Plandáí Biotechnology, Inc. – A Purer Diamond in the Rough

We feel there is no better find than a diamond in the rough biotech, add to the equation that it’s a biotech with an extremely low float, and further find that most importantly its work can literally change lives – making it the true definition of a diamond in the rough. We have uncovered some real gems lately, but we’re extremely excited about the ground-floor opportunity Plandáí Biotechnology, Inc. (OTCQB: PLPL) offers investors.

If you’ve read any of our reports or articles, you know we don’t like to get too bogged down in the science, or the complicated math. Our intent is to always keep it simple and speak in laymen’s terms so all investors can really grasp the company’s business. Now having said that, we may have to get a little into the science with Plandáí Biotechnology to fully explain how this company is on the verge of developing a brand that offers real preventative solutions to the world in such areas as malaria, parasites, viruses, cancer, diabetes, anti-aging and even weight loss.

In this report, we’ll introduce you to the company, its products and efforts to begin preclinical studies to develop pharmaceutical drugs; its proprietary approach to bioavailability that sets Plandáí Biotechnology apart from its competitors, the business plan it’s using to guide its future success, and the exceptional team behind the science. As we researched Plandáí Biotechnology, we found the management team has been very patient and
extremely thorough in its approach to its research, the business model and the process in general to get to this day. They have laid out 2013 as the proverbial starting point to the rest of the company’s life. It is this patience and attention to detail that leads us to believe the company deserves a long look and as you’ll soon read for yourselves, it’s a biotech that certainly deserves the Speculative Buy Rating we’ve given it.

Company Overview

Plandaí Biotechnology, Inc. focuses on the production of proprietary botanical extracts for the health and wellness industry. The company’s research and work is tied to a proprietary extraction process that gives Plandaí Biotechnology a competitive advantage with its multi-branded product – Phytofare™ and eventually its preclinical studies to develop pharmaceutical drugs for malaria and other diseases.

Make no mistake about it Plandaí is not producing green tea. If your impression of the company’s work, to this point, has been that PLPL is
creating another green tea to sit on the shelves at GNC, you’re in for quite a surprise. Plandaí Biotechnology is a biotech firm that farms the green tea plant itself for its leaves, harvests it, and then the science takes over, and an amazing process takes place (further explained below). Unlike current botanical extracts, Phytofare™ is specifically designed for maximum absorption, and the company points to research stating its product can deliver significantly more absorption than the standard – all due to the company’s process.

Keep all of this in mind, as we’ll be digging into the company’s proprietary process, the line of Phytofare™ products, and into terms like absorption and bioavailability and how these terms will likely generate a lot of revenue for Plandaí Biotechnology.

Plandaí Biotechnology, Inc. has 10 years of research and planning to back up its confidence in the model that executives have chosen to follow, and that work justifies the meticulous approach taken by Plandaí Biotechnology Chief Executive Officer (CEO), Roger Duffield.

In 2002, Duffield founded Plandaí Biotechnology with the original goal of delivering to the marketplace a stable, food-based emulsion to feed the masses in sub-Saharan Africa. The company’s experimentation led to the development of a tomato-based carotenoid extract. They thoroughly investigated the extract to understand fully its nutritional value. The most exciting research to be published on the find came from the USDA which said in its report published in Food Chemistry of Plandaí’s technology:

“This proprietary method provides increased accessibility of carotenoids to extraction procedures on tomato, while changing the stereoisomerism profile of lycopene to one that is more bioavailable and therefore more beneficial to consumers.”
The research done by the USDAs Dr. Betty Ishida in Albany, California, from 2007-09, validated the scientific data that proved Plandaí’s proprietary technology enabled positive isomeric structural changes of live plant materials, thereby making them significantly more bioavailable than other extracts. Basically the company had developed a way to transform plant material into a form that made their phytonutrients more readily absorbed and utilized by human tissues.

Now the company has dramatically expanded on its original development into what PLPL is becoming today. Plandaí has its headquarters in Seattle, Washington, but has also set up shop in South Africa where the biotech has received a great deal of support to the tune of $13,000,000 in loan funding and operates on 8,000 acres of land to bring its unique technology and brand to life.

**The Plandaí Biotechnology Structural Model**

The company should find a great deal of its success will come from the fact that Plandaí, along with its subsidiaries, controls every aspect of their process. From growing the raw material, to creating the extract on site through to selling it to the market, the company is able to maintain a tight control over both quality and supply.

All of the companies that fall under Plandaí Biotechnology’s umbrella are working together to bring to market highly bioavailable extracts from live plant materials. These extracts have numerous applications across many sectors throughout the world, and through the different companies all market segments are fully covered.
Dunn Roman Holdings – Africa (Pty) Ltd was established as a subsidiary to allow the company to operate in South Africa and continue its research into developing botanical extracts using live plant material. In the time since, research has extended into the field of green tea and the recovery of catechins.

Dunn Roman Holdings is the licensee in Africa for the company’s proprietary extraction process technology. It is also the holder of the company’s notarial leases for the thousands of acres comprising the tea plantation.

Breakwood Trading 22 (Pty) Ltd is the farming arm of the holdings company delivering the freshly harvested tea leaf product to the processing facility. Breakwood Trading has rehabilitated over 500 acres of green tea bushes on its 8,000 acres estate with a goal to have 800 acres prepared in time for the first harvest in the fall of 2013. There are currently 300 full-time workers living on the plantation helping to ensure that the company meets its initial goals. The CEO says this number will increase to 500 workers when the tea harvesting begins.
Roger Duffield says, “This amount of production will yield 6,000 kilos of our Phytofare™ Green Tea extract, which should be adequate for our forecasted 2014 sales.”

Green Gold Biotechnologies (Pty) Ltd receives the fresh green tea leaf product (live botanical material) and creates the extract using the proprietary technology with custom made equipment.

The Land Bank Advantage

In 2011, Plandaí, through its subsidiaries, entered into a **49-year notarial lease on 8,000 acres of tea plantation** in Mpumalanga province of South Africa. The lease gives Plandaí access to green tea, and other fruits for use in its botanical extracts. This is essential since the company’s extraction process requires the use of “live” plant material—meaning the plant matter must be processed within hours of harvest.
Plandaí Biotechnology, through its South African subsidiary, Dunn Roman Holdings Africa (Proprietary) Ltd, secured loan financing from the Land and Development Bank of South Africa in the amount of $13,000,000 (Rands 100 million). This money is being provided to rehabilitate the tea plantation into a workable farm, construct an on-site extraction facility, and provide hundreds of new jobs for the local communities in the region.

Plandaí CEO Roger Duffield said of the South African project, “The project is the first botanical extraction business in South Africa addressing the issues of unprofitable tea estates and making them more viable through the harvesting of fresh green tea leaf for the sole purpose of extracting a bioavailable green tea gallate catechin extract. Green tea extracts from the plant Camellia sinensis contain polyphenols and catechins, which are functional chemical compounds possessing nutritive properties that act
effectively as preventive agents in the healthcare field. Polyphenols from green tea are an excellent source antioxidant and anti-carcinogenic substances.”

This $13,000,000 loan financing comes with some extremely friendly terms for the company, and it’s a very strong endorsement by the folks at the Land and Development Bank of South Africa who clearly feel Plandaí Biotechnology is looking at a bright future. The loan is non-dilutive, and there is no equity conversion feature associated with it. It is strictly a debt financing.

The Land and Agriculture Bank of South Africa http://www.landbank.co.za is a specialist agricultural bank guided by a government mandate to provide financial services to the commercial farming sector and to agri-business and to facilitate access to finance by new entrants to agriculture from historically disadvantaged backgrounds.

The Plandaí Biotechnology Competitive Edge

Through a patented hydrodynamic sheering process, live plant-materials are converted at the molecular level during extraction into a nano-particle structure that mimics that found in human tissues. So, where most botanical products have less than 10% absorption, according to the company and documented research, Phytofare™ is clinically proven to have far superior absorption. Higher bioavailability translates into the ability for users to receive a clinical dose with lower quantities.

The top pharmaceutical grade botanical extracts report 80-85% purity through blending and formulation; However, Phytofare™ extracts are naturally 95-98% pure. This is huge and allows Plandaí to deliver exceptional purity, combined with exponentially enhanced bioavailability, resulting in a family of botanicals that yield unparalleled results.

Why is this important? Well, bioavailability is the key to any drug or supplement’s effectiveness. By definition, when a medication is administered intravenously, its bioavailability is 100%. When a medication is administered in any other way, orally for instance, its bioavailability
generally decreases due to incomplete absorption and may vary from patient to patient. Bioavailability can be defined as a measurement of the amount of any compound to be absorbed into the bloodstream.

Here is where we’ll get a little scientific on you only because it helps to explain the significance of what Plandaí Biotechnology does with its process and why their dramatically improved bioavailability is a huge win for the user of the company’s products. Bioavailability in human tissue is enhanced by several methods, all of which focus on improving the molecules’ ability to cross the cellular membrane. Generally, there are two ways this is accomplished:

- Decrease the size of the molecule. The smaller the size, the more easily it can pass through cell walls.

- Change the properties of the molecules so that they mimic that of human tissues and can, in turn, pass through cellular membranes unhindered.

Plandaí’s proprietary processing and extraction technologies have been shown to increase the bioavailability of phytonutrients and antioxidants by addressing both of these bioavailability advantages.

When we asked the company’s CEO Roger Duffield to give us a better understanding of the science the company uses with its process, he gave us an answer that should excite anyone who is interested in science and anyone who is interested in biotechnology firms that produce exciting products that can make our lives better:

“Nearly all drug compounds are synthesized plant analogs. While botanical material can have tremendous curative properties, it generally has poor bioavailability—or low absorption in human tissues. This is because human tissues have a different molecular structure than plant matter. A synthetic drug tries to recreate the beneficial elements using a molecule that has greater bioavailability. Unfortunately, these synthetics often have adverse
side effects and, over time, can result in drug-resistant strains of the disease.

Our patented technology allows us to take specific types of live plant material and **unzip the molecules, releasing all of the phytonutrients, and then rearrange the isomeric properties of the molecule so that it mimics the 50/50 ratio commonly found in human tissues.** Simultaneously, we’re able to take out any undesirable elements and reduce the particles to nano-size.

What this means is that **we are able to tailor design the living molecule to maximize the phytonutrient properties and absorption.** So, where most phytonutrients are poorly absorbed in humans, our products are highly absorbed.

The key for us is using live plant materials. From the moment of harvest, we maintain the material at an optimal temperature and then begin the extraction process within the hour. This ensures that we are releasing and capturing live anti-oxidants, resulting in a product that is 100% pure bioactive.

We believe that this technology is the foundation for creating a whole new family of drugs that can treat a multitude of diseases and conditions, safely and affordably using naturally-derived extracts.”

The benefit to those using Plandai’s products is that with higher bioavailability or absorption rate, a smaller dose is needed, and this allows the company to remain extremely competitive in the market.

Imagine finally buying a product that can actually deliver on its health promises. This is what Plandai’s highly bioavailable extracts will offer the market. When introduced, the company will sell its extracts to the leading product manufacturers in the following sectors: Food & Beverage, Cosmeceutical, Wellness, Nutraceutical, Anti-Aging, and Pharmaceutical.
Plandaí Biotechnology’s Products

Plandaí Biotechnology will soon introduce into the market three unique botanical extracts from green tea leaves, tomato plants, and citrus fruits that have been developed using the company’s hydrodynamic sheering process.

The products will all be branded under the Phytofare™ name, and they’ll address a number of the most talked about areas in the industry including: cancer prevention, anti-viral protection, anti-inflammation, antioxidants, weight loss, high blood pressure, and sports injury recovery.

The global tea market is estimated at over $50 billion while Vitamin Shoppe (NYSE: VSI) estimates the U.S. nutritional supplements industry alone is over $29 billion, and growing at 5.4% per year. Driven by increasingly educated consumers, with a heightened focus on living longer, feeling younger, living healthy and naturally, GNC (NYSE: GNC) now generates $1.2 billion online and through 6,300 retail stores, serving as a barometer of the magnitude of the market opportunity.

Plandaí Biotechnology will offer its Phytofare™ product branded with three distinct labels.

- Catechin Extract
- Limonoid Glycoside Complex
- Carotenoid Extract

Phytofare™ Catechin Extract

Phytofare™ Catechin Extract (“CE”) is rich in antioxidants, catechins—chemical compounds essential to boosting the immune system, lowering cholesterol, fighting obesity, and aiding in the prevention of cancers, malaria, and many other parasitic and viral infections.

Phytofare™ CE is a 65% polyphenol extract containing 85-88% catechins through the release of the active and stable immature catechin precursors.
Phytonutrients, namely catechins derived from green tea, or components thereof, have been thoroughly researched (over 200 published scientific papers) and shown to have anti-viral and anti-inflammatory properties.

We’ve all read about it – Green tea has been touted as the all-natural miracle plant for treating everything from obesity to cancer. So, we’ll take a moment to review how Phytofare™ CE is different from what is currently on the market and considered the standard:

- Most green tea extracts are made from dried unfermented tea leaf – meaning that the antioxidants have been compromised in stability and activity.

  In contrast, Phytofare™ CE is recovered from live plant material, retaining the catechins in an active and stable form.

- Most green tea extracts have between 1-10% bioavailability—in this form, human tissues simply cannot absorb a clinical dosage.
Phytofare™ CE is 85-88% pure through the release of the precursors and is stable, active and highly bioavailable.

- There are no toxicity issues as the body naturally rejects what it doesn’t require.
- Phytofare™ CE is fully water soluble.
- Phytofare™ extracts are less expensive since higher bioavailability and smaller particles means less dosage is needed.

**Plandaí** will operate with its top priority being human clinical trials of Phytofare™ Catechin Extract as an anti-malarial drug target. With upwards of two million deaths every year from malaria infections, this disease has a crippling economic and social cost.

Once approved by the FDA for treating malaria, Plandaí will be able to provide a clinical dose of Phytofare™ to at-risk individuals for a fraction of the current vaccine costs. This could provide Plandaí Biotechnology with a low cost solution to immunizing the entire population of sub-Saharan Africa against malaria, viruses, and parasites, as well as a defense mechanism for the immune system.

According to the company, ideally, Phytofare™ will be marketed to government agencies as an anti-malarial drug following successful in-vivo testing and FDA approval.

**Phytofare™ Limonoid Glycoside Complex**

Phytofare™ Limonoid Glycoside Complex is a unique product that utilizes the entire fruit including juice, pith, peel, and pulp from which all of the soluble phytonutrients are recovered.
It is an extract that is formulated to contain any or all of vitamins A & C, bioflavonoids, (especially Hesperidin and Rutin, limonoids – limonin and nomilin, and numerous minerals, including potassium and pectin.

The resulting complex has been scientifically proven to improve and maintain capillary integrity, fight infections, relieve the common cold and flu symptoms; reduce inflammation, and decrease the healing time of sports-related injuries.

In addition to the studies Plandaí will conduct with the Catechin Extract, in-vitro studies involving Phytofare™ Limonoid Glycoside Complex will be conducted as well focusing first on its anti-inflammatory properties.

**Phytofare™ Carotenoid Botanical Extract**

Carotenoid Botanical Extracts are produced from tomato and formulated in oleoresin containing different products of lycopene, and the opaque precursors phytoene & phytofluene in a highly concentrated, pure, stable, bioavailable form.

More than 250 scientific studies conducted in the last 15 years have shown that carotenoids, i.e., lycopene, have important health benefits for cardiovascular disease and certain cancers, especially breast, skin, prostate and colon. Prostate cancer, in particular, has received considerable attention with protective effects reported 19 times, and in one study that highlighted the benefit of processed tomato products over fresh tomatoes.

The biggest limitation of using lycopene as a nutriceutical has been reported to be the poor bioavailability, stability, and rapid degradation to heat and light.
Plandaí Biotechnology, Inc. – Management Team

Roger Duffield – Chairman & Chief Executive Officer

Roger Duffield has a significant background in the development and management of start-ups, both private and public companies, especially in the United States, Europe and South Africa.

His previous contributions in the United States’ public sector include Klinair Technologies, Inc. and Rhombic, Inc. relating to energy and hydrocarbon technologies.

Through his extensive involvement with research and development programs with a number of academic institutions, including Penn State, University of Southern California, University of Washington, and the University of Limerick, in Ireland, he was awarded two honorary Russian doctorates in Natural Sciences from the University of Moscow and Novosibirsk. In 2001, the Foundation for International Services, California recognized a degree in BSc. Chemical Engineering.

In 2001, he co-founded Global Energy Solutions Corporation Limited, Dublin, Ireland, which was acquired in 2011 by Plandaí Biotechnology, Inc., and in 2003, the USA-based Research Company, CRS Technologies, Inc.

Callum Baylis-Duffield – Vice President

Callum Baylis-Duffield is a graduate in International Business with French (BA Hons) from the University of the West of England. From 2007-2010, he was employed by Johnson and Johnson UK as a Marketing and Sales Manager of a proprietary surgical device.

Since 2010 he has been exclusively employed by Global Energy Solutions as the Director of Marketing and Sales.

For the past 18 months, he has been based in South Africa where he has been an integral part of bringing the proprietary extract to market. Mr. Baylis-Duffield has been involved with the research and development of
Plandaí’s proprietary emulsions since 2004, and he has worked extensively with the US scientific team.

**Daron Baylis Duffield – Director**

Daron Baylis Duffield has a PhD in Clinical Psychology and is a consultant psychiatrist with an international practice. She is the co-founder and Director of Global Energy Solutions Corporation Limited.

Born in Malawi, and having lived a great deal of her life in East and Southern Africa, she has an in-depth knowledge of the malnutrition crisis, alongside the accompanying physical and psychological dilemmas facing the people of Africa. During the 1990s she worked with the Red Cross in the HIV/Aids programs in South Africa.

**Brian Johnson – Director**

Brian Johnson is a patent attorney with a Bachelor of Science degree in Electrical Engineering and Juris Doctorate degree, both from the University of Texas, Austin and a Bachelor of Science degree in Mechanical Engineering from the University of Colorado, Boulder.

He has practiced as an engineer in the United States Air Force, as well as in the private sector, was previously a patent inspector, and was admitted to the Texas State Bar in 1995. Since 2008, he has served as patent counsel for Intellectual Ventures, LLC, prior to that he was Of Counsel Attorney for Davis Wright Tremaine, LLP.

**David Rzepnicki – Director**

David Rzepnicki holds a Bachelor of Science degree in Accounting from Barry University. He has worked as a Chief Financial Officer or Controller for several companies across a diverse field of industries, including fashion, real estate, energy, logistics, and insurance. He currently serves as controller for Excess Health, Inc., prior to which he was Controller for Missmatched, Inc., and Chief Financial Officer of Scott-Lawrence Realty and Development Corporation.
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