Vitality Biopharma, Inc.
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www.vitality.bio

Company Overview

Vitality Biopharma is unlocking the power of cannabinoid pharmaceuticals for treatment of serious neurological and inflammatory conditions, such as inflammatory bowel disease and multiple sclerosis

Key Upcoming Milestones

- Completion of in vitro toxicology and pharmacokinetics studies
- Registration of manufacturing facility with DEA and FDA
- Completion of in vivo efficacy studies for inflammatory bowel disease
- Intellectual property prosecution for cannabosides drug portfolio

Publicly-traded on the OTCQB

Ticker:VBIO

Company Profile

Price: $0.66 (8/15/16)

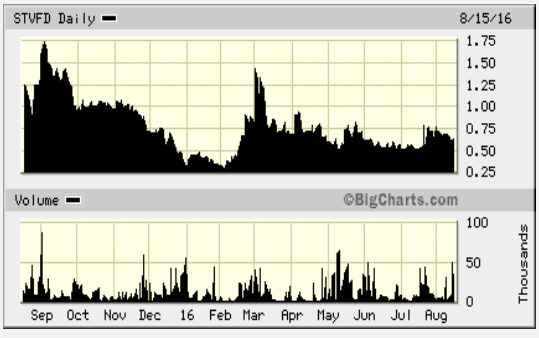
52 Week Range: $0.30 - $2.25

Avg. Volume (90 day): 21,135

Shares Outstanding: 11.9 M

Market Cap: $7.8 M

Data compiled from Yahoo! Finance and other reputable sources.



Financial Highlights

- Recent financing (May 2016): $1.5M in common stock and gross proceeds receivable from warrants

Investment Highlights

Novel Cannabinoid Pharmaceuticals Provide Targeted Delivery, Reducing Delivery of Psychoactive THC to the Brain

Vitality has developed a new class of cannabinoid prodrugs (cannabosides), which enable selective delivery of THC and cannabidiol (CBD) to the gastrointestinal tract. ***Site-specific delivery could enable potent local therapeutic effects while reducing or avoiding the systemic delivery of THC to the brain.*** Currently, the psychoactivity of THC limits the dose of cannabinoids that can be used for treatment of pain and inflammation.

Cannabosides for Treatment of Inflammatory Bowel Disease

Independent clinical trial results suggest that cannabinoids will help induce remission in Crohn's disease patients, and that the vast majority of inflammatory bowel disease (IBD) patients experience symptomatic relief, including more than 75% of patients who report improvement in visceral pain and abdominal cramping. Approximately 1.4 million Americans are affected by inflammatory bowel diseases, including Crohn's disease and ulcerative colitis. Most patients are diagnosed before age 30 and require life-long treatment.

Different classes of drugs are used to treat IBD, including anti-inflammatory drugs such as steroids, immunosuppressants, and antibiotics that treat or help prevent bacterial infections that result from gastrointestinal disturbances, as well as drugs that relieve the symptoms of disease such as diarrhea, constipation, and pain. A market research report by Visiongain predicts that in 2017 drug revenues for treatment of IBD will reach $9.6 billion. The ultimate goal of clinical treatment of IBD is to obtain complete disease control and to stop disease progression. This includes remission of disease without use of steroids or opiates, normalization of inflammatory markers in the blood, and also healing of the mucosal lining of the gastrointestinal tract, which typically leads to better clinical outcomes, reduced healthcare costs, and an improved quality of life.

Magnifying the Therapeutic Effects of Medical Marijuana through Targeted Delivery

Cannabinoids can be far more potent than opiates for pain relief (10x), and far more potent than aspirin (20x) or corticosteroids (2x) for inflammation. But the "elephant in the room" remains -- the desired potent effects cannot be achieved when high doses of THC enter the bloodstream and brain. Patients are forced to limit their doses, so targeted administration is critical. Our solution goes to the heart of this issue and offers a way to increase the beneficial dosage, right at the site of disease -- where it matters most, and relegates the psychoactive nature of the drug to a manageable side effect.

Management Team

Robert Brooke
CEO & Co-Founder
Former-hedge fund analyst for >50 direct healthcare investments at Bristol Capital. Founder, cancer immunotherapy company (now known as Lion Biotechnologies, NASDAQ:LBIO). Electrical and biomedical engineer, Georgia Tech and UCLA.

Avtar Dhillon, MD
Chairman & Co-Founder

Chairman, Inovio Pharmaceuticals (NASDAQ:INO), Oncosec Medical and Arch Therapeutics. Raised more than $200M in capital in the public markets over the last ten years. Former venture capitalist and family physician.

Brandon Zipp, PhD

Director, Research & Development

Scientific Co-founder

>12 years R&D experience with plant UGT enzymes and secondary metabolism products, PhD in Plant Sciences, UC Davis

Richard McKilligan, JD, MBA
Controller & Counsel

Formerly of Morgan, Lewis, & Bockius LLP, member of the CA and NY bar, former CPA. JD from Cornell, MBA from Univ. of Chicago, BS in Accounting from Univ. of Illinois.

Vitality Biopharma's key executives and company leadership have extensive public markets experience, which includes raising more than $250 million in capital for public biotech companies over the past decade as well as founding and managing multiple publicly traded companies with valuations in excess of $300 million. The Company is an early-stage pharmaceutical company focused on long-term growth and innovation in the public markets.

Investor Relations

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Find out more online

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Why us? We made a very interesting discovery that we can biosynthesize cannabinoid glycosides ("cannabosides") through enzyme biosynthesis. We are one of only a very few groups in the world who know how to produce and work with the enzymes that perform glycosylation, and we've of course been focused on it because the same enzymes are used to modify the taste of stevia (steviol glycosides). In the pharma industry, although glycosylation is a well-known process to some, nearly all medicinal chemists (the people and groups that are in charge of creating new molecular entities for large pharmaceutical companies) focus almost entirely on *chemical* synthesis, rather than biosynthesis using enzymes. It is fairly challenging to create glycosides through traditional chemical methods, and so most medicinal chemistry groups don't have the capability.

Why now? One reason is that we were focused on stevia for four years, and created many different glycosylated versions of it, i.e. next-gen stevia sweeteners that taste better, like Reb D, Reb M, and others. So we were in a unique position to recognize that cannabinoids could potentially be modified in the same way. In addition, there are of course significant federal restrictions on cannabinoid use and research in the U.S. The restrictions on research are only now beginning to relax. We made these discoveries using DEA-exempt cannabidiol (i.e. use of it for research doesn't require us obtaining a permit from the state or federal government). This DEA-exempt material has only been available for a few years, so most researchers still don't know about it, and very few groups have the right permits to work with controlled substances. As a result, it would be impossible for most researchers to make similar findings.

Glycosylation - A Proven Strategy for Pharmaceutical Prodrugs

As a testament to how safe and effective glycosylation can be for drug delivery, one example of a glycoside prodrug are the senna glycosides, or sennosides. They are used in Ex-Lax or Senokot, the ubiquitous laxative products that are sold over-the-counter, and that have been approved and used for >100 years. They are delivered orally, work over the next 6-12 hours, and people take it before they go to bed, which is exactly how we intend to use our product to relieve symptoms of IBD, MS, and other serious neurological and inflammatory conditions. These products are incredibly safe and reliable. An FDA filing from 2004 showed that for one product there were over 14.4 million sales of it, and only 72 cases were reported where it had a total lack of efficacy, and there were only 170 adverse events. This means that the drug delivery system worked an astounding 99.9995% of the time, and that the product was both safe and effective 99.998% of the time.

More than 20 novel cannabinoid prodrugs have been produced internally by Vitality Biopharma so far, with ***patent applications already covering strong composition of matter claims*** for prodrugs of the most medically important cannabinoids: THC, CBD, and CBDV.