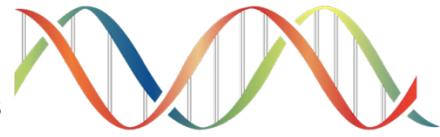




Community BioRefineries
The Epitome of American Innovation



By Scott Hewitt CEO and Vincent R. James Ph.D. CTO
Community BioRefineries,

What is the principal (core) product from the CBR and HBR?

Pure Plant Protein Isolates

What began as CBR's quest to discover the most efficient and sustainable method to make biofuels evolved into creating new and novel products in the process. The core product of Community Bio-Refineries is now pure plant protein isolates.

The world is waking up to the increasing demand for plant proteins, and we are becoming increasingly aware of beneficial nutritional and functional properties in a plant-based protein isolate. How can we find an accessible, affordable, healthy, and sustainable protein critical to human nutrition and economic development? Look no further than Community Bio-Refineries.

"How can we produce enough protein to feed a planet of 10 billion people?"

The Community BioRefineries (CBR) process makes it possible, for the first time, to extract and recover – intact and undamaged – proteins present in a host of feedstocks. Because of the nature of our proprietary process, these life-saving proteins have, for the first time, retained their complete nutritional properties. We enable our Pure Plant Protein Isolates to fortify other food products or create our own branded food products. Likewise, we can separate and recover without heat, pressures, and toxic solvents (hexane, propane, and butane) components like high-oleic oils in an extra virgin process for similar uses.

Can other companies create protein isolates? Of course, but they are largely severely damaged by their isolation and extraction processes used, which diminishes the nutritive values and makes their protein isolate look, smell, and taste funny.

In the world of nutrition and ingredients, the CBR Protein Isolates are a brand-new plant-based protein platform, healthy protein isolate, totally fat-free, tasteless, odorless, colorless, and with a 92%-plus purity protein isolate extract extracted from the grain.

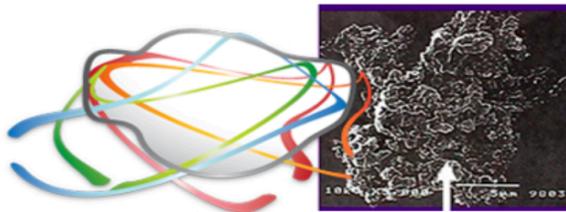
This isolate's amino-acid profile meets or exceeds the FAO* food pattern for a complete whole-food** protein with a healthy Protein Efficiency Ratio (PER) of 2.5. It provides a totally nutritious new-food protein throughout every group and age range.

* Food and Agriculture Organization of the United Nations

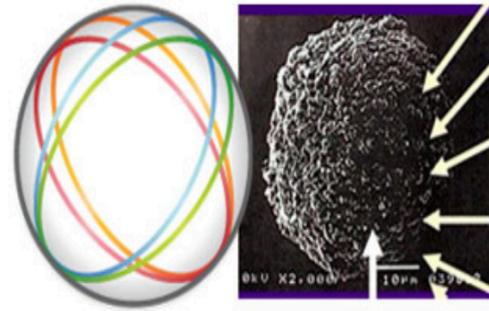
** A "whole food" is one which can sustain a human all by itself.

Other food companies currently utilize economy processes that result in denatured (damaged and ruptured) proteins that become putrefied and must be compensated for by additives to mask the nasty results of their

denatured proteins (odors, off-flavors, odd coloring, etc.). Something that is denatured means it has already started the decomposition/rotting process.



Denatured Protein



Intact Protein

Numerous food companies have expressed keen interest in the protein isolates and high-quality food-grade oils generated by the CBR process. In particular, one company has voiced a requirement for enough Protein Isolate to involve the entire output of 3 CBRs and possibly up to 10. On a corporate-wide basis, CBR desires to replace the almost 300 million pounds of mostly damaged or denatured milk protein (casein), currently imported annually into the U.S., which would require the construction of 60-100 CBRs. Interest has also been expressed in CBR's Corn Protein Isolates to supplement or replace whey protein isolates used in body-building formulas, which could require the construction of up to 90 CBRs to fulfill such orders. Further, high-quality oils have attracted pharmaceutical companies' attention, which view these CBR-produced oils as a health product to be capsulated and sold. CBR has the latitude to direct all or portions of the waste stream into its special fermentation reactors to produce food-grade organic acids, such as acetic acid (vinegar) and propionic acid, used extensively in the baking industry as a preservative. (The Propionic acid currently in use by the food industry is a *petrochemical* derivative...)

Using the CBR extraction and isolation applied technologies, the CBR Protein Isolates are new proteins isolated from grain, 90%+ pure protein. The Plant Protein Isolates contains a complete balance of branch chain amino acids that meet or exceed the WHO-FAO (World Health Organization's Food and Agricultural Organization) food pattern for a complete whole food across all age groups. Other grain protein processors do not offer this same benefit. The PER (Protein Efficiency Ratio) of the CBR Protein Isolates is 2.5 or higher (per USDA). This is comparable to milk casein and caseinate in nutrition and is considered a "complete" protein. CBR applied technologies allow the protein to be accessed directly from the plant or grain for food applications.

With the demand for food protein increasing globally, our Pure Plant Protein Isolates could become the new source of high-quality food protein to feed a hungry planet. CBR currently focuses on corn, soy, rice, camelina, barley, and hemp protein isolates.

Bio-Medical Applications: The possibilities of completely intact branch chain amino acids from a plant source, according to the Nutrition Industry, is revolutionary. As required, the CBR may isolate specific proteins and other nutritional food ingredients to create food and nutraceutical end items. These revolutionary nutritious food ingredients will lead to numerous dietary clinical trials for cachexia, the "wasting disease" frequently experienced by patients undergoing treatment for AIDS/HIV, and chemotherapy and radiation therapy for cancer patients. With its capabilities, the CBR can isolate, recover, and concentrate the *fulvic acid* present with the soybean plant. *Fulvic acid* has *pharmaceutical* applications, which provide the CBR with yet another value-added product to the produce. There are several other nutraceutical/bio-medical and even pharmaceutical applications possible from CBR products.

THE PRODUCT: THE PERFECT PLANT PROTEINS – A Bit More Detail

Through the Food For Life and Protein Therapeutics Foundations, Community Bio-Refineries intends to sponsor clinical trials to test new plant-based proteins called Perfect Plant Proteins in combating disease, such as the dreaded muscle-wasting disease known as "cachexia". Perfect Plant Proteins are, as an example, produced from hybrids of ancient Mayan maize varieties in mixtures with other botanicals. Scientists believe these ancient maize varieties contributed to the tremendous strength, energy, and vitality of the ancient Mayans, accounting for their vast, sustainable civilizations.

New modern maize varieties were developed from ancient seeds collected by Dr. Norman Borlaug in Mexico and by scientists at the USDA's Crop Seeds Unit in Ames, Iowa (who were also former students of Dr. Borlaug). Dr. Borlaug and his students developed improved cultivation methods to develop more robust strains of these crops. Dr. Borlaug's work was responsible for saving the lives of over one-billion people; for this work, he was awarded the Nobel Prize for Peace. Today, he is considered to be the "Father of the Green Revolution". These new hybrids have unique and unusual nutritional and nutraceutical traits, including a greater content of nutritious protein (similar to milk protein) and which display superior amino acid profiles, including extremely high levels of branch-chain amino acids and *glutamic acid*, known to combat cachexia.

These hybrids also contain essential monounsaturated oils (comparable with olive oils) that contain lower saturated fats; they also contain natural resistant starch, a type of natural probiotic which helps to improve the health of the digestive system. The USDA calls one of these new hybrids "Heart Friendly Corn" because it contains these exceptional nutraceutical traits (nutraceuticals are foods that act like medicine) which can be beneficial to the heart. CBR will process these new hybrids and botanicals without ruining or denaturing them, preserving their natural nutraceutical traits in Perfect Plant Protein products never before available.

The Food For Life and Protein Therapeutics Foundations believe that food products originating from these Perfect Plant Proteins, botanicals, and nutraceuticals can be used to combat many diseases, including the dreaded muscle-wasting syndrome known as "cachexia" experienced by cancer and HIV/AIDS patients who experience a dramatic loss of weight and appetite. Sarcopenia is also a result of loss of muscle mass and is a disease associated with aging; the Perfect Plant Proteins may also help in overcoming this disease, and perhaps even to children who suffer from starvation disease known as "kwashiorkor", through highly nutritious meals containing these Perfect Plant Proteins and nutraceuticals. Delivery can be via a host of highly nutritious breads, cookies, shakes, cereals, pastas, and snacks. Through a collaboration with Community Bio-Refineries with its Perfect Plant Proteins and Food For Life and Protein Therapeutics Foundations, clinical trials can be sponsored which will validate the use of these special protein nutraceuticals in proteo-homeostasis (protein therapy) applications and serve to help sustain the patient during disease affliction, resulting in faster recovery.

Why did Community Bio-Refineries choose hybrids of the Ancient Mayan Maize?

We learned about the work of Dr. Norman Borlaug and his focus on the original strains of maize; because it had not been compromised by genetic manipulation, we were doubly intrigued. Coupled with the ability of the CBR applied to isolate the components of these maize varieties without damaging or degrading them, there seemed to be a real opportunity to be able to provide a pristine protein product to cachexia sufferers. The non-GMO (not genetically modified) hybrid derived from these ancient maize varieties has been developed by the USDA through natural selection and is called "Heart Friendly Corn" because it contains higher nutritional levels of perfectly balanced amino acids which are more nutritious than animal proteins. Many scientists even believe these maize varieties contributed to the extreme health and vitality of the Mayans which allowed them to build their vast civilizations. In addition, these new hybrids also contain higher levels of special essential oils and starches, both

of which are known to have nutraceutical (medical) benefits that will have a positive effect on muscle wasting diseases.

Can we get the same nutrition from Industrial Farming?

In a word, no. Industrial farming has sought to maximize both production efficiency and increased yields per acre, but at what cost? However unintentional, the same elements which created these efficiencies and volumes also resulted, over time, in significant losses in nutritional values.

What is special about the Perfect Protein Products?

First, it is plant protein, not animal protein, so we don't leave out our vegan brothers and sisters. Second, the long-held method of breaking down plant material to recover its components involves prolonged exposure to heat to break it down – requiring tremendous amounts of fossil fuel to accomplish. After broken apart, the traditional process then applies various chemicals to recover them. By the time the proteins, oils, and starches are recovered, they have been irreversibly damaged (“denatured” – meaning no longer in their natural state). The protein in this "denatured" state has already begun to rot, and has lost much (if not most) of its original nutritive value. This is exactly why FFLF and PTF sought out Community Bio-Refineries with its cutting edge applied technologies, because they eliminate these negative attributes and preserve the natural nutritional characteristics of grains.

Who/where else can Perfect Plant Protein Products be obtained?

To our knowledge, these Perfect Plant Proteins are not available from any other sources. In our research, there have been several groups which have attempted to develop such technologies, but so far have been unsuccessful in their attempts, including the isolation of corn protein isolate. Unfortunately, some could only accomplish certain aspects of what the CBR applied technologies have been able to perfect. The proteins recovered using these applied technologies are odorless and tasteless, and can therefore be incorporated into a large variety of common food products we all eat every day.

For more in-depth information please see our website. [Community BioRefineries](#)