



**ANTIBE THERAPEUTICS INC.**

**ANNUAL INFORMATION FORM**

**FOR THE FISCAL YEAR ENDED MARCH 31, 2018**

**JUNE 26, 2018**

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## GLOSSARY

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“**Antibe**” or the “**Company**” means Antibe Therapeutics Inc., the Company filing this AIF;

“**Antibe Board**” or “**Board**” means the board of directors of the Company, as constituted from time to time;

“**Antibe Holdings**” means Antibe Holdings Inc., a corporation existing under the *Business Corporations Act* (Alberta);

“**Antibe Russia**” has the meaning given under the heading “Corporate Structure - Intercorporate Relationships”;

“**BRIC**” means, collectively, Brazil, Russia, India and China;

“**BGS**” means bone graft substitute;

“**CAGR**” means compound annual growth rate;

“**CEO**” means Chief Executive Officer;

“**Common Shares**” means the common shares of the Company;

“**COX**” means cyclooxygenase;

“**DBM**” means demineralized bone matrix;

“**FDA**” means Food and Drug Administration;

“**GI**” means gastro-intestinal;

“**GLP**” means Good Laboratory Practices;

“**H<sub>2</sub>S**” means hydrogen sulphide;

“**ICH**” means International Conference on Harmonization;

“**IND**” means investigational new drug;

“**IPO**” means the initial public offering of Common Shares of the Company completed on June 18, 2013;

“**License Agreement**” has the meaning given under the heading “Interests of Management and Other in Material Transactions”;

“**NCE**” means new chemical entity;

“**NDA**” means new drug application;

“**NI 52-110**” means National Instrument 52-110 - “Audit Committees” of the Canadian Securities Administrators;

“**NSAID**” means non-steroidal anti-inflammatory drug;

“**OA**” means osteoarthritis;

“**OBCA**” means the *Business Corporations Act* (Ontario) and the regulations thereunder, as amended;

“**OCF**” means oral craniofacial;

“**OSC**” means the Ontario Securities Commission;

“**RA**” means rheumatoid arthritis;

“**RM**” means regenerative medicine;

“**SEDAR**” means the System for Electronic Document Analysis and Retrieval;

“**TSXV**” means the TSX Venture Exchange;

“**UGI**” means upper gastrointestinal;

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## **FORWARD-LOOKING STATEMENTS**

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Certain statements in this AIF about the Company's current and future plans, expectations and intentions, results, levels of activity, performance, goals or achievements or any other future events or developments constitute forward-looking statements. The words "may", "will", "would", "should", "could", "expect", "plan", "intend", "trend", "indication", "anticipate", "believe", "estimate", "predict", "likely" or "potential", or the negative or other variations of these words or other comparable words or phrases, are intended to identify forward-looking statements. Forward-looking statements are based on estimates and assumptions made by the Company in light of management's experience and perception of historical trends, current conditions and expected future developments, as well as other factors that the Company believes are appropriate and reasonable in the circumstances.

Many factors could cause the Company's actual results, level of activity, performance or achievements or future events or developments to differ materially from those expressed or implied by the forward-looking statements. The purpose of the forward-looking statements is to provide readers with a description of management's expectations regarding, among other things, the Company's financial performance and research and development plans and may not be appropriate for other purposes. Readers should not place undue reliance on forward-looking statements.

Furthermore, unless otherwise stated, the forward-looking statements are made as of the date of this AIF, and the Company has no intention and undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. New factors emerge from time to time, and it is not possible for the Company to predict which factors may arise. In addition, the Company cannot assess the impact of each factor on the Company's business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements.

Without limitation, this AIF may contain forward-looking statements pertaining to the following:

- the Company's research and development plans (including the persons expected to oversee, coordinate and participate in such plans), business model, strategic objectives and growth strategy;
- the Company's current and future capital requirements and the need for additional financing;
- the continuation of the Company as a going concern;
- the payment of dividends;
- the Company's plans to expand Citagenix business in the US and globally;
- the Company's expectations regarding net losses and revenue generation; and
- the Company's expectations regarding increases in research and development costs and general and administrative expenses.

With respect to forward-looking statements, assumptions have been made regarding, among other things:

- the Company's future research and development plans proceeding substantially as currently envisioned;
- expected research and development tax credits;
- future expenditures to be incurred by the Company;
- research and development and operating costs;
- the Company's ability to find partners in the pharmaceutical industry;
- additional sources of funding, including the Company's ability to obtain funding from partners;
- the impact of competition on the Company;
- the Company being able to obtain financing on acceptable terms; and
- The Company's ability to license and/or obtain for sale new and innovative regenerative medicine products

Because the factors discussed in this AIF could cause actual results or outcomes to differ materially from those expressed in any forward-looking statements made by the Company, readers should not place undue reliance on any such forward-looking statements. These statements are subject to risks and uncertainties, known and unknown, which could cause actual results and developments to differ materially from those expressed or implied in such statements. Such risks and uncertainties relate, among other factors, to:

- the Company's history of operating losses;
- the Company's ability to obtain additional capital in the future to conduct operations, research and development activities and develop its products;
- the availability of tax credits;
- the Company's ability to find partners in the pharmaceutical industry;
- the Company's ability to license its products on terms and conditions acceptable to the Company;
- the Company's ability to compete against other companies and research institutions with greater financial and other resources;
- the Company's ability to secure and maintain adequate protection for its intellectual property;
- the Company's ability (or the ability of the Company's partners) to obtain regulatory approvals for the Company's products;
- the Company's ability to attract and retain key personnel; and
- The Company's ability to expand its regenerative medicine business into additional products and markets

The Company's actual results could differ materially from those discussed in the following AIF.

*Except where otherwise indicated or where the context otherwise requires, all references in this annual information form (“AIF”) to the “Company” or “Antibe” are to Antibe Therapeutics Inc. Unless otherwise indicated, all dollar amounts are expressed in Canadian dollars and the statistical and financial data and other information contained in this AIF are presented as at March 31, 2018.*

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## **CORPORATE STRUCTURE**

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### ***General***

The Company was incorporated under the Business Corporations Act (Ontario) on May 5, 2009. The Company was originally established under the legal name 2205405 Ontario Inc. On December 16, 2009, the Company changed its name to Antibe Therapeutics Inc. On June 18, 2013, the Company completed its initial public offering and was listed on the TSX Venture Exchange. On September 15, 2014, the Company began trading in the United States on the OTCQX Exchange.

The address of the Company's registered office and principal place of business is 15 Prince Arthur Avenue, Toronto, Ontario, Canada, M5R 1B2.

### ***Intercorporate Relationships***

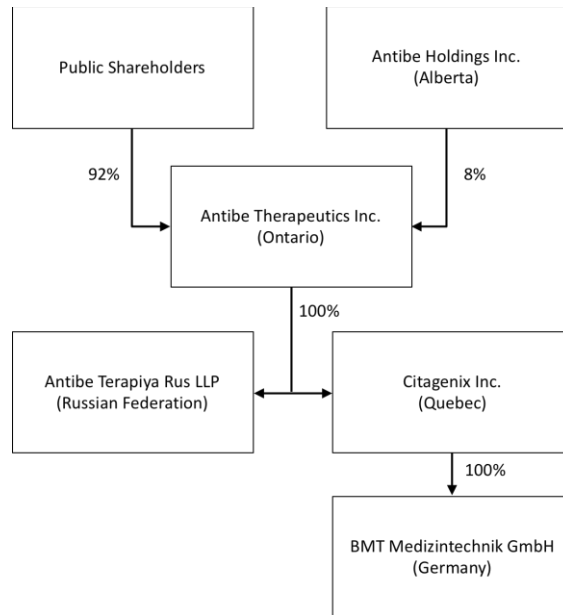
The Company was incorporated as a wholly-owned subsidiary of Antibe Holdings. As at March 31, 2018, Antibe Holdings beneficially owned and/or exercised control or direction over 15,000,000 Common Shares, or approximately 7.6% of the Company's issued and outstanding Common Shares.

On April 24, 2012, the Company incorporated a wholly-owned subsidiary, Antibe Terapiya Rus LLC (“Antibe Russia”), in the Russian Federation. Antibe Russia has a registered address at Room 5, office II, bldg. 5, 6, Kolpachny lane, Moscow, 101000, Russian Federation, and it has an authorized capital of 10,000 Russian roubles. Antibe Russia was formed in order to apply for a research and development grant from the Skolkovo Foundation, a non-profit organization founded to create a new science and technology development centre in the Moscow suburb of Skolkovo. Antibe Russia has never carried an active business and is in the process of being dissolved.

Effective October 15, 2015, the Company completed the acquisition of an 85% majority interest in Citagenix Inc., a Montreal-based sales and distribution company with a focus on regenerative medicine, and had an agreement to acquire the remaining 15% interest upon the fulfilment of a regulatory condition. The acquisition was in line with the Company's strategy to diversify its business and enter into the growing regenerative medicine industry. On February 2, 2016, Antibe acquired the remaining 15% minority interest in Citagenix upon the successful fulfilment of this regulatory condition.

The following chart illustrates the Company's organizational structure as at the date of this AIF.






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## GENERAL DEVELOPMENTS OF THE BUSINESS

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This section describes the important developments for the Company in general and for its drug candidates and regenerative medicine products over the last three completed financial years. Additional details related to the Company’s drug development and commercial activities are included in the “The Business” section of this document.

### *Fiscal 2016 Developments*

#### *Financial and Operational*

On April 1, 2015, Antibe completed a first closing of a non-brokered private placement of 7,860,000 Units at a price of \$0.10 per Unit, for gross proceeds of \$786,000. Each Unit comprised of one Common Share of the Corporation and one-half of one Common Share purchase warrant exercisable at a price of \$0.15 for a term of 36 months from the date of issuance. On April 9, 2015, the Company completed a final closing of the Offering of an additional 4,640,000 Units bringing the total gross proceeds raised under the Offering to \$1,250,000.

On July 13, 2015, Antibe announced the resignation of Dr. Michael Bumby as CFO, effective August 1, 2015. Samira Sakhia was named the Company’s CFO on an interim basis replacing Dr. Bumby. Ms. Sakhia, a member of Antibe’s board of directors, was the CFO of Paladin Labs Inc. for 13 years, responsible for leading the finance, operations, human resources, and investor relation functions.

On October 16, 2015, the Company announced the closing of the acquisition of Citagenix Inc. (“Citagenix”), a Montreal-based sales and distribution company with a focus on regenerative medicine. In connection with the transaction, Antibe purchased 85% of the common shares and 100% of the preference shares of Citagenix, by paying \$400,000 in cash and issuing 25,876,421 Antibe common shares for a total purchase price of \$4,710,088. The Citagenix share vendors entered into lock-up agreements respecting the Antibe common shares that they received as consideration, with 25% released on the Closing, and an additional 25% to be released 6 months, 9 months and 12 months from Closing. Antibe also completed a first closing of a non-brokered private placement of senior secured convertible debentures (the “Debentures”) for gross proceeds of \$1,800,000 (the “Citagenix Debenture Offering”). The Debentures have a term of three years from the date of their issuance, bear interest at a rate of 10% per year, are convertible at the option of the holder into Common Shares of Antibe at a price of \$0.22 per share and are secured by the assets of Antibe. Purchasers of the Debentures were issued an aggregate of 3,600,000 warrants to purchase common shares of Antibe (the “Warrants”). The Warrants are each exercisable for the purchase of one common share of Antibe

at a price of \$0.31 for a period of 3 years. The Debentures, the Warrants and the underlying shares are subject to a securities law hold period expiring on February 16, 2016. The Company has filed a Form 51-102F4 in respect of this acquisition on December 24, 2015 which is available on SEDAR at [www.sedar.com](http://www.sedar.com).

On November 16, 2015, the Company announced the signing of an exclusive long-term license and distribution agreement with Knight Therapeutics Inc. (“Knight”), a leading Canadian specialty pharmaceutical company, for Antibe’s anti-inflammatory and pain drugs, ATB-346, ATB-352 and ATB-340, as well as the rights to other, future Antibe prescription drugs. Under the terms of the license agreement, Antibe has granted Knight the exclusive commercial rights for Antibe’s drug candidates and other future prescription drugs in Canada, Israel, Romania, Russia and sub-Saharan Africa. Antibe is entitled to royalties on annual sales, along with the potential for \$10 million in payments for sales-based milestones. Antibe also announced a second closing of its Citagenix Debenture Offering, bringing the total proceeds to \$2,600,000 and resulting in the issuance of an additional 1,600,000 Warrants. The funds will support: (i) further development of Antibe’s novel anti-inflammatory drug pipeline; and (ii) expansion of Citagenix’s product portfolio and geographic footprint.

On December 1, 2015, Antibe announced the appointment of Alain Wilson to the position of CFO. Mr. Wilson is a management consultant with extensive experience in strategy and financial analysis in a variety of industries, including healthcare. Over the last 30 years Mr. Wilson has worked with senior executives on key strategic issues both in North America and internationally. He was a Vice President and Toronto Office Head for Mercer Management Consulting (now Oliver Wyman), and more recently a founding partner of Revelstoke Partners, a boutique consulting firm focused on assisting mid-market companies. Mr. Wilson has also served as CFO, or acting CFO, of several private and public companies.

On December 24, 2015, Antibe completed a first closing of a brokered private placement on the same financial terms as the Citagenix Debenture Offering for gross proceeds of \$450,000. Purchasers of the Debentures were issued an aggregate of 900,000 warrants to purchase Common Shares of Antibe at a price of \$0.22 per Common Share with an expiry date of October 15, 2018.

On January 12, 2016, Antibe announced the signing of an exclusive Licensing and Distribution Agreement with Induce Biologics Inc. (“Induce”) for the exclusive Canadian rights for Induce’s URIST™ biological product for dental and craniofacial applications. URIST™ is a novel bone graft substitute that contains bone morphogenetic protein-2 (“BMP”), and is being developed as a means of promoting the regeneration of bone following dental and oral maxillofacial surgery. Animal studies have demonstrated the ability of URIST™ to potently stimulate bone re-growth.

On February 2, 2016, Antibe announced the completion of the acquisition of the remaining 15% minority interest in Citagenix upon successful fulfilment of a regulatory condition by issuing 2,857,500 Antibe common shares at a price of \$0.15 per common share.

#### *Developmental*

On April 17, 2015, Antibe announced the results of additional testing of the in vivo activity of its lead anti-inflammatory drug, ATB-346. The results suggested that ATB-346 may be effective at much lower doses than previously expected, and that once daily dosing may be effective. Together, over 600 blood samples from its Phase 1 human clinical trial were independently analysed to assess the ability of ATB-346, at doses ranging from 25 to 1000 mg, to promote COX inhibition. Substantial inhibition of COX was observed at doses of ATB-346 as low as 75 mg, and the inhibition was maintained for 24 hours.

On July 20, 2015, Antibe announced the addition to its product pipeline of ATB-340, a hydrogen sulfide-releasing derivative of aspirin. In pre-clinical studies, ATB-340 has been shown to be at least as potent as aspirin in blocking the COX enzyme and reducing blood clotting. However, while aspirin produced significant stomach and intestinal ulceration and bleeding in rats, ATB-340 did not. In human blood, ATB-340 inhibited platelet aggregation as effectively as aspirin.

On August 10, 2015, Antibe announced the finalization of the report on its Phase I studies of ATB-346, permitting Antibe to proceed, when appropriate, with filing of applications to appropriate regulators for Phase II studies.

On December 21, 2015, Antibe announced the completion of validation studies being performed on the Company's lead drug, ATB-346. These studies had an objective of gaining a better understanding of the drug's potency, absorption, metabolism and excretion characteristics. The results of these studies supported progression to Phase II of development of ATB-346 in patients with osteoarthritis at a dosing regimen of 250 mg once-daily.

On February 3, 2016, Antibe submitted a Clinical Trial Application to Health Canada to proceed with an initial Phase II study in a small cohort of patients with osteoarthritis in the knee. The primary endpoints of the study will be clinical assessments of pain and inflammation over the course of 10 days of treatment with ATB-346 at 250 mg once daily. The Company received regulatory approval from Health Canada on March 7, 2016.

### ***Fiscal 2017 Developments***

#### ***Financial and Operational***

On April 18, 2016, Antibe announced that its subsidiary Citagenix Inc. ("Citagenix") launched PentOS OI™ Putty, the first product of a new family of bone graft substitutes that have a proven ability to form bone. PentOS OI™ Putty is available to oral and maxillofacial surgery customers and has been joined by three additional PentOS OI™ products: PentOS OI™ Flex, PentOS OI™ Sponge and PentOS OI™ Fill.

On June 10, 2016, Antibe completed a first closing of a non-brokered private placement of 9,685,000 Units at a price of \$0.10 per Unit, for gross proceeds of \$968,500. Each Unit comprised of one Common Share of the Corporation and one-half of one Common Share purchase warrant exercisable at a price of \$0.15 for a term of 24 months from the date of issuance. On June 20, 2016, the Company completed a final closing of the Offering of an additional 4,865,000 Units bringing the total gross proceeds raised under the Offering to \$1,455,000.

On July 19, 2016, Antibe announced the appointment of Yung Wu to its Board of Directors. Mr. Wu is Managing Director of private equity firm NFQ Ventures and is a seasoned entrepreneur with a track record of successfully building and growing several businesses throughout his career. As a serial founder and CEO, he has personally built 7 companies and produced multiple successful exits to acquirers such as Upsight and Oracle Financial Services. He also serves as a director on the Board of Green Shield, a multi-billion dollar health benefits insurance and financial services company. Mr. Wu serves as an independent director of Antibe and is also a shareholder.

On August 16, 2016, Antibe announced that its subsidiary Citagenix launched Neomem® FlexPlus, a high-performance barrier membrane for regenerative procedures in oral surgery. Neomem® FlexPlus is a single layer collagen membrane derived from porcine peritoneum. Test data and clinical experience suggest that Neomem® FlexPlus outperforms a leading barrier membrane in four metrics, specifically strength, handling, resorption and tissue response.

On October 11, 2016, Antibe announced that its subsidiary Citagenix launched a strategic growth initiative in the U.S. market for dental biologics. Specifically, Citagenix hired three senior-level sales directors with extensive industry experience who will be responsible for managing and executing this strategy. The strategic initiative will also involve additional product development efforts and enhanced marketing and systems support.

On December 16, 2016, Antibe announced the successful completion of the first tranche of a private placement of Units consisting of brokered and non-brokered components, raising gross proceeds of \$2,426,745 (the "Offering"). Under the terms of the Offering, 16,178,299 units (the "Units") were sold at a price of \$0.15 per Unit, with each Unit comprising of one Common Share of the Corporation and one-half of one Common Share purchase warrant ("Warrant"). Each whole Warrant entitles the holder to purchase an additional Common Share ("Warrant Share") at a price of \$0.22 per Warrant Share until December 15, 2018. Dominick Inc. acted as agent on the brokered private placement component. The total non-brokered portion of the Offering comprised of 2,011,667 units for gross proceeds of \$301,750. Insiders of the Corporation and their affiliates subscribed for 1,300,000 Units under the Offering for aggregate cash consideration of \$195,000. On December 21, 2017, the Company completed a second closing of the Offering, bringing the total gross proceeds of the Offering up to \$2,724,495.

On January 18, 2017, Antibe announced that its board of directors (the "Board") approved a change of the Company's auditor. The Board appointed Ernst & Young LLP ("EY") as the new auditor and at the request of the Company, Zeifmans LLP ("Zeifmans") resigned as Antibe's auditor.

On January 31, 2017, Antibe announced that its subsidiary Citagenix Inc. (“Citagenix”) launched PentOS OI™ Max for the dental biologics market. PentOS OI™ Max is the newest member of the PentOS OI™ family of bone grafts for oral and maxillofacial surgery.

On February 24, 2017, Antibe announced that it signed an exclusive licensing and distribution agreement with Laboratoires Acbel SA (“Acbel”) for ATB-346 in Greece, Romania, Serbia, Bulgaria, Albania, Algeria and Jordan. Acbel is a pharmaceutical company with a strong sales and distribution presence in the Balkan region. Antibe will receive an upfront, non-dilutive payment of \$1.1 million (€800,000), and is entitled to receive a 5% royalty on net sales of ATB-346 in these countries.

#### *Developmental*

On August 8, 2016, the Company announced successful completion of its initial Phase II study of its lead drug, ATB-346 in twelve patients with osteoarthritis of the knee. The primary endpoint of the study was the clinical assessment of pain measured at three time points over the 10 day course of treatment with ATB-346 at a 250 mg once daily dose. ATB-346 was found to be effective at reducing pain in osteoarthritis patients, and better than naproxen or celecoxib in comparable studies. The drug was also safe and well-tolerated. In this trial, a once daily dose of ATB-346 produced a reduction of the WOMAC pain score of 4.3 units on day 4, with a further decrease to 7.6 units on day 10, at a very high level of statistical significance in comparison to baseline pain ( $p < 0.001$ ). Studies have provided evidence that the average reduction of WOMAC pain scores observed with both celecoxib and naproxen, the most commonly prescribed drugs in the market, is approximately 4 units (using a 20-point WOMAC scale).<sup>(1)(2)</sup>

#### ***Fiscal 2018 Developments***

##### *Financial and Operational*

On May 24, 2017, Antibe filed a preliminary short form prospectus in connection with a proposed marketed offering of units of the Company (the “Units”) for minimum gross proceeds of \$3,000,000 and maximum gross proceeds of \$5,000,000 (the “Offering”). On June 21, 2017, the Company announced the first closing of the Offering for gross proceeds of approximately \$4,050,000. The Company issued 40,498,999 Units at a price of \$0.10 per Unit. The Company issued 40,498,999 Units at a price of \$0.10 per Unit. Each Unit is comprised of one common share of the Company (a “Common Share”) and one-half of one Common Share purchase warrant (each whole warrant, a “Warrant”). Each Warrant entitles the holder thereof to purchase one Common Share at an exercise price of \$0.15 until June 21, 2020. On August 18, 2017, the Company announced the second and final closing of the Offering for additional gross proceeds of approximately \$933,000. In total, the Company raised gross proceeds of \$4,983,000 from the sale of 49,830,000 Units in connection with the Offering.

#### *Developmental*

On April 26, 2017, Antibe announced that it formally commenced Investigational New Drug (“IND”) enabling pre-clinical studies for its second pipeline drug, ATB-352, a non-addictive, potent analgesic for the treatment of severe pain. As part of its latest pre-clinical studies, Antibe examined the pharmacokinetics (“PK”) of ATB-352 and completed a maximum tolerated dose (“MTD”) study.

On March 20, 2018, Antibe announce that its lead drug, ATB-346, met its primary endpoint in the Phase 2B gastrointestinal (“GI”) safety study. The double-blind study was conducted in 244 healthy volunteers and was designed to demonstrate the superiority of ATB-346 in GI safety compared to naproxen, the most prescribed nonsteroidal anti-inflammatory drug (“NSAID”) in the USA. Subjects on ATB-346 exhibited an ulceration rate of 2.5% versus an ulceration rate of 42.1% for subjects on naproxen at the end of the 2-week treatment period, with a very high degree of statistical significance ( $p < 0.001$ ). ATB-346 was also safe and well tolerated.

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<sup>1</sup> Boucher, Martin. A Bayesian Meta-Analysis of Longitudinal Data in Placebo Controlled Studies with Naproxen. Pfizer.

<sup>2</sup> Wittenburg et al. First-dose analgesic effect of the cyclo-oxygenase-2 selective inhibitor lumiracoxib in osteoarthritis of the knee: a randomized, double-blind, placebo-controlled comparison with celecoxib. *Arthritis Research & Therapy* Vol 8 No 2 (2004).

### ***Expected Future Developments***

Going forward into the fiscal 2019 period, Antibe expects to continue development of its lead drug, ATB-346, and the other drug candidates in its pipeline which may include the initiation of one or more clinical trials. The Company will continue to pursue its growth strategy with its subsidiary, Citagenix, through two key initiatives: (i) expansion of its product portfolio; and (ii) growth in existing and new geographic markets.

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## **THE BUSINESS**

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### **Overview**

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Antibe is a public biotechnology company that develops safer medicines for pain and inflammation. Antibe's technology involves linking a hydrogen sulfide-releasing molecule to an existing drug to produce a patented, improved medicine. Antibe's lead drug, ATB-346, targets the global need for a safer drug for chronic pain and inflammation. In March 2018, ATB-346 showed unequivocal superiority to naproxen in GI safety (2.5% versus 42.1% ulceration rate) in a Phase 2B double-blind clinical trial. ATB-352, the second drug in Antibe's pipeline, targets the urgent global need for a safer, non-addictive analgesic for treating severe acute pain, while ATB-340 is a GI-safe derivative of aspirin. In addition, Antibe has a commercial subsidiary, Citagenix Inc. ("**Citagenix**"), that is engaged in the sales and marketing of tissue regenerative products for oral and maxillofacial surgery. Citagenix is pursuing a global growth strategy in the dental biologics market.

### ***Novel Drug Development Platform***

Antibe's drug development platform originates, develops and out-licenses novel therapeutics and medical devices in the areas of pain, inflammation and regenerative medicine. Antibe's pain and inflammation drug platform advances patent-protected new pharmaceuticals that are improved versions of existing drugs. These improvements originate from Nobel Prize winning medical research highlighting the crucial role of gaseous mediators: chemical substances produced in the human body to regulate a range of fundamental cellular processes. The Company's drug design methodologies involve chemically linking a base drug to an Antibe-patented, hydrogen sulfide-releasing molecule; in short, improving existing therapies with the goal of making them better tolerated from a GI-safety perspective. Antibe's lead drug ATB-346 targets the global need for a safer drug for chronic pain and inflammation. ATB-352, the second drug in Antibe's pipeline, targets the urgent global need for a safer, non-addictive analgesic for treating severe acute pain, while ATB-340 targets a global desire for a GI-safe derivative of aspirin.

Antibe is actively engaged in business development activity to fully monetize its clinical development pipeline and maximize shareholder value. The Company remains in active strategic out-licensing discussions for smaller markets (i.e., outside of the United States and Western Europe). In addition, given the recent human proof-of-concept GI safety data for ATB-346, Antibe is now engaging multinational pharmaceutical firms with a goal of securing strategic partnerships for the large markets. Antibe's clinical development activities in the next 12 months are designed to maximize the value of its drug platform and strengthen its position in discussions with potential partners.

### ***Commercial Asset in Regenerative Medicine***

Antibe's subsidiary, Citagenix, is a leading promoter and distributor of tissue regenerative products addressing the oral craniofacial ("OCF") market in Canada and internationally. Citagenix has grown a comprehensive portfolio of high-quality, branded biologics and medical devices that promote bone regeneration. Citagenix is active in 15 countries, operating in Canada through its direct sales teams, and internationally via a network of distributor partnerships. Antibe believes that the field of regenerative medicine offers attractive growth opportunities while at the same time providing product diversification to the Company. Antibe is pursuing a global growth strategy for Citagenix that leverages its key strengths:

- **Leading Source of Knowledge.** Since its inception in 1997, Citagenix has grown to become an important source of medical device knowledge for oral surgeons in Canada. This is a key aspect of Citagenix's offering to customers and directly supports its ability to effectively compete and differentiate itself in the marketplace.

- **Growing Portfolio of Products and Brands.** Citagenix has, through licensing and distribution arrangements, assembled a comprehensive portfolio of bone graft substitutes and barrier membranes that address dental bone regeneration and grafting for functional, cosmetic and aesthetic results. Citagenix continues to source high-quality biologics and has a track record of building successful brands (such as Raptos®). Citagenix’s instrument business is the result of an earlier purchase of assets from a company in receivership and is a German manufacturer and distributor of high quality surgical instruments.
- **Expanding Distribution Network.** Citagenix sells its product portfolio internationally through distribution partners. Citagenix plans to build its global market share by partnering with committed resellers to enter markets without the high cost of a direct sales force.

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## **Novel Drug Development Platform**

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Antibe Therapeutics is pursuing a major advance in the safe and non-addictive treatment of pain and inflammation. The Company’s drugs are designed to prevent the widespread and serious gastrointestinal damage and bleeding caused by non-steroidal anti-inflammatory drugs (“NSAIDs”), today’s most widely used medicines for the relief of pain. The NSAID class of drugs includes prescription and over-the-counter (“OTC”) brands such as naproxen (Aleve), celecoxib (Celebrex), ibuprofen (Advil), and Aspirin.

Now in Phase 2 human clinical trials, Antibe’s first drug targets mild-to-moderate pain and inflammation arising from a wide range of medical conditions. If the promising results of pre-clinical studies are replicated in humans, Antibe will have surmounted the main barrier to the non-addictive control of pain and inflammation. Physicians and consumers will gain a radically safer alternative to today’s NSAIDs and to the multi-dimensional dangers of corticosteroids (used for inflammation) and opiates (used for pain).

Rooted in more than ten years of academic and proprietary research, Antibe’s patent-protected drug development technology enables the linking of an NSAID molecule to a hydrogen sulfide-releasing molecule. Notably, hydrogen sulfide (“H<sub>2</sub>S”) is endogenously produced and utilized throughout the body, serving as an anti-inflammatory agent and signaling molecule. Combined with an expanding scope of indications for NSAID use, the unique properties of hydrogen sulfide promise substantially improved medicines for pain and inflammation across the spectrum of human illness.

### ***The Global NSAID Market***

NSAIDs are one of the largest classes of drugs worldwide, with sales of over US\$11 billion in 2014<sup>(3)</sup>, and represent a significant portion of the US\$37 billion global pain management market for pharmaceuticals and medical devices<sup>(4)</sup>. Market leaders include well-known prescribed medicines such as Pfizer Inc.’s Celebrex® (US\$830 million in 2015 annual sales) and Novartis International AG’s Voltaren® (US\$558 million in 2015 annual sales). Leaders of the over-the-counter segment include Advil® (ibuprofen) and Aleve® (naproxen).

This class of drugs has been widely used for decades to treat acute and chronic pain, fever and inflammation from conditions such as osteoarthritis (“OA”), rheumatoid arthritis (“RA”) and gout. They have also been used to treat acute or chronic pain associated with injuries, surgical and dental procedures, back pain and headaches.

### ***GI Safety – The Unmet Medical Need***

The therapeutic anti-inflammatory effects of NSAIDs are attributable to the inhibition of cyclooxygenase (“COX”) enzymes. However, NSAIDs have well-known and serious adverse side effects, including the induction of bleeding and ulceration in the gastrointestinal (“GI”) tract. In severe cases, NSAID usage can result in fatal GI ulceration and bleeding. These side effects occur at an even higher rates in patients with other common disorders (e.g. arthritis, hypertension and obesity) and in the elderly. A second-generation of NSAIDs, known as selective COX-2 inhibitors, including Vioxx, Celebrex and Bextra, were developed with GI safety in mind. These drugs have only been marginally

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<sup>(3)</sup> Evaluate Pharma

<sup>(4)</sup> MSB, BCC Research

effective in reducing such side effects and carry additional severe cardiovascular toxicity risks. Such increased risks of adverse cardiovascular events resulted in the removal of Vioxx and Bextra from global markets in 2004.

Antibe’s drug design represents a significant opportunity for the development of a new class of NSAID-based compounds, which exhibit equal or greater efficacy than currently marketed drugs while drastically reducing adverse GI side effects. No current drug appears to meet these criteria, resulting in a significant unmet medical need. Furthermore, there are few novel NSAIDs in development, most being reformulations or combinations of existing drugs.

**ATB-346: Antibe’s Lead Drug**

ATB-346 combines a gaseous mediator (H<sub>2</sub>S) with naproxen, a widely used NSAID, to create a novel therapeutic compound. Studies to date on ATB-346 have shown very promising results, in particular, negligible GI damage in a recent Phase 2B clinical study that was conducted in 244 healthy volunteers (announced on March 20, 2018). These clinical results were consistent with pre-clinical studies done in both healthy and unhealthy animals<sup>(5)(6)</sup>. The contrast between ATB-346 and currently available drugs is most notable in studies involving animals with increased susceptibility to GI ulcers, mimicking the human condition for which NSAIDs are most widely used. In addition to an improved safety profile, ATB-346 exerts anti-inflammatory effects equal to or greater than those of naproxen<sup>(7)</sup>. Moreover, ATB-346 has no effect on blood pressure<sup>(3)</sup>, a good indicator of cardiovascular safety.

The Company anticipates that the initial therapeutic indication of ATB-346 will be OA, a chronic, degenerative disease encompassing multiple related pathologies associated with inflammation and degradation of cartilage and associated tissues of the joints. OA symptoms include joint pain, joint swelling, tenderness and stiffness. OA is often associated with a significant reduction in mobility and decline in quality of life with resultant significant socioeconomic burdens. With ongoing demographic shifts worldwide towards an increasingly elderly population, the incidence of OA is expected to increase.

**Table 1. ATB-346 Product Profile**

<b>Disease Condition(s):</b>	Osteoarthritis; to be broadened as supported by relevant data and regulatory filings to include all conventional markets for NSAIDs, including rheumatoid arthritis, ankylosing spondylitis, etc.
<b>Product Description:</b>	ATB-346 is a hydrogen sulfide-releasing derivative of naproxen (naproxen is among the most commonly used, and most cardiovascular-safe of the NSAID class).
<b>Target Segment(s) and Marketplace:</b>	NSAIDs are the most commonly used therapy for osteoarthritis, yet their use is associated with a high incidence of gastrointestinal ulceration and bleeding. NSAIDs are also widely used in a number of conditions, including rheumatoid arthritis, ankylosing spondylitis, and general pain reduction, with a similarly high rate of gastrointestinal ulceration and bleeding. It is well-accepted that patients with these conditions would benefit greatly from an effective, GI-sparing anti-inflammatory/analgesic agent such as ATB-346.
<b>Market Leaders:</b>	The two most widely prescribed NSAIDs for treating chronic pain and inflammation associated with osteoarthritis are naproxen and celecoxib (Celebrex). A common method to assess the effectiveness (ie. pain relief) of analgesics is the WOMAC Index, a widely recognized set of standardized questionnaires used by health professionals to evaluate the condition of patients with osteoarthritis of the knee and hip. WOMAC pain scores are

<sup>(5)</sup>Wallace et al., “Markedly Reduced Toxicity of a Hydrogen Sulphide-Releasing Derivative of Naproxen (ATB-346)”, *British Journal of Pharmacology* (2010); 159: 1236-1246.

<sup>(6)</sup> Blackler et al., “Gastrointestinal-Sparing Effects of Novel NSAIDs in Rats with Compromised Mucosal Defence”, *PLoS ONE* (2012); 7: e35196.

<sup>(7)</sup> Wallace, “Markedly Reduced Toxicity”.

	graded on a 10-point or 20-point scale, with a score of 10 or 20 (depending on the scale used) representing the highest level of pain. Studies have provided evidence that the average reduction of WOMAC pain scores observed with both celecoxib and naproxen is ~4 units (using a 20-point WOMAC scale). <sup>(8)(9)</sup>
<b>ATB-346 Advantages:</b>	As the standard first-line treatment for osteoarthritis, naproxen and other NSAIDs are effective, but can induce gastrointestinal ulceration and bleeding in a high number of patients, with much higher incidence in patients with co-morbidities and in the elderly. In these patients, selective COX-2 inhibitors offer only a modest improvement in terms of GI safety, but their use is associated with significant cardiovascular toxicity (studies to-date suggest that naproxen is the most cardiovascular-safe of available NSAIDs). ATB-346 has been found <u>not</u> to cause significant GI injury in rodents and dogs, even at very high doses. Moreover, ATB-346 remained GI-safe when given to animals with compromised mucosal defence or with pre-existing ulcers – situations in which selective COX-2 inhibitors cause GI damage/bleeding in humans. It also remained safe when co-administered with aspirin, which markedly elevates the risk of GI damage/bleeding with COX-2 inhibitors. ATB-346 also did not elevate blood pressure when administered acutely to hypertensive rats, in contrast to a significant hypertensive effect with naproxen.

Antibe has an extensive database of pre-clinical data collected from studies using a variety of validated animal models to assess the effectiveness and safety of ATB-346 (see the Company's "Initial Public Offering Prospectus" dated July 10, 2013 for a detailed discussion of preclinical results and data).

#### **Development Plan and Recent Activity**

Antibe has a development plan for ATB-346 through to the end of Phase II human clinical studies, a possible strategic exit point for the drug. The Company's objective is to satisfy the requirements of the drug regulatory authorities and the commercial licensing objectives of prospective global partners while moving through development quickly and efficiently. Assuming positive clinical results, the Company expects that one or more large multinational pharmaceutical companies may be interested in completing the final development work, including the Phase III program. The Phase III program is expected to enable registration in the U.S., Europe and other major markets.

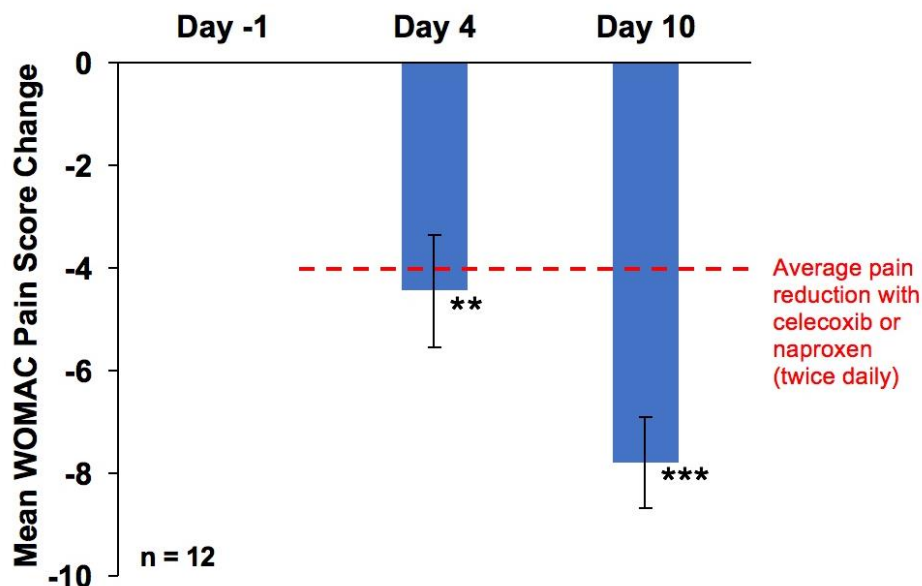
**Phase 2A Effectiveness Study (Completed in August 2016).** In March 2016, Antibe received a no objection letter from Health Canada to conduct a Phase 2 trial of ATB-346 in twelve patients with osteoarthritis of the knee. The primary endpoint of the study was the clinical assessment of pain measured at three time points over the 10 day course of treatment with ATB-346 at a 250 mg once daily dose. The Company announced successful completion of the trial on August 8, 2016 with results showing ATB-346 to be effective at reducing pain in osteoarthritis patients, and better than naproxen or celecoxib in comparable studies. The drug was also safe and well-tolerated. In this trial, a once daily dose of ATB-346 produced a reduction of the WOMAC pain score of 4.3 units on day 4, with a further decrease to 7.6 units on day 10, at a very high level of statistical significance in comparison to baseline pain ( $p < 0.001$ ). Studies have provided evidence that the average reduction of WOMAC pain scores observed with both celecoxib and naproxen, the most commonly prescribed drugs in the market, is approximately 4 units (using a 20-point WOMAC scale).<sup>10,11</sup>

<sup>8</sup> Boucher, Martin. A Bayesian Meta-Analysis of Longitudinal Data in Placebo Controlled Studies with Naproxen. Pfizer.

<sup>9</sup> Wittenburg et al. First-dose analgesic effect of the cyclo-oxygenase-2 selective inhibitor lumiracoxib in osteoarthritis of the knee: a randomized, double-blind, placebo-controlled comparison with celecoxib. *Arthritis Research & Therapy* Vol 8 No 2 (2004).



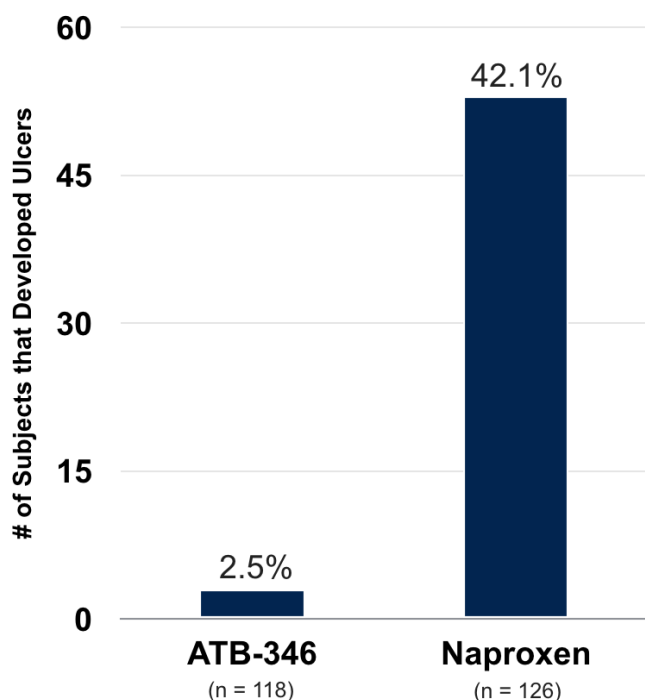
**Figure 1. Change of Pain Severity in Osteoarthritis Patients Treated Once Daily with Low-Dose ATB-346**



\*250mg of ATB-346 contains approximately 166mg of naproxen; the typical daily dose of naproxen for osteoarthritis is 1,000mg. Note: '\*\*' indicates a statistical significance of  $P < 0.01$ ; '\*\*\*' indicates a statistical significance of  $P < 0.001$ .

**Phase 2B GI Safety Study (Completed in March 2018).** Antibe received approval from Health Canada in August 2017 to conduct a Phase 2, double blind GI safety trial of ATB-346 in 244 healthy volunteers. The study was designed to demonstrate the superiority of ATB-346 in GI safety compared to naproxen, the most prescribed nonsteroidal anti-inflammatory drug (“NSAID”) in the USA. One group was treated for 14 days with ATB-346 (250 mg once daily) while the other group was treated for 14 days with the standard prescription dose of naproxen (500 mg twice daily). The primary endpoint for the study was the incidence of gastric or duodenal ulcers of at least 3 mm diameter with unequivocal depth, considered the gold standard in assessing the GI safety of NSAIDs. On March 20, 2018, Antibe announced that ATB-346 successfully met the primary endpoint in the study. Subjects on ATB-346 exhibited an ulceration rate of 2.5% (3/118) versus an ulceration rate of 42.1% (53/126) for subjects on naproxen at the end of the treatment period, with a very high degree of statistical significance ( $p < 0.001$ ). ATB-346 was also safe and well tolerated.

**Figure 2. Gastric Ulcer Incidence of ATB-346 Versus Naproxen During Two-Week Treatment Period**



**Future Development.** Antibe plans on initiating a double blind Phase 2 clinical study to validate the pain reduction efficacy of ATB-346 (versus control) in a sample size of approximately 200 - 250 OA patients. In addition, biomarker data derived from Phase 1 and Phase 2 blood assays suggest that ATB-346 is effective at lower doses; accordingly, the Company is planning on including two additional dosing cohorts in the study with the goal of determining the lowest effective dose. The Company anticipates that this clinical study will commence in Q3 2018 with an expected data read-out in Q1 2019.

### ***Regulatory Considerations***

In the United States, ATB-346 will be regulated by the Food and Drug Administration’s (the “**FDA**”) Center for Drug Evaluation and Research. Antibe is pursuing U.S. marketing approval via a U.S. FDA new drug application (an “**NDA**”) enabling path. An NDA enabling path is generally considered the gold standard path for drug development. The Company intends to work closely with the FDA and coordinate with the regulatory agencies of other major global markets to ensure that the development plan satisfies each of their respective requirements while minimizing redundancies. In addition, ATB-346 is an H<sub>2</sub>S-releasing version of naproxen and the Company’s development plan anticipates that it will be regarded as a New Chemical Entity (“**NCE**”). Nevertheless, naproxen is a well-characterized molecule, and H<sub>2</sub>S has been used in other marketed products. Accordingly, the development plan leverages the data existing for these two individual components to reduce, as much as possible, the development requirements for ATB-346.

### ***ATB-352: Non-Addictive Analgesic for Acute Pain***

ATB-352 is a hydrogen sulfide-releasing derivative of ketoprofen, a potent NSAID commonly prescribed for acute pain. ATB-352 is intended to target the urgent global need for a safer, non-addictive analgesic for treating severe acute pain; more specifically, ATB-352 directly addresses the need for pain medication that provides fast-acting pain relief without the harmful side effects and abuse potential associated with opioid use (such as OxyContin and Fentanyl). According to the Centre for Disease Control and Prevention (“**CDC**”), more than 60% of drug overdose deaths involve

an opioid (including prescription opioids and heroin), and the number of overdose deaths involving opioids have quadrupled since 1999.<sup>10</sup>

**Development Status.** Antibe recently confirmed the non-addictive properties of ATB-352, a more potent NSAID, targeting the significant market for severe, acute pain. In addition, pre-clinical studies have demonstrated that ATB-352 caused negligible GI damage compared to ketoprofen.<sup>11</sup> Due to its intended short-term use for acute pain, Antibe anticipates that the development timeline will be considerably accelerated as compared to that for a chronic-use drug such as ATB-346. Antibe initiated IND-enabling preclinical studies for ATB-352 in 2017 and expects their completion in the next 12 months.

#### ***ATB-340: Anti-thrombotic***

Antibe's third drug candidate, ATB-340, is a hydrogen sulfide-releasing derivative of low-dose aspirin targeting gastrointestinal safety. Low-dose aspirin is commonly prescribed to patients over 50 years of age to support cardiovascular disease prevention and more recently, a reduced risk from some gastrointestinal cancers including colon cancer. However, aspirin, like other NSAIDs, can cause stomach ulcers and serious gastrointestinal bleeding in an appreciable portion of the population. Studies indicate ATB-340 delivers the cardiovascular characteristics associated with aspirin but without the serious risk of gastrointestinal bleeding.<sup>12</sup>

**Development Status.** Pre-clinical studies<sup>13</sup> have demonstrated that ATB-340 caused negligible GI damage compared to low-dose aspirin. Given the success of its recent Phase 2B GI safety study for ATB-346, the Company is preparing to commence IND-enabling pre-clinical toxicology studies for ATB-340.

#### ***Partnering Opportunities***

Antibe continues to strategically seek regional partnering opportunities to provide non-dilutive sources of funding and provide further validation of its drug platform. On February 24, 2017, Antibe entered into an exclusive long-term license and distribution agreement (the "**License Agreement**") with Laboratoires Acbel SA ("**Acbel**") for ATB-346 in Albania, Algeria, Bulgaria, Greece, Jordan, Romania and Serbia (the "**Territory**"). Acbel is a pharmaceutical company with a strong sales and distribution presence in the Balkan region. Acbel, through its affiliates and partners, is the largest seller of naproxen in this region, which represents approximately 1% of the global market for NSAIDs. Under the terms of the license agreement, Antibe received an upfront, non-dilutive payment of \$1.1 million (€800,000) and is entitled to receive a 5% royalty on net sales of ATB-346 in the Territory.

In addition, Antibe is also party to a license agreement with Knight Therapeutics Inc. ("**Knight**"), which was entered into in conjunction with Knight's investment in Antibe by way of convertible debenture in November 2015. Knight was granted commercial rights for Antibe's drug candidates and other future prescription drugs in Canada, Israel, Russia and sub-Saharan Africa. Antibe is entitled to royalties from Knight on annual sales, along with the potential for \$10 million in payments for sales-based milestones. Antibe considers this to be a favorable royalty scenario given its competitive anticipated cost-of-goods structure.

Antibe remains in active discussions with other pharmaceutical companies in regions across the globe that represent smaller market opportunities (i.e., outside of the United States and Western Europe). In addition, given the recent human proof-of-concept GI safety data for ATB-346, Antibe is now engaging multinational pharmaceutical firms with a goal of securing strategic partnerships for the large markets.

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<sup>10</sup> CDC. Wide-ranging online data for epidemiologic research (WONDER). Atlanta, GA: CDC, National Center for Health Statistics; 2016. Available at <http://wonder.cdc.gov>.

<sup>11</sup> Gemici et al. H2S-releasing drugs: Anti-inflammatory, cytoprotective and chemopreventative potential. Nitric Oxide Vol 46, pages 25-31 (2015).

<sup>12</sup> See Gemici et al., above.

<sup>13</sup> See Gemici et al., above.

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## Commercial Asset in Regenerative Medicine

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### *Regenerative Medicine Market*

The market for regenerative medicine and tissue engineering products is expected to grow to nearly US\$61 billion (2021E) from US\$14 billion (2016E), representing a compounded annual growth rate of 35%.<sup>14</sup> Antibe is directly participating in this market and believes there is significant opportunity to build market share through: (i) the introduction of new products; (ii) expansion of its international distribution; and (iii) strategic partnerships. The Company is currently evaluating strategic alternatives to build its presence in the United States and international markets and has an active funnel of business development opportunities.

**Oral Regenerative Medicine.** There is a growing marketplace of oral regenerative products that is being stimulated by demand from dental surgeons and specialists to support specialized procedures in oral and maxillofacial surgery. According to Straumann, a leading provider of dental implants and regenerative products, the global market for oral tissue regeneration is estimated to be up to US\$700 million<sup>15</sup>. The U.S. market for dental bone graft substitutes and other dental biomaterials was US\$341 million in 2014, with barrier membranes representing approximately US\$120 million of this market (iData Research). The major product segments include: bone graft substitutes, barrier membranes and growth factors.

### *Competitive Landscape*

Both the dental and orthopedic biomaterials markets have many competitors that offer a variety of biologics, medical devices and other products to support tissue regeneration. A portion of these products are commoditized (eg. mineralized bone particulate) where competition is driven by pricing, brand awareness and customer support. Innovation in regenerative medicine is supporting the emergence of new products that will have the potential to disrupt the current landscape of technologies in the biomaterials marketplace. In particular, stem cell technology has made major advancements in recent years and is showing great promise to support tissue regeneration in cartilage and other tissues and organs beyond bone.

**Dental Biomaterials.** The market for dental biomaterials includes innovators, manufacturers, distributors and fully-integrated organizations that offer bone graft substitutes, dental barrier membranes, growth factors and other products that support bone regeneration. Geistlich is the market leader in the U.S. market due to strong sales from its Bio-Oss® xenograft and Bio-Gide® collagen membrane products, which are often bundled together. Specific competitors in the dental biomaterials market include: ACE Surgical Co., BioHorizons (subsidiary of Henry Schein), DENTSPLY Implants, Geistlich Biomaterials, Keystone Dental, LifeNet Health, Medtronic, Musculoskeletal Transplant Foundation, Nobel Biocare (subsidiary of Danaher), Osteogenics, Rocky Mountain Tissue Bank, Salvin Dental Specialties, Straumann and Zimmer Biomet.

**Orthopedic Biomaterials.** Orthopedic biomaterials are widely used to treat bone and joint degenerative and inflammatory issues and have a wide array of applications in spinal surgery, trauma, joint reconstruction and sports medicine therapy. The market for orthopedic biomaterials is fragmented due to the many overlapping medical fields. Medtronic Inc. (“Medtronic”) has emerged as the market leader largely due to the success of its Infuse® growth factor product (FDA approved in 2002). The growth of Infuse® has been hindered in recent years due to on-going legal disputes stemming from questionable business practices and negative side effects. Specific competitors in the orthopedic biomaterials markets include: Allosource, Anika Therapeutics, Inc., Arthrex, Inc., Baxter, Bioventus LLC, DePuy Synthes (a Johnson and Johnson company), Exactech, Inc., Genzyme, Integra LifeSciences Holding Corp., Musculoskeletal Transplant Foundation (MTF), Medtronic, NuVasive, Inc., Orthofix, RTI Surgical, Inc., Stryker Corp., Wright Medical Group, Vericel Corp. (formerly Aastrom Biosciences), Zimmer Biomet (Research and Markets, 2015).

### *Bone Graft Substitutes*

Bone grafting refers to a surgical procedure that transplants bone tissue to promote bone regeneration; this type of procedure is possible due to the collective regenerative properties of bone formation cells *in-vivo* when presented with

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<sup>14</sup> BCC Research LLC. Tissue Engineering and Regeneration: Technologies and Global Markets. September 2016.

<sup>15</sup> Straumann 2016 Annual Report (estimate based on MRG and iData Research), page 54.

growth signals and structural support. Antibe's subsidiary, Citagenix, markets and distributes a portfolio of high-quality biologics and medical devices that promote bone growth through osteoconductive and osteoinductive activity (see "Characterization" below).

**Characterization.** Bone grafts are widely used in orthopedic and oral maxillofacial surgery to support the regeneration of bone tissue. A bone graft is derived from bone tissue and is broadly characterized by its ability to provide, depending on its source, one or more of the following characteristics:

- **Osteoconductivity.** Characterizes a bone graft's ability to provide structure, enabling blood vessel incursion and new bone growth within a defined framework (known as a "scaffold").
- **Osteoinductivity.** Describes the ability of a bone graft to actively recruit surrounding mesenchymal stem cells ("MSCs") to differentiate into bone-forming osteoblasts; this process occurs via presence of growth factors in the graft, primarily bone morphogenetic protein ("BMP").
- **Osteogenesis.** Occurs when living cells (eg. osteoblasts) from a donor graft directly synthesize new bone at the site of implantation; this activity is only exhibited when the bone is harvested from the patient ("autograft" as defined below).

**Classification.** There are two types of bone tissue found in the body: cancellous (trabecular or spongy bone) and cortical (compact bone). Cancellous bone is more porous and less dense than cortical bone, which is strong and difficult to fracture. Bone grafts are generally classified as the following:

- **Autograft.** *Patient-specific* bone graft harvested at primary and secondary surgical sites; availability is often limited and the grafting procedure can cause donor-site morbidity.
- **Allograft.** *Human-derived* bone graft that is primarily supplied by tissue banks that harvest, process and store cadaverous tissue; allografts are readily available in different shapes and sizes and do not cause donor-site morbidity.
- **Xenograft.** *Non-human derived* bone graft that is typically sourced from bovine, equine or porcine bone tissue.
- **Synthetic.** Biocompatible substances such as tricalcium phosphate ("TCP") and hydroxyapatite ("HA") are synthesized to form a synthetic resorbable bone substitute that provides similar mechanical properties to bone (ie. osteoconductivity) but does not provide any osteoinductivity.

**Processing & Storing.** Modern bone grafts are processed in a manner that virtually eliminates chance of disease transmission while enabling a sufficiently long shelf life for the finished product. It is important that any processing is gentle enough to preserve the integrity of the graft. The most common processing techniques include gamma-ray irradiation and freeze drying.

### ***Dental Barrier Membranes***

Barrier membranes are manufactured from either synthetic or biodegradable material and are used in dental surgery to allow bone regeneration to occur without the interference of surrounding soft tissue. The vast majority of dental membranes are used in guided bone regeneration procedures to support the success rate of the bone graft and increase the volume of bone formation.

**Categorization.** Barrier membranes are categorized by their ability to be absorbed by the body:

- **Resorbable membranes (*biodegradable*).** Resorbable membranes are manufactured from biodegradable material such as collagen and are often sourced from animal tissue (eg. bovine Achilles tendon, porcine small intestinal submucosa, etc.). Resorbable membranes are absorbed by the body typically over a 1 – 6 month period depending on the product and do not require a follow-up removal procedure. Resorbable membranes represent approximately 90% of the U.S. dental membrane market<sup>16</sup>.

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<sup>16</sup> iData Research Inc., 2013.

- **Non-resorbable membranes (*synthetic*).** Non-resorbable membranes were the first generation of barrier membranes introduced to the dental biomaterials market and are derived from synthetic materials; the most common material used today is titanium-enforced polytetrafluoroethylene (“PTFE”). PTFE membranes are cheaper than collagen membranes and can be appropriate for procedures that require significant structural support, but they do require a follow-up removal procedure. Non-resorbable membranes represent approximately 10% of the U.S. dental membrane market<sup>18</sup>.

**Characteristics.** Barrier membranes can have different handling characteristics (stiff versus pliable) and come in a variety of sizes, making them suitable for a wide range of oral surgical procedures. Stiff membranes are better suited for procedures that require strong support and containment of the surgical site, where flexible membranes conform to the surgical site.

### ***Commercial Product Portfolio***

Citagenix has a comprehensive portfolio of bone grafts, dental membranes, surgical instruments and other products that support specialized surgical procedures in the dental and orthopedic market places.

- **Bone Graft Substitutes (“BGSS”).** Citagenix’s suite of bone grafting solutions include alloplast granules and putty (TCP and HA combinations), allografts (irradiated cancellous and cortical bone), xenografts (porcine-derived) and demineralized bone matrix (“DBM”) products that display both osteoconductive and osteoinductive activity.
- **Dental Barrier Membranes.** Citagenix has assembled a portfolio of allogeneic and xenogeneic soft-tissue grafts that support guided tissue regeneration (“GTR”) and guided bone regeneration (“GBR”).
- **Surgical Instruments.** BMT Medizintechnik GmbH (“BMT”, a wholly owned subsidiary of Citagenix) designs, manufactures and markets a complete product portfolio of over 10,000 surgical instruments. As a leading global manufacturer of surgical instruments, BMT has major distributors located throughout Europe, the Americas, the Middle East and Asia. BMT sources and manufactures surgical instruments from martensitic stainless steels (AISI 421, 440, 440C2) which is the highest quality surgical steel available.

**Trademarks.** The majority of Citagenix’s grafting and membrane products are marketed under its own brands and trademarks and sourced from private label suppliers.

**Dynamic Portfolio.** The field of oral regenerative medicine is constantly evolving and oral surgeons are quick to adopt new innovations that can save time, costs and improve patient outcomes. Citagenix carefully manages the life cycle of each product and regularly launches new products to ensure that its portfolio meets or exceeds the demands of its customers.

**Table 2. Portfolio of Commercial Products**

<b>Product</b>	<b>Type</b>	<b>Application</b>
<b>Bone Graft Substitutes</b>		
C-Graft Putty™ C-Blast Putty™	Deminerlized Bone Matrices (“DBMs”)	<ul style="list-style-type: none"> <li>• Periodontal defects</li> <li>• Implant site development</li> <li>• Coronal defects around</li> <li>• Immediate implants</li> <li>• Extraction site repair</li> <li>• Implant dehiscence defects</li> <li>• Sinus lift procedures</li> <li>• Moderate localized ridge defects</li> <li>• Sockets Preservation</li> </ul>
DynaGraft-D™ DynaBlast™		
PentOS OI™ Putty PentOS OI™ Flex PentOS OI™ Fill PentOS OI™ Sponge		
Raptos® Allograft THE Graft ( <i>xenograft</i> )	Irradiated bone particulates (cancellous, cortical and cortico-cancellous)	<ul style="list-style-type: none"> <li>• Mineralized component in a composite graft</li> <li>• As a graft extender</li> <li>• Osseous defects</li> </ul>
Eclipse™ Synthetic Granules	Synthetic resorbable bone substitute	<ul style="list-style-type: none"> <li>• Ridge preservation</li> <li>• Extraction site repair</li> <li>• Sinus lifts</li> <li>• Ridge augmentation</li> <li>• Osseous defects</li> <li>• Periodontal defects</li> </ul>
<b>Barrier Membranes</b>		
Neomem® Neomem® FlexPlus	Resorbable collagen membrane ( <i>bovine derived</i> )	<ul style="list-style-type: none"> <li>• Guided tissue regeneration (“GTR”)</li> <li>• Guided bone regeneration (“GBR”)</li> </ul>
NeoGuarde®	Resorbable collagen membrane ( <i>porcine derive</i> )	
NeoDerm	Accellular human dermis	<ul style="list-style-type: none"> <li>• Replacement of inadequate tissue for the repair, reinforcement or supplemental support of soft tissue defects</li> </ul>
DynaMatrix™ ™ Plus	Extracellular matrix ( <i>porcine derived</i> )	<ul style="list-style-type: none"> <li>• Soft tissue remodeling &amp; grafting</li> <li>• Soft tissue augmentation/bulking</li> <li>• Gingival recession</li> </ul>
BioXclude™	Allograft amnion and chorion tissue	<ul style="list-style-type: none"> <li>• Site preservation</li> <li>• Bony defects around teeth and implants</li> <li>• Ridge augmentation</li> <li>• Over block grafts and ridge splits</li> <li>• Covering the lateral window in sinus elevations</li> <li>• Mild gingival recession</li> </ul>
Cytoplast® Ti-250 OpenTex® TR	Titanium-reinforced high-density PTFE membrane	<ul style="list-style-type: none"> <li>• On-lay grafting in ridge augmentation procedures</li> <li>• GTR</li> <li>• Structural support when grafting 3 or 4-walled extraction sites</li> </ul>
<b>Other Products</b>		
Neoplug / Neocote / Neotape	Collagen dental wound dressings ( <i>bovine derived</i> )	<ul style="list-style-type: none"> <li>• Collagen matrices engineered from highly purified Type 1 collagen</li> <li>• Thickness and pore structure allow fluid and blood absorption at the defect site</li> </ul>

Cytoplast® PTFE Suture Biotex®	Soft monofilament suture	<ul style="list-style-type: none"> <li>• Ideal for dental bone grafting and implant procedures</li> <li>• Mono filament construction doesn't allow bacterial wicking into the surgical site</li> </ul>
PeriAcryl®	Cyanoacrylate tissue adhesive	<ul style="list-style-type: none"> <li>• Fast drying butyl cyanoacrylate tissue adhesive with low viscosity</li> <li>• Displays hemostatic properties and a bacteriostatic action</li> </ul>

**Surgical instruments.** Citagenix, through its subsidiary BMT Instruments, markets and sells nearly 10,000 SKUs of high-quality surgical instruments addressing a wide variety of applications:

- **Dental Surgery.** Dental Surgery, General Dentistry, Implantology, Orthodontics, Endodontics, Periodontics, Bone Regeneration, Oral and Maxillofacial Surgery.
- **Plastic Surgery.** Reconstructive Surgery, Cosmetic Surgery, Blepharoplasty, Breast Surgery, Rhinoplasty, Liposuction, Rhytidectomy – Facelift, Oral and Maxillofacial Surgery.
- **General Surgery & Specialties.** General Surgery, Arthroscopy, Gynecology, Microsurgery, Ophthalmology, ENT – Otolaryngology, Traumatology – Orthopedics, Podiatry – Pedicure – Esthetics.
- **Veterinary.** General Surgery, Dental Surgery, Ophthalmology, ENT – Otolaryngology, Traumatology – Orthopedics, Birds – Canine – Feline, Bovine – Equine – Reptile, Exotics – Zoo and wildlife.

### Summary of Development Pipeline

Antibe is pursuing blockbuster drug opportunities in the areas of pain and inflammation, and tissue regenerative biologics for oral and craniofacial surgery (regulated as medical devices).

dollar amounts stated in USD millions

Candidate	Target Indication	Market Niche	Est. Market Size	Development Status
<b>Pain &amp; Inflammation: Oral Therapeutics</b>				
ATB-346	Acute & chronic pain	Osteoarthritis, rheumatoid arthritis, etc.	\$11,000	Phase II
ATB-352	Acute pain	Gout, dental pain, post-surgical pain etc.	\$5,000	Pre-clinical development
ATB-340	Anti-thrombotic	Stroke prevention, cancer prevention	\$6,000	Pre-clinical characterization and toxicology
<b>Regenerative Medicine: Medical Devices</b>				
CGX-443	Amniotic membrane	Dental barrier membranes (oral & maxillofacial surgery)	\$250	Design phase
CGX-227	Demineralized bone putty	Bone graft substitutes (oral & maxillofacial surgery)	\$350	Design phase
URIST™ (CGX-276) <sup>(1)</sup>	Synthetic BMP-releasing bone putty	Bone graft substitutes (oral & maxillofacial surgery)	\$1,000	Clinical development

(1) Antibe obtained the exclusive Canadian distribution rights for URIST™ for dental & craniofacial applications from Induce Biologics Inc. (see January 12, 2016 press release available on SEDAR at [www.sedar.com](http://www.sedar.com))



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## Corporate Strategy

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### *Advance and Monetize Drug Candidates Addressing Pain & Inflammation*

Antibe's strategy to maximize value of its clinical development programs is focused on three primary activities: (i) partner with Big Pharma subsequent to Phase II proof-of-concept data; (ii) seek to non-dilutively finance clinical development through regional partnerships; and (iii) leverage the development platform to expand its pipeline.

### *Secure Strategic Partnerships for the Large Markets*

The Company anticipates co-developing, out-licensing or selling the rights to its drugs at the conclusion of Phase II clinical trials to one or more large global pharmaceutical companies with sales and marketing capabilities. These companies would then complete the remaining Phase III clinical studies and bring the drugs to market. Such deals would constitute a strategic exit for the drugs in question. The companies would benefit from Phase II human data prior to licensing and obtain rights to key western world markets, including Europe, the U.S. and Japan, while the Company would maximize the value of the drug by discharging a significant proportion of the risk in the less expensive, earlier phases of clinical development.

Given the recent human proof-of-concept GI safety data for ATB-346, Antibe is now engaging multinational pharmaceutical firms with a goal of securing strategic partnerships for the large markets. The Company intends to keep these companies informed of its progress, while soliciting input on all aspects of clinical design. In addition to understanding the clinical design preferences of large pharmaceutical companies, the Company would gain a better understanding of their deal drivers, their views on differentiation, key opinion leader expectations, research and development and patent issues, and their internal franchise and pipeline priorities. Antibe considers licensing as an evolving process and values the building of substantive, long-term relationships.

### *Seek to Non-Dilutively Finance Clinical Development through Regional Partnerships*

Antibe is strategically seeking regional partnering opportunities to: (i) support its objective of funding clinical development through non-dilutive sources; (ii) monetize its drug platform through royalty and milestone revenue; and (iii) provide further validation of its drug platform. In such a transaction Antibe would provide exclusive marketing rights in smaller markets for its drug candidates to a regional pharmaceutical company at reduced royalty rates in exchange for such company funding the additional clinical development required to be completed for marketing approval. Antibe would retain control of the drug development plan to ensure global study quality, and to leverage the data for global regulatory requirements and partnering. This plan strikes an important balance between minimizing capital requirements and obtaining significant value for the Company's drugs. Antibe is in active discussions with pharmaceutical companies in regions that represent smaller market opportunities (ie. outside of the United States and Europe).

### *Leverage Development Platform to Expand Pipeline*

Antibe's strategy is to leverage the unique properties of H<sub>2</sub>S by molecularly attaching a moiety that releases H<sub>2</sub>S to a known, off-patent base drug, resulting in a new drug that may have a significantly improved drug profile compared with the base drug. Ideal candidates to investigate as possible base drugs are expected to have the following characteristics:

- they can be distributed in large, growing markets;
- they can be going or have gone off patent; and
- they exhibit weaknesses, such as low efficacy or certain toxicities, which could be significantly improved by the properties of H<sub>2</sub>S.

The Company has determined that a number of targets meet these characteristics. It currently has three drugs in its pipeline (ATB-346, ATB-352 and ATB-340) and several additional candidates ready for medicinal chemistry. The Company expects that each of ATB-346, ATB-352 and ATB-340 will be of interest to an identifiable set of regionally based and large pharmaceutical companies. Compared with *de novo* development, improving an existing base drug as described above may shorten the development period and time to market, and reduce development risk and cost. The

improved drug also benefits from physician, regulatory and sales force familiarity with the base drug. Importantly, since Antibe creates new chemical entities, the improved drugs obtain new composition of matter patent protection.

### ***Pursue Diversification Strategy to Minimize Risk and Realize Synergies***

Antibe's diversification strategy was initiated through the acquisition of Citagenix in October 2015. This transaction transformed the Company from an R&D-driven organization to a commercial pharmaceutical company with a distribution platform supported by a direct sales force in Canada and international reseller partnerships. The acquisition of Citagenix also augmented Antibe's risk-return profile by de-risking its balance sheet through commercial activities but retaining the significant upside of its drug development program. Antibe is continuing this diversification strategy with Citagenix by expanding its product and geographic reach through two key growth initiatives: (i) expansion of its product portfolio; and (ii) growth in existing and new geographic markets (see "Grow Global Market Share in Dental Regenerative Medicine Industry" below).

The acquisition of Citagenix has provided the potential to realize material operating synergies as its commercial platform can readily leverage Antibe's existing resources. Antibe has scientific, clinical development and business development strengths that can support Citagenix in pursuing new product opportunities that, due to lack of resources, it could not consider before. Antibe's scientific strengths in degenerative disease (including bone regeneration) are being leveraged to perform due diligence on new product opportunities. Finally, Antibe's access to capital will support the financial commitments required for both licensing transactions and product development.

### ***Grow Global Market Share in Dental Regenerative Medicine Industry***

Citagenix has become a leading provider in the dental regenerative medicine industry in Canada due to its high-knowledge approach and comprehensive portfolio of quality products and brands, including Raptos®, PentOS OITM, Neomem®, Neomem® FlexPlus, and C-Graft PuttyTM. These strengths are being leveraged to replicate Citagenix's success in Canada on a global scale. Citagenix's growth strategy includes two primary initiatives: strategic footprint expansion and portfolio expansion. In addition, Citagenix has repositioned its instrument business to focus primarily on dental and oral surgery which is complementary to the Company's product line of dental biologics. The Company is executing its market share expansion strategy with the objective of seeing considerable growth in sales and profitability over the next few years.

In October 2016, Citagenix launched a strategic growth initiative in the United States that introduced a new sales management layer that will be supported by new product development efforts and enhanced marketing and systems support. Since the launch of this initiative, Citagenix has grown its distribution network considerably and recently secured a distribution agreement with Benco Dental Supply Co., the 3rd largest dental distributor in the United States based on market share.

### ***Business Development Activity***

Citagenix continues to source, license and launch new products to support growth of its product portfolio, leverage its distribution capabilities and build market share. The Company successfully launched the following products in the 2017 and 2018 fiscal periods:

- THE Graft, a mineralized bone graft substitute derived from porcine bone (fiscal Q3 2018);
- OpenTex® TR, a titanium reinforced non-resorbable polytetrafluoroethylene ("PTFE") barrier membrane (fiscal Q3 2018);
- Biotex®, a non-absorbable monofilament suture made of 100% medical grade PTFE (fiscal Q3 2018);
- PentOS OITM Max, its newest bone graft substitute for oral and maxillofacial surgery (fiscal Q4 2017);
- Neomem® FlexPlus, a high-performance barrier membrane for oral surgery (fiscal Q2 2017); and
- PentOS OITM family of bone graft substitutes (fiscal Q1 2017).

### *Seeking Higher Return Opportunities*

While the Company continues to source and in-license high-quality, approved biologics, it is actively pursuing pre-approval opportunities with higher return potential. The Company is pursuing two internal development opportunities (CGX-227 and CGX-443) that have best-in-class potential, low development costs and fast timelines to market (510(K) clearance anticipated within 12 months). As well, on January 12, 2016, Antibe announced the signing of an exclusive Licensing and Distribution Agreement with Induce Biologics Inc. (“Induce”) for the Canadian rights for Induce’s URIST™, a biological product for dental and craniofacial applications. URIST™ is a novel bone graft substitute that contains bone morphogenetic protein-2 (“BMP”), and is being developed to support stable bone regeneration following dental and oral maxillofacial surgery. The Company estimates the dental implant market for URIST™ and similar products to be in excess of \$1 billion per year.

### *Leverage Internal Resources to Enhance Profitability*

Antibe’s commercial platform incurs a substantial amount of fixed costs in the form of salaries and other operating expenditures to support sales. The Company anticipates greater fixed cost utilization (and expansion of its operating margins) as sales grow due to new product launches and market share growth in international markets.

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## **Intellectual Property**

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### *Technology License*

The Company has licensed its intellectual property for its NSAID therapeutics from Antibe Holdings. This property consists of the exclusive worldwide license for a family of H<sub>2</sub>S-releasing NSAID drugs (which include, among others, the Company’s pipeline NSAIDs), certain statins and the specific moiety that is used in ATB-346, for human use in all indications. The license is modeled after licenses that are often used by universities when licensing scientific intellectual property and it contains a relatively standard “4/15” royalty, where the Company will pay a 4% net sales royalty or, should the Company sublicense the property, a 15% royalty on royalty revenue earned. See “Interests of Management and Others in Material Transactions”.

The Company and Antibe Holdings collaborate in maintaining a vigorous intellectual property (“IP”) prosecution and protection program. Patents are filed in key global markets, including the BRIC countries. Detailed and specific patents are filed by creating individual molecules and generating molecule-specific data. The NSAID program has successfully undergone extensive IP due diligence in Canada, the United States and Europe with respect to both validity and freedom to operate, and the patents have already issued in most major markets, including Canada, the United States and Europe. Specifically, the Company holds a patent in “Hydrogen sulfide releasing derivatives of nonsteroidal anti-inflammatory drugs” that is valid in: Canada, the US, Mexico, the EU, Turkey, Great Britain, Russia, South Africa, Singapore, China, Australia, Japan, Hong Kong, South Korea with an expiration date for all jurisdictions of July 18, 2027. Patent approval is pending in: Brazil, India, Israel, Norway, New Zealand.

### *Trademarks*

Citagenix owns (either directly or through exclusive license) a substantial portfolio of registered trademarks that have accumulated a significant degree of brand awareness in the Canadian market amongst dental and orthopedic surgeons. These trademarks include: C-Graft Putty™, C-Blast Putty™, Eclipse®, NeoGuarde®, Neomem®, Neomem® FlexPlus, PentOS OI™ and Raptos®. Trademarks are essential for Citagenix’s brand building efforts and overall marketing and promotion strategy. Citagenix continues to pursue new trademark registrations in connection with new product launches to support brand awareness and its ability to remain competitive.

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## Operations

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### ***Manufacturing, Supply & Production***

Antibe does not own or operate manufacturing facilities for the production of its products. The Company currently relies on its supply partners for all of its required raw materials, active ingredients and finished products.

Development and commercial quantities of any products that the company develops and/or markets will need to be manufactured in facilities, and by processes, that comply with the requirements of Health Canada, FDA and other regulatory agencies of jurisdictions in which the Company is seeking approval. Antibe employs internal resources to manage its suppliers and plays an active role in working with suppliers to maintain the quality of the products that the Company supplies to its distribution partners. The manufacturers of Antibe's products have advised that they are compliant with both current Good Laboratory Practices ("cGLP") and Good Manufacturing Practices ("cGMP").

The Company and its suppliers are, and will be, subject to extensive governmental regulation in connection with the manufacture of any pharmaceutical products or medical devices. Antibe and its suppliers must ensure that all of the processes, methods and equipment are compliant with cGMP and cGLP for drugs and medical devices on an ongoing basis, as mandated by the FDA and foreign regulatory authorities. Please see "Risk Factors".

### ***Distribution & Marketing***

Citagenix leverages its direct sales force, distribution partners, independent sales representatives and trade show attendance to promote and sell its products:

- **Direct Sales Force:** Citagenix has a direct sales force of 5 full-time sales representatives in Canada who detail general dentists, periodontists and dental surgeons across the country. In the United States, Citagenix has a team of sales directors who primarily manage and drive sales from a growing network of distributors and dental support organizations ("DSOs").
- **Independent Sales Representatives:** Citagenix employs independent sales representatives in Canada to supplement its direct sales force and maintain a presence in hospital operating rooms.
- **Distribution Partners:** In the United States, the Company leverages strategic distribution partners and DSOs to promote and drive sales volumes in this market (*see "Grow Global Market Share in Dental Regenerative Medicine Industry"*). Outside of North America, Citagenix presently has 15+ distribution partners who promote and distribute its dental regenerative medicine portfolio.
- **Trade Show Attendance:** Citagenix attends several dental and orthopedic trade shows including national conferences throughout the year where it markets its current product portfolio and showcases new products yet to be launched.

### ***Seasonality***

Although there is a seasonality in Citagenix's business, with a strong period in the Spring and Fall, these peaks are distributed fairly evenly over the fiscal quarters.

### ***Specialized Skill and Knowledge***

The Company has extensive knowledge in scientific research, clinical development and commercialization of drugs and therapies in the areas of pain, inflammation and regenerative medicine. By enlisting the support of experienced clinical trial, regulatory and legal consultants, the Company is able to use expert knowledge to assist in the successful development of its products and the protection of its intellectual property. Antibe continually evaluates its internal resources and may add talented senior professionals to its team as needed to support growth.

### ***Employees***

At March 31, 2018, the Company had 37 full-time employees. The distribution of our full-time employees according to main areas of activities is set forth in the following table:

	<b>Employees</b>
<b>Area of Activity:</b>	
Business Development	3
Clinical Development	2
Sales & Support (sales reps, sales management and customer service)	19
General & Administrative (executive management and finance)	8
Supply Chain & Logistics (warehouse staff and inventory control)	5
<b>Total</b>	<b>37</b>

The Company also uses senior consultants, hired on a contract basis and outsources its clinical development programs to various Contract Research Organizations (“CRO”), as needed. The Company has never experienced any employment-related work stoppages and believe its relationships with its employees are good.

### ***Facilities***

Antibe’s corporate headquarters are located in Toronto, Ontario. The Company renewed its twelve-month lease for the use of its 15 Prince Arthur Ave. office space effective March 1, 2015. The lease carries a six-month notice period.

Antibe’s subsidiary, Citagenix, leases approximately 12,700 square feet of office and warehouse space in Laval, Quebec. The office space serves as the corporate headquarters for Citagenix and drives its key commercial activities, including: management, sales support, logistics and distribution. The warehouse is an FDA registered facility and facilitates both domestic and international shipments. The Company has long-term leases with respect to its premises in Laval, Quebec. Future minimum payments over the next 5 years are \$975,308. In addition, the Company is obligated to pay for its proportional share of maintenance and other related cost for the leased premises. Citagenix also leases approximately 1,000 square feet of warehouse space in Highland, Michigan to support sales in the United States.

### ***Environmental, Health & Safety Matters***

Currently, the Company does not manufacture any of its products. However, the operations of its subcontractors and suppliers are subject to various laws and regulations relating to environmental, health and safety matters, and their failure to comply with such laws and regulations could have a material adverse effect on its business and reputation, result in an interruption or delay in the development or manufacture of its products and development candidates, or increase the costs for the development or manufacture of its products and development candidates.

### ***Economic Dependence***

Antibe’s exclusive economic interest in its H<sub>2</sub>S-releasing NSAID drug candidates is dependent on the existence of an exclusive worldwide License Agreement with Antibe Holdings (see “Intellectual Property”).

### ***Foreign Operations***

Citagenix relies on its German subsidiary, BMT, to supply and sell a line of surgical instruments. In the 2018 fiscal period, BMT did not account for more than 10% of consolidated revenue.

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### **Liquidity and Capital Resources**

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The Company is a drug development company as well as a regenerative medicine marketer and seller of products and will continue to operate at a loss for the foreseeable future. The Company is dependent on continued access to capital markets to acquire the resources it needs to achieve its short and long-term business objectives.

The Company's future capital requirements will depend on many factors including, without limitation, the scope of the Company's research and development efforts, the results of the studies that comprise those efforts, the Company's ability to successfully manage its development partners and the Company's ability to grow its regenerative medicine business. If the development of ATB-346 proceeds as planned, and the scientific results of the planned development work are positive, the Company expects to be in a strong position to attract new investment and/or obtain additional financing at attractive rates. However, financial market and other conditions may result in the Company not being able to secure the additional financing needed to complete the development of any of its assets on terms acceptable to the Company, or at all.

As at March 31, 2018, the Company had cash of \$3.7 million and working capital of \$4.9 million.

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### **RISK FACTORS**

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#### **Start-up and Basis of Presentation**

In January 2010, the Company commenced operations after having acquired from Antibe Holdings an exclusive worldwide license to use Antibe Holdings' intellectual property to develop, clinically study and market new human pharmaceutical products based on H<sub>2</sub>S linked to NSAIDs and statins.

The Company's pharmaceutical development operations currently consist of conducting Phase II studies of ATB-346. Additionally, the Company conducts pre-clinical research on other of its assets in order to assess them as potential future pre-clinical and clinical development candidates. The Company is considered a development stage enterprise. Almost all research and development, administration and capital expenditures incurred by the Company since the commencement of operations are associated with the development described above.

On October 15, 2015 the Company acquired 85% of Citagenix, a Montreal-based sales and distribution company of regenerative medicine surgical products, primarily bone graft and membrane products for dental, oral cranial maxillofacial ("OCF") and orthopedic surgery (remaining 15% interest acquired on February 2, 2016).

The Company is subject to a number of risks and material uncertainties associated with the successful development and acquisition of new products and their marketing, the conduct of its clinical studies and their results, the ability to increase market share and expand its distribution network and the establishment of strategic alliances as needed. The Company will have to acquire the financing needed to conduct its research and development operations, as well as its strategic development activities for growth in the field of regenerative medicine. To achieve the objectives of its business plan, the Company plans to raise capital and enter into development partnerships as needed. The products developed by the Company will require approval from regulatory bodies including the FDA, Health Canada, and similar organizations in other countries before their sale can be authorized.

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**Risks Related to the Company's Business**

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***Ability to Continue as a Going Concern***

The consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As at March 31, 2018, the Company had working capital of \$4,878,379 (March 31, 2017 - \$3,076,348), incurred a net loss for the year of \$7,429,832 (2017 - \$5,745,821), and had negative cash flows from operations for the year of \$6,450,616 (2017 - \$3,439,791).

All of the factors above raise substantial doubt about the Company's ability to continue as a going concern. Management's plans to address these issues involve actively seeking capital investment and to generate revenue and profit from the commercialization of its products. The Company's ability to continue as a going concern is subject to management's ability to successfully implement this plan. Failure to implement this plan could have a material adverse effect on the Company's financial condition and financial performance.

Until such time as the Company's pharmaceutical products are patented and approved for sale, the Company's liquidity requirements are dependent on its ability to raise additional capital by selling additional equity, from proceeds from the exercise of stock options and common share warrants or by obtaining credit facilities. The Company's future capital requirements will depend on many factors, including, but not limited to, the market acceptance of its products and services. No assurance can be given that any such additional funding will be available or that, if available, it can be obtained on terms favourable to the Company.

If the going concern assumption was not appropriate for these condensed interim consolidated financial statements, then adjustments would be necessary to the carrying value of assets and liabilities, the reported revenue and expenses, and the classifications used in the statement of financial position. The condensed interim consolidated financial statements do not include adjustments that would be necessary if the going concern assumption was not appropriate.

***Lack of Supporting Clinical Data***

The clinical effectiveness and safety of any of the Company's developmental products is not yet supported by clinical data and the medical community has not yet developed a large body of peer reviewed literature that supports the safety and efficacy of the Company's products. If future studies call into question the safety or efficacy of the Company's products, the Company's business, financial condition, and results of operations could be adversely affected.

***Research and Development Risk***

A principal component of the Company's business strategy is to expand its product offering to fully exploit the core technologies that have been licensed from Holdings. As such, the Company's organic growth and long-term success is dependent in part on its ability to successfully develop new and current products and it will likely incur significant research and development expenditures to do so. The Company cannot be certain that any investment in research and development will yield technically feasible or commercially viable products. Furthermore, its ability to discover and develop products will depend on its ability to:

- retain key scientists as employees or partners;
- identify high quality therapeutic targets and unmet medical needs;
- identify potential drug candidates and medical devices;
- develop products internally and assist its partners with development;
- successfully complete laboratory testing and clinical trials on humans;
- obtain and maintain necessary intellectual property rights to the Company's products;
- obtain and maintain necessary U.S. and other regulatory approvals for its products;
- collaborate with third parties to assist in the development of its products; and
- enter into arrangements with third parties to co-develop, license, and commercialize its products.

The Company may not be successful in discovering and developing drug and medical device products. Failure to introduce and advance new and current products could materially and adversely affect the Company's operations and financial condition.

### ***Clinical Development Risks***

The Company must demonstrate the safety and efficacy of ATB-346 (and potentially other products it develops) through, among other things, extensive clinical testing. The Company's drug research and development programs are at an early stage of development. Numerous unforeseen events during, or as a result of, the testing process could delay or prevent commercialization of any products the Company develops, including the following:

- the results of early clinical studies may be inconclusive, may demonstrate potentially unsafe drug characteristics, or may not be indicative of results that will be obtained in later human clinical trials;
- the safety and efficacy results attained in the early clinical studies may not be indicative of results that are obtained in later clinical trials; and
- after reviewing early clinical study results, the Company or its partners or collaborators may abandon projects that were previously thought to be promising.

Clinical studies are very expensive, can run into unexpected difficulties and the outcomes are uncertain. The Company initiated a Phase 2B clinical study for ATB-346 in calendar Q3 2017 and announced the results in calendar Q1 2018. The final data collected from this study (or any other studies the Company conducts) may not be sufficient to support the regulatory approval of additional human testing of such product(s). Clinical studies of the Company's products may not be completed on schedule or on budget. The Company's failure to complete any of its clinical studies on schedule or on budget, or its failure to adequately demonstrate the safety and efficacy of any of the products it develops, could delay or prevent regulatory approval of such products, which could adversely affect the Company's business, financial condition, and results of operations.

### ***Negative Cash Flow from Operating Activities***

The Company reported negative cash flow from operating activities for the year ended March 31, 2018 and expects to experience negative operating cash flows for the foreseeable future. Until such time as the Company's drug products are approved for sale, or the revenue and profits from the sale of its regenerative medicine products are sufficient to produce positive cash flows, the Company's working capital requirements are dependent on the Company's ability to raise capital by selling additional equity or from proceeds from the exercise of stock options and Common Share purchase warrants, by obtaining business development revenue (milestone payments for licensing agreements), or by obtaining credit facilities. No assurance can be given that any such additional funding or revenue will be available or that, if additional funding is available, it can be obtained on terms favourable to the Company.

### ***Operational Risk***

In the normal course of business, the Company's operations continue to be influenced by a number of internal and external factors and are exposed to risks and uncertainties that can affect its business, financial condition and operating results. The Company's activities are subject to ongoing operational risks, including the performance of key suppliers, product performance, and government and other industry regulations, all of which may affect its ability to meet its obligations. In addition, and although the Company believes it has prudently adopted conservative assumptions in its business planning and related cost estimations, no assurances can be given that such assumptions will prove to be accurate.

### ***Reliance on Partners and Suppliers***

Antibe works with a number of third parties to develop its products (and finance such development) and it purchases a number of its products for resale from third parties, and it expects its reliance on third party partnerships and suppliers to increase in the future. If the Company's current or future strategic partners and suppliers do not devote adequate resources to product development, or if they experience financial difficulties, change their business strategy or undergo



a business combination that affects their willingness or ability to fulfill their obligations to the Company, the result could be a material adverse effect on the Company's financial condition, results of operations and/or cash flow. Furthermore, if the Company is unable to enter into additional partnerships and supplier relationships in the future, or if the current or future partnerships and supplier relationships fail, the Company's ability to develop and sell products could be impacted negatively and the Company's business could be adversely affected. There can be no assurances that the Company will be able to establish these future strategic relationships, or, if established, that the relationships will be maintained.

### ***Distributor Risks***

The Company distributes its product line in part through non-exclusive distribution partnerships with multiple distributors. If the distributors are unable or unwilling to promote and deliver the product to end customers, the Company's financial condition and operating results could be materially impacted. There can be no assurance the Company will be successful in managing the nuances of their markets to ensure the success of the Company's products in those markets.

### ***Disruptions in Production***

Factors that affect the production and sale of the company's products which could result in decreases in profitability include: (a) Acts of God; (b) the expiration or termination of leases, contracts, permits or licenses; (c) sales price redeterminations; (d) future litigation; (e) work stoppages or other labor difficulties; (f) disputes with suppliers, distributors and subcontractors; (g) political risk with offshore suppliers; (h) reliance on suppliers with highly technical and not easily replaceable expertise; and (i) changes in the market and general economic conditions. Weather conditions, equipment replacement or repair and fires can have a significant impact on operating results.

### ***Seasonality***

Sales may have seasonal components which may result in significant variances in quarterly operating results and may also significantly increase working capital requirements on a quarterly basis.

### ***Fluctuations in Exchange Rates***

The Company is exposed to the financial risk related to the fluctuation of foreign exchange rates. The Company operates in Canada, Europe and the United States and sells throughout the world. The Company's revenues and costs are primarily in Canadian and US dollars, and Euros. The Company has not hedged its exposure to currency fluctuation.

### ***Income Taxes***

Income taxes are accrued based on current taxes expected to be paid or recovered for the period, and deferred taxes applicable in respect of the temporary differences that will reverse in subsequent periods. The tax rates and tax laws used to compute the amounts are those that are enacted or substantively enacted at the reporting date in the countries where the Company operates and generates taxable income.

Estimation of income taxes includes evaluating the recoverability of deferred tax assets based on an assessment of the Company's ability to utilize the underlying future tax deductions against future taxable income before they expire. The Company's assessment is based upon existing tax laws and estimates of future taxable income. If the assessment of the Company's ability to utilize the underlying future tax deductions changes, the Company would be required to recognize more or fewer of the tax deductions as assets, which would decrease or increase the income tax expense in the period in which this is determined.

Significant judgment is required in determining the global provision for taxation. There are transactions and calculations during the ordinary course of business for which the ultimate tax determination is uncertain. The Company maintains provisions for uncertain tax positions that it believes appropriately reflect its risk with respect to tax matters under active discussion, audit, dispute or appeal with tax authorities, or which are otherwise considered to involve uncertainty. These provisions for uncertain tax positions are made using the best estimate of the amount expected to be paid based on a qualitative assessment of all relevant factors. The Company reviews the adequacy of these provisions at each

balance sheet date. However, it is possible that at some future date an additional liability could result from audits by taxing authorities. Where the final tax outcome of these matters is different from the amounts that were initially recorded, such differences will affect the tax provisions in the period in which such determination is made.

### ***Worsened General Economic Conditions***

The decline in the global economic environment in recent years and the continuing economic instability in certain parts of the world resulted in increasing uncertainty regarding future revenue and customer commitments, both in terms of timing and magnitude for such future sales. If the global economic climate does not recover, the Company may not generate the sales activity required to support its operations resulting in requirement for additional restructurings and erosion of its existing capital resources which may hinder the future viability of the Company.

### ***Acquisitions***

The Company in the future may, acquire businesses, products or technologies that it believes complement or expand its existing business. Acquisitions of this type involve a number of risks, including the possibility that the operations of the acquired business will not be profitable or that the attention of the Company's management will be diverted from the day-to-day operation of its business. An unsuccessful acquisition could reduce the Company's margins or otherwise harm its financial condition.

### ***Product Liability and Medical Malpractice Claims***

The Company may be exposed to risks associated with product liability claims if the use of the Company's products results in injury or property damage. In addition, medical malpractice claims may be brought against the Company. The Company carries what it believes to be adequate product liability insurance as well as clinical studies insurance, but the Company may not have adequate resources to satisfy a judgment if a successful claim is brought. The assertion of product liability or medical malpractice claims may also significantly damage the Company's reputation.

### ***Management of Growth***

The Company's future results of operations will depend in part on the ability of its officers and other key employees to implement and expand operational, customer support and financial control systems and to expand, train and manage its employee base. The Company's future performance will also depend to a significant extent on its ability to identify, attract, train and retain highly skilled sales, technical, marketing and management personnel.

### ***Dependence on Key Personnel***

Antibe's success is dependent on certain key management personnel, primarily its executives, who are key to the existence and continuity of Antibe. Furthermore, competition for qualified employees among biotechnology industry companies is intense, and the loss of key personnel or inability to attract and retain additional highly skilled employees required for the expansion of activities could adversely affect Antibe's business. There can be no assurance that these persons will remain available to Antibe, forcing Antibe to attract and retain additional qualified employees and key executives for the achievement of Antibe's business goals.

### ***Protection of Intellectual Property***

The Company's success depends in part on its ability to maintain or obtain and enforce patent and other intellectual property protections for its processes and technologies and to operate without infringing upon the proprietary rights of third parties or having third parties circumvent the rights that the Company owns or licenses. The Company has applications and registrations in the United States, Canada, and other jurisdictions, and has received some patents and expects others, and may, in the future, seek additional patents and registrations or file patent applications and registrations.

Patents may provide some degree of protection for intellectual property; however, patent protection involves complex legal and factual determinations and is therefore uncertain. The Company cannot be assured that its patents or patent applications will be valid or will issue over prior art, or that patents will issue from the patent applications it has filed

or will file. Additionally, the Company cannot be assured that the scope of any claims granted in any patent will be commercially useful or will provide adequate protection for the technology used currently or in the future. The Company cannot be certain that the creators of its technology were the first inventors of inventions and processes covered by its patents and patent applications or that they were the first to file. Accordingly, it cannot be assured that its patents will be valid or will afford protection against competitors with similar technology or processes. Despite its efforts to protect its proprietary rights, unauthorized parties may attempt to copy or otherwise obtain and use its proprietary information. Monitoring unauthorized use of confidential information is difficult and the Company cannot be certain that the steps taken to prevent unauthorized use of confidential information will be effective. In addition, the laws governing patent protection continue to evolve and are different from one country to the next, all of which causes further uncertainty in the usefulness of a patent. In addition, issued patents or patents licensed to the Company may be successfully challenged, invalidated, circumvented or may be unenforceable so that the Company's patent rights would not create an effective competitive barrier.

Moreover, the laws of some countries may not protect the Company's proprietary rights to the same extent as do the laws of the United States and Canada. There are also countries in which the Company intends to sell its products, but has no patents or pending patent applications, or trademark registrations. The Company's ability to prevent others from making or selling duplicate or similar technologies will be impaired in those countries in which there is no intellectual property protection. If the Company is not able to adequately protect its intellectual property and proprietary technology, its competitive position, future business prospects and financial performance will be adversely affected.

Unpatented trade secrets, technological innovation and confidential know-how are also important to the Company's success. Although protection is sought for proprietary information through confidentiality agreements and other appropriate means, these measures may not effectively prevent disclosure of proprietary information, and, in any event, it cannot be assured that others will not independently develop the same or similar information or gain access to the same or similar information. In view of these factors, the Company's intellectual property positions have a degree of uncertainty.

Setbacks in these areas could negatively affect the Company's ability to compete and materially and adversely affect its business, financial condition and results of operations.

#### ***Inability to Implement the Business Strategy***

The growth and expansion of the Company's business is heavily dependent upon the successful implementation of the Company's business strategy. There can be no assurance that Antibe will be successful in the implementation of its business strategy.

#### ***Large Accumulated Deficit***

Antibe has a large accumulated deficit, expects future losses, and may never achieve or maintain profitability. It has incurred substantial losses since inception and expects to incur additional operating losses in the future as a result of research and development costs and ongoing operating costs including the additional costs of operating as a public company. The extent of the Company's future losses is highly uncertain, and its prospects must be considered in light of the risks and uncertainties encountered by a company in the early stage of product development in the continuously evolving human pharmaceutical market, including the risks described throughout this AIF. If the Company cannot successfully address these risks, its business and financial condition will suffer.

#### ***Competitive Market for Antibe's Products***

The pharmaceutical and biotechnology industries are highly competitive. Overall, most of Antibe's competitors in the pharmaceutical and biotechnology industries are larger and have greater financial and other resources, which enable them to invest significant amounts of capital and other resources in their businesses, including expenditures for research and development and sales and marketing. If one of Antibe's current or future competitors develops innovative proprietary products, some or all of Antibe's products could be rendered obsolete.

### ***Intellectual Property Litigation***

Patents issued or licensed to the Company and trademarks registered or licensed to the Company may be infringed upon by the products or processes of others. The cost of enforcing intellectual property rights against infringers, if such enforcement is required, could be significant, and the time demands could interfere with normal operations. There has been substantial litigation and other proceedings regarding patent and other intellectual property rights in the pharmaceutical industry. Antibe may become a party to intellectual property litigation and other proceedings. The cost of any intellectual property litigation, even if resolved in the Company's favour, could be substantial. Some of the Company's competitors may be able to sustain the costs of such litigation more effectively than the Company can because of their substantially greater financial resources. Litigation may also absorb significant time and could divert management's attention from Antibe's core business. Litigation also puts the Company's intellectual property at risk of being invalidated or interpreted narrowly, and puts patent applications at risk of not being issued.

Additionally, it is possible that patents issued or licensed to Antibe may be challenged successfully by third parties in patent litigation. Patent applications which relate to or affect the business may have been filed by others and may conflict with the Company's technologies or patent applications; this could reduce the scope of patent protection which could otherwise be obtained or even lead to refusal of patent applications. It is also possible for others, on an independent basis, to develop products which have the same effect as the Company's products or to design around the technology protected by the Company's patents. In any event, if the Company is unable to secure or to continue to maintain a preferred position, its products could become subject to competition from the sale of generic or equivalent products. Antibe could also become involved in interference proceedings in connection with one or more of its patents or patent applications to determine priority of invention.

Antibe cannot be certain that it is the creator of inventions covered by pending patent applications or that it was the first to file patent applications for any such inventions. It cannot be assured that the Company's patents, once issued, would be declared by a court to be valid or enforceable, or that a competitor's technology or product would be found to infringe upon the Company's products. In the event that a court were to find that the Company was infringing upon a valid patent of a third party, it could be required to pay a substantial damage award, develop non-infringing technology, enter into royalty-bearing licensing agreements or stop selling its products. It cannot be assured that the Company could enter into licensing arrangements at a reasonable cost, or at all. Any inability to secure licenses could result in delays in the introduction of some of the Company's products or even lead to prohibition of the development, manufacture or sale of certain of its products.

Although no claims against the Company are, to its knowledge, currently pending, it may be subject to claims. Litigation may be necessary to defend against these claims. Even if the Company is successful in defending against these claims, litigation could result in substantial costs and be a distraction to management.

### ***Non-IP Litigation***

Any unfavourable court judgment or other cases could affect Antibe's cash flow. As of the date hereof, Antibe has no material legal matters pending.

### ***Regulatory Risk***

Antibe will require approval from the FDA and Health Canada to conduct future human clinical studies in the US and Canada respectively, and will require approval from these regulatory agencies and equivalent organizations in other countries before any of its products can be marketed. There is no assurance that such approvals will be forthcoming. Furthermore, the exact nature of the studies these regulatory agencies will require is not known and can be changed at any time by the regulatory agencies, increasing the financing risk and potentially increasing the time to market the Company faces, which could adversely affect the Company's business, financial condition or results of operations.

### ***Regulatory Compliance***

In both domestic and foreign markets, the development, formulation, manufacturing, packaging, labeling, handling, distribution, import, export, licensing, sale and storage of pharmaceuticals and medical devices are affected by a body of laws, governmental regulations, administrative determinations, including those by Health Canada and the FDA, court decisions and similar constraints. Such laws, regulations and other constraints can exist at the federal, provincial or

local levels in Canada and at all levels of government in foreign jurisdictions. There can be no assurance that Antibe and Antibe's partners are in compliance with all of these laws, regulations and other constraints. Antibe and its partners may be required to incur significant costs to comply with such laws and regulations in the future, and such laws and regulations may have an adverse effect on the business. The failure of the Company or its partners to comply with current or future regulatory requirements could lead to the imposition of significant penalties or claims and may have a material adverse effect on the business. In addition, the adoption of new laws, regulations or other constraints or changes in the interpretations of such requirements might result in significant compliance costs or lead Antibe and its partners to discontinue product development and could have an adverse effect on the business.

### ***International Operations***

Antibe's international operations expose it and its representatives, agents and distributors to risks inherent to operating in foreign jurisdictions that could materially adversely affect its operations and financial position. These risks include:

- Country specific taxation policies;
- Imposition of additional foreign governmental controls or regulations;
- Export license requirements;
- Changes in tariffs and other trade restrictions; and
- Complexity of collecting receivables in a foreign jurisdiction.

Moreover, applicable agreements relating to business in foreign jurisdictions are governed by foreign laws and are subject to dispute resolution in the courts of, or through arbitration proceedings in, the country or region in which the parties are located or another jurisdiction agreed upon by the parties. Antibe cannot accurately predict whether such jurisdictions will provide an effective and efficient means of resolving disputes that may arise in the future. Even if it obtains a satisfactory decision through arbitration or a court proceeding, Antibe could have difficulty in enforcing any award or judgment on a timely basis or at all.

### ***Financial Instruments***

The Company is exposed to a variety of financial risks by virtue of its activities: market risk (including interest rate risk), credit risk and liquidity risk. The overall risk management program focuses on the unpredictability of financial markets and seeks to minimize potential adverse effects on financial performance.

Risk management is carried out by the officers of the Company as discussed with the Board. The officers of the Company are charged with the responsibility of establishing controls and procedures to ensure that financial risks are mitigated in accordance with the expectation of the Board as follows:

**Credit risk:** The Company's credit risk is primarily attributable to accounts receivable amount due from AHI. The Company, in the normal course of operation monitors the financial condition of its customers. The Company establishes an allowance for doubtful accounts that corresponds to the specific credit risk of its customers, historical trends and economic conditions.

**Liquidity risk:** Liquidity risk is the risk that the Company is not able to meet its financial obligations as they become due or can do so only at excessive cost. The Company manages its liquidity risk by forecasting cash flows and anticipated investing and financing activities. Officers of the Company are actively involved in the review and approval of planned expenditures.

**Foreign currency risk:** The functional and reporting currency of the Company is Canadian dollar. The Company undertakes transactions denominated in foreign currencies, including US dollars and Euros and as such is exposed to currency risk due to fluctuations in foreign exchange rates against the Canadian dollar. The Company does not use derivative instruments to reduce exposure to foreign exchange risk.

**Interest rate risk:** Interest risk is the risk that the fair value or future cash flows of a financial instrument will fluctuate because of changes in market interest rates. Financial assets and financial liabilities with variable interest rates expose the Company to cash flow interest rate risk. The Company is currently exposed to interest rate risk on its credit facility and long-term debt.

As at March 31, 2018, the Company's financial obligations including applicable interest are due as follows:

	<b>Less than one year</b>	<b>1 – 2 years</b>	<b>After 2 years</b>	<b>Total</b>
	\$	\$	\$	\$
Accounts payable and accrued liabilities	1,894,874	-	-	1,894,874
Bank indebtedness	1,291,259	-	-	1,291,259
Convertible debentures	246,117	-	-	246,117
Interest on the above financial obligations	113,351	-	-	113,351
	<b>3,545,601</b>	<b>-</b>	<b>-</b>	<b>3,545,601</b>

## **Risks Related to Financing**

### ***Volatility of Share Price***

Market prices for shares of companies such as Antibe are often volatile. Factors that could have a significant effect on the share price of the Common Shares include, but are not limited to, the results of animal and human clinical studies, regulatory responses or developments regarding the Company's products or processes, developments regarding current or future third party strategic partners, announcements of technological innovations, new commercial products, patents, trademarks, the development of proprietary rights by the Company or by others or any litigation relating to these rights, regulatory actions, general conditions in the pharmaceutical and medical device industries, the Company's failure to meet analysts' expectations, the Company's financial results, general economic conditions in the United States, Canada or abroad and terrorism. In recent years, the shares of other companies in the pharmaceutical and medical device industries have experienced extreme price fluctuations that have been both related and unrelated to the operating performance of the affected companies. It cannot be assured that the market price of the Common Shares will not experience significant fluctuations in the future.

### ***Influence of Significant Shareholder***

As at March 31, 2018, AHI beneficially owned and/or exercised control or direction over 15,000,000 Common Shares, or approximately 7.6% of the Company's issued and outstanding Common Shares. As a result, Holdings has, and is expected to retain, some control over the Company, giving it some ability to influence, among other things, the election of a majority of the Company's board of directors, the approval of significant corporate transactions, and the delay or prevention of a change of control of the Company that could be otherwise beneficial to minority shareholders. Holdings generally will have some ability to control the outcome of any matter submitted to a vote or for consent of the Company's shareholders other than matters, if any, which require the approval of the Company's minority shareholders. In some cases, the interests of Holdings may not be the same as those of the Company's other shareholders, and conflicts of interest may arise from time to time that may be resolved in a manner detrimental to Holdings or to the Company's minority shareholders.

### ***Future Sales of Common Shares***

The market price of the Common Shares could decline as a result of issuances by the Company or sales by existing shareholders of Common Shares in the market, or the perception that these sales could occur. Sales by shareholders might also make it more difficult for the Company to sell equity securities at a time and price deemed appropriate.

### ***Dividends***

Antibe has not paid dividends on the Common Shares in the past and has no plans to pay dividends on the Common Shares for the foreseeable future. The Company's current intention is to retain earnings to fund the development and growth of the business and it does not anticipate declaring or paying any cash dividends in the near to medium term. The Board will determine if and when dividends should be paid in the future based on all relevant circumstances, including the desirability of financing future growth and the financial position at the relevant time.

### ***Internal Controls over Financial Reporting***

As a public company, Antibe is required to comply with the internal control evaluation and certification requirements of Canadian securities laws. The Company's financial reporting internal controls are currently in compliance with those requirements. Ensuring compliance with reporting and other obligations places significant demands on management, administrative, operational and accounting resources and will result in increased independent auditor fees. The Company anticipates that it will need to continue to upgrade systems, implement additional financial and management controls, reporting systems and procedures. If it is unable to accomplish these objectives in a timely and effective fashion, its ability to continue to comply with the financial reporting requirements and other rules that apply to reporting issuers could be impaired. Moreover, any failure to maintain effective internal controls, including a failure to implement new or improved controls in response to identified weaknesses in its system of internal controls, could cause the Company to fail to meet its reporting obligations or result in material misstatements in its financial statements. If the Company cannot provide reliable financial statements or prevent fraud, its reputation and operating results could be materially harmed, its current and future shareholders could lose confidence in the reported financial information and in the Company, and the Company's share price could be affected negatively.

### ***Prior Losses***

It is expected that the Company will continue to experience operating losses until product sales and/or licensing rights income generate sufficient revenues to fund its continuing operations, including research and product development. There is no assurance that Antibe will be able to realize such revenues.

Antibe has incurred net losses from operations since inception. If, in the future, Antibe needs but cannot raise additional funds, it may not be able to continue as a going concern and realize its assets and pay its liabilities as they fall due. The financial statements have been prepared on a going concern basis, which assumes Antibe will continue its operations in the foreseeable future and will be able to realize its assets and discharge its liabilities and commitments in the ordinary course of business.

### ***Ability to Secure Additional Financing & Dilution of Common Shares***

Antibe expects that its current cash and cash equivalent reserves will be sufficient to meet its anticipated needs for working capital and capital expenditures for the near future. If estimates of revenue, expenses, or capital or liquidity requirements change or are inaccurate, or if cash generated from operations is insufficient to satisfy liquidity requirements, the Company may arrange additional financings. In the future, the Company may also arrange financings to give it the financial flexibility to pursue attractive acquisition or investment opportunities that may arise. The Company may pursue additional financing through various means, including equity investments, issuances of debt, joint venture projects, licensing arrangements or through other means. The Company cannot be certain that it will be able to obtain additional financing on commercially reasonable terms or at all. The Company's ability to obtain additional financing may be impaired by such factors as the status of capital markets, both generally and specifically in the pharmaceutical and medical device industries, and by the fact that it is a new enterprise without a proven operating history. If the amount of capital raised from additional financing activities, together with revenues from operations (if any), is not sufficient to satisfy the Company's capital needs, it may not be able to develop or advance its products, execute its business and growth plans, take advantage of future opportunities, or respond to competitive pressures or unanticipated customer or partner requirements. If any of these events occur, the Company's business, financial condition, and results of operations could be adversely affected. Any future equity financings undertaken are likely to be dilutive to existing shareholders. Finally, the terms of securities issued in future capital transactions may include preferences that are more favourable to new investors.

## DIVIDENDS

Antibe has not paid dividends on the Common Shares since incorporation and has no plans to pay dividends on the Common Shares for the foreseeable future. The Company's current intention is to retain earnings to fund the development and growth of the business and it does not anticipate declaring or paying any cash dividends for the foreseeable future. The Antibe Board will determine if and when dividends should be paid based on all relevant conditions, including the desirability of financing future growth and the financial position at such future time.

## DESCRIPTION OF CAPITAL STRUCTURE

### *Authorized Capital*

The Company's authorized share capital currently consists of an unlimited number of Common Shares without nominal or par value.

### *Common Shares*

Each holder of a Common Share is entitled to (i) notice of and the right to vote at all meetings of shareholders of the Company, (ii) receive any dividend declared by the Board, and (iii) receive the remaining property of the Company in the event of the voluntary or involuntary liquidation, dissolution or winding up of the Company, or any other distribution of its assets among its shareholders for the purposes of winding up its affairs. The foregoing description may not be complete and is subject to, and qualified in its entirety by reference to, the terms and provisions of the Company's constating documents, as amended. As at March 31, 2018, there were 198,549,753 Common Shares issued and outstanding.

## MARKET FOR SECURITIES

The Common Shares of the Company trade on the TSX Venture Exchange under the symbol "ATE" and on OTCQB under the symbol "ATBPF". The following table sets forth the reported high and low prices and the trading volume for the periods indicated:

Month	Toronto Stock Exchange (CDN\$)			OTCQB (US\$)		
	High	Low	Volume	High	Low	Volume
May 2018	0.425	0.365	9,295,000	0.322	0.287	717,910
April 2018	0.52	0.375	28,908,200	0.418	0.298	2,465,836
March 2018	0.79	0.235	98,874,000	0.599	0.180	5,242,807
February 2018	0.33	0.185	23,989,500	0.256	0.151	2,021,805
January 2018	0.26	0.15	15,817,800	0.216	0.135	1,279,404
December 2017	0.19	0.125	9,731,000	0.141	0.105	450,128
November 2017	0.15	0.085	9,767,800	0.091	0.061	633,588
October 2017	0.095	0.08	7,021,900	0.079	0.063	59,145
September 2017	0.10	0.08	8,921,800	0.083	0.069	190,305
August 2017	0.115	0.08	8,970,900	0.084	0.062	1,347,503
July 2017	0.10	0.085	1,977,200	0.077	0.071	46,200
June 2017	0.105	0.085	4,362,000	0.074	0.069	8,000
May 2017	0.18	0.10	7,570,800	0.127	0.079	149,515



April 2017	.015	0.21	3,015,200	0.138	0.104	169,300
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## DIRECTORS AND OFFICERS

The following table provides the names and jurisdictions of residence of the executive officers and the directors of the Company as at the date of this AIF as well as their offices held with the Company, the date they were first appointed to the Board and their principal occupation and positions.

<b>Name and Jurisdiction of Residence<sup>(1)</sup></b>	<b>Current Position and/or Office Held</b>	<b>Director Since</b>	<b>Principal Occupation</b>
Walt Macnee <sup>(2)(3)(4)</sup> <i>Toronto, Ontario Canada</i>	Chair of the Board	February 26, 2013	Vice Chair, MasterCard Worldwide, a financial services company
Daniel Legault <sup>(2)(4)</sup> <i>Toronto, Ontario Canada</i>	President, Chief Executive Officer, Secretary & Director	May 5, 2009	President, Chief Executive Officer, Secretary & Director of Antibe
John Wallace <i>Toronto, Ontario Canada</i>	Chief Scientific Officer & Director	May 5, 2009	Chief Scientific Officer & Director of Antibe
Roderick Flower <sup>(3)(4)</sup> <i>London, England United Kingdom</i>	Director	February 26, 2013	Pharmacologist and Professor, St. Bartholomew's Hospital and The London School of Medicine and Dentistry
Amal Khouri <sup>(2)(4)</sup> <i>Montréal, Québec Canada</i>	Director	March 19, 2018	VP, Business Development, Knight Therapeutics Inc., a specialty pharmaceutical company
Yung Wu <i>Toronto, Ontario Canada</i>	Director	July 18, 2016	Managing Director, NFQ Ventures
Alain Wilson <i>Toronto, Ontario Canada</i>	Chief Financial Officer	-	Chief Financial Officer, Antibe
David Vaughan <i>Pickering, Ontario Canada</i>	Chief Development Officer	-	Chief Development Officer, Antibe
Scott Curtis <i>Toronto, Ontario Canada</i>	VP, Business Development	-	VP, Business Development, Antibe

(1) The information respecting each individual set out above, not being within the knowledge of the Company has been furnished by such individual.

(2) Member of the Audit Committee, of which Mr. Macnee is the Chair.

(3) Member of the Compensation Committee, of which Mr. Macnee is the Chairman.

(4) Member of Corporate Governance Committee, of which Dr. Flower is the Chairman.

The directors listed above shall hold office for a term expiring at the conclusion of the next annual meeting of shareholders of the Company, or until their successors are duly elected or appointed pursuant to the Business Corporations Act (Ontario). Each director devotes the amount of time as is required to fulfill his or her obligations to the Company. The Company's officers are appointed by, and serve at the discretion of, the Board.

#### ***Share Ownership by Directors and Officers***

As at March 31, 2018, as a group, the Company's directors and officers beneficially owned or exercised control or direction over, directly or indirectly, 36,570,274 Common Shares representing approximately 18.4% of the issued and outstanding Common Shares (on an undiluted basis), and no common shares of the Company's subsidiary.

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#### **LEGAL PROCEEDINGS**

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The Company is not a party to any legal proceedings or regulatory actions nor does the Company anticipate becoming a party to any such proceedings or regulatory actions.

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#### **INTERESTS OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

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There are no material interests, direct or indirect, of the directors or executive officers of the Company, or any shareholders who beneficially own, control or direct, directly or indirectly, more than 10% of the Company's outstanding Common Shares, or any known associates or affiliates of such persons, in any transaction within the last three years before the date of this AIF that has materially affected or is reasonably expected to materially affect the Company or a subsidiary of the Company, except as disclosed below or as otherwise disclosed in this AIF.

On December 22, 2009, the Company entered into a license agreement (the "License Agreement") with its parent company, Antibe Holdings, that provided for the exclusive right and license to research, develop, make, use, reproduce, sell, offer for sale, manufacture, import, export, market, distribute, and commercialize the subject of various patents under the titles "Hydrogen Sulfide Derivatives of Non-Steroidal Anti-Inflammatory Drugs" and "Hydroxythiobenzamide Derivatives of Drugs", as applicable, for human applications. Pursuant to the License Agreement, the Company paid a non-refundable license issue fee of \$150,000 to Antibe Holdings, and the Company is required to pay royalties of 4% of all net sales upon the first commercial sale or, if the Company sublicenses its patents, a 15% royalty on royalty revenue earned. Additionally, the Company is required to make milestone payments to Antibe Holdings at various stages of development, namely, the greater of a \$150,000 payment upon enrolment of the first patient in Phase I clinical trial or 10% of any milestone payment received from a sublicense related thereto; the greater of a \$150,000 payment upon enrolment of the first patient in the first Phase II clinical trial or 10% of any milestone payment received from a sublicense related thereto; the greater of a \$150,000 payment upon enrolment of the first patient in the first Phase III clinical trial or 10% of any milestone payment received from a sublicense related thereto; the greater of a \$250,000 payment upon the first filing of a new drug application or 10% of any milestone payment received from a sublicense related thereto; and the greater of a \$750,000 payment upon receipt of the first regulatory approval from any relevant registration authority or 10% of any milestone payment received from a sublicense related thereto. As at the date of this AIF, the milestone payment to Antibe Holdings for enrolment of the first patient in Phase I clinical trial has been made, and the milestone payment for enrolment of the first patient in the first Phase II clinical trial has been incurred. To date, no royalties have been incurred or paid.

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#### **TRANSFER AGENT AND REGISTRAR**

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Computershare Limited is the registrar and transfer agent of the Common Shares at its principle offices in Toronto, Ontario.

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## MATERIAL CONTRACTS

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The following are the material contracts, other than contracts in the ordinary course of business, and material contracts in the ordinary course of business required to be listed, that were entered into by the Company in 2018 or prior to 2018 and are still in effect:

1. The License Agreement referred to under “Interests of Management and Others in Material Transactions”.
2. Amended and Restated Employee Stock Option Plan dated effective March 7, 2017 that is to encourage ownership of the Common Shares by directors, officers and employees of the Company, and its subsidiaries thereof, Consultants and management Company employees, who are primarily responsible for the management and profitable growth of its business and to advance the interests of the Company by providing additional incentive for superior performance by such persons and to enable the Company and its subsidiaries to attract and retain valued directors, officers, employees, consultants and management Company employees. The maximum number of Common Shares reserved and set aside for issued under the Plan shall not exceed 20% of the Company's issued and outstanding Common Shares. Options granted under the plan are granted at the discretion of the board of directors of the Company.
3. Licensing and Distribution Agreement entered into with Knight Therapeutics Inc. on November 16, 2015 for the exclusive commercial rights for ATB-346, ATB-352 and ATB-340 (including future Antibe prescription drugs) in the following territories: Canada, Israel, Russia and sub-Saharan Africa.
4. Licensing and Distribution Agreement entered into with Induce Biologics Inc. (“Induce”) on January 12, 2016 for the exclusive Canadian rights for Induce’s URIST™ biological product for dental and craniofacial applications.
5. Licensing and Distribution Agreement entered into with Laboratoires Acbel SA (“Acbel”) on February 24, 2017 for the exclusive commercial rights for ATB-346 in the following territories: Greece, Romania, Serbia, Bulgaria, Albania, Algeria and Jordan.

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## AUDIT COMMITTEE INFORMATION

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### *Audit Committee Mandate*

The Board has established an Audit Committee and adopted a written mandate for the Audit Committee, which sets out the Audit Committee’s responsibility for (among other things) reviewing the Company’s financial statements and public disclosure documents containing financial information and reporting on such review to the Board, ensuring the Company’s compliance with legal and regulatory requirements, overseeing qualifications, engagement, compensation, performance and independence of the Company’s external auditors, and reviewing, evaluating and approving the internal control and risk management systems that are implemented and maintained by management. A copy of the Charter of the Audit Committee is attached to this AIF as Appendix “A”.

### *Composition of the Audit Committee and Relevant Education and Experience*

The Audit Committee consists of Mr. Macnee (Chair), Ms. Khouri and Mr. Legault. Each member of the Audit Committee is considered to be “financially literate” within the meaning of NI 52-110 and each of Ms. Khouri and Mr. Macnee is considered to be “independent” within the meaning of NI 52-110. Mr. Legault is not considered to be independent as he is the CEO, President and Secretary of the Company.

The Company believes that each of the members of the Audit Committee possesses: (i) an understanding of the accounting principles used by the Company to prepare its financial statements; (ii) an ability to assess the general application of such accounting principles in connection with the accounting for estimates, accruals and provisions; (iii) experience preparing, auditing, analyzing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can

reasonably be expected to be raised by the Company's financial statements, or experience actively supervising one or more individuals engaged in such activities; and (iv) an understanding of internal controls and procedures for financial reporting.

The following is a brief summary of the education and experience of each member of the Audit Committee relevant to the performance of his responsibility as a member of the Committee.

Audit Committee Member	Relevant Education & Experience
Walt Macnee (Chair)	Mr. Macnee is the Vice Chairman of MasterCard Inc., where he oversees various senior client, government and merchant relationships and plays a central role in steering the company strategy toward the wider merchant community and other key stakeholders. Previously, Mr. Macnee served as President, International Markets, of MasterCard Worldwide, where he undertook responsibility for all markets and customer-related activities outside of the United States. Mr. Macnee also served as President, MasterCard Canada Inc. and was Executive Vice President of the Canadian Imperial Bank of Commerce. From 1983 to 2001, Mr. Macnee worked for Toronto Dominion Bank, in New York, Houston and Toronto. Mr. Macnee holds Bachelor degrees in Arts and in Education from Queen's University and an MBA from York University.
Amal Khouri	Ms. Khouri joined Knight as Vice-President of Business Development in August 2014. Prior to Knight, Ms. Khouri worked at Novartis Pharma for over 7 years, where she held multiple positions within the global business development and licensing team in Basel, Switzerland. Before joining Novartis, she worked in business development at Paladin Labs in roles with increasing responsibilities. Ms. Khouri holds a B.Sc. in Biochemistry from McGill University and an M.B.A. from the University of Ottawa.
Daniel Legault	Mr. Legault is an experienced entrepreneur and executive with extensive experience in guiding early stage businesses in the pharmaceutical, software, consulting and travel industries. Mr. Legault has served as President, CEO and Secretary of the Company since its formation and he has served as President and CEO of Antibe Holdings since 2005. Mr. Legault previously served as a director and officer of Revelstoke Partners Ltd., a consulting firm providing turnaround services. He has been a principal of Exchange Solutions Inc., a marketing consultancy based in Boston and Toronto, and President of Opal Sky Inc., a Toronto-based marketing software company. Previously, Mr. Legault was President of Butterfield & Robinson Inc., a Toronto-based travel firm, and a Captain in the Canadian Air Force. Mr. Legault was for 17 years a director and audit committee member of Green Shield Canada (an OSFI-regulated organization), one of the country's largest health benefits administrators. Mr. Legault is a Member of the Law Society of Upper Canada and the New York Bar, and he holds a JD from Queen's University.

### ***Audit Fees***

The following table summarizes the fees paid by the Company to its auditor for external audit and other services provided to the Company in each of the last two fiscal years.

<b>Year</b>	<b>Audit Fees<sup>(1)</sup></b>	<b>Audit Related Fees<sup>(3)</sup></b>	<b>Tax Fees<sup>(2)</sup></b>	<b>All Other Fees<sup>(4)</sup></b>
Fiscal 2018	\$275,500	-	\$28,650	-
Fiscal 2017	\$187,000	-		-

- (1) Fees in respect of audit services performed in order to comply with Canadian generally accepted auditing standards (“GAAS”), interim review services, and audit services relating to prospectus filings. In some cases, these may include an appropriate allocation of fees for tax services or accounting consultations, to the extent such services were necessary to comply with GAAS.
- (2) Audit-related fees approved by the audit committee. Fees in respect of services performed by the auditor’s tax professionals, except those services required in order to comply with GAAS which are included under “Audit Fees”. Tax services include assistance with tax compliance and tax planning and advice.
- (3) Fees in respect of all services not falling under any of the foregoing three categories.

### ***Reliance on Certain Exemptions***

The Company is a “venture issuer” as defined in NI 52-110 and it is relying on the exemption in section 6.1 of NI 52-110 relating to Parts 3 (Composition of Audit Committee) and 5 (Reporting Obligations).

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### **INTEREST OF EXPERTS**

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The financial statements for the financial years ended March 31, 2017 and March 31, 2018 have been audited by Ernst & Young (“EY”) LLP, Chartered Accountants, the Company’s auditors. EY is independent in accordance with the auditors’ rules of professional conduct in Canada.

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### **ADDITIONAL INFORMATION**

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Additional information relating to the Company may be found on SEDAR at [www.sedar.com](http://www.sedar.com). Additional information, including directors’ and executive officers’ remuneration and indebtedness and principal holders of the Company’s securities is contained in the Company’s management information circular for its May 15, 2018 annual meeting of shareholders at which directors were elected. Additional financial information is available in the Company’s financial statements and MD&A for its most recently completed financial year.

**APPENDIX “A”  
CHARTER OF THE AUDIT COMMITTEE**

**NAME**

There shall be a committee of the board of directors (the “Board”) of Antibe Therapeutics Inc. (the “Company”) known as the Audit Committee.

**PURPOSE OF AUDIT COMMITTEE**

The Audit Committee has been established to assist the Board in fulfilling its oversight responsibilities with respect to the following principal areas:

- (a) the Company’s external audit function; including the qualifications, independence, appointment and oversight of the work of the external auditors;
- (b) the Company’s accounting and financial reporting requirements;
- (c) the Company’s reporting of financial information to the public;
- (d) the Company’s compliance with law and regulatory requirements;
- (e) the Company’s risks and risk management policies;
- (f) the Company’s system of internal controls and management information systems; and
- (g) such other functions as are delegated to it by the Board.

Specifically, with respect to the Company’s external audit function, the Audit Committee assists the Board in fulfilling its oversight responsibilities relating to: the quality and integrity of the Company’s financial statements, including the Company’s management’s discussion & analysis (“MD&A”); the independent auditors’ qualifications; and the performance of the Company’s independent auditors.

**MEMBERSHIP**

The Audit Committee shall consist of as many members as the Board shall determine. Except as may otherwise be permitted under National Instrument 52-110 - *Audit Committees* (“NI 52-110”), each member of the Audit Committee must, to the satisfaction of the Board, be “financially literate” (as such term is defined in NI 52-110) and each member shall be “independent” (as such term is defined in NI 52-110). Each member of the Audit Committee shall continue to be a member until a successor is appointed, unless the member resigns, is removed or ceases to be a director of the Company. The Board may fill a vacancy that occurs in the Audit Committee at any time.

**CHAIR AND SECRETARY**

The Chair of the Audit Committee shall be designated by the Board. If the Chair is not present at a meeting of the Audit Committee, the members of the Audit Committee may designate an interim Chair for the meeting by majority vote of the members present. The Secretary of the Audit Committee shall be such member of the Audit Committee as may be designated by majority vote of the Audit Committee from time to time, provided that if the Secretary is not present, the Chair of the meeting may appoint any person who need not be a member, to act as secretary at any meeting. A member of the Audit Committee may be designated as the liaison member to report on the deliberations of the Audit Committees of affiliated companies (if applicable).

## **MEETINGS**

The Chair of the Audit Committee, in consultation with the Audit Committee members, shall determine the schedule and frequency of the Audit Committee meetings provided that the Audit Committee will meet at least four times in each fiscal year and at least once in every fiscal quarter. The Audit Committee is to meet prior to the filing of quarterly financial statements in order to review and discuss the unaudited financial results for the preceding quarter and the related MD&A and is to meet prior to filing the annual audited financial statements and MD&A in order to review and discuss the audited financial results for the year and related MD&A. The Audit Committee shall have the authority to convene additional meetings as circumstances require.

Notice of every meeting shall be given to the external and internal auditors of the Company, and meetings shall be convened whenever requested by the external auditors or any member of the Audit Committee in accordance with applicable law. The Audit Committee shall meet separately and periodically with management, legal counsel and the external auditors. The Audit Committee shall meet separately with the external auditors at every meeting of the Audit Committee at which external auditors are present.

A quorum for the transaction of business at any meeting of the Audit Committee is (the presence in person or by telephone or other communication equipment of) a simple majority of the total number of members of the Audit Committee or such greater number as the Audit Committee may by resolution determine. If within one hour of the time appointed for a meeting of the Audit Committee, a quorum is not present, the meeting shall stand adjourned to the same hour on the second business day following the date of such meeting at the same place. If at the adjourned meeting a quorum as hereinbefore specified is not present within one hour of the time appointed for such adjourned meeting, the quorum for the adjourned meeting will consist of the members then present.

Should a vacancy arise among the members of the Audit Committee, the remaining members of the Audit Committee may exercise all of its powers and responsibilities so long as a quorum remains in office.

Meetings of the Audit Committee are to be held from time to time at such place as the Audit Committee or the Chair of the Audit Committee may determine, within or outside Ontario, Canada, upon not less than 48 hours prior notice to each of the members. Meetings of the Audit Committee may be held without 48 hours prior notice if all of the members entitled to vote at such meeting who do not attend, waive notice of the meeting and, for the purpose of such meeting, the presence of a member at such meeting shall constitute waiver on his or her part. Any member of the Audit Committee, the Chairman of the Board, the Company's external auditors, or the Chief Executive Officer or Chief Financial Officer of the Company are entitled to request that the Chair of the Audit Committee call a meeting. A notice of a meeting of the Audit Committee may be given verbally, in writing or by telephone, fax or other means of communication, and need not specify the purpose of the meeting.

The Audit Committee shall keep minutes of its meetings which shall be submitted to the Board.

All decisions of the Audit Committee will require the vote of a majority of its members present at a meeting at which quorum is present. Action of the Audit Committee may be taken by an instrument or instruments in writing signed by all of the members of the Audit Committee, and such actions shall be effective as though they had been decided by a majority of votes cast at a meeting of the Audit Committee called for such purpose. Such instruments in writing may be signed in counterparts each of which shall be deemed to be an original and all originals together shall be deemed to be one and the same instrument.

## **MEETING AGENDAS**

Agendas for meetings of the Audit Committee shall be developed by the Chair of the Audit Committee in consultation with management and the corporate secretary, and shall be circulated to Audit Committee members as far in advance of each Audit Committee meeting as is reasonable.

## **RESOURCES AND AUTHORITY**

The Audit Committee shall have the resources and the authority to discharge its responsibilities, including the authority, in its sole discretion, to engage, at the expense of the Company, outside consultants, independent legal counsel and other advisors and experts as it determines necessary to carry out its duties, without seeking approval of the Board or management.

The Audit Committee shall have the authority to conduct any investigation necessary and appropriate to fulfilling its responsibilities, and has direct access to and the authority to communicate directly with the internal and external auditors, the counsel of the Company and other officers and employees of the Company.

The members of the Audit Committee shall have the right for the purpose of performing their duties to inspect all the books and records of the Company and its subsidiaries and to discuss such accounts and records and any matters relating to the financial position, risk management and internal controls of the Company with the officers and external and internal auditors of the Company and its subsidiaries. Any member of the Audit Committee may require the external or internal auditors to attend any or every meeting of the Audit Committee.

## **RESPONSIBILITIES**

The Company's management is responsible for preparing the Company's financial statements and the external auditors are responsible for auditing those financial statements. The Audit Committee is responsible for overseeing the conduct of those activities by the Company's management and external auditors, and overseeing the activities of the internal auditors.

The specific responsibilities of the Audit Committee shall include those listed below. The enumerated responsibilities are not meant to restrict the Audit Committee from examining any matters related to its purpose.

### **1. Financial Reporting Process and Financial Statements**

The Audit Committee shall:

- (a) in consultation with the external auditors and the internal auditors, review the integrity of the Company's financial reporting process, both internal and external, and any major issues as to the adequacy of the internal controls and any special audit steps adopted in light of material control deficiencies;
- (b) review all material transactions and material contracts entered into between (i) the Company or any subsidiary of the Company, and (ii) any subsidiary, director, officer, insider or related party of the Company, other than transactions in the ordinary course of business;
- (c) review and discuss with management and the external auditors: (i) the preparation of Company's annual audited consolidated financial statements and related MD&A and its interim unaudited consolidated financial statements and related MD&A; (ii) whether the financial statements present fairly (in accordance with Canadian generally accepted accounting principles) in all material respects the financial condition, results of operations and cash flows of the Company as of and for the periods presented; (iii) any matters required to be discussed with the external auditors according to Canadian generally accepted auditing standards; (iv) an annual report by the external auditors describing: (A) all critical accounting policies and practices used by the Company; (B) all material alternative accounting treatments of financial information within generally accepted accounting principles that have been discussed with management of the Company,



including the ramifications of the use of such alternative treatments and disclosures and the treatment preferred by the external auditors; and (C) other material written communications between the external auditors and management;

- (d) following completion of the annual audit, review with each of: (i) management; (ii) the external auditors; and (iii) the internal auditors, any significant issues, concerns or difficulties encountered during the course of the audit;
- (e) resolve disagreements between management and the external auditors regarding financial reporting;
- (f) review the financial statements, MD&A and annual and interim press releases prior to public disclosure of this information; and
- (g) review and be satisfied that adequate procedures are in place for the review of the public disclosure of financial information by the Company extracted or derived from the Company's financial statements, other than the disclosure referred to in (f), and periodically assess the adequacy of those procedures.

## **2. External auditors**

The Audit Committee shall:

- (a) require the external auditors to report directly to the Audit Committee;
- (b) recommend to the Board the external auditors to be nominated for approval by the shareholders and the compensation of the external auditor;
- (c) be directly responsible for the selection, nomination, compensation, retention, termination and oversight of the work of the Company's external auditors engaged for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company;
- (d) approve all audit engagements and must pre-approve the provision by the external auditors of all non-audit services, including fees and terms for all audit engagements and non-audit engagements, and in such regard the Audit Committee may establish the types of non-audit services the external auditors shall be prohibited from providing and shall establish the types of audit, audit related and non-audit services for which the Audit Committee will retain the external auditors. The Audit Committee may delegate to one or more of its independent members the authority to pre-approve non-audit services, provided that any such delegated pre-approval shall be exercised in accordance with the types of particular non-audit services authorized by the Audit Committee to be provided by the external auditor and the exercise of such delegated pre-approvals shall be presented to the full Audit Committee at its next scheduled meeting following such pre-approval;
- (e) review and approve the Company's policies for the hiring of partners and employees and former partners and employees of the present and former external auditors of the Company;
- (f) consider, assess and report to the Board with regard to the independence and performance of the external auditors; and
- (g) request and review the audit plan of the external auditors as well as a report by the external auditors to be submitted at least annually regarding: (i) the external auditing

firm's internal quality-control procedures; (ii) any material issues raised by the external auditor's own most recent internal quality-control review or peer review of the auditing firm, or by any inquiry or investigation by governmental or professional authorities within the preceding five years respecting one or more independent audits carried out by the external auditors, and any steps taken to deal with any such issues.

### **3. Accounting Systems and Internal Controls**

The Audit Committee shall:

- (a) oversee management's design and implementation of and reporting on internal controls. The Audit Committee shall also receive and review reports from management, the internal auditors and the external auditors on an annual basis with regard to the reliability and effective operation of the Company's accounting system and internal controls; and
- (b) review annually the activities, organization and qualifications of the internal auditors and discuss with the external auditors the responsibilities, budget and staffing of the internal audit function.

### **4. Legal and Regulatory Requirements**

The Audit Committee shall:

- (a) receive and review timely analysis by management of significant issues relating to public disclosure and reporting;
- (b) review, prior to finalization, periodic public disclosure documents containing financial information, including the Company's MD&A and Annual Information Form, if required;
- (c) prepare the report of the Audit Committee required to be included in the Company's periodic filings;
- (d) review with the Company's counsel legal compliance matters, significant litigation and other legal matters that could have a significant impact on the Company's financial statements; and
- (e) assist the Board in the oversight of compliance with legal and regulatory requirements and review with legal counsel the adequacy and effectiveness of the Company's procedures to ensure compliance with legal and regulatory responsibilities.

### **5. Additional Responsibilities**

The Audit Committee shall:

- (a) discuss policies with the external auditor, internal auditor and management with respect to risk assessment and risk management;
- (b) establish procedures and policies for the following
  - (i) the receipt, retention, treatment and resolution of complaints received by the Company regarding accounting, internal accounting controls or auditing matters; and
  - (ii) the confidential, anonymous submission by directors or employees of the Company of concerns regarding questionable accounting or auditing matters;

- (c) discuss prepare and review with the Board an annual performance evaluation of the Audit Committee;
- (d) report regularly to the Board, including with regard to matters such as the quality or integrity of the Company's financial statements, compliance with legal or regulatory requirements, the performance of the internal audit function, and the performance and independence of the external auditors; and
- (e) review and reassess the adequacy of the Audit Committee's Charter on an annual basis.

#### **6. Limitation on the Oversight Role of the Audit Committee**

Nothing in this Charter is intended, or may be construed, to impose on any member of the Audit Committee a standard of care or diligence that is in any way more onerous or extensive than the standard to which all members of the Board are subject.

Each member of the Audit Committee shall be entitled, to the fullest extent permitted by law, to rely on the integrity of those persons and organizations within and outside the Company from whom he or she receives financial and other information, and the accuracy of the information provided to the Company by such persons or organizations.

While the Audit Committee has the responsibilities and powers set forth in this Charter, it is not the duty of the Audit Committee to plan or conduct audits or to determine that the Company's financial statements and disclosures are complete and accurate and in accordance with international financial reporting standards with applicable rules and regulations. These are the responsibility of management and the external auditors.