactive properties to support good mood and brain health. Because of their low density, standardized botanical extracts such as Pycnogenol, lemon balm, and luo han guo require accelerated dispersion to prevent these very fine particles (<100–125 um) from forming agglomerates.

Botanical extracts are also heat sensitive and must be kept in a “Goldilocks” zone during manufacturing. If the temperature is too high, the extracts will be degraded and lose their potency.

The multi-agitator, high-shear sanitary mixer used during manufacturing is configured with a jacketed vessel that provides close control of heat in the batch. A temperature probe within the closed vessel collects data for display on the main control panel.

Wide-Angle View:
There are no contamination challenges during the mix cycle because the whole process takes place in an enclosed and controlled environment.

All food-contact surfaces and mixer wetted parts are built of Type 316 stainless steel and are easy to clean and sanitize. This allows for less downtime between production runs—and greater production.

A fully enclosed multi-shaft mixer provides increased control over critical process parameters such as temperature and pressure. Because the agitators are independently driven, the unit can operate with various combinations of high-shear and low-shear agitators in process. Numerous operations can be accomplished in a single unit—eliminating the time, expense, and risk of contamination associated with transfers between several single-agitator mixers.

Scenario 2

Your Mission: Blend fragile, high-value ingredients

Product: Trail mix
Major Ingredients: Nuts, dried fruit, seeds, oats
Minor Ingredients: Honey, natural oils, flavor extracts, salt

Mixing Challenge:
- Blending fragile ingredients quickly, without damage

Close-Up View:
The strong preference for natural ingredients in this market presents many formidable challenges on the process line. Many of the high-value ingredients we see in retail products like energy bars, trail mixes, and fortified cereals are fragile. Exposed to high-energy blending, dried berries, apricots, and cherries are easily crushed. Macadamia nuts, pine nuts, pistachios, pumpkin seeds, toasted oats, banana chips, coconut grates—and many other nuts, seeds, and grains—are easily chipped. The trick is to find the delicate balance between applying enough energy to fluidize the mix and achieve homogeneity, without damaging the ingredients.

In most cases, the answer to this challenge is a sanitary paddle mixer equipped with electronic variable speed control, not just an on/off switch. Contemporary Variable Frequency Drives (VFD) provide the flexibility to vary speed easily, while main-
Many people believe the goal of automation is to eliminate human operators in a production environment. This is not true. Well-designed controls take over the repetitive tasks humans don’t do very well, while allowing them to do more of what they do best. A control system gathers data and executes a multistep process exactly the same way every time, shift after shift, without risk of fatigue, distraction, and occasional mistakes. Released from these chores, human operators are free to monitor the process, spot irregularities, and make judgments based on experience.

The goal in control design is really to optimize both machine operation and human operation. In each case, we ask, “What is the optimal role for operators in this case, and how can the control system help achieve this goal?” We adapt to the complexity of the process and the skill level of the operator. For example, we may provide on-screen instructions for an operator to take a sample, interpret the results, and manually continue the mixing cycle. Or we might automate the entire sampling process and simply report the results.

The value you can expect from your control system in day-to-day production goes up as you invest more energy and thought in your control strategy. Think of your control as a powerful tool that will help ensure greater product quality, more reliable production, and easier compliance with cGMPs.
Protein is having a “moment”—and a very good moment, at that. Unlike carbs, which have come in for all manner of criticism, or fat, which is going through its latest round of reputational reassessments, protein stands alone as the “virtuous” macronutrient: no mere repository of empty calories or artery-clogging lipids, but Nature’s ideal source of energy, satiety, and muscle-building amino acids.

Yet the shine on protein’s healthy halo could turn to rust if an insidious practice known as amino acid spiking persists. For when consumers purchase a purportedly protein-packed product that’s actually been spiked, they’re literally not getting what they pay for. And there’s no better way to lose consumer confidence—or the potential to profit from protein’s promise—than to say one thing on the label and deliver something far less impressive in the bottle, bar, tub, or packet.

The Body’s Building Blocks
To grasp just how high protein’s profile is flying these days, you need look no further than the results of this year’s International Food Information Council (IFIC) Food & Health Survey, in which fully 50% of respondents claimed they were either aiming for a certain amount of dietary protein, or were simply trying to get as much of the stuff as possible.

And taking a look at the product-development side, researchers at Innova Market Insights tracked a 16.4% compound annual growth rate from 2009 to 2013 in new food and beverage launches in the United States that make a protein claim.

Far from being an empty trend, protein and its benefits are well substantiated. As Nandakumara Sarma, PhD, director of dietary supplements, US Pharmacopeia (USP; Rockville, MD), says, “The human body needs a certain amount of protein to cover not only its caloric needs but also its need for essential amino acids, which the human body requires but cannot make and, hence, must get from the diet.” The body then uses those amino acids to build proteins that participate in nearly all functions of the human body, Sarma says. Muscles, antibodies, enzymes, and more: they owe their existence to protein, as do we.

The Protein Premium
And we’re catching on to that fact. Everyone, from millennials and boomers to body-builders and big losers, now recognize protein as essential to sustaining energy, maintaining and growing muscles, even putting the kibosh on hunger pangs through its effects on satiety. Armed with this knowledge, consumers are paying a premium for supplements and functional foods that pack protein in—and proclaim it on the package.

Nowhere is this clearer than in the beverage sector. Innova found that products in the weight-management and sports-nutrition sub-categories can carry upwards of 40 g and 50 g of protein per serving, respectively, while averaging a respective and more reasonable 32 g and 18 g. And when the research firm looked solely at milk-based drinks—ready-to-drink (RTD) or powder—it found that those making high-protein claims fetched a 66% price premium over their mainstream counterparts.

Incentive to Increase
Such comfy margins give manufacturers every incentive to pump as much protein into their formulations as their budgets and product constraints will allow. But even when limited in their ability to add more protein, at least some processors appear willing to make it look as though they did. And that’s where amino acid spiking comes in.

“Amino acid spiking is not new and has certainly been reported in the past,” says Markus Lipp, PhD, senior director of food ingredients at USP. “It is hard to tell how widespread it is, as, of course, it is done in secrecy and with attempts to evade detection.” But whatever its prevalence, its motivation lies in the tension between the price that protein-packed products can capture and the equally dear price that manufacturers must pay for...
the protein ingredients to make them.

Or, as Lipp explains, “When amino acid spiking is done, a more expensive ingredient is...replaced with a lower-cost one, financially benefitting perpetrators.” More specifically, instead of building a protein powder entirely out of biologically valuable protein, “spikers,” so to speak, dope their formulations with cheaper, less nutritionally and physiologically beneficial substances like free amino acids.

Indeed, says John Travis, senior research scientist, NSF International (Ann Arbor, MI), “We suspect that the problem of protein or amino acid spiking was exacerbated by the increasing price of whey protein”—which, in-"novia notes, is the most sought-after protein in sports-performance and weight-management drinks. Whey protein isolates (WPIs) enjoy substantially higher penetration in sports beverages, whose consumers shell out for the “purest” form of protein.

Spiking to the Test
Pure protein is what consumers deserve to get. But when processors pull the bait-and-switch of spiking with non-protein amino acids, they’re taking consumers for a ride.

How do they get away with it? By explo-iting a quirk in the method used to determine the protein content of foods, beverages, and dietary supplements. Called the Kjeldahl method, this procedure is what Sarma terms “a surrogate test,” in that it measures the total nitrogen in a test substance and uses that as an indicator of the protein present. “Typi-cally, the numerical result for the amount of nitrogen is simply multiplied by the factor 6.25,” Sarma says. “The resulting figure is used as the amount of protein.”

But surrogate analyses fail to catch spiking thanks to two faulty assumptions that “some labs or companies intentionally or unintentionally make,” Travis says. The first is assuming that other compounds in the sample don’t contain nitrogen. “And two is [assuming] that nearly all of the nitrogen in the ingredient or product is present as protein,” he says. But several non-protein nitrogen-containing compounds—or NPN—can skew the nitrogen level upward, “artificially inflating the protein number,” he says.

The most common are amino acids. “For instance,” Travis says, “lysine and glycine have a higher nitrogen content than protein, both are less expensive than whey protein, and both may be commonly added to protein powders.” He also cites the melamine scandal of a few years back as an instance in which dubious processors added melamine—extremely rich in nitrogen—to pet food and infant formulas to boost protein analytics. Other ingredients can serve as go-to NPN sources as well, including taurine and creatine, which, Travis says, “are both commonly added to protein formulas.”

Catching Cheaters
Which raises the question of who would make such a deceptive formulation decision. And as far as Lipp is concerned, “It can only be done by people who lack the ethical boundaries, have access to the supply chain of proteins and cheap amino acids, and have access to a process to adulterate the protein with such an amino acid.”

Travis takes a more nuanced view, seeing “spikers” as falling into two camps: “1) those who intentionally formulate their ingredients or finished products with NPN sources to inflate the protein content number artificially, and 2) unintentional spikers using the non-specific test methods without knowing that further calculations are necessary to label an accurate protein content.”

Many in industry don’t realize that surrogate analyses such as Kjeldahl are only the first step in the process, Travis says. To get an accurate reflection of a product’s actual protein content, we must first correct for the presence of any NPN by subtracting it from the Kjeldahl results. “From a laboratory’s perspective, the issue becomes even more complex,” Travis continues. “A lab may run a free amino acid test, which finds nitrogen contributed from free amino acids like lysine and glycine. Subtracting this number from total nitrogen will give you a more accurate measure of nitrogen from protein only, but it does not account for other NPN like creatine and taurine. One can see how complex this becomes. At what point does the lab stop searching for NPN in an ingredient or product?”

Perhaps when they have an alternative to the Kjeldahl method for finding it. And according to Gabriel Giancaspro, PhD, vice president for food ingredients, dietary supplements, and herbal medicines at USP, pressure to identify such alternatives has directed attention to amino acid profile as one of the potential solutions. Instead of measuring “the simple nitrogen atom as ammonia, several techniques intended to measure proteins are based on protein hydrolysis and subsequent measurement of the released amino acids,” Giancaspro explains.

While this lessens the incentive to add, say, melamine as a source of simple nitrogen, adulterators may still be tempted to spike with the amino acids that the tests are designed to detect. “However,” Giancaspro continues, “spiking with pure amino acids to boost the protein content does not make much economic sense because production of pure amino acids is usually more expensive than production of nitrogen-rich ingredients.” One exception, he notes, occurs when a test looks for a particular amino acid. This is the case with the Lowry method, for instance, which zeroes in on tyrosine content. Thus, in this case, he says, “spiking with tyrosine could make economic sense, as you know your buyer is testing by Lowry.”

Spiking with amino acids from hydrolyzed proteins “is more likely to occur as economically motivated adulteration,” Giancaspro concludes. And some unlikely amino acid sources might even include hydrolyzed leather, which he calls “a typical adulterant.” To ferret out such shenanigans, he suggests denaturing the proteins with trichloroacetic acid (TCA), precipitating the free amino acids and more water-soluble peptides and then filtering or centrifuging them out for analysis. “Another analytical solution,” he says, “would be to use techniques that measure intact proteins, such as electrophoresis or isoelectrofocusing, or techniques that focus on the peptide bonds themselves, like BCA—bicinchoninic acid assay—or biuret.”

A Losing Game
Clearly, it’ll take some analytical innovation to beat the cheaters. Meantime, both consumers of protein products and such products’ well-intentioned manufacturers are left wondering what they’re getting. “In the most immediate sense,” Travis says, “spiking protein content provides ‘bad’ players with a temporary competitive edge and increased profit margins.” But in the longer term, he says, “Fraud by just a few bad companies has the potential to erode consumer confidence
in supplements altogether, lumping the good companies in with the bad.”

And that, experts agree, is the real danger. As Sarma notes, “Victims are, of course, consumers, as they are buying a fraudulent product that is not what it purports to be. Ultimately, consumers, industry, and regulators will suffer from a loss of trust in the supply chain.”

As that chain grows ever more global, the chances to jeopardize trust multiply in tandem with those for spiking product. That, Travis says, is “the challenge of a complex global supply chain.” Protein spiking “can happen anywhere along it. It could be the formulators, ingredient suppliers, or the finished-product manufacturer. There are many opportunities for mistakes or economic fraud.”

### Reinforcing the Supply Chain

Thus, he says, each link needs targeted and rigorous supplier qualification programs reinforced through testing. “Retailers in particular have looked to third-party product testing and certification to ensure the quality and safety of the supplements on their store shelves,” he says. To comply with GMPs, manufacturers must test incoming ingredients and finished products to confirm both their identity and accordance with specifications like protein content. Failure to test incoming ingredients, Travis adds, is “the most-cited GMP nonconformance by FDA auditors.”

When NSF International tests products to validate protein content, he continues, “we run a total amino acid scan as well as a free amino acid scan, then subtract the two numbers to get an accurate protein number. This means that we eliminate the nitrogen that is contributed from all non-protein compounds such as creatine, taurine, melamine, urea, ammonium sulfate, et cetera.” The organization also participates in industry discussions about testing and offers guidance on proper supplier validation and protein determination.

And a good thing, too, considering that regulatory oversight of protein-content determination remains frustratingly lax. As Andrea Wong, PhD, vice president, scientific and regulatory affairs, Council for Responsible Nutrition (CRN; Washington, DC), points out, “Currently, FDA’s labeling regulations do not specify what should or should not be counted toward protein content.” That helps explain why CRN released its own protein calculation guidelines for use with supplements and functional food and beverages.

CRN’s guidelines recommend that content determinations include only proteins that, “by definition, consist of a chain of amino acids connected by peptide bonds,” according to a press release. And while the organization recognizes that NPN ingredients may have nutritional and physiological benefits themselves, Wong says, “it is important that they are labeled appropriately and not be included in the protein count.”

Wong says CRN has “received enthusiastic support of our protein labeling guidelines from industry, health professionals, and consumers,” adding that the guidelines comport with those issued earlier by the American Herbal Products Association (AHPA; Silver Spring, MD)—not surprising considering that the two groups cooperated to provide consistency and make it easier for industry members to voluntarily comply with both programs.

As Michael McGuffin, AHPA’s president, says, “The AHPA Guidance on Labeling of Protein in Food and Dietary Supplements creates a standard by establishing that protein is calculated to include only proteins that are chains of amino acids connected by peptide bonds and to exclude any non-protein nitrogen-containing substances from such calculations.” He adds that the guidance highlights industry’s “ability to identify an issue and collaborate to develop an effective solution.”

And that should put manufacturers’, not to mention consumers’, minds at ease. As Travis points out, “There will always be economic fraud where money is to be made, which is why transparency is so important to consumers. Doing your due diligence to identify a high-quality, accredited laboratory to conduct your ingredient testing is essential, and relative simple if you know what to look for and which questions to ask.”

Kimberly J. Decker writes for the food and nutrition industries from her base in the San Francisco area, where she enjoys eating food as much as she does writing about it. Contact her at kim@decker.net.
Can Turmeric Help with Digestive Disorders?


Canadian researchers are preparing to review existing research on turmeric for digestive disorders, and their conclusion should bring the scientific community closer to understanding whether or not this famous root has an impact on this part of human health.

Known for its characteristic yellow color, turmeric is commonly used around the world for its anti-inflammatory properties, but science on this root for digestive disorders is inconclusive. Preclinical studies suggest a role for turmeric in protecting the gastrointestinal system from inflammation, while also encouraging the secretion of important acids and digestive enzymes, but results from disease-specific studies vary. Past studies support turmeric for ulcerative colitis and indigestion, but trials on irritable bowel syndrome haven't always been so successful.

The Canadian review, led by Kednapa Thavorn of St. Michael's Hospital in Toronto, will concern studies on turmeric and its compounds for a number of digestive disorders: peptic ulcers, irritable bowel syndrome, indigestion, Crohn's disease, ulcerative colitis, and gastroesophageal gut syndrome (GERD).

“If the gastro-protective effect of turmeric is confirmed, turmeric and its compounds should be considered as a promising alternative for patients who suffer from digestive disorders because it is safe, inexpensive, and ubiquitously available,” wrote the research team. “In contrast, if gastro-protective effects of turmeric cannot be established, this evidence would be useful in enhancing the patients’ understanding of the limitations of this commonly used therapy. Thus, it could guard them against the false claims and advertisements of turmeric product manufacturers.”

Organic Food Has More Antioxidants, Says Largest Comparative Study to Date


Back in 2012, a group of Stanford University researchers published a study that found no evidence that organic foods are more nutritious than their conventionally grown counterparts. In a new meta-analysis, however, a different group of researchers found there are benefits to going organic—including higher level of antioxidants.

Levels of antioxidants were substantially higher in organic produce compared to non-organic produce, including 19% more phenolic acids, 69% more flavanones, 28% more stilbenes, 26% more flavones, 50% more flavonols, and 51% more anthocyanins.

“Among the composition differences detected by the meta-analyses carried out in the present study, the higher antioxidant activity and higher concentrations of a wide range of antioxidants/(poly)phenolics found in organic crops/crop-based foods may indicate the greatest potential nutritional benefits,” wrote the study authors, who also looked for other crop composition differences.

Why are antioxidants more plentiful in organic crops? It’s likely part of the plants’ own mechanism of self-protection. Plants may produce higher levels of antioxidants when trying to protect themselves from pests and disease, but the researchers caution that no formal studies have confirmed a causal link between antioxidant content and pest incidence, nor do they claim a link between higher antioxidant content and better health.

Organic produce may offer other benefits, though. The researchers confirm a four-fold reduction in the amount of pesticide residues in organic foods compared to non-organic foods, as well as a significantly lower level of the heavy metal cadmium.

This meta-analysis throws the biggest support to date behind the demand spike for organic foods over the last 20 years—a market that, in the United States, now represents 4%, or $32.3 billion, of the total food market.

Yerba Mate Beverages Can Have Lots of Rutin


The plant yerba mate (Ilex paraguariensis) is rich in flavonoids called rutin, but these compounds degrade under certain environmental conditions. For beverage manufacturers eager to preserve the rutin in yerba mate drinks, researchers at the University of Campinas in Brazil have settled on what they believe are optimum processing conditions.

After grounding and roasting yerba mate leaves and stems from several commercial batches, the researchers prepared ready-to-drink samples under a variety of conditions: different steeping times, different steeping temperatures, and different water volumes. HPLC tests indicated that rutin content was highest when 2 mg of tea was added to 100 ml of water at 72°C for 9 minutes. Tea brewed in this fashion yielded anywhere from 0.16 to 1.1 mg of rutin in commercial-ready products. That’s a steady amount compared to the at-times immeasurable rutin content resulting from extreme temperatures and steeping times. 

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Coloring with Spirulina Blue

Industry just got a new source of natural blue coloring, but what are this colorant’s limits?

BY ROBBY GARDNER, ASSOCIATE EDITOR

For centuries, humans have consumed spirulina (*Arthrospira platensis*) for its great concentration of vitamins, minerals, protein, and chlorophyll. It’s been a primary component of diets in Mexico and Chad, and consumers worldwide still buy spirulina today as tablets and powders. But, for all of spirulina’s popular use, U.S. manufacturers have never been allowed to use this blue-green bacterium as a coloring agent—until now.

Thanks to a few persistent ingredient suppliers who filed petitions, spirulina is now an FDA-approved colorant. Yet, while spirulina coloring is getting lots of approved uses, the ingredient is not without its limits. Before manufacturers switch from artificial blues to this natural one, a basic understanding of spirulina can be helpful.

Taste and Application

Sourced from open-air ponds, spirulina is known as much for its fish-tank odor and flavor as for its nutrition. But the small amount of spirulina that is required to impart color in food products shouldn’t be enough to disturb the senses. Many spirulina coloring agents are sourced from extracts anyway, and suppliers say these extracts undergo enough processing to overcome the smell or taste that would be present in the raw material.

Spirulina extract is approved for many food product categories. Last summer, FDA approved the material as a coloring source for candies and chewing gums. Just months ago, the agency extended that permit to frostings, ice cream and frozen desserts, dessert coatings and toppings, beverage mixes and powders, yogurts, puddings, custards, cottage cheese, gelatin, breadcrumbs, and ready-to-eat (but not extruded) cereals.

On the dietary supplement side, spirulina is useful as a nutraceutical ingredient. Its usual color is dark green, but Valensa International (Eustis, FL) has taken an extra step in developing a spirulina ingredient that is highly concentrated in spirulina’s blue pigment. It’s this blue that is the basis for spirulina’s approved use for coloring.

Color Range

The primary pigment in spirulina is a protein called phycocyanin. It imparts a cyan, or vibrant blue, color. Manufacturers will most often see spirulina coloring extract in this shade, but that’s not to say that spirulina blue can’t be the foundation for other colors.

“You can mix it with yellow to get green, but you can also mix it with red to get these lavender or violet shades,” says Jeanette O’Brien, vice president of GNT USA Inc. (Tarrytown, NY). “They’re different shades of purple than what you would get from other fruits or vegetables.”

Stability

Even though spirulina opens up a new world of natural color, the ingredient isn’t destined to perform well in every product. It has its limits, as all natural colorants do.

Spirulina is usually not stable in beverages, either because of beverage acidity or because spirulina will simply settle to the bottom of liquid products. (Beverage powders, on the other hand, are a viable alternative.) Spirulina does not hold up in high heat conditions, and for this reason extruded cereals are also out of the question. Dairy products, while included on the permissions list, could be tricky.

“With yogurt and dairy products, you may have to be careful and watch out for any interactions that may occur,” says Chad Ford, associate director of the colors division for WILD Flavors Inc. (Erlanger, KY). “There’s a lot of protein that’s already in spirulina itself, so you’d want to watch for any interactions with active cultures from yogurt.”

Conditions that work well for spirulina coloring are alkaline or neutral in pH. Products that are fixed in form, like non-extruded cereals and gelatin, should keep the coloring in place and prevent it from migrating through to different parts of a product. For spirulina’s handful of challenges, a lot of opportunities still exist, and if blue coloring is desired, this brilliant new blue is worth your consideration.

Ice cream colored with spirulina, courtesy of GNT USA.

Not interested in spirulina? Try huito. Unlike spirulina, this fruit juice–based blue is acid-stable, but in a slightly different shade of blue.
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