Management Discussion and Analysis (Expressed in Canadian Dollars)

# KANE BIOTECH INC.

Three months ended March 31, 2019 and 2018



#### **Management Discussion and Analysis**

The following management discussion and analysis ("MD&A") covers information up to May 22, 2019 and should be read in conjunction with the financial statements for the three months ended March 31, 2019 and 2018. Except as otherwise noted, the financial information contained in this MD&A and in the financial statements has been prepared in accordance with IFRS. All amounts are expressed in Canadian Dollars unless otherwise noted. Additional information regarding the Company is available on SEDAR at <a href="https://www.sedar.com">www.sedar.com</a> and on the Company's website at <a href="https://www.sedar.com">www.sedar.com</a> and <a href="https://

This MD&A has been prepared to help investors understand the financial performance of the Company in the broader context of the Company's strategic direction, the risks and opportunities as understood by management, and the key success factors that are relevant to the Company's performance. Management has prepared this document in conjunction with its broader responsibilities for the accuracy and reliability of the financial statements, as well as the development and maintenance of appropriate information systems and internal controls to ensure that the financial information is complete and reliable. The Audit Committee of the Board of Directors has reviewed this document and all other publicly reported financial information for integrity, usefulness, reliability and consistency.

#### FORWARD-LOOKING STATEMENTS

This Management's Discussion and Analysis contains certain forward-looking information and statements within the meaning of securities law which may not be based on historical fact, including without limitation statements containing the words "believes,", "should", "may," "plan," "will," "estimate," "predict," "continue," "anticipates," "potential", "intends," "expects," or other similar expressions. Such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause the actual results, events or developments to be materially different from any future results, events or developments expressed or implied by such forward-looking statements. Such factors include, among others, the Company's stage of development, lack of product revenues, additional capital requirements, risks associated with the completion of clinical trials and obtaining regulatory approval to market the Company's products, the ability to protect its intellectual property and dependence upon collaborative partners. These factors should be considered carefully, and readers are cautioned not to place undue reliance on such forward-looking statements. The forward-looking statements are made as of the date hereof, and the Company disclaims any obligation to update any such factors or to publicly announce the result of any revisions to any of the forward-looking statements contained herein to reflect future results, events or developments.

Actual results and developments are likely to differ, and may differ materially, from those expressed or implied by the forward-looking statements contained in this MD&A. Such statements are based on a number of assumptions which may prove to be incorrect, including, but not limited to, assumptions about:

- general business and economic conditions;
- interest rates and foreign exchange rates;
- the timing of the receipt of regulatory and governmental approvals for the Company's research and development projects;
- the availability of financing for the Company's research and development projects, or the availability of financing on reasonable terms;
- the Company's costs of trials;
- the Company's ability to attract and retain skilled staff;
- market competition;
- tax benefits and tax rates;
- the Company's ongoing relations with its employees and with its business partners.

Management cautions you, the reader, that the foregoing list of important factors and assumptions is not exhaustive. Events or circumstances could cause actual results to differ materially from those estimated or projected and expressed in, or implied by, these forward-looking statements. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking statements or the foregoing list of factors, whether as a result of new information or future events or otherwise.

### **OVERVIEW**

Kane Biotech Inc. ("Kane Biotech" or the "Company") is a biotechnology company engaged in the research, development and commercialization of technologies and products that prevent and remove microbial biofilms. Biofilms are thin, slimy films that develop when bacteria and other microorganisms form a protective matrix that acts as a shield against attack. Biofilms attach to and grow on living and inert surfaces. When protected by a biofilm, bacteria become highly resistant to antibiotics, antimicrobials, biocides and host immune responses. This resiliency contributes to numerous human and animal health related problems.



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According to the United States National Institute of Health, biofilms are estimated to be responsible for 80% of all animal and human bacterial infections including tooth decay, wound care infections, chronic inflammatory skin disorders and wounds, recurrent urinary tract infections, medical device-associated and hospital acquired infections (HAIs), and foodborne bacterial outbreaks. Biofilms cost society billions of dollars each year. As such, there is significant interest, and therefore significant opportunity, in safe and effective products that can combat the biofilm problem. Kane Biotech's mission is to capitalize on this large, addressable market by licensing its proprietary anti-biofilm technologies to global industry players.

Key Highlights of Kane Biotech include the following:

- A specialized focus on the development and continual improvement of anti-biofilm technologies, targeting large markets for biofilm prevention and dispersion solutions
- Robust patent portfolio of differentiated anti-biofilm technologies with 58 patents and patents pending
- Unique and growing portfolio of technology platforms for medical devices in development for the Human Health and Animal Health markets
- First commercial licensing and distribution agreement signed in 2017 establishing a 10-year partnership with Dechra Veterinary Products wherein Kane receives an ongoing royalty from Dechra on net sales of its Vetradent products in North America
- Expansion into multiple markets with mutually beneficial contractual agreements with North American and Asian distributors and retailers
- Exclusive representation by SLA Brands for the bluestem line of products to distributors and retailers in the US market
- Significant year-over-year growth in online sales of its bluestem™ brand of oral care products on Amazon
- Expanding product line offering one of the most comprehensive lineups of oral care products in the industry

Kane Biotech has a portfolio of biotechnologies, intellectual property (patents, patents pending and trademarks) and products developed by the Company's own biofilm research expertise and acquired from leading research institutions. StrixNB™, DispersinB®, Aledex®, bluestem™, bluestem®, AloSera™, coactiv+™ and coactiv+® are trademarks of Kane Biotech Inc.

The Company is listed on the TSX Venture Exchange under the symbol "KNE" and on the OTC Pink Open Market under the symbol "KNBIF".

### **COMPANY FOCUS**

Kane Biotech is in the midst of a company-wide transformation. Marc Edwards, the newly appointed CEO, has implemented several initiatives with a sharp focus on execution and delivering results to the Company's shareholders. Marc's main objective remains unchanged: to license the Company's biofilm related intellectual property to strategic partners with established large-scale market and territory access.

Throughout 2019, Kane Biotech will continue to focus on two lucrative markets for its technologies: Animal Health and Human Health. In the near-term, the Company aims to: (1) generate revenue growth through sales of its premium companion animal products in the veterinary, pet specialty and e-commerce channels, and (2) Receive 510k regulatory approval from the FDA on a medical device in the wound care space.

Within the Animal Health market, Kane Biotech is focusing its efforts on growing product sales in the pet specialty and online sales channels through increased marketing efforts and continued expansion of the bluestem product line. With recent bluestem product introductions such as water additive powder, chews, and dental wipes, Kane Biotech now has the most comprehensive lineup of pet oral care products in the market. Kane has already reached out to several major retailers regarding this product line, and the preliminary response has been very positive.

In addition to growing product sales and bluestem product expansion, Kane Biotech will also be focused on growing royalty revenue generated by the sale of its premium veterinary oral care line. The company aims to achieve a key milestone in the near-term namely Veterinary Oral Health Council (VOHC) certification. This milestone carries a \$500,000 (USD) payment as part of the agreement signed with Dechra in 2017. Kane Biotech is working with Key Opinion Leaders in both oral health to help achieve this milestone.

Finally, in addition to established products and sales strategy, the Company is also actively exploring growth options through new applications for its intellectual property in other key growth areas within Animal Health.

In the Human Health market, Kane Biotech, with the support of the Scientific Advisory Board, recently re-addressed its business plan and outlined several new strategic steps including securing funding for its technologies in development. As part of this



### **Management Discussion and Analysis**

strategy, Kane Biotech has made the decision to take its first product through the FDA's 510k regulatory pathway. Completing this regulatory work will significantly reduce the risk for future partners and increase the value of a licensing agreement. Kane Biotech is collaborating with external consultants in order to prepare for a pre-submission meeting with the FDA. If approved, the device will enhance current wound care treatment by improving the efficacy of antimicrobials and antibiotics in wounds.

Targeted company milestones for 2019 include the following:

- · Continue to grow sales of the bluestem line of products while seeking an established licensing partner
- Expand the sales of bluestem outside North America
- Increase royalties from Dechra through increased sales and the launch of new products in the veterinary channel
- Continue to enforce Kane Biotech's intellectual property
- Rationalize Kane's patents with a focus on its most promising technologies
- Complete additional trials and achieve International standard of canine oral care efficacy
- Make significant progress toward FDA 510k certification for a wound care product
- Secure non-dilutive financing for the human health R&D program
- Raise capital via a dilutive financing
- Execute with cost-control and continue to reduce operating expenses

The Kane team is extremely proud of the record-breaking revenue growth this quarter and the strong start to 2019. With a number of new initiatives and a targeted focus on product development, international market expansion, and cost-effective execution, Kane Biotech is positioning itself in a strong position to succeed. The entire team is dedicated to achieving the above-mentioned milestones throughout 2019 and to building a foundation for long-term, sustainable growth.

# SUMMARY OF KANE BIOTECH PRESS RELEASES FROM JANUARY 2019 TO May 22, 2019

On May 22, 2019, the Company announced its First Quarter 2019 Financial Results, extension of loan and insider funding.

On May 16, 2019, the Company announced it had scheduled its First Quarter Conference Call and Business Update on Thursday, May 23, 2019 at 4:30pm E.T. to discuss its financial results for the first quarter, in conjunction with the filing of its Financial Statements for the first quarter ended March 31, 2019.

On April 30, 2019, the Company provided an update on its exclusive license and distribution agreement with Dechra indicating that royalty revenues from Dechra have steadily increased in early 2019 and that it expects the growth to continue as the Vetradent line recently received broader approval when it was added to the formulary of major American veterinary groups.

On April 24, 2019, the Company announced a strategic partnership with Schiaffino, Lasky, & Associates Inc. (SLA Brands). SLA Brands will exclusively represent Kane Biotech's bluestem line of products to distributors and retailers in the United States market.

On March 25, 2019, the Company announced its Fourth Quarter 2018 Financial Results.

On March 20, 2019, the Company announced it had scheduled its Fourth Quarter Conference Call and Business Update on Tuesday, March 26, 2019 at 4:00pm E.T. to discuss its financial results for the fourth quarter, in conjunction with the filing of its Financial Statements for the fourth quarter ended December 31, 2018.

February 19, 2019, the Company announced that it had signed a non-exclusive Distribution Agreement with a major Chinese distributor and secured its first order valued at \$25K USD. The order included Kane's StrixNB™ Water Additive for the Chinese Veterinary market as well as its bluestem™ Water Additive and Oral Spray for the Chinese pet specialty market.

On January 30, 2019, the Company announced that it had secured an additional purchase order for bluestem™ products from the North America pet retail chain that recently purchased the largest order in Kane Biotech's history.

On January 25, 2019, the Company announced that it would be hosting a conference call and webcast on Wednesday, January 30, 2019 at 4:00pm Eastern Time to provide an update on the Company's business strategy including product developments, licensing and business development and other initiatives in progress.

On January 24, 2019, the Company announced that it closed and delivered its single largest purchase order in the history of the company for \$440,000 of bluestem products to one of the largest pet retail operations in North America.



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On January 17, 2019, the Company announced its new human health strategy. Efforts are to be focused on development of a wound care hydrogel containing Kane's patented enzyme Dispersin®. The Company also announced that it had renewed its exclusive worldwide license agreement with the University of Medicine and Dentistry of New Jersey, now part of Rutgers University, for all human, animal and industrial applications of the DispersinB® enzyme. The Company has also submitted a funding proposal under the Military Infectious Diseases Research Program (MIDRP) with Medical Technology Enterprise Consortium (MTEC). MTEC has already given first stage approval to this project.

# **INTELLECTUAL PROPERTY**

Patent #	Title	Jurisdiction
2,452,032	Synergistic Antimicrobial Compositions and Methods of Inhibiting Biofilm Formation	Canada
7,314,857	Synergistic Antimicrobial Compositions and Methods of Inhibiting Biofilm Formation	United States
7,144,992	Synergistic Antimicrobial Compositions and Methods for Reducing Biofilm Formation	United States
8,906,364	Antimicrobial Compositions for Inhibiting Growth and Proliferation of Microbial Biofilms	United States
EP1906736	Antimicrobial Compositions for Inhibiting Growth and Proliferation of Microbial Biofilms	Europe
EP1906736	Antimicrobial Compositions for Inhibiting Growth and Proliferation of Microbial Biofilms	Germany
EP1906736	Antimicrobial Compositions for Inhibiting Growth and Proliferation of Microbial Biofilms	France
EP1906736	Antimicrobial Compositions for Inhibiting Growth and Proliferation of Microbial Biofilms	United Kingdom
6,923,962	Signal Peptides, Nucleic Acid Molecules and Methods for Treatment of Caries	United States
7,597,895	Signal Peptides, Nucleic Acid Molecules and Methods for Treatment of Caries	United States
7,294,497	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	United States
540731	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	New Zealand
555378	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	New Zealand
2,003,284,385	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	Australia
7,833,523	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	United States
7,989,604	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	United States
5,073,169	Compositions and Methods for Enzymatic Detachment of Bacterial and Fungal Biofilms	Japan
8,580,551	Dispersin B Polypeptides and uses thereof	United States
8,821,862	Soluble β-N-Acetylgucosaminidase Based Antibiofilm Compositions and Uses Thereof	United States
8,617,542	Dispersin B, 5-Fluorouracil, Deoxyribonuclease I and ProteinaseK-Based Antibiofilm	
	Compositions and uses thereof	United States
2,720,301	Dispersin B, 5-Fluorouracil, Deoxyribonuclease I and ProteinaseK-Based Antibiofilm	
	Compositions and uses thereof	Canada
EP2283130	Dispersin B, 5-Fluorouracil, Deoxyribonuclease I and ProteinaseK-Based Antibiofilm	
	Compositions and uses thereof	United Kingdom
EP2283130	Dispersin B, 5-Fluorouracil, Deoxyribonuclease I and ProteinaseK-Based Antibiofilm	
	Compositions and uses thereof	Germany
EP2283130	Dispersin B, 5-Fluorouracil, Deoxyribonuclease I and ProteinaseK-Based Antibiofilm	
	Compositions and uses thereof	France
8,753,692	Biofilm-Removing Antimicrobial Compositions and uses thereof	United States
2,750,340	Biofilm-Removing Antimicrobial Compositions and uses thereof	Canada
5,752,051	Biofilm-Removing Antimicrobial Compositions and uses thereof	Japan
10733164.7	Biofilm-Removing Antimicrobial Compositions and uses thereof	Europe
EP2389071	Biofilm-Removing Antimicrobial Compositions and uses thereof	United Kingdom
EP2389071	Biofilm-Removing Antimicrobial Compositions and uses thereof	Germany
EP2389071	Biofilm-Removing Antimicrobial Compositions and uses thereof	France
9,622,481	Biofilm-Removing Antimicrobial Compositions and uses thereof	United States
2012332014	Compositions and Methods for Treatment and Prevention of Oral Diseases	Australia
CN104010653	Compositions and Methods for Treatment and Prevention of Oral Diseases	China
6,038,167	Compositions and Methods for Treatment and Prevention of Oral Diseases	Japan
624,850	Compositions and Methods for Treatment and Prevention of Oral Diseases	New Zealand
9,980,497	Compositions and Methods for Treatment and Prevention of Wound Infections	United States
6,401,720	Compositions and Methods for Treatment and Prevention of Wound Infections	Japan
2,014,225,252	Compositions and Methods for Treatment and Prevention of Wound Infections	Australia
2662764	Compositions and Methods for Treatment and Prevention of Wound Infections	Russia



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The Company has 40 issued and 18 pending patents. Successful development of products to prevent and remove microbial biofilms may be dependent upon the ability to obtain approval for patents that are currently in pending status as well as successfully file new patents; however, there is no guarantee that new patents will be obtained, and, if obtained, it may not be possible to successfully defend against any subsequent infringements to these patents. Currently the Company is unaware that it has infringed upon any existing patents issued to third parties and success may, in part, depend on operating without such infringement.

<u>Trademark</u>	<u>Jurisdiction</u>
DispersinB®	Canada
•	United States
	Europe
	United Kingdom
StrixNB <sup>TM</sup>	Canada
	Europe
Aledex™	Canada
Aledex®	United States
bluestem™	Canada
	United States
bluestem®	Europe
AloSera™	Canada
<del></del>	United States
Coactiv+™	Canada
	United States
Coactiv+®	Europe

#### KANE BIOTECH TECHNOLOGIES

# StrixNB™ and bluestem

The Company's trademarks for the companion pet oral care market are StrixNB<sup>TM</sup>, bluestem® and bluestem<sup>TM</sup>. The companion pet oral care market in the U.S. was estimated to be \$775 million in 2015 and is projected to grow to nearly \$1 billion by 2020. According to the American Veterinary Medical Association (AVMA) oral health is one of the top three concerns for companion animal owners. Bacteria in the mouth cavity form plaque and as the plaque grows this causes tartar build-up, gum infection (gingivitis) and periodontitis. By the time they are three years old 80% of dogs and 70% of cats develop some sort of periodontal disease.

The Company introduced its companion pet oral care products in Canada under the StrixNB and bluestem brands and received Health Canada's Low Risk Veterinary Health Products (known as LRVHP) which Health Canada replaced in 2017 with the Veterinary Health Products (VHP) - Notification Program. Approvals under these programs are in place for oral care liquid water additives, a water additive powder formulation, an oral spray formulation and a toothpaste. The Company pursued a strategy to license out its intellectual property on a broader scale which led to Kane Biotech's StrixNB technology and trademarks being part of a 10-year exclusive licensing and distribution agreement with Dechra Veterinary Products LLC for the North American veterinary market announced March 6, 2017. Dechra introduced its Vetradent<sup>TM</sup> oral care brand into the U.S. and Canadian veterinary channel in Q4 2017. In conjunction with Dechra, additional formulations are in development to expand Dechra's complete oral health program of pet oral care products for veterinary clinics and dog and cat parents. Water additive powder and dental wipe products were added to the Vetradent product family in Q2 and Q4, 2018 respectively. A dental rawhide chew is in development for market release later in 2019.

Kane Biotech's bluestem brand of products are sold in approximately 1,600 pet specialty retail stores in Canada and the U.S., as well as Amazon.com (U.S.) and Amazon.ca (Canada). Based on the Company's science, efficacy, safety and value the bluestem products are well received in the market. Kane will continue to grow sales of bluestem products in order to increase the value of a potential licensing agreement.



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### DispersinB®

Kane Biotech's trademark for the wound care market is DispersinB® for both animal and human wound care applications. The Company has started to pursue its strategy to license out its wound care intellectual property on a broader scale.

For animal applications, the use of Kane Biotech's DispersinB technology and trademarks are part of the 10-year exclusive licensing and distribution agreement with Dechra Veterinary Products LLC announced on March 6, 2017. The introduction of DispersinB products for canine otic (ear) infections is planned. Additional DispersinB products are in development.

In terms of human applications, in 2018, the Company renewed its exclusive worldwide license agreement with the University of Medicine and Dentistry of New Jersey, now part of Rutgers University, for all human, animal and industrial applications of the DispersinB® enzyme. In 2019, efforts will be focused on the development of a human wound care hydrogel containing DispersinB with the view of filing an Investigational Device Extension (IDE) application with the Food and Drug Administration (FDA) in 2020.

#### **KBI Disinfectant Technology**

KBI Antibacterial Disinfectant was issued a Drug Identification Number or DIN (02374463) in 2011 by the Therapeutic Products Directorate of Health Canada as a hard surface disinfectant for use in domestic, hospital, and industrial environments. The Company is continuing its efforts in the research and development of these disinfectant technologies in pursuit of further antimicrobial and anti-biofilm claims.

Kane has not been actively focused on this technology over the past few years due to its concentration of financial and human resources on StrixNB and DispersinB commercialization. However, based on the sizeable market opportunity related to KBI, management believes KBI represents significant future opportunity and value for the Company and has full intent to continue its pursuit of the commercialization of this technology in the future.

# **OUTLOOK**

The strategic direction of the Company remains centered on developing and commercializing solutions to biofilm related problems in the Animal and Human health markets. To advance these programs and establish the company as a key player, management expects Kane Biotech to continue incurring operating losses for the foreseeable future. Given the nature of this business and the developmental phase that Kane Biotech is currently in, research expenditures are expected to be higher in 2019 than in 2018. However, based on current projections, total revenue is expected to increase significantly in fiscal 2019 as compared to fiscal 2018. In addition, due to several cost-cutting initiatives recently implemented, operating expenses in 2019 are expected to be lower than in 2018. The company is committed to creating revenue growth and operating with strict cost controls while developing their new technologies and devices.

The Company's funding of future operations is dependent upon its ability to: a) negotiate collaboration or licence royalty agreements with upfront and subsequent milestone payments, b) generate product sales, and c) obtain research grant funding and/or secure additional funds. While the Company is striving to achieve funding through all three of the above-mentioned alternatives, there is no assurance that such sources will be available or obtained on favourable terms. If the Company cannot realize sufficient funding from these sources, it will have to consider additional strategic alternatives which may include, among other strategies, exploring the monetization of certain tangible and intangible assets as well as seeking to license assets or potential asset divestitures.

The ability of the Company to continue as a going concern and to realize the carrying value of its assets and discharge its liabilities and commitments when due is dependent on the successful completion of the actions taken or planned, some of which are described above, which management believes will mitigate the adverse conditions and events which raise doubt about the validity of the going concern assumption used in preparing its financial statements. There is no certainty that these and other strategies will be sufficient to permit the Company to continue as a going concern.

The Company may decide to accelerate, terminate or reduce its focus in certain research areas, or commence research in new areas as a result of the Company's research progress and the availability of financial resources. These decisions are made with the goals of tightly managing the Company's cash resources and optimizing the Company's opportunities. Management is not presently aware of any factors that would change its strategy over the next year. See also "Note 2(c) Going concern" to the accompanying financial statements.



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# **SELECTED QUARTERLY FINANCIAL INFORMATION**

The selected financial information provided below is derived from Kane Biotech's unaudited quarterly financial statements for each of the last eight quarters:

	Q1-2019	Q4-2018	Q3-2018	Q2-2018	Q1-2018	Q4-2017	Q3-2017	Q2-2017
	\$	\$	\$	\$	\$	\$	\$	\$
License	16,768	16,769	16,768	16,768	16,768	16,768	16,768	16,768
Royalty	33,993	12,355	9,590	9,218	13,097	9,671	4,480	3,355
Sales of goods and services	570,495	128,034	100,201	86,592	80,113	73,998	56,247	102,651
Total Revenue	621,256	157,158	126,559	112,578	109,978	100,437	77,495	122,774
Cost of Sales	410,408	86,390	95,579	93,489	115,344	129,160	115,540	123,596
Gross Profit	210,848	70,768	30,980	19,089	(5,366)	(28,723)	(38,045)	(822)
Operating Expenses	830,123	783,550	941,442	702,381	866,930	842,949	809,170	659,468
Loss for the Qtr	(657,393)	(622,497)	(1,013,456)	(718,482)	(906,564)	(871,918)	(852,478)	(773,781)
Loss per share	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.02)

It is important to note that historical patterns of expenditures cannot be taken as an indication of future expenditures. The amount and timing of expenditures, and therefore liquidity and capital resources, may vary substantially from period to period depending on the business and research activities being undertaken at any one time and the availability of funding from investors and prospective commercial partners.

The Company's ongoing operating expenses relate primarily to the execution of research programs, the commercialization of its intellectual property and general and administrative expenses. The operations of the Company are not subject to any material seasonality or cyclical factors.

License revenue relates to the recognition of revenue associated with the initial payment of \$500,000 USD the Company received upon signing its exclusive license and distribution agreement with Dechra in March 2017. In accordance with the retrospective adoption of IFRS 15 *Revenue from Contracts with Customers* which went into effect January 1, 2018, this initial payment has been recorded in the financial statements as deferred license revenue and is being recognized as license revenue on a straight-line basis over the 10-year life of the agreement.

Royalty revenue, which relates to the Dechra agreement, has increased significantly in Q1 2019 as the Vetradent product line recently received broader approval when it was added to the formulary of major American veterinary groups.

Sales of goods and services increased significantly in Q1 2019 as a result of the Company delivering in the quarter its single largest purchase order for bluestem products in the history of the company to one of the largest pet retail operations in North America.

Dechra licensed the Company's StrixNB products and technology for the North American companion pet veterinary market commencing in early March 2017. The Company's StrixNB product revenues were significantly reduced once Dechra moved to its own brand (Vetradent) sourced from its own contract manufacturer. As Dechra increases its sales of Vetradent in Canada, the United States and Mexico, Kane Biotech expects to receive increasing royalty payments. The Company retains the ability to sell StrixNB outside of North America and is pursuing options for licensing in Europe, Asia and other geographies. International sales of StrixNB have been modest since the signing of the licensing agreement with Dechra.

Gross profit has been gradually increasing due to overall revenue growth and reductions in manufacturing expenses. Effective November 5, 2018 all product manufacturing is being outsourced resulting in the elimination of internal fixed manufacturing costs as well as the capacity to significantly scale-up product manufacturing volumes to accommodate anticipated future revenue growth. During the fourth quarter of 2018, retroactive to Q1 2017, the Company reclassified certain expenses to Costs of Sales that were previously classified as General and Administrative expenses.

Total operating expenses in earlier quarters include higher product marketing spending than in more recent quarters reflecting the subsequent licensing of StrixNB to Dechra and recently reduced spending on bluestem marketing. Previous quarters up to and including Q1 2018 include significant spending on contract research. The four quarters in 2018 and Q1 2019 include legal expenses pertaining to the Nestle lawsuit which were not incurred in earlier quarters as well as higher investor relations costs



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compared to 2017. Q3 2018 includes separation costs relating to the departure of the Company's former President and CEO.

#### **RESULTS OF OPERATIONS**

#### Revenue

Revenue consists of License and Royalty revenue from its licensing agreement with Dechra, product sales from the Company's bluestem brand and contract manufacturing and quality control services revenue related to the Company's relationship with Dechra

The Company's revenue by category for the three months ended March 31, 2019 and 2018 is summarized in the table below:

Three Months ended March 31,	2019	2018	Change	% Change
License	\$ 16,768	\$ 16,768	\$ -	0.0%
Royalty	33,993	13,097	20,896	159.6%
Sales of goods and services	570,495	80,113	490,382	612.1%
Total Revenue	\$ 621,256	\$ 109,978	\$ 511,278	464.9%

License revenue consists of the recognition over 10 years of an upfront payment of \$500,000 USD received from Dechra upon signing the License Agreement in March 2017. As per Note 4 of the Company's 2018 Financial Statements, the \$500,000 USD initial payment received upon signing the Dechra agreement, which was initially recognized as license revenue in its entirety in Q1 2017, has been restated as deferred revenue on the Statement of Financial Position retroactive to March 2017 and is being recognized over the 10-year life of the agreement.

Royalty revenue consists of royalties received from Dechra on their sales of Vetradent products in the North American veterinary market. In the three months ended March 31, 2019, royalty payments received from Dechra increased by 160% to \$33,993 compared to \$13,097 in the three months ended March 31, 2018 as Dechra continues to roll out the Vetradent product line to its North American veterinarian customer base.

Revenue from product sales in the three months ended March 31, 2019 was \$519,378, an increase of 839% compared to \$55,331 in the three months ended March 31, 2018. In Q1 2019 the Company delivered on the single largest purchase order for bluestem products in its history from one of the largest pet retail operations in North America.

Services revenue consists of contract manufacturing and quality control services related to the Company's relationship with Dechra. In the three months ended March 31, 2019, services revenue was \$51,117, an increase of 106% compared to \$24,782 in the three months ended March 31, 2018. As the demand for the Dechra's Vetradent line has grown, this has resulted in higher demand for the Company's contract manufacturing and quality control services.

# **General and Administration Expenses**

General and administration expenses include those costs not directly related to research and development. These include expenses associated with management and administrative staff compensation, commercialization activities and professional fees such as legal, audit, and investor relations.

The changes in general and administration expenditures by category for the three months ended March 31, 2019 and 2018 are reflected in the following table:

Three Months ended March 31,	2019	2018	Change	% Change
Compensation related costs	\$ 274,877	\$ 320,115	\$ (45,237)	-14.1%
Business development costs	222,053	130,892	91,161	69.6%
Legal costs	62,905	144,810	(81,906)	-56.6%
Other administration costs	35,850	37,519	(1,669)	-4.4%
General and adminstration expenses	\$ 595,685	\$ 633,335	\$ (37,650)	-5.9%



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Lower compensation related costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are primarily due to lower staffing levels and lower long-term compensation expense partially offset by higher short-term compensation expense in the current period.

Higher business development costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are primarily due to increased spending on bluestem marketing programs related to a sales agreement with a major North American distributor.

Lower legal costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are primarily due to lower legal costs incurred in the current period related to the Nestle lawsuit.

Lower other administration costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are primarily due to lower general office expenditures in the current period related to less general and administration staff.

#### **Research and Development Expenses**

Research and development expenses are associated with the Company's research and development programs. The Company is in the development and commercialization stage and devotes a significant portion of its financial resources to research and market-ready product development activities.

The changes in research and development expenses by category for the three months ended March 31, 2019 and 2018 are reflected in the following table:

Three Months ended March 31,	2019	2018	Change	% Change
Compensation related costs	\$ 129,949 \$	89,855	40,094	44.6%
Contract research and scientific consulting	9,754	100,517	(90,763)	-90.3%
Patent related costs and other intangibles expensed	50,454	70,498	(20,044)	-28.4%
Other research costs	52,088	48,356	3,731	7.7%
Government assistance	(7,806)	(75,631)	67,825	-89.7%
Research expenses	\$ 234,438 \$	233,595 \$	843	0.4%

Higher compensation related costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are due primarily to increased staffing in the current period in support of increased research activities as well as an increase in short-term compensation expense.

Lower contract research and scientific consulting costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are due primarily to a reduced need for external contract research services during the current period.

Lower patent related costs and other intangibles expensed in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are due mainly to decreased new patent spending partially offset by the write-off of abandoned patents during the current period.

Higher other research costs in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 are due primarily to higher research consumables costs in the current period compared to the previous period.

Lower government assistance recorded in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 is the result of the Company receiving no National Research Council Canada (NRC) Industrial Research Assistance Program (IRAP) grant funding in the current period whereas the Company did receive IRAP funding in the comparable period.



# **Management Discussion and Analysis**

#### **Finance Costs (Income)**

The change in finance costs (income) for the three months ended March 31, 2019 and 2018 are reflected in the following table:

Three Months ended March 31,	2019	2018	Change
Finance income	\$ (23)	\$ (42) \$	19
Finance expense	40,698	526	40,172
Foreign exchange loss, net	(2,557)	248	(2,804)
Net finance costs	\$ 38,118	\$ 732 \$	37,386

Higher finance expense in the three months ended March 31, 2019 compared to the three months ended March 31, 2018 is due primarily to the recognition of interest expense on both the short-term loan and the due to related party balances in the current period

#### **Loss and Comprehensive Loss**

The losses and comprehensive losses for the three months ended March 31, 2019 and 2018 are reflected in the following tables:

Three Months ended March 31,	2019		2018	Change
Loss and comprehensive loss	\$ (657,393)	\$	(906,564) \$	249,171
Basic and diluted loss per share	\$ (0.01)	\$	(0.01) \$	-

# LIQUIDITY AND CAPITAL RESOURCES

Since inception, the Company has primarily financed its operations from revenues, public and private sales of equity, the exercise of warrants, loans and convertible notes, government grants and tax credits. As at March 31, 2019, the Company had cash of \$122,788 compared with \$1,244,828 at March 31, 2018.

# Cash used in operating activities

Cash used in operating activities for the three months ended March 31, 2019 was \$391,279 compared to \$712,617 for the three months ended March 31, 2018. This decrease is due primarily to a lower operating loss and an increase in accounts payable and accrued liabilities during the current period.

# Cash from financing activities

Cash provided by financing activities for the three months ended March 31, 2019 was \$450,000 compared to nil received in the three months ended March 31, 2018 reflecting cash advances received from a related party and their associates during the current period.

### Cash used in investing activities

Cash used in investing activities during the three months ended March 31, 2019 was \$11,358 compared to \$18,278 in the three months ended March 31, 2018 reflecting lower spending on both new equipment and new patents in the current period.

The Company continues to seek additional licensing and distribution partners for its various products and technologies currently in development. This in combination with ongoing royalties and potential milestone payments associated with its existing licensing agreement with Dechra will provide increasing liquidity in the future. The Company also intends to seek maximization of its use of government grant programs in order to offset some of its research costs.

However, it is possible that these sources of cash inflows will not be enough to entirely fund the Company's planned research activities and administration costs in 2019. If that is the case, the Company will consider financing alternatives including those



# **Management Discussion and Analysis**

used in the past such as private placements and debt financing to raise the necessary capital it requires to fund ongoing operations.

The Company manages its operational spending and determines its future financing requirements through a process of budgeting and ongoing cash flow forecasting.

# Shares, options, and warrants

	May 22, 2019	March 31, 2019	December 31, 2018
Common shares issued and outstanding	80,113,536	80,113,536	80,113,536
Options outstanding	5,123,666	5,267,667	6,197,333
Warrants outstanding	38,004,997	38,004,997	38,004,997

A summary of the Company's share capital may be found in Note 12 of the accompanying financial statements.

#### **CONTRACTUAL OBLIGATIONS**

The Company periodically enters into long-term contractual agreements for the licensing of technologies as well as the lease of facilities, equipment and certain purchased services. The following table presents commitments arising from agreements currently in force over the next five years:

	 Payments due by Period						
	Within		2-3		4-5		
	1 year		years		years		Total
Facility lease agreements	\$ 80,035	\$	35,605	\$	-	\$	115,640
Accounts payable and accrued liabilities	1,171,323		-		-		1,171,323
Due to related party	1,367,556		-		-		1,367,556
Short-Term Loan	500,000		-		-		500,000
	\$ 3,118,914	\$	35,605	\$	-	\$	3,154,518
Licence maintenance fees (USD)	\$ 10,000	\$	20,000	\$	20,000	\$	50,000

### **GUARANTEES**

The Company periodically enters into research and licence agreements with third parties that include indemnification provisions customary in the industry. These guarantees generally require the Company to compensate the other party for certain damages and costs incurred as a result of claims arising from research and development activities undertaken on behalf of the Company. In some cases, the maximum potential amount of future payments that could be required under these indemnification provisions could be unlimited. These indemnification provisions generally survive termination of the underlying agreement. The nature of the indemnification obligations prevents the Company from making a reasonable estimate of the maximum potential amount it could be required to pay. Historically, the Company has not made any indemnification payments under such agreements and no amount has been accrued in the accompanying financial statements with respect to these indemnification obligations.

### **OFF-STATEMENT OF FINANCIAL POSITION ARRANGEMENTS**

The Company does not have any off-Statement of Financial Position arrangements.



# **Management Discussion and Analysis**

#### **CONTROLS**

As a result of the Company's limited administrative staffing levels, internal controls which rely on segregation of duties in many cases are not appropriate or possible. Due to resource constraints and the present stage of the Company's development, the Company does not have sufficient size and scale to warrant the hiring of additional staff to correct this potential weakness at this time. To help mitigate the impact of this potential weakness, the Company is highly reliant on the performance of compensating procedures and senior management's review and approval.

As a TSX-Venture Exchange issuer, the Company is not required to certify the design and evaluation of the Company's disclosure controls and procedures (DC&P) and internal controls over financial reporting (ICFR), and as such has not completed such an evaluation.

Investors should be aware that inherent limitations on the ability of certifying officers of a venture issuer to design and implement on a cost-effective basis DC&P and ICFR as defined in NI 52-109 may result in additional risks to the quality, reliability, transparency and timeliness of interim and annual filings and other reports provided under securities legislation.

# **CRITICAL ACCOUNTING POLICIES AND ESTIMATES**

The preparation of financial statements in conformity with International Financial Reporting Standards ("IFRS") requires the Company to select from possible alternative accounting principles and to make estimates and assumptions that determine the reported amounts of assets and liabilities at the statement of financial position date and reported costs and expenditures during the reporting period. Management believes that the estimates and assumptions upon which the Company relies are reasonable based upon information available at the time these estimates and assumptions are made. Estimates and assumptions may be revised as new information is acquired and are subject to change.

In addition to the going concern assumption described above, management believes that its most critical accounting policies and estimates relate to the following areas, with reference to notes contained in the accompanying financial statements:

### Research and development costs

The Company's accounting policy over research and development costs may be found in Note 3(f)(i) in the Company's financial statements. Research expenditures are expensed as incurred. Development expenditures are deferred when they meet the criteria for capitalization in accordance with IFRS and the future benefits could be regarded as being reasonably certain. No development expenditures have been capitalized to date and there are no plans to capitalize development expenditures in the foreseeable future. Related Scientific Research & Experimental Development (SR&ED) investment tax credits are accounted for as a reduction to research and development expenditures in the period that they are earned and only to the extent they are refundable. Non-refundable SR&ED investment tax credits are not recorded in the financial statements as there is not assurance at this time there will be sufficient taxable income in the future to utilize those tax credits.

# Patents and trademarks

The Company's accounting policy over patents and trademarks may be found in Notes 3(f)(ii) in the Company's financial statements. Patents and trademarks are reviewed for impairment on an ongoing basis whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If any such indication exists, then the asset's recoverable amount is estimated. An impairment exists when the carrying value of an asset exceeds its recoverable amount, which is the higher of its fair value less costs to sell or its value in use. The fair value less costs to sell calculation is based on available data from observable market prices, less incremental costs. The value in use calculation is based on a discounted cash flow model. These calculations require the use of estimates and forecasts of future cash flows. Qualitative factors, including market size and market growth trends, strength of customer demand and degree of variability in cash flows, as well as other factors, are considered when making assumptions regarding future cash flows and the appropriate discount rate. A change in any of the significant assumptions of estimates used to evaluate the underlying assets could result in a material change to the results of operations.

Impairment losses recognized in prior periods are assessed at each reporting date for any indications that the loss has decreased or no longer exists. An impairment loss is reversed, to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of amortization, if no impairment had been recognized. Write-downs as a result of impairment are recognized in research expense in the statement of comprehensive loss.



**Management Discussion and Analysis** 

# Stock-based compensation

The Company's accounting policy over stock-based compensation may be found in Notes 3(h)(ii) and 12(c) in the Company's financial statements. Where the Company issues warrants and stock options (to its employees, directors and officers), a fair value is derived using the Black-Scholes pricing model. The application of this pricing model requires Management to make assumptions regarding several variables, including the expected life of the options and warrants, the price volatility of the Company's stock over a relevant timeframe, the determination of a relevant risk-free interest rate and an assumption regarding the Company's dividend policy in the future.

A summary of all the Company's significant accounting policies and estimates may be found in Note 3 to the financial statements.