

≝ G R E E N F U N D

R E P O R T

BOTAN IX

JUNE 2019



≡ G R E E N F U N D 📮

The Green Fund is APAC's preeminent media house, positioned at the forefront of the global cannabis industry.

BOTANIX PHARMA

1Y - June-18 - June-19



52 Week Outlook



Value

Enterprise Value	\$84.93m
Market Cap	\$104.37m
Issued Float	773.13m
Average Daily Volume	902,525

Price Performance

1 month	\$0.12	17.39%
3 months	\$0.11	22.73%
6 months	\$0.07	92.86%



CONTENTS

PAGE	06	Executive Summ	lary	
	10	The CBD Market and medicinal usage		
	12	Synthetic CBD		
	14	Dermatology Market		
	16	Product Pipeline		
	20	BTX1503		
			Overview	
			Addressable Acne Market	
			Treatment Types	
			Market Value	
			Clinical Data	
	28	BTX1204	ļ	
			Overview	
			Addressable Atopic Dermatitis Market	
			Treatment Types	
			Market Value	
			Clinical Data	
	36	BTX1308		
			Overview	
			Addressable Psoriasis Market	
			Treatment Types	
			Market Value	
			Clinical Data	
	44	BTX1801		
	48	Commercial Stra	itegy	
	50	Financial Models	5	
	54	Current Financial Overview		
	56	Management		
	60	Risks		
	66	The Bottom Line	2	

ΒΟΤΑΝΙΧ

PHARMA

Inspired by the Cannabis Plant

Botanix Pharma (BOT) state that their mission is "to improve the lives of patients suffering from serious skin diseases including acne, psoriasis and atopic dermatitis by providing new treatment options for conditions that currently are inadequately addressed or are treated with therapeutics that are burdened with side effects profiles."

Simply put, this mission is the business.

And the business is preparing for some near term data read outs in the coming weeks, which if successful, will de-risk the company's portfolio of products with evidence as to how cannabis extracts produce the desired clinical effects BOT is striving for.

BOT is an Australian medical dermatology company engaged in the development of cannabinoid-based products for the treatment of a range of skin conditions and are working to get the first cannabinoid products approved by the FDA. If successful, they will dominate the multi-billion dollar dermatology market which largely has seen few new products approved in the last 20 years.

BOT is investigating the use of a synthetic active pharmaceutical ingredient, known as cannabidiol (CBD), which has a well-established safety profile, and is well documented in its ability to impact inflammation and potentially bacterial infection. However, BOT is not using the cannabis plant to obtain the CBD required for the formulation of their products. "The cannabis plant is the inspiration. We are just using a chemical that happens to be found in the plant."

Botanix Pharma Founder and CEO, Matt Callahan



All products made by BOT utilise synthetic CBD in conjunction with Permetrex[™] skin delivery technology. Permetrex[™] is a dermal delivery formulation technology that allows 10 to 20 times more of the active ingredient to get through the skin to better treat the disease. BOT has exclusive rights to this technology, developed by Dr Eugene Cooper, for all drugs that treat dermatological conditions.

Recently, BOT announced the results of a 3rd-party independent contract research report which was focused on showing the superior performance of Permetrex[™] against a range of over the counter (OTC) CBD products. The comparative analysis demonstrated that, relative to the closest comparator CBD topical product, BOT's initial product (**BTX1503**) delivered:

- > Over 5 times as much CBD to the epidermis, and
- > Over 3 times as much CBD to the dermis, and
- Significantly more than other CBD topical creams and gels.

The first two products off the rank target the treatment of Acne (**BTX1503**) and Atopic Dermatitis (**BTX1204**). As it stands right now, there are no cannabis-based products approved for these markets and no-one else is studying the impact of CBD-based products on these conditions.

And this is what makes this company so exciting. They are operating in two very big markets—with combined Total Addressable Markets of over \$8 billion—and their products would really stand out in a market were the incumbents consist of generic brands, who to this day, still produce significant side effects and safety issues when used as a long term treatment method.

"With acne, there has been no new approved drug for over 20 years."

Matt Callahan

As we will outline, the initial results from these clinical trials suggest that BOT products deliver on par efficacy-based results (even higher some of the time) as the incumbents, but (and it's a big one) with a statistically significant improvement in the safety profile. Same results, less side effects. Which would you rather your teenager use, if they both delivered successful treatment outcomes? Especially when some of those side effects include cancer risks, birth defects and risks of suicide?

Precedence for cannabis-based drugs gaining mainstream pharmaceutical acceptance was set when the FDA approved GW Pharmaceutical's Epidiolex in June last year. In general, the stigma surrounding cannabis and its legitimate ability to relieve the symptoms of a medical condition is rapidly reducing.

The lead asset **BTX1503** for the treatment of chronic acne – is currently in a phase II clinical trial that is expected to be completed and report in Q3.

The company's second asset, **BTX1204** for the treatment of Atopic Dermatitis (AD), which covers severe eczema, is currently in a Phase II clinical trial that is expected to be completed by the end of 2019. Both of the above Phase II studies are fully funded.

We believe the price targets set by both BellPotter and Argonaut to be fair and accurate. We see significant upside in the share price for investors prepared to take the speculative risk.

Should BOT deliver successful endpoints on the Phase II trials for their leading assets, then the most likely outcome from there would be a licensing deal with a global BIG Pharma player that would deliver significant upfront cash flow, and medium-term licensing royalties post successful Phase III study outcomes.

Recently, both BellPotter and Argonaut covered BOT and developed their own proprietary financial models. Both companies agreed that the most likely outcome post any successful Phase II studies would be a licensing deal. They each had their own metrics for the value of these deals and the discount rate that should be applied to the deal (based on uncertainty and risk)

Both recommended BOT as a speculative buy with target prices of \$0.15 and \$0.20 per share respectively.

Why we like Botanix Pharma?

- Targeting two of the most common dermatological conditions with a total addressable market of over \$12 billion
- Synthetic cannabinol means standardised production which greatly enhances the probability of clinical and regulatory success (FDA in the US)
- Strong global growth in CBD-based pharmaceutical products that drive social and medical acceptance of cannabinoids
- ➤ Exclusive global rights to use PermetrexTM delivery technology which is one of the primary factors in the successful outcomes of the clinical studies
- Two further products in initial stages of research and trials that could add tremendous long-term value, creating a substantial pipeline of commercial IP
- Strong management team with a proven track record of success in the drug development industry



BTX1308	Psoriasis	Phase Ib	Top line Data Q2 CY2019
BTX1503	Acne	Phase II	Top line Data Q3 CY2019
BTX1204	Atopic Dermatitis	Phase II	Top line Data Q4 2019

The next inflection point in the coming weeks, is when BOT releases it's 1308 mechanism data which if positive (and if the 1801 data supports the noresistance anti-infective properties), means that they de-risk the Phase 2 studies underway as the mechanism is anti-inflammatory and anti-microbial.



THE CBD MARKET

To understand why BOT has so much potential, one has to have a better understanding of the CBD market. According to a study published by the Brightfield Group, the hemp-based CBD market alone is currently worth approximately \$591 million and could be worth as much as \$22 billion by 2022.

This makes CBD one of the fastest growing industries on the planet – with Baby Boomers being the primary consumers. Reuters estimates that the US dominates with 78% of the global CBD market, while studies show that 7% of the US population reports using CBD frequently. After the US, Europe occupies 11% of the global CBD market followed by the APAC region making up 9%.

A segment of the market that is of particular interest is the wellness market. People are becoming more health-conscious than ever and are constantly looking for ways to improve their well-being, which has led to the value of the global wellness market ballooning to an estimated \$4.2 trillion annually.

Set to be a massively disruptive force in the wellness space, CBD is quickly embedding itself into creams, oils, gummies, tinctures and even tampons. The compound is said to have soothing, anti-inflammatory and anti-anxiety effects, which explains why so many companies are taking it on board.

Because of the lower barrier to entry—compared to pharma-grade products—the CBD wellness industry is

growing at a staggering rate. CV Sciences' PlusCBD Oil is now being sold in 1300 health food retailers, and Cannabis company Tilray recently signed a \$100 million deal with Authentic Brands Group to develop and distribute cannabis products.

Charlotte's Web is quickly becoming a household name in the CBD game with its line of CBD oils, capsules and animal products. Marijuana Company of America has also cashed in on the power of CBD through its products under the hempSMART brand, which focuses on general health and well-being through hemp-based CBD.

A recent report also found that CBD beverages are set to become a \$260 million industry in the US alone over the next four years.

Where this really becomes interesting, is when you consider that BOT does not actually produce any of its CBD from the plant itself. In fact, quote to the contrary. All of BOT's assets are derived from synthetic CBD.

Synthetic CBD

Another area of the market that's drawing significant attention is synthetic CBD. Similarly to cannabinoids produced using biosynthesis, synthetic CBD can be created in a lab without the need for the marijuana plant itself.

Instead of using living cells as production factories, synthetic CBD—which is simply a purified analogue of naturally occurring CBD—is produced using organic chemistry to recreate the molecular structure of cannabinoid compounds.

This makes it easier to be mass produced, allows CBD to generated at a significantly reduced cost. The race to gain the first-mover advantage on synthetic CBD is already on, and companies such as CannBioRex and Katexco Pharmaceuticals are hard at work refining the technology's potential to treat rheumatoid arthritis, multiple sclerosis, and other inflammatory diseases.

However, BOT is already way ahead of the pack, thanks to its ongoing clinical trials which make use of synthetically derived CBD.



"CBD is just a molecule, you can extract it from a plant but it won't be very pure. The reason we use a synthetic is because we can get it 100% pure all the time."

> Executive Director of Botanix Pharmaceuticals, Matt Callahan

Once the trials are complete, the company hopes to turn the compounds into some of the first registered cannabis drugs targeted at serious skin conditions.

According to the executive director of Botanix, Matt Callahan, in the future most CBD products will be made synthetically. He also predicts that CBD products will be commercially available in Australia as early as 2021, saying that the value of the local market could be in the "hundreds of millions".

"[synthetic] CBD is very easy to make and it's more cost effective to make it rather than extract it from a plant," Callahan said.

With the above in mind, let's consider the markets that BOT aims to play in. The biotech company operates in the dermatology industry, with specific application to certain areas of the industry, such as Acne and Atopic Dermatitis.



Global Dermatology Market

The Dermatology Market

The global dermatology market is estimated to grow to US\$33.7 billion by 2022. Further to this, GMR Data forecasts that the global dermatology (prescription) drugs market will report a Compound Annual Growth Rate (CAGR) of 6.4% between 2018 and 2028.

Koncept Market Research: Dermatology Market 2018



Further stats on the industry



> Allow for long-term use

Industry Trends



Dermatology drug manufacturers are enjoying higher revenues than ever before,

and with increasing prevalence of skin diseases, this should continue across the next decade.

A number of leading drugs are set to come off of patent across the forecast period.

THE PRODUCT PIPELINE

Indicative activities and milestones		1Q CY2019	2Q CY2019	3Q CY2019	4Q CY2019	Upcoming milestones
BTX1308 Psoriasis	Phase 1b study in psoriasis patients					Top line data 2Q CY2019
BTX1503 Acne	Phase 2 multi-centre acne clinical study					Recruitment complete 2Q CY2019
BTX1204 Atopic Dermatitis	Phase 2 multi-centre atopic dermatitis clinical study					Recruitment complete 3Q CY2019
BTX1801 Antimicrobial	Pre-clinical development					Patient study design 2Q CY2019
Permetrex™ Collaborations	Research collaborations and partnership discussions					Ongoing studies with partners

BTX1503 is the company's leading asset. It's a synthetic-cannabinoid with the patented Permetrex[™] delivery system that is used for the treatment of moderate to severe acne. A \$5 billion-dollar industry that has not seen a new drug brought to the market in 20 years. The drug is currently in Phase II trial with a positive endpoint expected in Q3.

BTX1204 was the second product to market and is aimed at the Atopic Dermatitis (AD) market. AD affects between 10-15% of the Australian population, and over 30 million Americans. Importantly, it impacts nearly 40% of children. It is for this reason, that safety is so imperative. The drug has just gone in Phase Ib trial with a Phase II study underway which will complete by the end of 2019.

The third product in the pipeline is **BTX1308** for psoriasis, which is also a synthetic-CBD drug using Permetrex[™]. This product, it is currently in a Phase 1b study which is designed to identify how CBD works mechanistically.

Patients in this study are having biopsies taken from treated skin so that the company can use advanced biology techniques to confirm how CBD affects inflammation and other responses in the skin.

This data, combined with the research underway around the anti-infective properties of CBD, will hopefully provide a basis for proving the mechanism of CBD which underlies the other pipeline products BOT is developing. The study data is due in the next few weeks.

The last product in the pipeline is **BTX1801** for the treatment of skin infections. BOT is testing this product currently with help from the University of Queensland's Institute for Molecular Bioscience (IMB). The venture, partly funded through an Australian Innovation grant, aims to try and figure out what types of bacteria **BTX1801** can kill, whether those bacteria form resistance to **BTX1801** with repeated treatment, and how **BTX1801** compares to other commonly uses (and often overused) antibiotics.

Permetrex[™] Skin Delivery Technology

Proprietary Permetrex[™] technology delivers high doses of drug into the layers of the skin without use of permeation enhancers, preservatives, or irritating levels of alcohol / petrolatum additives



Note - oral administration of cannabidiol only delivers ~6% drug active into the blood stream





Dr. Amy Abernethy 🕗 @DrAmyAbernethyFDA - 22h

Key questions about product safety needs to be addressed. Data are needed to determine safety thresholds for CBD; datasets/information should be objective, of adequate quality and availability for transparent review. Lab testing and data analyses need to be replicated.

BOT has an exclusive license to use a propriety drug delivery system (Permetrex[™]) for direct skin delivery of the pharmaceuticals in all skin diseases. BOT has tested the effectiveness of the Permetrex[™] delivery system in getting CBD to the affected areas up against a range of leading products that use traditional drug delivery approaches.

During the quarter, Tioga Research, a contract research organisation, was engaged to complete an independent comparative analysis between BOT's lead product for acne (**BTX1503**) against other commercially available CBD products. The analysis demonstrated that relative to the closest comparator CBD topical product, **BTX1503** delivered 3-5 times more drug into the skin than other CBD topical creams and gels. Further analysis was also completed to determine the amount of CBD in other comparator products, which raised significant quality concerns about the OTC products that are currently on the market. These concerns have recently been confirmed at FDA's public hearing on CBD products, following which the acting head of the FDA commented on twitter:

The results of this analysis indicated that **BTX1503** delivered more CBD in each dose used by patients in clinical studies, compared to the amount of CBD available in the entire package of each of the comparator products.



MOR WARDEN

1

BTX1503 is BOT's leading asset targeting the multi-billion-dollar Acne industry.

The drug is currently in Phase II trial with a positive endpoint expected next quarter.

Acne is a long-term skin disease that appears because of clogged hair follicles, dead skin cells, and oil excreted from skin. It is characterised by presence of considerable number of pimples, whiteheads, blackheads, oily skin, and probable scarring. It generally affects skin with a comparatively high number of sweat glands at upper part of chest, back, and face.

Acne forms as the result of obstruction and inflammation of hair follicles and their sebaceous glands. It can present as non-inflammatory or inflammatory lesions and / or nodules and is diagnosed by classification of severity, as this helps to determine an appropriate treatment regimen.

Mild acne is classically defined by the presence of clogged skin follicles (known as comedones) limited to the face with occasional inflammatory lesions. Mild acne can be treated with over-the-counter (OTC) medications, such as gels, soaps, pads, creams, and lotions, that are applied to the skin.

Moderate severity acne is said to occur when a higher number of inflammatory papules and pustules occur on the face compared to mild cases of acne and are found on the trunk of the body. Topical antimicrobials aim to reduce acne in patients with moderate to severe acne. While a dermatologist may prescribe a topical retinoid.

Severe acne is said to occur when nodules (the painful 'bumps' lying under the skin) are the characteristic facial lesions and involvement of the trunk is extensive.



Cannabidiol Has Been Shown To...



The Addressable Acne Market

Acne is one of the most common dermatological disorders. It affects 9.4% of people worldwide, and approximately 50m people in the US alone.

Although the condition can affect people of all ages, it is most prevalent among teenagers, and has been found to be in more than 85% of people between the ages of 12 and 25.

Various factors such as fluctuating hormone levels, unhygienic lifestyle and excessive production of oil from sebaceous glands have increased the prevalence of acne, thereby positively affecting the market growth.

In addition, western countries are more prone to acne due to the population's dietary regimen characterised by high amounts of sugar, refined grains, high protein, and high-fat dairy products, hence boosting the market growth in developed countries around the world.

Incumbent Treatment Types

Retinoids and antibiotics remain the mainstays of acne treatment. Retinoids have led the therapeutic classes and this trend is expected to continue through to 2025. However, the therapeutic landscape is also witnessing a shift toward combination treatment due to higher efficacy, convenient dosing, and fewer adverse effects.

By mode of administration, topical drugs currently dominate the market. Severe cases see the use of systemic medications such as oral antibiotics, hormonal agents, or other drugs, but the side effects from prolonged use of these drugs can (in some cases) be very dangerous. Despite being one of the most common dermatological diseases in the world, innovation in acne treatment has been rather limited over the past decade. In fact, in the last 20 years there has been no new approved drug brought to market.

The standard of care for patients with mild to severe chronic acne is a range of topical products that include benzoyl peroxide, antibiotics and topical retinoids. Despite mixed efficacy these generally tend to have moderate side effects relative to oral drugs.

If topical treatment options are ineffective, the next line of treatment includes oral medication such as antibiotics.

The problem though, is that despite their effectiveness, patients are often left with long-term side effects which include skin scarring and depression.

Teenage kids are already prone to depression—with the weight of social acceptance sometimes being crushing— so having their acne drug fuel this fire is no good.

The Global Acne Medication Market

Amazingly, a market with over 5 million topical prescriptions per annum in the US alone has not seen a new drug entrant in over 20 years.

The Global Topical Use Acne Treatment Market is expected to exceed more than US \$3 Billion by 2022 at a CAGR of 3% in the given forecast period.

In addition, the development of effective therapeutics with lesser side effects are expected to provide lucrative growth opportunities for the market.



US\$ Billions



Global acne market is projected to reach ~US\$7.3bn in 2025

- Key drivers: disease population growth and increasing prescription population
- Market size is largely attributable to the Americas (~90% market share in 2016)

For moderate to severe acne, topical retinoids are the most commonly prescribed therapeutic class

- Accounts for ~32% of the US market
- Single active topical retinoid market ~US\$850m with 5m prescriptions p.a.

Innovation in the acne market has been limited

 No new drugs approved in the US since Tazorac® (Allergan) in 1997

The Clinical Data

The IND (investigational new drug) application was approved by the FDA in May 2018. The Phase II study is almost complete with results due very soon in Q3.

The randomised, controlled, blinded study enrolled 360 patients and ran for 12 weeks across 28 sites in Australia and the US at a cost of around US\$8m (\$22k/patient);

- The primary endpoint of the trial is absolute change from baseline to week 12 in inflammatory lesions and involves three separate dosing regimens and a control; and
- > Secondary endpoints include:
- absolute change from baseline to week 12 in non-inflammatory lesions,
- percentage change from baseline to week 12 in inflammatory and non-inflammatory lesions, and
- > proportion of successfully treated patients.

It's hard not to be bullish about the potential for a successful Phase II study when you consider the results from the **BTX1503** Phase 1b study that was completed in 2018.

This study of **BTX1503** enrolled 21 patients and ran for over 4 weeks. The key data from this phase 1b study was:

- The drug reduced inflammatory lesions by 47% and non-inflammatory lesions by 5.4%; This compares with reductions of 42% and 38% respectively for the two leading existing acne treatments: Allergan's Epiduo and Aczone's Galderma (which together have approximately \$1 billion in annual sales);
- There were no adverse safety effects associated with BTX1503; and
- The drug modestly outperformed leading topical products Epiduo (marketed by Galderma) and Aczone (marketed by Allergan).

"We expect that with 360 patients the trial is powered for statistical difference in at least the primary endpoint."

Matt Callahan

A topically applied product with a benign safety profile and multiple mechanisms of action, which improves efficacy as compared to current standard of care, has the potential to generate significantly higher revenues than currently marketed products.

Figure 1 indicates a potential for long-lasting efficacy following last treatment. For the seven days following treatment inflammatory lesions reduced by approximately 45%. Additionally, the 'reduction effect' actually improves for non-inflammatory lesions in the week following treatment from 5.4% at day 28 to 22.5% at day 35.







Below are two summaries of the **BTX1503** safety studies that have been undertaken. The first study tested the safety profile of **BTX1503** on healthy subjects (no skin disease), and the second focused on the safety profile when applied to patients (with moderate to severe acne).

Safety of BTX1503 in Healthy Subjects (BTX.2017.001)

This study demonstrated that daily topical treatment with BTX 1503 was safe and well-tolerated. No subjects discontinued the study, and there were no reports of any adverse events. The study also went on to report that given there were no reported adverse events, there were no discontinuations or modifications of the drug dosages. In English - all clear.

Safety of BTX1503 in Patient Populations (BTX.2017.002)

This study demonstrated that daily topical treatment with BTX 1503 was safe and well-tolerated in subjects with moderate to severe acne. There were no adverse events reported, and hence no discontinuations or modifications of the drug dosages. In addition, there were no clinically relevant changes from baseline observed in vital signs (blood pressure, temperature and pulse). No subjects tested positive for the presence of THC using a urine drug test.

Bottom line - zero safety issues or adverse events reported.

These independent tests verified a 2011 paper by Bergamaschi, et al. [Bergamaschi 2011a], which indicated that chronic use and high doses up to 1500 mg/ day of CBD are reportedly well-tolerated in humans. Additional studies have been performed in humans using CBD since the publication of the paper by Bergamaschi. These studies further demonstrate the safety of CBD when given in a wide range of doses (as high as 6000 mg/day) and via multiple routes [McGuire 2018; Cuñetti 2018; Boggs 2018; Millar 2018; Taylor 2018; Sekar 2019; White 2019].



There remains a substantial demand for new drugs to treat acne given that no drugs with a new mechanism of action have been approved by the FDA in more than 20 years.



Key here is:

- All of the incumbent topical drugs in market do the same thing
- They all come with various long-term usage side effects such as dryness and itchiness
- In more severe cases, there are systemic side effects with oral ingestion
- There have been no drug innovations since the 1997 US release of Tazorac® (Allergan)
- All new drugs are simply iterations and generics.
- No-one has studied the effects of cannabinoid-based treatments for this market.

BTX1204 ATOPIC DERMATITIS

BTX1204

BTX1204 is BOT's second asset developed for the treatment of Atopic Dermatitis (AD)—a chronic skin condition usually diagnosed during infancy—in a market that is predicted to grow by a CAGR of 12.8% in the coming 5-10 years.

Atopic Dermatitis

Atopic dermatitis is a common condition that often begins in infancy or early childhood but can also begin in young adults or even later in life. The skin becomes red, swollen and very itchy. The itchiness may interfere with sleep. The inflammation and itchiness wax and wane in severity.

Sometimes, tiny blisters containing clear fluid can form and the affected areas of skin can weep. Weeping is a sign that the dermatitis has become infected, usually with the bacterium Staphylococcus aureus ('staph' but also resistant bacteria versions or 'golden staph').

In infants, atopic dermatitis often affects the cheeks, scalp, outsides of the arms and legs and the trunk. In children and adults, the inflammation involves the creases in the front of the arms and behind the knee, often the wrists, ankles and buttocks.

The appearance varies with the age of the affected person. However, itching, scratching (often breaking the skin with scratching) and rubbing are present in all cases of AD.

The Itchy and Scratchy show

In atopic dermatitis, the skin becomes extremely itchy and inflamed, causing redness, swelling, vesicle formation (minute blisters), cracking, weeping, crusting, and scaling. This type of eruption is termed eczematous. In addition, dry skin is a very common complaint in almost all patients afflicted with atopic dermatitis.

The itchiness is an important factor in atopic dermatitis, because scratching and rubbing can worsen the skin inflammation that is characteristic of this disease. People with AD seem to be more sensitive to itching and feel the need to scratch longer in response. They develop what is referred to as the "itch-scratch" cycle.

The extreme itchiness of the skin causes the person to scratch, which in turn worsens the itch, and so on. Itching is particularly a problem during sleep, when conscious control of scratching decreases and the absence of other outside stimuli makes the itchiness more noticeable.

The Addressable AD Market

Atopic dermatitis is very common worldwide and is increasing in prevalence. It affects males and females equally and accounts for 10%-20% of all referrals to dermatologists.

Atopic dermatitis occurs most often in infants and children. Of those affected, 65% of patients develop symptoms in the first year of life, and 90% develop symptoms before the age of 5. Onset after age 30 is uncommon and often occurs after exposure of the skin to harsh conditions.

- > AD affects approximately 13.7m people in the US
- 10-20% of children and 1-3% of adults will suffer from AD
- 90% of infant suffers under the age of 6 months will see involvement of the face and neck.
- AD has a significant impact on patients' quality of life and more than 7 million health care provider visits annually have a significant economic impact

About 10% of all infants and young children experience symptoms of the disease. Roughly 60% of these infants continue to have one or more symptoms of atopic dermatitis even after they reach adulthood. This means that more than 15 million people in the United States are suffering from symptoms of the disease.

Current And Projected US AD Patient Population By Age (M)



Incumbent Treatment Types

To date, the preferred first-line therapy treatment for mild, moderate, and severe AD, is topical steroids. But, topical steroids cannot be used long term nor can they be used on sensitive areas of the body (especially the face), and AD is a life-long disease.

The current treatments in market focus on trying to address the resultant symptoms of the disease and not the inflammatory origin of it. And as is being proven around the world in many different areas of diseases and symptoms, CBD is having an impact on inflammation.

Current treatment options have only a moderate effect on secondary symptoms, most important of which is reducing itch as it has the greatest impact on patients' quality of life Some of the treatment options are associated with mild to moderate side effects (such as stinging and mild burning) as well as severe side effects (cancer and depression), while other treatment options are immunosuppressants which can have severe long-term implications on the human body.

Oral anti-inflammatory medication

Most people affected by AD can manage the condition with creams and ointments alone. While oral medication can help people whose AD is resistant to treatment, their side effects can include high blood pressure, increased susceptibility to all types of infections, and mood and behavioral changes.

Market Value

The global atopic dermatitis market is forecasted to grow at a CAGR of 12.8% from ~US\$7bn in 2017 to ~US\$24bn by 2027

Prescriptions for atopic dermatitis market currently bring in more than US\$8 billion in sales each year around the world.

- It is estimated that over 25 million people in the US suffer from AD
- > Up to 18% of sufferers are infants and children.

Of the diagnosed AD patients who fill their prescription:

- > 25% have severe AD,
- > 41% have moderate AD, and
- > 34% have mild AD
- Limited innovation and significant remaining unmet needs
- Minimal innovation in AD for 15 years before the 2016 approval of Eucrisa®
- Eucrisa® does not affect itch and has been considered a launch failure



Projected AD Market By Revenue (US\$bn)

The Clinical Data

In August 2018 BOT held a successful pre IND meeting with the FDA, which allowed for the commencement of a Phase II clinical trial in the USA.

The Phase II clinical trial will be randomised, vehicle controlled and double blinded.

- The study will be across 200 patients with moderate AD across 25 sites in the US and Australia;
- The primary endpoint will look at the proportion of subjects with Investigator's Static Global Assessment (ISGA) success – which is subjectively defined as AD being "clear" or "almost clear". Secondary endpoints include
- > Change from baseline in the signs of AD,
- > Eczema area severity index score,
- > Percentage of body surface area affected by AD, and
- > The time taken to achieve success.

BOT expects to have clinical data from the current Phase II study later this year.

In June 2018 BOT successfully completed their Phase 1b study in AD. The trial was a randomised, controlled, double blind study in 36 patients over 4 weeks in Australia. The data was reported as follows:

- BTX1204 was twice as effective over the vehicle (placebo) with "substantial improvement" in key signs of AD including itch and underlying inflammation; and
- There were no adverse safety effects associated with BTX1503

And the best news? **BTX1204** is the identical chemical entity to **BTX1503** and is, therefore, not required to undertake a separate safety study.



Efficacy was increasing at the 4-week time point. In this small study tolerability was established with no signs of burning or local side effects. This suggests potential for a longer treatment timeframe - a key unmet need in the treatment of AD.



Key here is:

- > AD is a long-term disease
- > Current treatment options create significant side effects with prolonged use
- > No one has been able to tackle the patient's "real" problem the itchiness
- > Limited innovation and significant remaining unmet needs
- Significant market opportunity exists for a treatment option which has an improved safety profile as compared to standard of care, significantly reduces itch, and can be used long term

BTX1308 PSORIASIS
BTX1308

The third product in the pipeline is **BTX1308** for psoriasis, which is also a synthetic-CBD drug using Permetrex[™]. This product, is currently in a Phase 1b study which is designed to identify how CBD works mechanistically.

Patients in this study are having biopsies taken from treated skin so that the company can use advanced biology techniques to confirm how CBD affects inflammation and other responses in the skin. This data, combined with the research underway around the anti-infective properties of CBD, will hopefully provide a basis for proving the mechanism of CBD which underlies the other pipeline products BOT is developing. The study data is due in the next few weeks.

"The unique design of this patient study which allows us to compare multiple drugs in the same patient at the same time, means that the treatment duration can be shortened, while the quality of data can also be enhanced.

"**BTX1308** is our third product to commence a patient study in the last 12 months, which demonstrates our ability to rapidly add new indications to the pipeline, as we can leverage the studies already successfully completed with synthetic cannabidiol in acne and atopic dermatitis."

Psoriasis Overview

Psoriasis is a chronic, non-infectious, inflammatory skin disorder, characterised by well-defined salmon-pink lesions on the scalp, trunk and extensor surfaces that are itchy and scaly. Essentially, Psoriasis speeds up the life cycle of skin cells, causing cells to build up rapidly on the surface of the skin. The extra skin cells form scales and red patches that are itchy and can be very painful.

While the cause of psoriasis is still unknown, there is often a genetic predisposition and it is commonly triggered by environmental factors. Psoriasis is a chronic disease that often comes and goes.



Types of psoriasis

- > plaque psoriasis the most common form
- pustular psoriasis a more severe form, which can be painful
- > guttate psoriasis found mostly in children
- napkin psoriasis characteristically seen in infants between two and eight months of age
- flexural psoriasis affects body folds and genital areas
- erythrodermic psoriasis a severe form requiring hospitalisation.

Psoriasis is associated with systemic (whole body) inflammation and patients with the disease are at a significantly increased risk of comorbidities such as:

- > Psoriatic arthritis.
- Hepatic disease, non-alcoholic fatty liver disease and non-alcoholic steatohepatitis.
- > Increased risk of cardiovascular disease and stroke.
- Increased risk of diabetes and opportunistic infections.
- > Anxiety, depression and thoughts of suicide.



The Addressable Psoriasis Market

Psoriasis affects approximately 125 million people worldwide, with onset typically between the ages of 15 to 25 years – although psoriasis can develop at any age. The incidence of psoriasis is dependent on the climate and genetic heritage of the population, with prevalence increasing in colder climates and in those with lighter skin.

It is estimated that over 9 million people in the US alone suffer from psoriasis.

Incumbent Treatment Types

There is currently no cure for psoriasis but there are many treatments that can help to keep it under control. The main goal of treatment is to stop the skin cells from growing so quickly.

Mild psoriasis is usually treated with topical products that are applied to the skin. These can be simple overthe-counter products like moisturisers and shampoos, and treatments that doctors may prescribe, which include ointments, creams, lotions or shampoos containing the following ingredients.

- Corticosteroids, which reduce inflammation and skin cell production.
- Calcipotriol (e.g. Daivonex Cream), a vitamin D-based medicine that slows skin cell growth.
- > Tar preparations (coal tar or ichthammol), which reduces inflammation, scaling and itching.

While these treatment methods have proven effective, they can also cause significant side effects, including skin thinning, inflammation, stretch marks, easy bruising, enlarged blood vessels, hives, rashes and redness.

Treatments for moderate to severe psoriasis

Medicines and phototherapy are usually recommended to control moderate to severe psoriasis. Typically, patients are considered to be suffering from moderate psoriasis if it covers from 3-10% of their body. The illness is classified as severe psoriasis if it spreads to sensitive areas or covers more than 10% of your body.

Phototherapy

For people whose disease isn't controlled by topical therapies alone or who have quite widespread disease, another treatment option is ultraviolet light therapy (phototherapy). Phototherapy reduces inflammation and inhibits the immune response in the skin.

There are three main types of phototherapy:

- > Ultraviolet B (UVB) Therapy.
- > PUVA Therapy (Photochemotherapy).
- > Laser Treatment.

Unfortunately, these treatments also come with their own unpleasant side effects, such as skin redness, blisters, itching and increased risk of cancer.



Medicines

There are several oral treatments (treatments taken by mouth, including tablets and capsules) for psoriasis available in Australia. One of these is Cyclosporine, which is used to prevent organ rejection in transplant patients but has also been approved for psoriasis treatment.

Another common treatment option is Methotrexate which originated as a cancer drug—and can be used to slow the rate of skin cell growth. Although both of these drugs are highly effective, they can also reduce the patient's quality of life due to side effects such as nausea and vomiting, flu-like symptoms, headache, high blood pressure, and tingling in the arms or legs.

More severely, the drugs have the potential to induce hair loss, shortness of breath, stomach pain, blood in your urine or stool, and even liver damage.

The drugs also cannot be used by women during pregnancy, as they have the potential to cause birth defects in unborn children. Men who are trying to conceive are also advised against taking Methotrexate, as it has been found to affect sperm.

2017 US\$22B WW Sales



2024 US\$43B WW Sales



Market Value

The Global Psoriasis market is predicted to grow from \$13.2 billion in 2017 to over \$21.6 billion in 2024. Factors such as growing awareness of the disease, the increasing number of avenues for patient reimbursement, and improved diagnostic methods are expected to lead to the increased adoption of therapeutics aimed at treating the disease.

Additionally, the potential patient base suffering from psoriasis is expected to expand over time, driving future growth prospects for the market.

While the exact causative factors behind psoriasis are still not known, a combination of genetic and environmental factors—as well as lifestyle changes—are predicted to increase the number of incidences of the disease, in keeping with historical trends.

A declining response and growing resistance to existing therapies may also be behind the growing incident rate for psoriasis, which has been seen across numerous geographical locations worldwide.

Despite the introduction of new technology such as biologic injections for severe psoriasis, significant opportunity exists for mild to moderate patients and particularly those patients suffering from pruritus (itch).



Clinical Trials

The phase 1b patient study is being conducted in collaboration with BioSkin GmbH, a German clinical contract research organisation and an Australian dermatology clinic. Bioskin is internationally recognised for their experience with the psoriasis plaque test which is clinically validated and utilised by a number of leading dermatology companies.

BTX1308 indicative clinical timeline (CY)	4Q CY2018	1Q CY2019	2Q CY2019
Study commencement			
Patient enrolment completed			
Biopsy and sonography data analysis			
Top line data available			

The study is designed to assess the safety and efficacy of **BTX1308** on psoriasis plaques or lesions, with the ability to compare multiple formulations and test products at the same time, and on the same patient.

Although third off the rank, this drug and the associated study has far reaching benefits for BOT.

"I think it's worth also focusing on the near term psoriasis data read out as well. This is the third clinical program, but has the added interest that we are likely to learn a lot about the mechanism of action of CBD in skin disease from the biopsies we are doing as part of this study, "said Matt Callahan. Bioskin GmbH psoriasis plaque model¹

Novel multi-drug comparison study format in the same patient, provides high quality data on **BTX1308** efficacy

 \oslash

Biopsies of each drug zone and also healthy skin data will elucidate the mechanism of action

 \bigcirc

For the first time, this biopsy data will inform the proposed anti-inflammatory, skin cell and immune modulation activity "Everyone has theories about CBD does in the skin, but we will be the first people in the world to do proper biology and then know. It potentially opens up a bunch of new and valuable development angles for us as well as confirms for the pharma folks exactly HOW this stuff does what it does."

- Matt Callahan, Executive Director, Botanix Pharma

Clinical Data and Update

During the quarter (Q1 2019, ending 31 March) BOT completed the patient treatment portion of its **BTX1308** Phase 1b psoriasis study in collaboration with German-based clinical contract research organisation BioSkin GmbH ("BioSkin") and an Australian dermatology clinic.

All patients have now been treated for the pilot period and skin punch biopsies have been taken from treated and untreated skin, which are now being processed and analysed by one of the world's leading researchers in inflammatory diseases and immune responses.

Top line data from the study is on schedule to be available by the end of Q2 2019.

Key here is:

- Current treatment options create significant side effects
- Study opens the opportunity for better understanding the relationship between CBD and the Skin (world first)
- Limited innovation and significant remaining unmet needs
- Significant market opportunity exists for a treatment option which has an improved safety profile as compared to standard of care

BTX1801

Impetigo



- > Common skin infection in children (school sores)
- > Highly contagious, results in rupturable red sores
- > Caused by Staph Aureus and MRSA bacteria
- Approximately 162m children each year suffer from Impetigo
- > 45% of Australian aboriginal children
- Market size ~US\$446m¹

Bacterial Folliculitis





- Common skin infection involving inflammation of the hair follicle and pustules that may erupt
- > Caused by Staph Aureus and MRSA bacteria
- > Approximately 3m cases in the US alone
- Incidence in people of African descent estimated to be up to 45%
- Market size estimated to be ~US\$561m by 2023²

BOT's fourth asset in the pipeline, **BTX1801**, is a product born out of a joint venture between the University of Queensland's Institute for Molecular Bioscience (IMB) and BOT.

The IMB is a multidisciplinary life sciences research institute with over 500 full-time scientists working on various projects to drive discoveries in genome sequencing, drug design and disease discovery application. Its research is focused on superbugs, pain, heart disease, inflammation, solar biotechnology and the "genomics-disease interplay".

The venture, funded through an Australian Innovation grant, aims to try and study the effectiveness of synthetic-CBD formulas on a range of serious skin infections. They will also be studying the effectiveness of Permatrex and how this is amplifying the results that the BOT range of products is currently achieving.

BTX1801 is a novel antimicrobial product with the potential to address unmet needs in serious skin infections. Development so far has been positive with BOT reporting that this particular branch of its overall product pipeline offers "significant market opportunities".

"What's so exciting about this program is that it's a completely different type of compound which may have different effects on bacteria and in particular may be able to treat some of the drug-resistant bacteria that are out there now."

- Dr Mark Blaskovich, Centre for Superbug Solutions, IMB

The research collaboration will include an assessment of the impact of **BTX1801** against a diverse range of antibiotic-resistant organisms and gauge its impact on more than 100 clinical isolates of methicillin-resistant Staphylococcus aureus (MRSA). Let's get technical for a second here.

Staphylococcus aureus is a bacterium that commonly lives on the skin. It is often referred to as "staph" or "golden staph". When staph becomes resistant to commonly used antibiotics (meaning the antibiotics are no longer effective) it is called methicillin-resistant Staphylococcus aureus (MRSA). MRSA has secured an infamous reputation as a "superbug" that remains resistant to antibiotics and synthetic treatments. Cannabinoid-based treatments such as **BTX1801** could potentially offer a more effective way of neutralising infections.

In the US alone, more than 3 million patients are hospitalised each year, which in combination with outpatients, leads to an estimated 30 million days of treatment and comprises a market worth approximately US\$10 billion.

As an investment, a drug that is in the discovery or pre-clinical stage is a very risky proposition, with less than a 1% chance of getting to market (according to an industry report published in 2003 by the Pharmaceutical Research and Manufacturers of America). Therefore, drugs in the pre-clinical stage are usually assigned zero value by public market investors.

It is difficult to value this product, so for the purposes of this research report, we count this as "cream on the top", and investors should watch the development of any drugs in this area with interest. According to the most recent investor update from Botanix, the pre-clinical trials of **BTX1801** are progressing well, and have shown significant potential for solving serious skin conditions.

In fact, the company even believes that **BTX1801** could help to "address the significant global public health issue of antimicrobial resistance".

Early testing has indicated that the product can kill of high levels of bacteria and could eventually be used to treatment skin conditions such as acute bacterial and skin structure infections. Botanix is now currently working with "key opinion leaders" to decide on a key skin infection to initially target for product testing, as well as the development of a research pathway.

The executive director of Botanix, Matt Callahan, said that the company is excited to be "working in partnership with Professor Matt Cooper and Dr Mark Blaskovich's team at UQ's Institute for Molecular Bioscience (IMB)."

"Prof Cooper and Dr Blaskovich are leading experts in the field of antimicrobial drug discovery and development. Their extensive expertise in the mechanisms of antimicrobial resistance, combined with their state-of-the-art research facilities and library of antimicrobial resistant microorganisms will help facilitate the rapid advancement of **BTX1801** into clinical trials," he said.

BTX1801 May Have The Following Benefits

\bigcirc	Gram-positive bactericidal effect
\bigcirc	New mechanism of action
\bigcirc	Active against MRSA
\oslash	Topical application suited for skin infections
\oslash	Benign side effect profile based on previous clinical studies
\bigcirc	Ability to use long term
\oslash	Anti-inflammatory and skin barrier improvement properties
\bigcirc	Suitable for treatment of chil- dren (due to low toxicity)
\oslash	Prevent early use of IV antibiot- ics (significant side effects)

C O M M E R C I A L S T R A T E G Y



Commercial Strategy

BOT essentially face two routes to commercialise their asset pipeline.

They can develop their own drugs right through to the end of Phase III and claim all the upsides from there, or they can license their drugs to another pharmaceutical company during any of the clinical stages for a combination of upfront payments and ongoing royalties.

It is extremely expensive to take a drug through a complete Phase III trial and produce data which shows a statistical difference between the control and active arm of the trial in the primary endpoint. And thus the most likely path forward facing BOT would be to execute a licensing deal at the end of their current Phase II trials of **BTX1503** and **BTX1204**.

Licensing deals are normally structured with an upfront payment amount, split into milestones, and then a certain ongoing royalty percentage of sales.

In order to get a good idea of what this could look like, we can look at some of the recent pharmaceutical transactions in the dermatology industry. In particular, we refer to the Leo Pharma license of Tralokinumab in 2016 for an upfront payment of US\$115 million, and the potential for over US\$1 billion in royalties. Leo Pharma has numerous clinical studies under way in the US to evaluate this drug including a phase III study in adolescents with AD which commenced in July 2018. The drug is not yet approved in any country.

As can be seen in the table below, Denmark-based Leo Pharmaceuticals continues to invest heavily in dermatology, as does Mayne Pharma. This is a good sign, as it indicates that there is still an ongoing need for better drugs that can be more effective in their treatment of these dermatological conditions.

We believe that both BTX1503 and BTX1204 will be licensed post successful endpoints to the Phase II studies.

Related Transactions and Licensed Deals

Year of Deal	Drug Name	Treatment Use	Deal Type	Acquirer	Licensor/Vendor	Clinical Stage	Upfront Payment (\$US)	Potential Deal Value (Excl Upfront)
2015	Doryx	Acne	Acquisition	Mayne Pharma	Actavis	On Market	\$50m	N/A
2015	Siliq	Psoriasis	License	Valeant	Astra Zeneca	Post Phase III	\$100m	\$170m Milestones + Royalties
2016	Tralokinumab	AD & Psoriasis	License	Leo Pharma	Astra Zeneca	Post Phase IIb	\$115m	\$1b Royalties
2016	Pegcantratinib	AD & Psoriasis	Acquisition	Sienna Pharma	Creabilis	Phase IIb	Undisclosed	\$150m Milestones
2016	Eucrisa	AD	Acquisition	Pfizer	Anacor	Post Phase III	\$4.5b	N/A
2018	Halobetasol Foam	Plaque psoriasis	Acquisition	Mayne Pharma	Private company	Approved	\$10m	US\$22m in milestones plus annual earnout payments over 10 years
2018	JW1601	AD	License	Leo Pharma	JW Pharmaceutical	Pre IND	\$17m	US\$385m plus 2% royalty

SOURCE: BELL POTTER SECURITIES

FINANCIAL MODELS

The Financial Models

Recently, both BellPotter and Argonaut covered BOT and developed their own proprietary financial models. Both companies agreed that the most likely outcome post any successful Phase II studies would be a licensing deal. They each had their own metrics for the value of these deals and the discount rate that should be applied to the deal (based on uncertainty and risk)

The following table outlines the findings of their models Both recommended BOT as a speculative buy with target prices of \$0.15 and \$0.20 respectively.

Ultimately, the assumptions behind the model came down to 3 questions.

	BellPotter	Argonaut
Market Cap (million)	\$121.9	\$151.6
Target value per share	\$0.15	\$0.20
Current Price	\$0.10	\$0.10
Target Uplift	50%	100%

We believe the price targets set by both to be fair and accurate. We see significant upside in the share price for investors prepared to take the speculative risk.





How much cash does the company have?

Cash is the lifeblood of biotech companies. Without cash, they cannot fund their testing and trials which means that the company is doomed for failure.

As of May 2019, BOT has over \$14 million in the bank. Both of the Phase II trials (the first of which is concluding next month) are fully funded. A future capital raise is most probably required but should this take place on the back of a successful Phase II endpoint for **BTX1503**, then this will be done at a much higher level and should limit shareholder dilution.

Are there any predicted events that will shift the stock price in a positive way?

The next question is catalysts. Catalysts are a huge attribute to biotech companies and are one of the key ways that money is made and lost when investing in biotech.

BOT are currently in the final throws of the Phase II trial for **BTX1503**. From everything we have read and heard, we believe that there is a good chance that the endpoint for the trial will be successful. If this is the case, this will be a massive catalyst for the stock price and investors could expect significant movement.

This catalyst alone would justify the price target that BellPotter have on the stock.



What is the makeup and potential of their drug pipeline?

The last major key point is pipeline potential. A diversified, well-rounded pipeline is favourable for the longterm growth and sustainability of a biotech business.

BOT have a very strong pipeline that is currently in significant stages of clinical trials. This is a production pipeline if ever we saw one. Many of the severe skin conditions that exist today are treated with some sort of topical cream as one stage in their treatment options. BOT have the ability to continue to deliver assets to the market covering a much wider array of conditions than currently listed.

Being the only company in market to be studying the effects of cannabinoids on these conditions, it really emphasises the power of their first mover advantageshould the results of the various Phase II trials come back positive. Bottom line, there is a massive pipeline coupled with first-mover advantage, which will generate a powerful foundation for future growth and value creation.

Both models also assume low digit percentage market penetration in the first 3 years, which is linked to royalty revenue outcomes. We believe this assumption to be fair.

Both drugs offer, at a minimum, the same level of treatment efficacy, but with a noticeable and considerable increase in the safety profile. In addition, both drugs offer the opportunity for long-term treatment which to date, has not been possible without the risk of significant side effects.

CURRENT FINANCIALS

Latest quarter ending 31 March 2019

- > \$4.597m used in operations
- \$4.235m for R&D (will get \$0.43 on each dollar back in R&D rebate)

Year to date

- > \$8.306m used in operations
- \$11.561m for R&D (with associated R&D rebate of \$4.617m)
- > \$9.27m cash in the bank

Next quarter

- > Outflow of \$4.533m
- Again, R&D comprises \$4.050m of that (and will come with an R&D rebate)
- Fully funded for completion of Phase II trials for BTX1503 and BTX1204

MANAGEMENT



- David Ogilvy, Founder of the Ogilvy Agency

In the cannabis industry, given how early in the game it is, the most important ingredient in the recipe for success is management. A management team that has experience and success in an area or industry relevant to the company is always a big bonus, and in this case, the management team is both strong and experienced.





Recent Appointment Mr Vince Ippolito President

Highly regarded US based dermatology industry leader, Mr Ippolito is the former Executive Vice President and Chief Commercial Officer of Anacor. He played a leading role in the recent sale of Anacor to Pfizer for US\$5.2 billion. His appointment is a remarkable validation of BOT's potential.

Matthew Callahan Chief Executive Officer

Mr. Matthew Callahan was appointed Executive Director in July 2016 and is also the founding director of Botanix. He is also the founding CEO of iCeutica, and a co-inventor of technologies that comprise the SoluMatrix Fine Particle Technology™ for improving the bioavailability of pharmaceuticals. He has more than 20 years legal, licensing and investment management experience and is a director of Orthocell Ltd (ASX:OCC).



Dr Stewart Washer Non-Executive Chairman

Dr Washer is an experienced executive with more than 20 years of Board and senior executive medical technology, biotechnology and agrifood companies. He has an established track record and has overseen several acquisitions and strategic partnerships in the pharmaceutical and cannabinoid medicine sectors, with some of the world's leading companies.

Dr Washer is currently active as an ASX board member with Orthocell (ASX:OCC), Zelda Therapeutics (ASX:ZLD) and Cynata Therapeutics (ASX:CYP).



Dr Michael Thurn Head of Australian Operations

Dr Thurn brings extensive knowledge in drug regulation, drug discovery, pre-clinical and clinical development across dermatology in Australia and the United States, having held various senior leadership roles in both listed and private companies.



Dr William Bosch Chief Scientific Officer

Dr William Bosch was appointed Executive Director in July 2016. He has more than 25 years of experience in the industry, focusing on applications of drug delivery technology to Pharmaceuticals product development.

Dr Bosch also works with iCeutica Inc. and is a coinventor of the SoluMatrix[™] technology and has been instrumental in the development of three FDA approved products that use the drug delivery technology. Dr Bosch was also cofounder of NanoSystems LLC in 1995 and a co-inventor of NanoCrystal® Technology.



Both BellPotter and Argonaut placed a SPECULATIVE buy recommendation on the company.

The definition of "speculative" refers to investments that are either start-up enterprises with nil or only prospective operations or recently commenced operations with only forecast cash flows, or companies that have commenced operations or have been in operation for some time but have only forecast cash flows and/or a stressed balance sheet. Such investments may carry an exceptionally high level of capital risk and volatility of returns.

Botanix Pharma is extremely opportunistic, and hence it is important to understand the risks associated with the company.



The Domino effect

If any of the above products fail their Phase II studies, then because they are all variants of the same base compound - CBD - it would increase the likelihood of the other assets failing their studies. Hence the binary outcome spoken of above is then compounded by a knock-on effect. Again, the binary outcome of this risk is the compounded effect of a positive endpoint for any of their leadings sets driving the value and potential of the remaining assets. Hence, again, the speculative nature of the company.



A Binary Outcome

One of the more immediate risks is the endpoint results of both Phase II studies for **BTX1503** and **BTX1204**. Should these studies not be successful, then the company would be faced with the double impact of having to start the studies again and have to find the capital to finance these studies. This would severely impact the company both in credibility and financially.

Ultimately this is a binary-outcome event that will dramatically move the stock dial either way. This is a key reason that the company (and investment) is so speculative. Although we strongly believe that the endpoints will be positive, investors need to understand the downside.



The Delivery Mechanism

BOT relies almost completely on the Permetrex[™] drug delivery system. Should Permetrex[™] decide not to renew the license, this would severely impact the effectiveness of BOT's assets. In addition, the USP of their assets is the patented Permetrex[™] technology. Should this IP not end up being enforceable, and the company fail to defend the intellectual property, then this could affect BOT's ability to develop and commercialise its product candidates.



The Commercial model

Given the likelihood and high probability of a licensing deal at the completion of the Phase II trials for **BTX1503** and **BTX1204**, there are two factors that could significantly affect the BellPotter and Argonaut models. The first being the upfront milestone-based payments. In addition, given the partner would then be responsible for distribution and sale, the actual price fetched for the asset could well be out of BOT's control. This in turn affects the models which in turn affects the target price. Something for investors to be aware of.

The Regulatory Environment

CBD is a global buzzword right now and this is both a positive and a negative for the company. However, as it stands, CBD is not an accepted form of treatment for most doctors and more clinical trials are required from multiple companies, in multiple verticals, to truly drive home the efficacy off the compound in treating a diverse range of diseases. For the moment, the passing of the Farm Bill of 2018 in December 2018, has legalised the production of industrial hemp and hemp-derived CBD. This will go a long way to dramatically increase the usage and research of CBD as a treatment form for various diseases. We see this risk as low for the moment, especially given BOT is following a fully pharmaceutical pathway to commercialisation.



BOTTOM LINE

This is a very well-run company, operating in a very large market, with the ability to bring innovative change in treatment for the first time in over 20 years. The company has a strong pipeline of assets currently in study, each of which could be worth more than \$500 million in revenue to the company.

"Botanix is uniquely positioned and poised for success with its pipeline of novel therapies that have the potential to meet many unmet patient needs. The Company is also way ahead of the curve with its delivery technology, Permetrex[™], a highly elegant formulation with considerable potential across the broader dermatology space."

Vince Ippolito, President Botanix Pharma

Currently the only global player studying the effects of the CBD compound on dermatological diseases, this first-mover advantage creates an opportunity to really dominate the market in the plant-based products sector.

This also makes the company a very strong acquisition candidate, should they successfully license even the first product to market. One only needs to look to GW Pharmaceuticals (NYSE:GWPH) with its Epidiolex drug the first ever FDA-approved cannabis-based drug. The company currently sports a \$5.5 billion market cap, and is the best proxy for how to model and evaluate the potential of BOT. The ultimate value is heavily dependent on the outcomes of the Phase II studies for the **BTX1503** acne drug, and **BTX1204**, the psoriasis drug. Should these be positive, then look for the value of BOT to really take off, from its current worth of \$86 million. However, the same could not be said if the endpoints fail to find success. This would require additional funding (likely at a substantially discounted share price) in order to correct.



Given that we believe the outcome more than likely will be successful (based on the Phase Ib), then it is unlikely that the company would look to raise further capital and fund a Phase III study. We would expect a licensing deal, for short term capital gains, with long term royalty opportunities.

We like the experience and gravitas of the management team and board and see the recent appointment of Vince Ippolito to the board, as a strong indication that the company is looking to license its products, given his role in the sale of Anacor to Pfizer.

Their addressable market is huge, and the lack of innovation in the space glaringly obvious. There remains a substantial demand for new drugs to treat acne given that no drugs with a new mechanism of action have been approved by the FDA in more than 20 years. In the Atopic Dermatitis patient base, long term usage of incumbent treatment products leads to signs of burning or local side effects. However early results suggest that the safety profile of both leadings assets could show potential for a longer treatment timeframe, a key unmet need in the current treatment of AD.

And with the Psoriasis study, BOT's third clinical program, there is a likelihood for BOT to learn a lot about the mechanism of action of CBD in skin disease, given the biopsies being undertaken as part of this study.



We believe the price targets set by both BellPotter and Argonaut to be fair and accurate. We see significant upside in the share price for investors prepared to take the speculative risk.

Why we like Botanix Pharma

- Targeting two of the most common dermatological conditions with a total addressable market of over \$12 billion
- Synthetic cannabinol means standardised production which greatly enhances the probability of clinical and regulatory success (FDA in the US)
- Strong global growth in CBD-based pharmaceutical products that drive social and medical acceptance of cannabinoids
- ➤ Exclusive global rights to use PermetrexTM delivery technology which is one of the primary factors in the successful outcomes of the clinical studies
- Two further products in initial stages of research and trials that could add tremendous long-term value, creating a substantial pipeline of commercial IP
- Strong management team with a proven track record of success in the drug development industry

Please note the following Disclaimer:

This is a Native Advertisement, meaning it is an informational paid marketing piece, and is for general information purposes only. The Green Fund makes no recommendation that the securities of the companies profiled or discussed in this Report should be purchased, sold or held by readers that learn of the profiled companies through this Report. Please review all investment decisions with a licensed investment advisor. This Report was paid for by Botanix Pharma in an effort to enhance public awareness of the company and its securities. This Report contains forward-looking statements that involve risks and uncertainties. This Report contains or incorporates by reference forward-looking statements, including certain information with respect to plans and strategies of the featured Company.

As such, any statements contained herein or incorporated herein by reference that are not statements of historical fact may be deemed to be forward-looking statements. Without limiting the foregoing, the words "believe(s)" "anticipate(s)", "plan(s)" "expect(s)" "project(s)" "will" "make" "told" and similar expressions are intended to identify forward-looking statements. There are a number of important factors that could cause actual events or actual results of the Company to differ materially from these indicated by such forward-looking statements. Such statements include, without limitation, statements regarding business, financing, business trends, future operating revenues and expenses. There can be no assurance that such expectations will prove to be correct. Investors are cautioned that any forward-looking statements made by the Company, or contained in this Report are not guarantees of future performance, and that the Issuer's actual results may differ materially from those set forth in the forward-looking statements. Difference in results can be caused by various factors including, but not limited to, the Company's ability to be able to successfully complete planned funding agreements, to successfully market its products in competitive industries or to effectively implement its business plan or strategies.

To reiterate, information presented in this Report contains "forward-looking statements". Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, goals, assumptions, or future events or performance are not statements of historical fact and may be "forward-looking statements." Forward-looking statements are based on expectations, estimates, and projections at the time the statements are made that involve a number of risks and uncertainties which could cause actual results or events to differ materially from those presently anticipated. Forward-looking statements in this Report may be identified through the use of words such as "expects," "will," "anticipates," "estimates," "believes," "may," or by statements indicating certain actions "may," "could," or "might" occur.

The Green Fund is not a certified financial analyst or licensed in the securities industry in any manner. The information in this Report is subjective opinion and may not be complete, accurate or current and was paid for, and so could create a conflict of interest. Please review all investment decisions with a licensed investment advisor.





thegreenfund.com

© Copyright 2019