Zacks Small-Cap Research

September 5, 2017
David Bautz, PhD
312-265-9471
dbautz@zacks.com

scr.zacks.com
10 S. Riverside Plaza, Chicago, IL 60606

Antibe Therapeutics Inc.

ATE.V - TSX

ATE.V: Raises CAD$5.0 Million in Public Offering; Data From Phase 2 GI Safety Study Expected in 1Q18…

Based on our probability adjusted DCF model that takes into account potential future revenues from ATB-346 along with Citagenix Inc., ATE.V is valued at CAD$0.85 per share. This model is highly dependent upon continued clinical success of ATB-346 along with the global growth strategy for Citagenix and will be adjusted accordingly based upon future clinical results and the company's execution.

Current Price (09/05/2017)	CAD$0.09
Valuation	**CAD$0.85**

OUTLOOK

On Aug. 18, 2017, Antibe Therapeutics Inc. (ATE.V) announced the final closing of a public offering that resulted in gross proceeds of approximately CAD$4.98 million. The company issued 49,830,000 units at a price of $0.10 per unit, with each unit consisting of one share of common stock and one-half share of a common stock purchase warrant with an exercise price of $0.15.

The company has initiated a Phase 2 GI safety study of ATB-346, with results likely in the first quarter of 2018. In addition, a Phase 2 dose-ranging study will be conducted for ATB-346 with results anticipated in the second half of 2018. The data from both of these studies are clear inflection points for the stock, and the current downturn represents an opportunity for investors to pick up shares at a discount ahead of the data readouts.

SUMMARY DATA

52-Week High	**$0.28**
52-Week Low	**$0.08**
One-Year Return (%)	**-66.0**
Beta	**-0.46**
Average Daily Volume (sh)	**241,622**
Shares Outstanding (mil)	**163**
Market Capitalization ($mil)	**$14**
Short Interest Ratio (days)	**N/A**
Institutional Ownership (%)	**N/A**
Insider Ownership (%)	**N/A**
Annual Cash Dividend	**$0.00**
Dividend Yield (%)	**0.00**
5-Yr. Historical Growth Rates	
Sales (%)	**N/A**
Earnings Per Share (%)	**N/A**
Dividend (%)	**N/A**
P/E using TTM EPS	**N/A**
P/E using #Lin Estimate	**N/A**
P/E using #Lin Estimate	**N/A**

Risk Level	**N/A**
Type of Stock	**Large-Growth**
Industry	**Med-Biomed/Gene**

ZACKS ESTIMATES

Revenue

(In millions of CAD$)

	Q1 (Jun)	Q2 (Sep)	Q3 (Dec)	Q4 (Mar)	Year (Mar)
2017	2.6 A	2.2 A	2.0 A	2.3 A	9.1 A
2018	2.3 A	3.4 E	3.4 E	3.5 E	13.6 E
2019					15.0 E
2020					18.0 E

Earnings per Share

	Q1 (Jun)	Q2 (Sep)	Q3 (Dec)	Q4 (Mar)	Year (Mar)
2017	-$0.01 A	-$0.01 A	-$0.02 A	-$0.01 A	-$0.06 A
2018	-$0.02 A	-$0.01 E	-$0.01 E	-$0.01 E	-$0.04 E
2019					-$0.02 E
2020					-$0.02 E

© Copyright 2017, Zacks Investment Research. All Rights Reserved.

WHAT'S NEW

Antibe Therapeutics Inc. (ATE.V) is a Canadian biotechnology company developing treatments for pain, inflammation, and regenerative medicine. The company's lead compound, ATB-346, is an improved non-steroidal anti-inflammatory drug (NSAID) that attempts to overcome the well-known and serious side effects of that class of compounds, including ulcers and bleeding in the gastrointestinal (GI) tract. Antibe has successfully completed a series of Phase 1 and 2 clinical trials for ATB-346 and will soon be initiating two Phase 2 clinical trials that will support a potential partnering opportunity with a larger pharmaceutical company.

The company is complementing the high-risk nature of the drug development process with its subsidiary Citagenix, a low-risk, revenue generating entity that is the leader in Canada in the sales and marketing of tissue regenerative products for primarily the dental market.

Business Update

Upcoming ATB-346 Phase 2b Trials

In order to pursue a global licensing deal for ATB-346 with a large multinational pharmaceutical company, Antibe is planning to conduct two Phase 2 clinical trials. The first trial will consist of approximately 240 healthy volunteers and will involve an examination of endoscopically defined upper GI ulceration in patients taking ATB-346 compared to those taking naproxen over a 2-week period. Antibe has engaged Topstone Research Inc. as the contract research organization (CRO) to manage the study. In addition, Dr. Francis Chen, the Dean of Medicine at the Chinese University of Hong Kong, has been retained as a key advisor in the study.

This study is necessary as the FDA considers endoscopically examining upper GI ulceration the 'gold standard' in assessing NSAID-associated toxicity. Positive results from this study would allow Antibe to pursue a GI safety claim of superiority to naproxen. On August 2, 2017, the company announced it received approval to commence the study and we anticipate results in the first quarter of 2018.

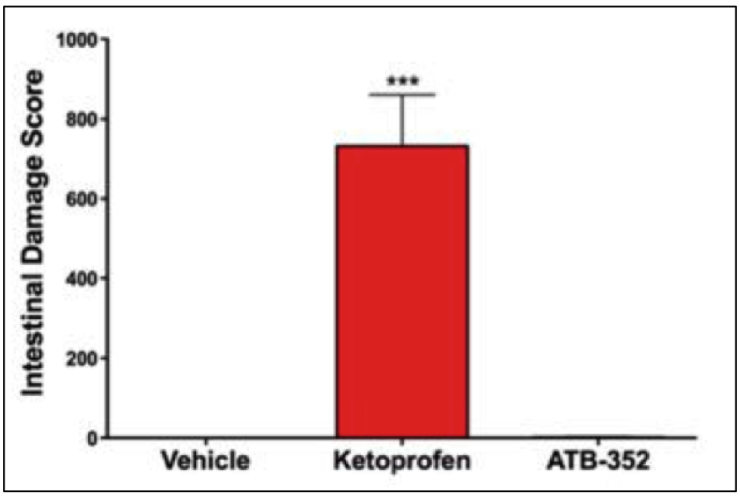
The second trial will be a placebo-controlled, dose-ranging effectiveness study and consist of approximately 200 patients with osteoarthritis of the knee in order to validate effectiveness and to establish the proper dose for Phase 3 registration studies.

Antibe is currently planning on targeting patients with osteoarthritis, for whom NSAIDs are the most commonly used therapy. Given the risks associated with NSAID use, these patients could benefit greatly from an effective anti-inflammatory/analgesic medication that did not carry the same GI risk. Additional indications for which ATB-346 could be approved include all traditional markets for NSAIDs, including rheumatoid arthritis, ankylosing spondylitis, etc.

Advancing ATB-352 Development

On April 26, 2017, Antibe announced that it has formally begun Investigational New Drug (IND) enabling studies for ATB-352, a hydrogen sulfide-releasing derivative of ketoprofen, which is a potent NSAID that is normally prescribed for acute pain. Opioids such as oxycontin have a very high propensity for abuse due to being highly addictive, however they are still prescribed at a very high rate as 227 million prescriptions for opioid medications were dispensed in 2015 (IMS Health). In 2014, there were almost 20,000 overdose deaths resulting from the use of prescriptions opioid medications, a 300% increase since 1999 (CDC). Thus, there is an urgent need for a non-addictive acute pain reliever.

Antibe recently confirmed that ATB-352 is non-addictive and preclinical data indicates that it results in negligible GI damage compared to ketoprofen. The following graph shows the results from a study in rats in which ketoprofen treatment resulted in significant GI damage, however no damage was seen in rats treated with ATB-352.



Source: Antibe Therapeutics Inc.

Financial Update

On August 29, 2017, Antibe reported financial results for the first quarter of fiscal year 2018 ending June 30, 2017. The company reported revenue of CAD$2.3 million compared to CAD$2.6 million for the three months ended June 30, 2016. The decrease in sales was due to reduced purchases by five major accounts.

General and administrative, selling and marketing, research and development, stock-based compensation, and depreciation and amortization expenses totaled CAD$2.6 million for the quarter ending June 30, 2017, compared to CAD$2.1 million for the quarter ending June 30, 2016. The increases in expenses were due to the following:

- G&A expenses increased CAD$11,853 primarily due to slightly increased wages, professional and consulting fees mostly offset by lower licensing fees.
- Selling and marketing expenses decreased CAD$0.1 million due to lower commissions and advertising and promotion costs partially offset by higher travel and entertainment costs.
- R&D expenses increased CAD$0.5 million due to higher salaries and wage costs and development costs.
- Stock based compensation increased CAD$0.1 million.
- Depreciation and amortization expenses increased by CAD$6,582 primarily due to amortization of Citagenix brand and trademarks.

As of June 30, 2017, Antibe had cash and cash equivalents of CAD$3.7 million with another CAD$0.5 million in restricted cash. On June 21, 2017, Antibe announced the closing of a public offering that resulted in gross proceeds of approximately CAD$4.0 million. The company issued 40,498,999 units priced at CAD$0.10 per unit, with each unit consisting of one share of common stock and one-half share of a common stock purchase warrant. The warrants have an exercise price of CAD$0.15 and an expiration date of June 21, 2020. On August 18, 2017, Antibe announced the second and final closing of the public offering that resulted in additional gross proceeds of CAD$933,000. In total, the company raised gross proceeds of CAD$4.983 million from the sale of 49,830,000 units. We believe the current cash position is sufficient to fund operations into the second quarter of 2018.

On February 22, 2017 the company announced a regional licensing agreement with Laboratories Acbel SA for ATB-346 in Albania, Algeria, Bulgaria, Greece, Jordan, Romania, and Serbia. Acbel is a pharmaceutical company with a strong sales and distribution presence in the Balkan region. As part of the agreement, Antibe was issued an upfront payment of approximately $1.1 million and is entitled to receive a 5% royalty on net sales. Given that the territory licensed represents approximately 1% of the global market for NSAIDs, Acbel is valuing ATB-346 at $110 million, not including the royalty.

As of Aug. 29, 2017, the company had approximately 163.0 million common shares outstanding along with approximately 21.1 million stock options and approximately 60.2 million warrants. In addition, the company has approximately $3.4 million in convertible debt that can be converted into approximately 15.2 million shares. We estimate the fully diluted share count currently stands at 259.5 million shares.

Background Information

NSAIDs

NSAIDs are a class of drugs that provide analgesic (pain-reducing) and antipyretic (fever reducing) effects. The non-steroidal portion of the name is utilized to distinguish the drugs from steroids, which have a similar mechanism of anti-inflammatory action.

The mechanism through which NSAIDs exert their effect is through the inhibition of the cyclooxygenase enzymes (COX-1 and COX-2). The COX enzymes are responsible for the production of important biological signaling molecules known as prostanoids, which include prostaglandins, prostacyclin, and thromboxane. Inhibiting the production of these molecules results in reduced inflammation and pain.

There are a number of NSAIDs available both over the counter and as prescriptions, with the difference typically being the dosage strength. Examples of NSAIDs are celecoxib (Celebrex®), ibuprofen (Advil®), and naproxen (Aleve®). The compounds can be administered either orally or topically. When administered orally, NSAIDs are effective in reducing pain and decreasing inflammation; however, they have well documented side effects related to systemic administration.

NSAID side effects

The dose-related GI side effects associated with NSAIDs are a result of the inhibition of the COX-1 enzyme, which is responsible for the normal gastro-protective processes (Roth, 1988). In addition, many NSAIDs are acidic molecules, resulting in irritation to the gastric mucosa. Dyspepsia, abdominal pain, and nausea are all common side effects of oral NSAIDs (Makris *et al*., 2010). While these adverse events are manageable, more serious events are known to occur with oral NSAID use including upper GI bleeding, ulcers, and death (Hernández-Díaz *et al*., 2000).

According to The Arthritis, Rheumatism, and Aging Medical Information System, more than 100,000 Americans are hospitalized each year and more than 16,000 die from ulcers and GI bleeding linked to NSAID use. To limit the gastric side effects, NSAIDs are commonly taken along with a proton pump inhibitor (PPI), such as omeprazole or esomeprazole, that work to limit the amount of acid in the stomach.

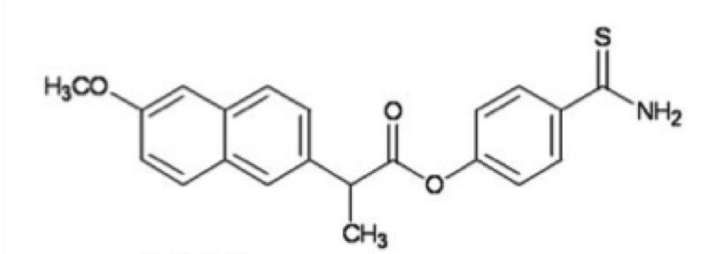
With the discovery of COX-2, research and development efforts were directed at discovering compounds that inhibited COX-2 selectively in order to overcome the GI side effects. While COX-1 is constitutively expressed throughout the body, COX-2 is typically only expressed in inflammation, with the inhibition of COX-2 resulting in the desired clinical response of NSAIDs.

Selective COX-2 inhibitors, such as rofecoxib (Vioxx®), celecoxib (Celebrex®), and valdecoxib (Bextra®), were initially very popular with both physicians and patients for their ability to relieve pain with a significantly decreased risk of adverse GI events. For example, Vioxx achieved over $1 billion in sales in its first year on the market. However, some clinical trials of the COX-2 inhibitors showed that treatment led to an increased risk of adverse cardiovascular (CV) events (Antman *et al*., 2007; Kearney *et al*., 2006). These results led Merck to voluntarily recall Vioxx® in 2004, with Bextra® withdrawn from the market in 2005. In addition, the FDA required a black box warning on the label for Celebrex®.

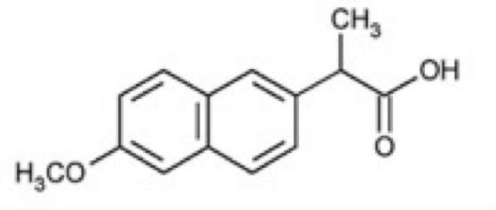
So while on the one hand non-selective NSAIDs are great at offering pain relief, they are accompanied by the threat of serious GI problems, including the development of intestinal damage and bleeding ulcers. Selective NSAIDs are very effective at mitigating pain and they cause significantly fewer GI effects, but they come with an increased risk of CV events. Thus, what is needed is an effective NSAID that does not increase a patient's risk of serious GI or CV events.

ATB-346

Antibe is developing ATB-346 as a solution to the aforementioned problems with NSAIDs. ATB-346 uses naproxen as a base molecule with a hydrogen sulfide releasing moiety covalently attached. Hydrogen sulfide (H_2S) has been identified as an important gasotransmitter, a gas that serves as an important signaling molecule in the body. Other examples of gasotransmitters are nitric oxide (NO) and carbon monoxide (CO).



ATB-346



Naproxen

Hydrogen sulfide's role in the body

H_2S is most commonly known for its very foul odor and potent toxicity, however it is capable of affecting all parts of the body. Recent research has uncovered an important role for H_2S in a variety of biological processes and systems. Endogenous production of H_2S is driven by two enzymes, cystathione β-synthase and cystathione γ-lyase, that utilize L-cysteine as the main substrate (Wang, 2002). These enzymes are expressed in liver, kidney, brain, and lymphocytes. H_2S can also be synthesized from the nonenzymatic reduction of elemental sulfur using reducing equivalents derived from glucose oxidation (Searcy *et al*., 1998).

H_2S has been identified as the third gasotransmitter after NO and CO. NO is the most studied of the three as it plays a large role in cardiovascular functions. The fundamental role of NO is to relax blood vessels and thus lower blood pressure. For this reason, several NO releasing molecules are being developed for therapeutic purposes (Martelli *et al*., 2006). H_2S appears to have similar beneficial cardiovascular effects as NO, with the difference between the two being that NO produces Reactive Oxygen Species (ROS) while H_2S is an ROS scavenger (Martelli *et al*., 2012).

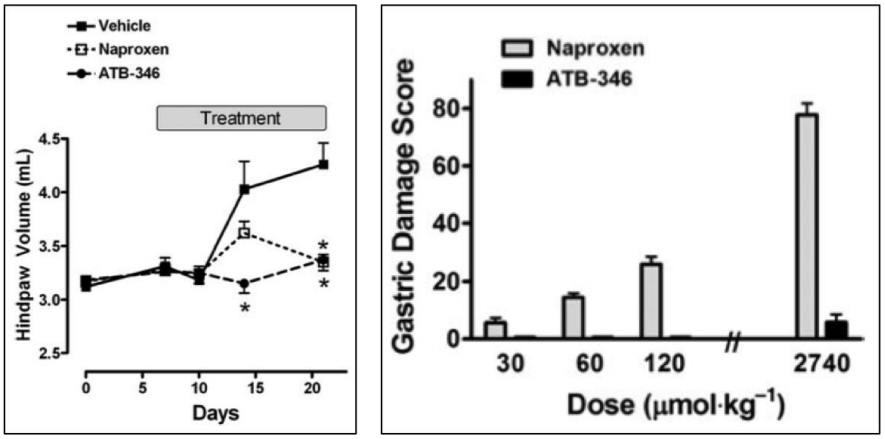
In addition to neutralizing ROS, H_2S activates adenosine triphosphase (ATP)-sensitive potassium channels (K_{ATP}). These channels regulate a number of biological functions in several types of tissues including smooth muscle cells, pancreatic beta cells, neurons, and myocardial cells (Ashcroft *et al*., 1990). Importantly, the level of H_2S appears to be affected by many commonly used drugs, including NSAIDs, which have an inhibitory effect on the production of H_2S in the gastrointestinal mucosa (Fiorucci *et al*., 2005). This may in turn contribute to gastric mucosal injury induced by these drugs. Hence, the pharmacological modulation of H_2S could represent a potential therapeutic application.

ATB-346 protects gastric mucosa from NSAID injury

In an effort to augment the negative side effects of NSAIDs, a hydrogen sulfide releasing moiety (4-hydroxythiobenzamide, TBZ) was covalently attached to the NSAID naproxen and tested in different pre-clinical animal models. Naproxen is one of the most widely used NSAIDs, in part due to evidence that its use may be associated with less cardiovascular toxicity than selective COX-2 inhibitors and other NSAIDs (Kearney *et al*., 2006). The following studies show ATB-346 to be just as effective as naproxen with a significant reduction in GI toxicity.

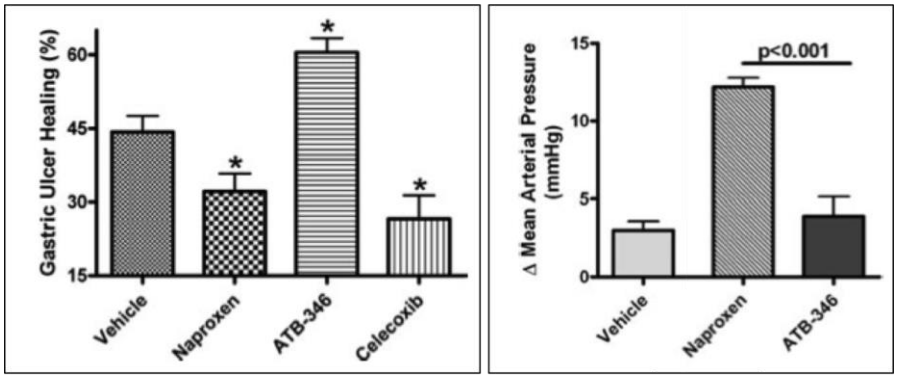
- Wallace *et al*., 2010: This study examined the effect of naproxen and ATB-346 in rats by examining a number of different attributes including inflammation alleviation in an arthritis model, gastric damage, and the ability to heal gastric ulcers. The following figure on the left shows that ATB-346 results in a significant reduction in hindpaw inflammation in a rat model of induced arthritis on both days 14 and 21 following arthritis induction, while naproxen only resulted in a significant reduction of swelling on day 21. The figure on the right shows that naproxen results in dose-dependent hemorrhagic damage in the stomach, while ATB-346 showed markedly less damage at all doses tested. At the highest dose tested for ATB-346 (2740 µmol/kg), the compound showed the same gastric damage as that produced by naproxen at 1/100th of that

dose (30 µmol/kg). The authors noted that the gastric sparing properties were not evident upon administration of naproxen and TBZ as separate entities.



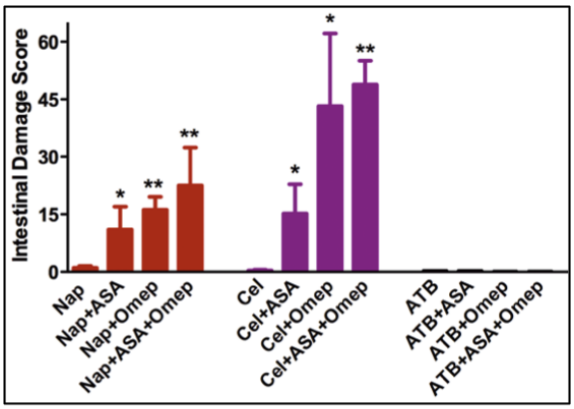
Source: Wallace *et al*., 2010

In addition to promoting the production of ulcers, NSAIDs can interfere with the body's ability to heal pre-existing ulcers. After induction of ulcers in a rodent model, treatment with vehicle resulted in an approximately 50% reduction in the size of the ulcer, as shown in the following figure on the left. Administration of naproxen or celecoxib resulted in significantly less ulcer healing, while treatment with ATB-346 significantly enhanced ulcer healing. Lastly, the following figure on the right shows that administration of ATB-346 did not result in an elevation in arterial blood pressure, while administration of naproxen resulted in a rise above basal blood pressure by ~12 mmHg.



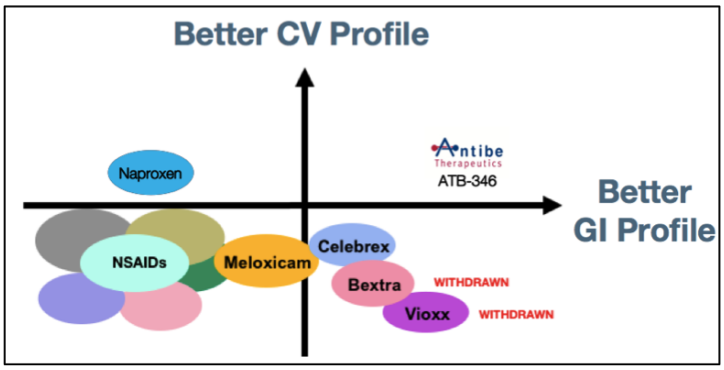
Source: Wallace *et al*., 2010

- Blackler *et al*., 2012: This study examined the effect of celecoxib, naproxen, and ATB-346 in different rat models (arthritic, obese, hypertensive, and aged). Results were very similar to what was reported by Wallace *et al*. in that ATB-346 showed very little to no gastric or intestinal damage in these models. Another model this study looked at was the co-administration of celecoxib, naproxen, and ATB-346 with aspirin and omeprazole (proton pump inhibitor). As the following figure shows, co-administration of both naproxen (Nap) and celecoxib (Cel) with aspirin and omeprazole resulted in increased hemorrhagic injury compared to administration of either drug alone. However, ATB-346 administration with aspirin and/or omeprazole did not result in significant intestinal damage.



Source: Blackler *et al.*, 2012

Based upon the aforementioned pre-clinical data, ATB-346 may ultimately prove to be an efficacious NSAID that has an enhanced GI safety profile and a similar or better CV risk profile. If the pre-clinical data continues to be replicated in clinical testing, ATB-346 could be particularly attractive to patients that are more susceptible to GI damage from traditional NSAIDs, such as the elderly and those with other comorbidities (e.g., diabetes, obesity, etc.).



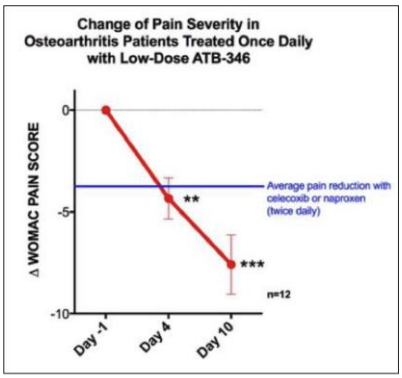
Source: Antibe Therapeutics

ATB-346 Phase 1 Trial

Antibe initiated a Phase 1 trial of ATB-346 in June 2014. On October 6, 2014, Antibe announced the completion of the single ascending dose portion of the trial with the primary objectives of safety and tolerability reached up to the maximum dose tested (1500 mg). However, on January 16, 2015, Antibe announced that it had suspended development of ATB-346 due to safety concerns (liver enzyme elevations in subjects in the highest dose cohort of the multiple ascending dose portion of the study). On March 11, 2015, the company resumed the development of ATB-346 after a thorough review of all Phase 1 data, which suggested a target therapeutic dose of 250 mg or less once daily. Analysis of patient blood samples showed that ATB-346 inhibited cyclooxygenase (COX) at a dose as low as 75 mg and that the inhibition persisted for 24 hours, suggesting once daily dosing would be appropriate. Additional validation studies showed that there was no accumulation of ATB-346 in the liver (or any other organ) and that all metabolites of ATB-346 were rapidly cleared (in rats), further suggesting that toxicity due to lack of metabolism or excretion was not an issue.

ATB-346 Phase 2a Trial

On August 8, 2016, Antibe announced the successful completion of a Phase 2 study of ATB-346 in patients with osteoarthritis of the knee. Twelve patients were treated once daily with 250 mg of ATB-346, which is only 1/6th of the typical daily dose of naproxen for treating osteoarthritis. The patients recorded their pain level one day prior to starting treatment and then again on days 4 and 10 of treatment using the WOMAC pain scale. The graph on the right shows the change in recorded pain level over the 10 days of the study. Previous studies show typical reductions in WOMAC pain scores for osteoarthritis patients taking celecoxib of approximately 4 units following one



week of treatment, with no additional improvement beyond that with continued treatment (Wittenberg *et al*., 2006). Thus, the average reduction of 7.6 units is quite impressive in that study population.

Arthritis

Arthritis is inflammation in one or more joints resulting in joint pain and stiffness. The condition typically gets worse with age. There are over 100 different types of arthritis, with the most common form being osteoarthritis. Other forms of arthritis include rheumatoid arthritis, psoriatic arthritis, and septic arthritis.

The most common symptom for all forms of arthritis is varying degrees of pain, swelling, joint stiffness, and occasionally a constant ache around the joint. Other symptoms of arthritis include an inability to use the affected hand or leg, muscle aches, and difficulty moving the affected joint. A 2010 survey by the Centers for Disease Control showed that in the U.S. approximately 50 million adults over the age of 18 had self-reported doctor-diagnosed arthritis (CDC, 2010).

Osteoarthritis

Osteoarthritis (OA) is the most common form of arthritis that affects approximately 250 million adults worldwide (Vos *et al*., 2006). It results in a slow degeneration of the joint through a gradual wearing away of the joint cartilage. It mostly affects weight-bearing joints (e.g., the hips, knees, and ankles) and results in their progressive deterioration. OA affects articular cartilage, which is the smooth, white tissue that covers the ends of bones where they come together to form a joint. Articular cartilage is characterized by a very low friction and a high resistance to wear; however, it also has poor regenerative properties.

There are a number of risk factors for developing OA, which include old age, bone deformities, joint injuries, obesity, and certain diseases such as diabetes, underactive thyroid, or gout. Diagnosis is accomplished through a series of tests that includes a physical examination by a physician along with imaging of the affected joint(s) either radiographically (X-ray) or cross-sectional imaging (magnetic resonance imaging). While there are no blood tests to confirm OA, they are usually performed to rule out other causes of joint pain such as rheumatoid arthritis.

Using 2005 Census data, it was estimated that approximately 27 million people in the U. S. suffered from OA (Lawrence *et al*., 2008). While it has been known to occur in young people, it typically affects those aged 45 and over and is considered as one of the leading causes of lower limb disabilities among the elderly. In addition, as a result of the major loss of function and, due to how it limits activity, OA can also result in depression and a loss of independence. There is also a considerable socioeconomic burden on societies and families due to disabilities brought about by OA.

As there is no cure for OA, treatment is focused on controlling symptoms and preserving physical function. Even with effective management strategies available, OA is both under-diagnosed and under-treated. This may be due in part to the high co-morbidities associated with OA, with upwards of 90% of OA patients suffering from at least one other chronic condition. OA and cardiovascular disease (CVD) are among the most common dyads seen in clinical practice, with CVD precluding the use of OA therapies – particularly NSAIDs.

If left untreated, most patients manage the pain associated with OA by limiting physical activities that exacerbate the pain, such as walking. This limitation of physical activity can then lead to poorer overall health, a higher risk of CVD and worsening of other chronic conditions.

Treatment of OA

There is no known cure for OA, thus treatment is utilized to alleviate the pain and discomfort associated with the condition. In 2012, the American College of Rheumatology (ACR) published recommendations on the use of nonpharmacologic and pharmacologic therapies for OA of the hand, knee, and hip (Hochberg *et al.*, 2012). The ACR recommends the following treatments:

- Non-pharmacologic therapy: cardiovascular exercise, aquatic exercise, weight reduction, walking aids, braces, acupuncture, surgery

- Pharmacologic therapy: acetaminophen, oral NSAIDs, topical NSAIDs, tramadol, cortisone injections, chondroitin sulfate, glucosamine

A typical pharmacological treatment regimen begins with the patient starting acetaminophen up to a full dose of 4,000 mg per day. If the patient does not have a satisfactory clinical response, then the health care practitioner is advised to start the patient on oral or topical NSAIDs. As was previously discussed, NSAIDs are known to have adverse GI effects, thus oral NSAIDs are not advised for those > 75 years of age or in those patients with a history or upper GI bleeding. If symptoms continue to persist, tramadol and/or cortisone injections can be utilized. Opioid analgesics are a last resort for patients who have failed all other pharmacological treatments and either cannot or are not willing to go through with joint replacement.

Citagenix

Antibe's subsidiary, Citagenix, is a leader in Canada in the sales and marketing of tissue regenerative products serving the orthopedic and dental markets. Citagenix was founded in 1997, and since that time it has built up a comprehensive portfolio of high-quality, branded biologics and medical devices to promote bone regeneration. The company is currently active in 15 countries, which includes a direct sales staff in Canada and a network of distributor partnerships outside of Canada.

Citagenix's business focuses on three main areas: bone graft substitutes, dental barrier membranes, and surgical instruments.

- **Bone Graft Substitutes**: A bone graft refers to a procedure whereby bone tissue is transplanted in order to promote bone regeneration. Citagenix markets a portfolio of biologics and medical devices that promote bone growth through either osteoconductive (providing a structure to enable blood vessel formation and new bone growth) or osteoinductive (actively recruits surrounding mesenchymal stem cells to become bone-forming osteoblasts via the presence of bone morphogenic protein [BMP]) activity.

- **Dental Barrier Membranes**: These are manufactured from synthetic or biodegradable material and are used in dental surgery to allow bone to regenerate without incursion of surrounding soft tissue. Barrier membranes can be either resorbable (biodegradable) or non-resorbable (synthetic). Resorbable membranes are sourced from animal tissue (e.g., bovine Achilles tendon, porcine small intestine submucosa, etc.) and are absorbed by the body such that no follow-up removal procedure is required. Non-resorbable membranes are commonly made out of titanium-enforced polytetrafluoroethylene (PTFE), and are typically used for procedures that require significant structural support. Resorbable membranes represent approximately 90% of the U.S. market (iData Research Inc.).

- **Surgical Instruments**: BMT Medizintecnik GmbH is a wholly owned subsidiary of Citagenix that designs, manufactures, and markets a portfolio of over 10,000 surgical instruments. All of the instruments are made from martensitic stainless steels (AISI1 421, 440, 440C2) and are sold through BMT's vast distribution network located throughout Europe, the U.S., the Middle East, and Asia. The instruments can be used in a variety of applications, including dental surgery, plastic surgery, general surgery, and by veterinarians.

Antibe is committed to growing Citagenix, which the company views as an important diversification strategy to augment the high-risk involved in the development of ATB-346. In addition, Antibe has the scientific, clinical development, and business development expertise to help Citagenix pursue new opportunities that were previously unavailable due to a lack of adequate resources. Antibe also has access to capital to support the financial commitments necessary for licensing transactions and product development as Citagenix expands into new business opportunities. The company is focused on three core areas in order to grow global market share in the dental regenerative medicine market:

- Antibe will continue to in-license both development-stage and commercial licensing opportunities in order to expand Citagenix's product portfolio. In support of this, last year Antibe in-licensed the Canadian rights for URIST and recently launched PentOS OI™, a suite of bone grafting products that are licensed for Canada and the U.S.
- Antibe is developing two products that target tissue regeneration for use in oral and maxillofacial surgery. Both products are regulated as class I/II medical devices and would be eligible for FDA approval in 12 months or less through a 510(k) registration.
- Antibe is committed to expanding Citagenix's sales, marketing, and distribution capabilities in the U.S. and internationally. The company currently utilizes distribution sales channels in markets outside of Canada, which is viewed as a more cost effective approach compared to a direct sales force. Antibe is exploring

acquisition opportunities in order to increase its sales presence in the U.S. as well as developing an e-commerce platform to support sales in North America.

For the fiscal year ending Mar. 31, 2017, Citagenix had $9.1 million in revenue and we model for revenues of $13.6 million for the fiscal year ending Mar. 31, 2018.

Valuation

We value Antibe using a probability adjusted discounted cash flow model that takes into account potential future revenues for ATB-346 and Citagenix. For ATB-346, we anticipate that the company will enter into a collaboration with a larger pharmaceutical company before Phase 3 studies commence. For modeling purposes, we are estimating that Phase 3 studies for ATB-346 will begin in 2019, with an NDA filing in 2020 and approval in 2021. We model for approval in the E.U. a year later.

ATB-346 is the main value driver for Antibe as the NSAID market is valued at $8 billion total. We model for approval in OA, however we believe that if the drug is approved it will likely go on to be approved for multiple indications similar to celecoxib. There are approximately 27 million individuals in the U.S. with OA (NIAMS). Of those, we estimate approximately 50% are taking or are open to taking oral NSAIDs. With a conservatively estimated 6% of the market, ATB-346 would have peak sales of $1.0 billion. In the E.U., where there are approximately 40 million patients with OA (WHO), a similar market share could generate close to $1 billion in revenue. Using a 12% royalty rate, an 18% discount rate, and a 50% chance of approval, we estimate the net present value of ATB-346 to be $171 million. When taking into account estimated capital requirements (~$5 million), the current conversion to Canadian Dollars (USD$1 = CAD$1.24), and dividing by the fully diluted share count of 259.5 million shares leads to a valuation of approximately CAD$0.85. Antibe is certainly an interesting story and we encourage investors to get familiar with the company ahead of Phase 2 data readouts in 2018.

PROJECTED FINANCIALS

Antibe Therapeutics, Inc.
Income Statement

Antibe Therapeutics, Inc. Fiscal Year Ends Mar. 31 / in Canadian dollars	FY 2017 A	Q1 '18 A	Q2 '18 E	Q3 '18 E	Q4 '18 E	FY 2018 E	FY 2019 E	FY 2020 E
ATB-346 (royalty)	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
YOY Growth	-	-	-	-	-	*#DIV/0!*	*#DIV/0!*	*#DIV/0!*
ATB-352 (royalty)	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
YOY Growth	-	-	-	-	-	-	*#DIV/0!*	*#DIV/0!*
Citagenix	**$9.1**	**$2.3**	**$2.9**	**$3.0**	**$3.1**	**$11.3**	**$15.0**	**$18.0**
Licensing / Development	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
Total Revenues	$9.1	$2.3	$2.9	$3.0	$3.1	$11.3	$15.0	$18.0
YOY Growth	*104.1%*	*#REF!*	*#REF!*	*#REF!*	*#REF!*	*24.5%*	*33.1%*	*20.0%*
Cost of Goods Sold	$5.1	$1.3	$1.9	$1.9	$2.0	$7.1	$8.3	$9.9
Product Gross Margin	*43.4%*	*42.7%*	*34.5%*	*36.7%*	*35.5%*	*37.0%*	*44.7%*	*45.0%*
SG&A	$6.9	$1.6	$2.1	$2.1	$2.2	$8.0	$9.0	$11.0
% SG&A	*76.6%*	*72.0%*	*72.4%*	*70.0%*	*71.0%*	*71.3%*	*60.0%*	*61.1%*
R&D	$0.7	$0.6	$0.2	$0.4	$0.5	$1.7	$1.8	$2.0
% R&D	*7.7%*	*27.5%*	*6.9%*	*13.3%*	*16.1%*	*15.3%*	*12.0%*	*11.1%*
Stock-based compensation	$1.2	$0.3	$0.2	$0.3	$0.4	$1.2	$1.8	$1.8
% Stock-based	*12.8%*	*12.2%*	*6.9%*	*10.0%*	*12.9%*	*10.4%*	*12.0%*	*10.0%*
Amortization and Depreciation	$0.4	$0.1	$0.1	$0.1	$0.1	$0.5	$0.5	$0.6
% Other	*3.9%*	*4.0%*	*4.5%*	*4.3%*	*4.2%*	*4.3%*	*3.3%*	*3.3%*
Operating Income	($5.2)	($1.7)	($1.6)	($1.8)	($2.1)	($6.1)	($4.6)	($5.5)
Operating Margin	*-57.5%*	*-73.0%*	*-56.2%*	*-61.0%*	*-68.7%*	*-53.9%*	*-30.7%*	*-30.6%*
Interest Income / Net	($0.9)	($0.2)	$0.0	$0.0	$0.0	($0.2)	$0.0	$0.0
Pre-Tax Income	($6.1)	($1.8)	($1.6)	($1.8)	($2.1)	($6.2)	($4.6)	($5.5)
Taxes	($0)	($0)	($0)	$0	($0)	($0)	($0)	($0)
Tax Rate	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*	*0%*
Net Income	($5.7)	($1.7)	($1.6)	($2.0)	($2.0)	($6.1)	($4.6)	($5.5)
YOY Growth	*71.1%*	-	-	-	-	*6.6%*	*-25.2%*	*19.7%*
Net Margin	*-63.5%*	-	*-54.9%*	*-66.4%*	*-64.1%*	*-54.4%*	*-30.5%*	*-30.4%*
Reported EPS	($0.06)	($0.02)	($0.01)	($0.01)	($0.01)	($0.04)	($0.02)	($0.02)
Fully Diluted Shares	95.7	116.7	153.0	155.0	160.0	146.2	190.0	220.0

Source: David Bautz, PhD - Zacks Investment Research, Inc.

© Copyright 2017, Zacks Investment Research. All Rights Reserved.

HISTORICAL STOCK PRICE



© Copyright 2017, Zacks Investment Research. All Rights Reserved.

DISCLOSURES

The following disclosures relate to relationships between Zacks Small-Cap Research ("Zacks SCR"), a division of Zacks Investment Research ("ZIR"), and the issuers covered by the Zacks SCR Analysts in the Small-Cap Universe.

ANALYST DISCLOSURES

I, David Bautz, PhD, hereby certify that the view expressed in this research report accurately reflect my personal views about the subject securities and issuers. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the recommendations or views expressed in this research report. I believe the information used for the creation of this report has been obtained from sources I considered to be reliable, but I can neither guarantee nor represent the completeness or accuracy of the information herewith. Such information and the opinions expressed are subject to change without notice.

INVESTMENT BANKING AND FEES FOR SERVICES

Zacks SCR does not provide investment banking services nor has it received compensation for investment banking services from the issuers of the securities covered in this report or article. Zacks SCR has received compensation from the issuer directly or from an investor relations consulting firm engaged by the issuer for providing non-investment banking services to this issuer and expects to receive additional compensation for such non-investment banking services provided to this issuer. The non-investment banking services provided to the issuer includes the preparation of this report, investment software, financial database analysis, organization of non-deal road shows, and attendance fees for conferences sponsored or co-sponsored by Zacks SCR. The fees for these services vary on a per-client basis and are subject to the number and types of services contracted. Fees typically range between ten thousand and fifty thousand dollars per annum. Details of fees paid by this issuer are available upon request.

POLICY DISCLOSURES

This report provides an objective valuation of the issuer today and expected valuations of the issuer at various future dates based on applying standard investment valuation methodologies to the revenue and EPS forecasts made by the SCR Analyst of the issuer's business.
SCR Analysts are restricted from holding or trading securities in the issuers that they cover. ZIR and Zacks SCR do not make a market in any security followed by SCR nor do they act as dealers in these securities. Each Zacks SCR Analyst has full discretion over the valuation of the issuer included in this report based on his or her own due diligence. SCR Analysts are paid based on the number of companies they cover. SCR Analyst compensation is not, was not, nor will be, directly or indirectly, related to the specific valuations or views expressed in any report or article.

ADDITIONAL INFORMATION

Additional information is available upon request. Zacks SCR reports and articles are based on data obtained from sources that it believes to be reliable, but are not guaranteed to be accurate nor do they purport to be complete. Because of individual financial or investment objectives and/or financial circumstances, this report or article should not be construed as advice designed to meet the particular investment needs of any investor. Investing involves risk. Any opinions expressed by Zacks SCR Analysts are subject to change without notice. Reports or articles or tweets are not to be construed as an offer or solicitation of an offer to buy or sell the securities herein mentioned.

This research report is a product of Zacks SCR and prepared by a research analyst who is employed by or is a consultant to Zacks SCR. The research analyst preparing the research report is a resident outside of Canada and is not an associated person of any Canadian registered adviser and/or dealer and, therefore, the analyst is not subject to supervision by a Canadian registered adviser and/or dealer, and is not required to satisfy the regulatory licensing requirements of any Canadian provincial securities regulators, the Investment Industry Regulatory Organization of Canada and is not required to otherwise comply with Canadian rules or regulations.