



# CARDIOL

T H E R A P E U T I C S

TSX:CRDL

## THE NEXT GENERATION OF CBD

APRIL 21, 2019

# Disclaimer

In this presentation, all amounts are in Canadian dollars, unless otherwise indicated. Any graphs, tables or other information in this presentation demonstrating the historical performance of Cardiol or any other entity contained in this presentation are intended only to illustrate past performance of such entities and are not necessarily indicative of future performance of Cardiol or such entities.

## FORWARD-LOOKING INFORMATION

This presentation contains forward-looking information, within the meaning of applicable securities laws in Canada, that relate to Cardiol's current expectations and views of future events ("forward-looking information" or "forward-looking statements"). In some cases, these forward looking statements can be identified by words or phrases such as "may", "might", "will", "expect", "anticipate", "estimate", "intend", "plan", "indicate", "seek", "believe", "predict", or "likely", or the negative of these terms, or other similar expressions intended to identify forward-looking information. Statements containing forward-looking information are not historical facts. Cardiol has based these forward-looking statements on its current expectations and projections about future events and financial trends that it believes might affect its financial condition, results of operations, business strategy, and financial needs. These forward-looking statements may include, among other things, statements relating to: our financial position; our business strategy; our growth strategies; our operations; our financial results; our dividend policy; our plans and objectives; our anticipated cash needs, the need for additional financing; our launch, marketing, and sale of a pharmaceutically-produced pure cannabidiol oil as a Cannabis Act product line; the ability for our nanotherapeutics to deliver cannabinoids and other anti-inflammatory drugs to inflamed tissue in the heart; our intention to initiate clinical trials during 2019; our development of proprietary cannabidiol formulations for near-term commercialization; our expectation that we will be in a position to offer an advanced precise dosing sublingual spray form of cannabidiol upon the addition of concentrates to the Cannabis Act by October 17, 2019; the successful development and commercialization of our current product candidates and the addition of future products; our expectation of a significant increase in the market and interest for pure pharmaceutical cannabinoid products; the expected growth in the size of the market for cannabidiol in Canada, the United States, and internationally; our intention to build a pharmaceutical brand and cannabidiol products focused on addressing heart failure; the expected medical benefits, viability, safety, efficacy, and dosing of cannabidiol; patents, including, but not limited to, our ability to have patents issued covering our drugs, drug candidates and processes, as well as oppositions and legal challenges; our expectation of a significant near-term revenue opportunity from the sale of pure cannabidiol products; our competitive position and the regulatory environment in which we operate; and expectations of future results, performance, achievements, prospects, opportunities or the markets in which we operate. In addition, any statements that refer to expectations, intentions, projections or other characterizations of future events or circumstances contain forward-looking information.

Forward-looking statements are based on certain assumptions and analyses made by the Corporation in light of the experience and perception of historical trends, current conditions, and expected future developments and other factors it believes are appropriate, and are subject to risks and uncertainties. Although we believe that the assumptions underlying these statements are reasonable, they may prove to be incorrect, and we cannot assure that actual results will be consistent with these forward looking statements. Given these risks, uncertainties, and assumptions, prospective purchasers of Class A Common Shares ("Common Shares") or share purchase warrants ("Warrants") of Cardiol should not place undue reliance on these forward-looking statements. Whether actual results, performance, or achievements will conform to Cardiol's expectations and predictions is subject to a number of known and unknown risks, uncertainties, assumptions, and other factors, which include: the inherent uncertainty of product development; our requirement for additional financing; our history of losses; dependence on success of the sale of our pharmaceutically-produced pure cannabidiol oil as a Cannabis Act product line and our early-stage product candidates which may not generate revenue; reliance on Management, loss of members of Management or other key personnel, or an inability to attract new Management team members; our ability to develop a sublingual cannabidiol spray form; a delay in the Government of Canada's authorization of cannabis concentrates by October 17, 2019; our ability to successfully design, commence, and complete clinical trials, including the high cost, uncertainty, and delay of clinical trials and additional costs associated with any failed clinical trials; potential negative results from clinical trials and their adverse impacts on our future commercialization efforts; our ability to establish and maintain commercialization organizations in the U.S., Mexico, and elsewhere; our ability to receive and maintain regulatory exclusivities, including Orphan Drug Designations, for our drugs and drug candidates; delays in achievement of projected development goals; management of additional regulatory burdens; volatility in the market price for the Common Shares and Warrants; failure to protect and maintain and the consequential loss of intellectual property rights; third-party claims relating to misappropriation by our employees of their intellectual property; reliance on third parties to conduct and monitor our pre clinical studies and clinical trials; our product candidates being subject to controlled substance laws which may vary from jurisdiction to jurisdiction; changes in laws, regulations, and guidelines relating to our business, including tax and accounting requirements; lack of successful implementation of adequate internal controls over financial reporting; limited experience of our Management team with publicly-traded companies; our reliance on current early-stage research regarding the medical benefits, viability, safety, efficacy, and dosing of cannabinoids; claims for personal injury or death arising from the use of products and product candidates produced by us; uncertainty relating to market acceptance of our product candidates; our lack of experience in commercializing any products; the level of pricing and reimbursement for our products and product candidates, if approved; our dependence on Dalton Chemical Laboratories, Inc. operating as Dalton Pharma Services ("Dalton") and other contract manufacturers; unsuccessful collaborations with third parties; business disruptions affecting third-party suppliers and manufacturers; lack of control in future prices of our product candidates; our lack of experience in selling, marketing, or distributing our products; competition in our industry; our inability to develop new technologies and products and the obsolescence of existing technologies and products; unfavorable publicity or consumer perception towards cannabidiol; product liability claims and product recalls; expansion of our business to other jurisdictions; fraudulent activities of employees, contractors, and consultants; our reliance on key inputs and their related costs; difficulty associated with forecasting demand for products; operating risk and insurance coverage; our inability to manage growth; conflicts of interest among our officers and Directors; managing damage to our reputation and third-party reputational risks; relationships with customers and third-party payors and consequential exposure to applicable anti-kickback, fraud, and abuse and other healthcare laws; exposure to information systems security threats; no dividends for the foreseeable future; future sales of Common Shares by existing shareholders causing the market price for the Common Shares to fall; use of proceeds; and the issuance of Common Shares in the future causing dilution.

If any of these risks or uncertainties materialize, or if assumptions underlying the forward-looking statements prove incorrect, actual results might vary materially from those anticipated in the forward-looking statements.

Information contained in forward-looking statements in this presentation is as of the date of such presentation, and we disclaim any obligation to update any forward-looking statements, whether as a result of new information or future events or results, except to the extent required by applicable securities laws. Accordingly, potential investors should not place undue reliance on forward-looking statements or the information contained in those statements.

## NON-IFRS MEASURES AND INDUSTRY METRICS

This presentation makes reference to certain non-IFRS measures including "EBITDA", and to certain operating metrics in the industry. Non-IFRS measures including industry metrics do not have a standardized meaning prescribed by IFRS and are therefore unlikely to be comparable to similar measures presented by other companies. Rather, these measures are provided as additional information to complement those IFRS measures by providing further understanding of our results of operations from management's perspective. Accordingly, these measures should not be considered in isolation nor as a substitute for analysis of our financial information reported under IFRS. Please refer to our Final Prospectus for further details on these non-IFRS measures including industry metrics, including relevant definitions and reconciliations.

# Who We Are

A biotechnology innovator that believes medicine should work better to improve quality of life for all

# Our Goal

Create the purest and safest CBD therapies in the market, while innovating with new unique drug delivery systems aimed to target heart failure and brain cancer

# Positioned with Strong Growth Drivers



**Pharmaceutical CBD Launch  
2019**



**Scaled Supply of CBD  
(1M grams)**



**Developing Future CBD  
Science**



**Heart Failure Therapies**



**Brain Cancer Solutions**



**International Research  
Partnerships**



**Experienced Executive  
Team**



# Pharmaceutical Product Streams

## Unique CBD therapies with a focus on Heart Failure

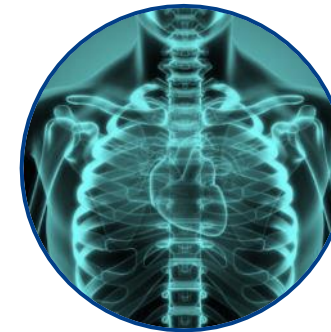
### Pharmaceutical Cannabidiol



**\$1.2 billion medicinal  
CBD market<sup>(2)</sup>**

**2019 CardiolRx Market Launch**

### Heart Failure



**No new therapeutics in diastolic  
heart failure in the past 20 years <sup>(1)</sup>**

**Collaborating with extensive  
research network**

1. Cook et al. International Journal of Cardiology 171, 368–376 (2014)  
2. New Frontier Data

# CardiolRx

Pharmaceutical Commercial CBD



# Synthesizing 'Miracles of Nature' Into Mass Solutions

Some of the world's most coveted medicines started as plant extracts, but became synthesized for global demand



**Willow Bark**



**Aspirin**



# World-Class Partnerships to Meet Global Demand

Providing unparalleled access to metric tonne quantities of pharmaceutically-manufactured pure CBD



**Global leader in the manufacture and supply of controlled drug substance APIs**

- Cardiol has an exclusive agreement for the manufacture and supply of pure pharmaceutical cannabidiol in Canada and Mexico



**A Health Canada-approved, FDA-registered, cGMP manufacturer of pharmaceutical cannabinoids**

- Cardiol has an exclusive global manufacturing agreement with Dalton for the supply of pharmaceutical cannabidiol for commercial introduction



# A Shortage of CBD as Demand Exceeds Supply

## Current Issues



Medical cannabis users anxious over supply shortages



financialpost.com

Canada's cannabis shortage is so severe retailers watch 24/7 for chance to scoop up fresh supply

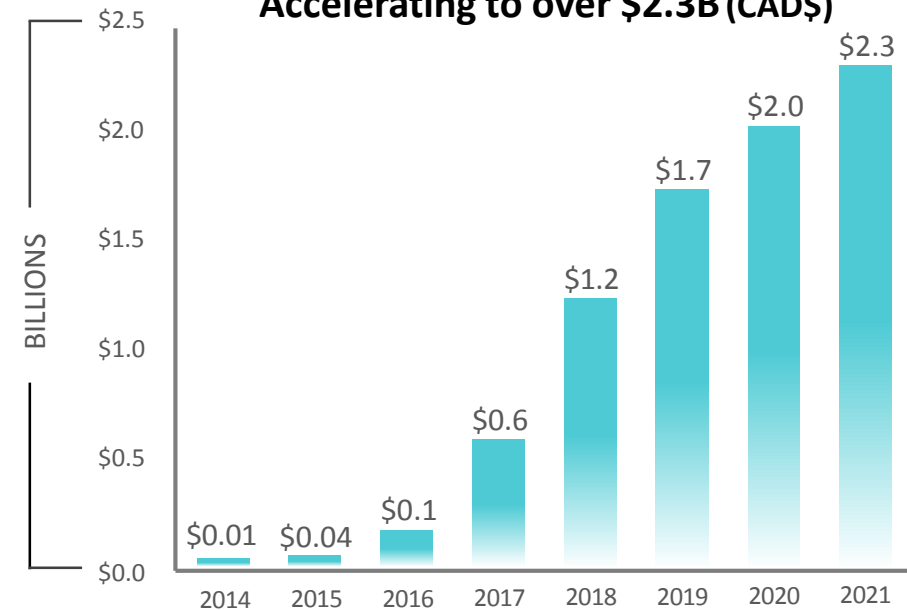


"Supply is a challenge": Half of Cannabis NB stores closed on Monday morning due to cannabis shortages

## Future Demand



**CBD Market Set to Take Off**  
Canadian Medical Market  
Accelerating to over \$2.3B (CAD\$)

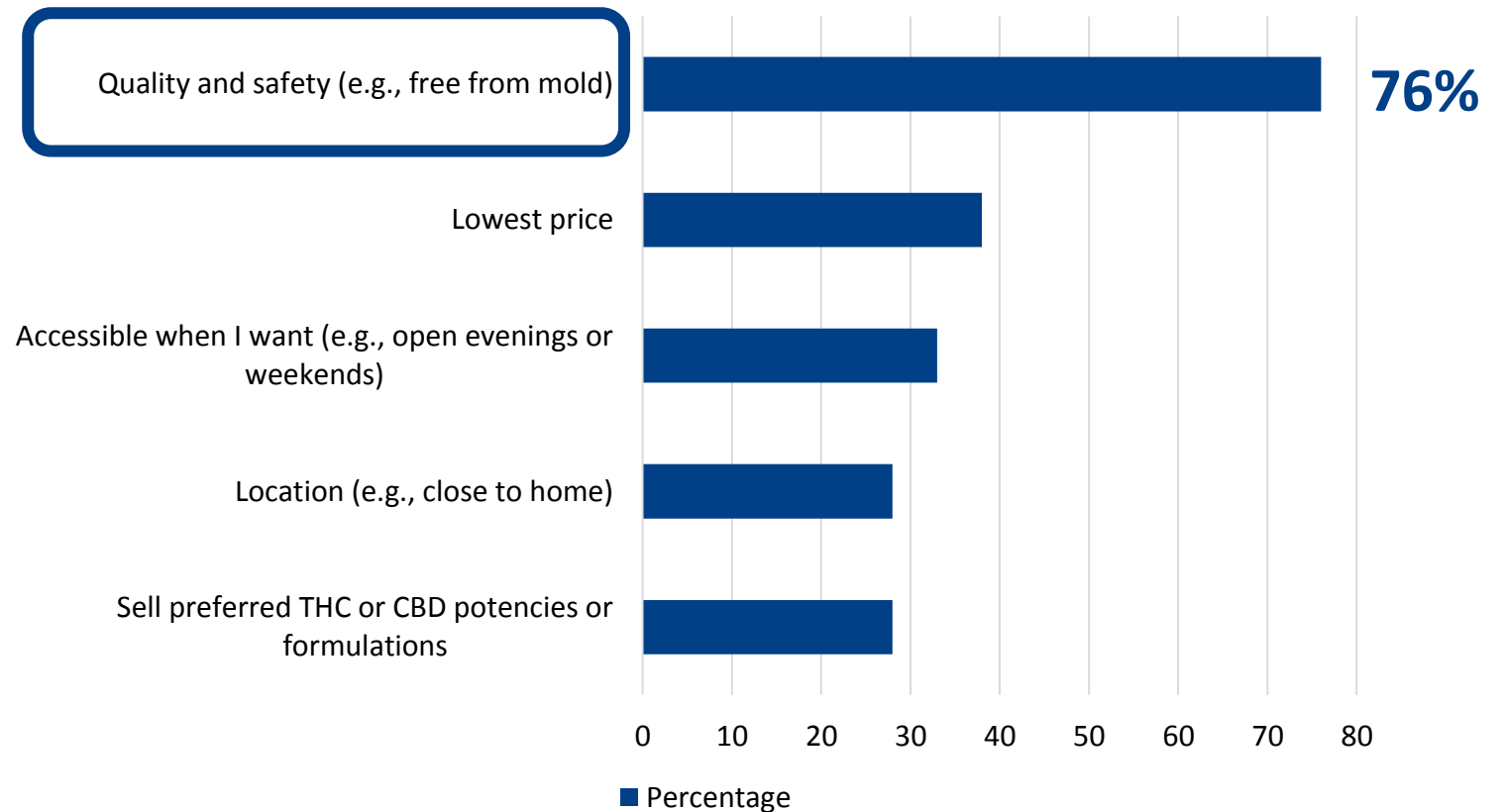


Source: New Frontier Data and StatsCan

# The #1 Consumer Need is Quality and Safety in Selecting a CBD Source

Statistics Canada  
Consumer Survey

Leading purchase considerations for Cannabis<sup>(1)</sup>

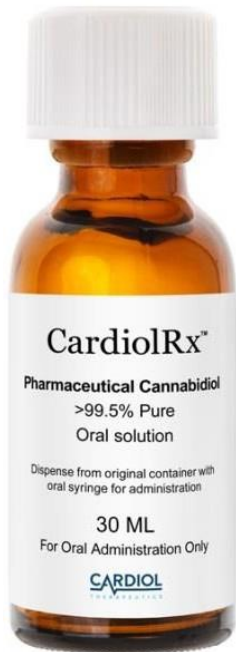


(1) Statistics Canada: National Cannabis Survey, Q4, 2018

# The CardiolRx Advantage

Setting a higher product standard for patients and doctors

The Purest, Highest Quality, and Safest CBD



**Pure**

**Pharmaceutically  
Consistent with  
every dose**

**GMP  
Certified**

**Highest  
Manufacturing  
Standards**

**Tasteless  
&  
Odorless**

**Ease of  
Application**

**THC  
Free**

**No Psychoactive  
side effects**

# CardiolRx: Launching Two Dosage Forms

THC-free CardiolRx Delivers Unique Benefits at a Premium Price

50  
mg/ml CBD



100  
mg/ml CBD



# How CardiolRx is Sold to the Consumer

## The Targets



Consumers  
Looking for Health  
Solutions



18,000 +  
Physicians  
Prescribing  
Cannabis



## The Promotion



Driving Awareness by:

- Physician Advertising
- Pharmacist Awareness
- Event Sponsorship
- Consumer Digital
- Insurance Companies



## The Benefit



Reasons to Prescribe

- THC Free
- GMP Certified
- Purity and Consistency



## The Prescription



Consumer Receives  
Prescription  
from Physician



## The Sale



Consumer Goes On-line  
to order from:

1. Drug Retailer Website
  2. Cardiol Website
- Shipped Direct to  
Consumer



# Future International Expansion Opportunities



## Europe

- In next 10 years, Medical Cannabis Market estimated to be over \$60B\*
- 32 countries have legalized CBD
- In many countries including the UK and Germany, CBD is currently being sold as an Over-the-counter Product

\* [www.healtheuropa.eu](http://www.healtheuropa.eu)



## Latin America

- Market estimated at \$2.5B for CBD by 2026\*\*
- Since June 2017, CBD with THC below 1% has been allowed in Mexico
- In selected countries CBD is being sold as an Over-the-counter Product in pharmacy stores

\*\* [www.foodnavigator-latam.com](http://www.foodnavigator-latam.com)



# Heart Failure

Mass Market Potential

# The Opportunity:

## Heart Failure Market is the most significant cost to Healthcare



- **Over 6 million adults** in Canada and the U.S. suffer from heart failure <sup>(1)</sup>
- **About half of all Heart Failure** patients suffer from Diastolic heart failure
- **30% of patients with Heart Failure die within 1 year, 50% within 5 years** <sup>(2)</sup>
- **Leading cause of hospitalization** with health-care costs exceeding \$30+ billion annually in U.S.<sup>(3)</sup>

## No significant treatment advances in Diastolic Heart Failure in over 20 years

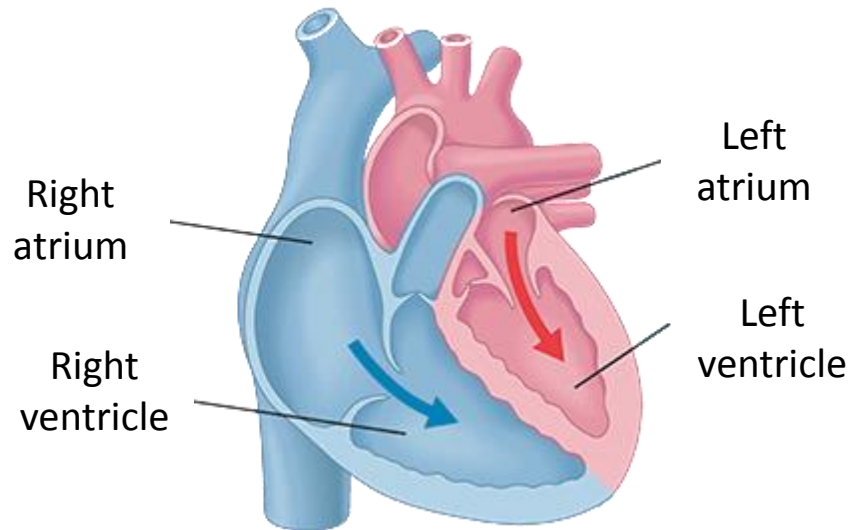
(1) Blair et al. Current Cardiology Reviews 9, 128–146 (2013).  
(2) Taylor et al. European Journal of Heart Failure 14, 176–184 (2012).  
(3) Cook et al. International Journal of Cardiology 171, 368–376 (2014).



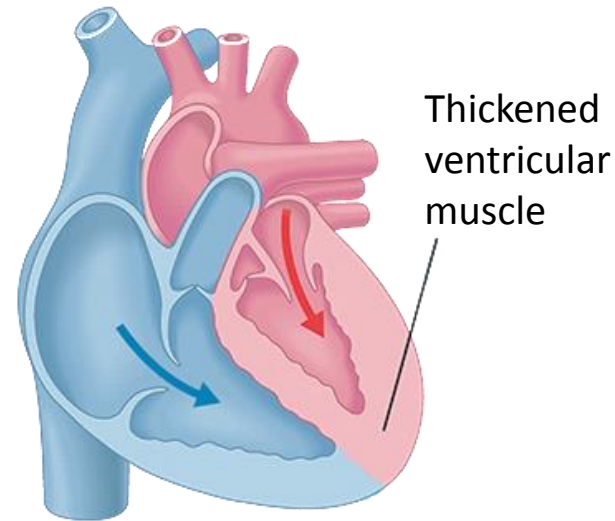
# The Issue:

## Overview of Diastolic Heart Failure

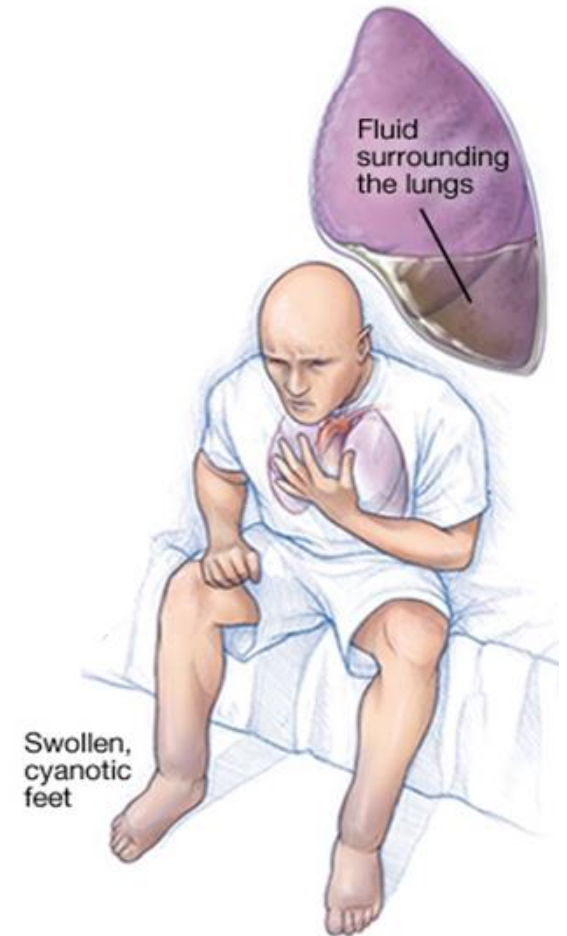
Occurs when the heart fails to relax normally and fill with blood that is required to oxygenate tissues of the body



Healthy Heart



Diastolic Heart Failure



# The Research:

Partnering with the University of Alberta, one of North America's top Nanotechnology Centers

Cardiol's research program at the University of Alberta is:

- focused on development of proprietary nanoformulations of anti-inflammatory and anti-fibrotic drugs
- designed to improve pharmacokinetics and target drugs to sites of disease



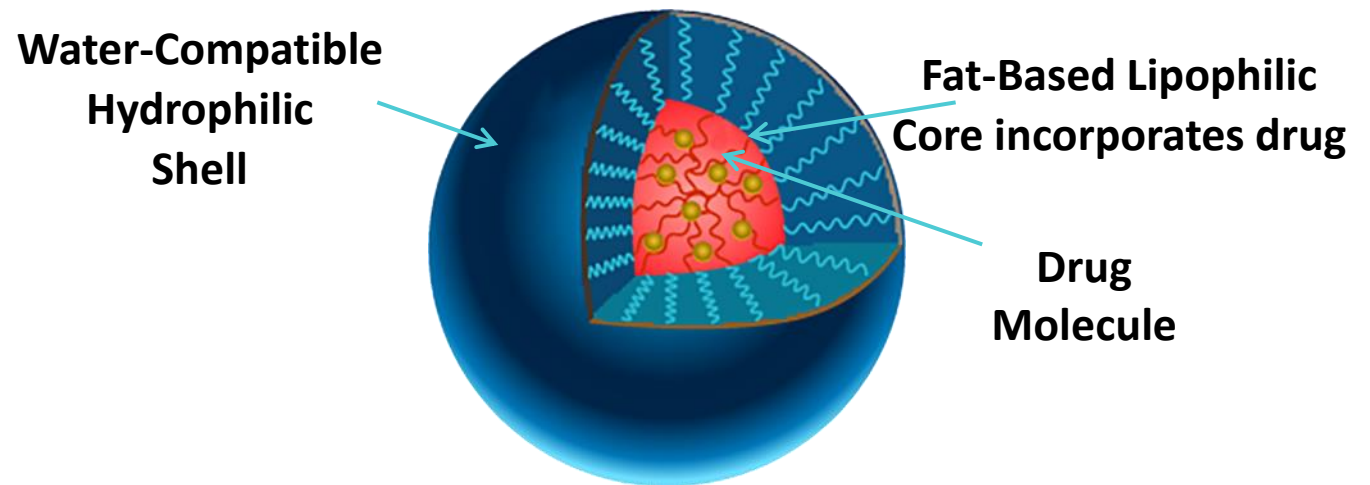
# The Solution:

Cardiol's Patented Nanotechnology is designed to improve drug formulation and drug delivery to the heart

## How Cardiol's Nanostructure works:

- Many drugs including CBD, are not soluble in water – only in oils and fats
- Cardiol's nanostructure surrounds the drug with a water-compatible shell
- The drug then circulates more effectively in the blood (which is like water)
- And can more effectively target drugs to sites of disease

## Cardiol's Nanotechnology



# The Research:

**DeBakey Heart & Vascular Center, a world leader in heart treatment and home of North America's first heart transplant**

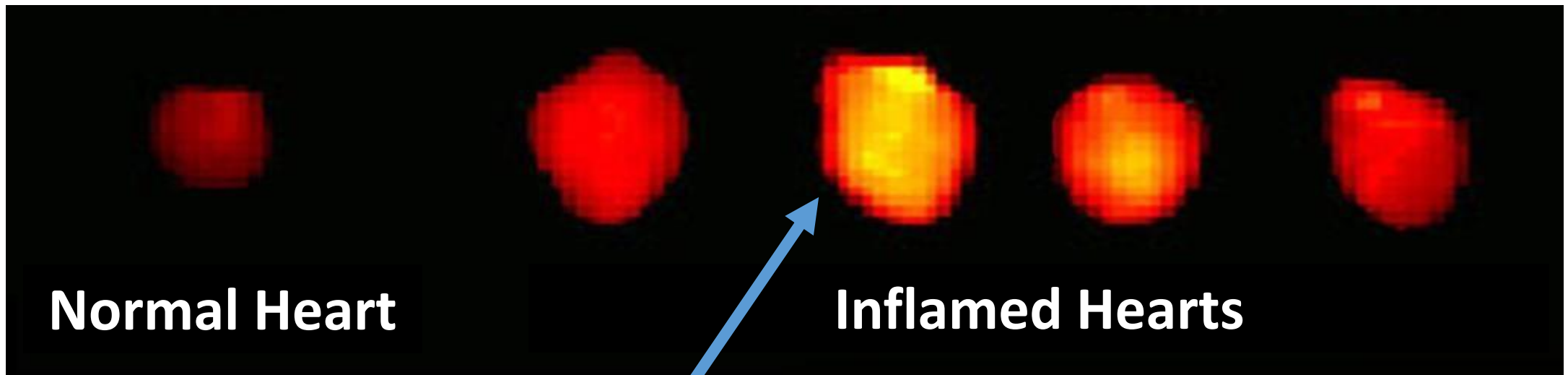
Cardiol is working with the DeBakey Center to conduct experimental research to investigate the activity of the Company's proprietary nanotechnology in models of heart failure



# The Findings:

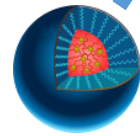
Cardiol's nanotechnology targets the Failing Heart and delivers drugs to the site of Inflammation

**Experimental Model of Heart Failure**  
*Houston Methodist DeBakey Heart & Vascular Center*



**Normal Heart**

**Inflamed Hearts**



**Cardiol nanoparticles (in orange/yellow)  
are delivered to the inflamed heart**

# The Research to Support Clinical Trials in Heart Failure: TecSalud del Tecnológico de Monterrey, Latin America's Largest Private Research Network

Cardiol is working with TecSalud to develop the scientific background to support clinical trials.

TecSalud is also collaborating with leading heart centers, such as the Houston Methodist DeBakey Heart & Vascular Center, and has an agreement with the Massachusetts Institute of Technology (MIT) to promote research and development in nanotechnology.



# The Product:

## CTX01 – Proprietary Pharmaceutical CANNABIDIOL

- Nanotherapeutics designed to deliver pharmaceuticals to the Heart
- Cannabidiol has anti-inflammatory and anti-fibrotic properties
- Evidence of safety and efficacy in numerous clinical trials



Also developing proprietary formulations of Cyclosporine A and Methotrexate



# 2019 Corporate Milestones

**1. Distribution Agreements:** announce distribution agreements for sale of CardiolRx in Canada

**2. Launch CardiolRx in H2 2019** setting new industry standards for product purity and consistency

**3. Heart Failure Clinical Development:** advance clinical program designed to demonstrate impact of CardiolRx and CTX formulations on inflammatory heart disease

**4. International Expansion:** develop global expansion plans in Europe and Latin America for CardiolRx





# Experienced Management Team



**David Elsley, MBA**

**President and CEO**

Founder and former President and CEO of Vasogen Inc.; 25 years of experience developing, financing, and managing corporate development of biotech and high-growth organizations.



**Anthony E. Bolton, PhD, DSc**

**Director of Research**

Immunologist with 20+ years of experience in biotech; former Chief Scientific Officer of Vasogen Inc.; former Professor and Department Head of Biomedical Sciences (Sheffield, UK).



**Eldon R. Smith, OC, LL.D (Hon), MD, FCAHS, FCCS, FRCPC**

**Chairman and Chief Medical Officer**

Cardiologist; former Head of Cardiology, former Chairman of Medicine, former Dean of Medicine, University of Calgary; Chair Steering Committee, Canadian Heart Health Strategy; recipient of Order of Canada.



**Anne Tomalin, BA, BSc, RAC**

**Director of Regulatory Affairs**

Founder of CanReg Inc. and TPIreg, regulatory firms previously sold to Optum Insight and Innomar Strategies, respectively. An expert in regulatory affairs in Canada, United States, and Europe.



**Thomas Moffat, BBA**

**Chief Commercial Officer**

Senior operations and retailing executive with an extensive background in the pharmaceutical environment; more than 20 years tenure at Shoppers Drug Mart.



**Dolly Kao, BSc, JD**

**Intellectual Property Counsel**

Co-Founder of PCK LLP. Highly-experienced IP lawyer with a practice focused primarily on patent and trademark matters (procurement, oppositions, and opinions) for clients in the chemical, pharmaceutical, and biotechnology industries.



**Blagoja Ristevski, BSc**

**Director of Chemical Engineering and Manufacturing**

Chemical Engineer, 25+ years' experience in the biopharmaceutical industry, senior executive roles in eight Canadian biopharmaceutical companies in the research/discovery of drug products; VP Product Development, AMRIC Institute, Ontario, Canada.



**Chris Waddick, CPA, MBA**

**Chief Financial Officer**

Thirty years of experience in financial and executive roles in the biotechnology and energy industries, former Chief Financial Officer and Chief Operating Officer of Vasogen Inc.

# Strong Board of Directors



**Eldon R. Smith, OC, LLD (Hon), MD, FCAHS, FCCS, FRCPC**

**Chairman and Chief Medical Officer**

Cardiologist; former Head of Cardiology, former Chairman of Medicine, former Dean of Medicine, University of Calgary; Chair Steering Committee, Canadian Heart Health Strategy; recipient of Order of Canada.



**Guillermo Torre-Amione, MD, PhD**

**President of TecSalud Academic Medical Center**

President of TecSalud academic medical center and school of the Instituto Tecnológico y de Estudios Superiores de Monterrey (ITESM), Mexico. Former director of Cardiac Transplantation at the Houston Methodist DeBakey Heart & Vascular Center.



**Peter Pekos, BSc, MSc**

**President, CEO, and Founder of Dalton Pharma Services**

Broad experience in the research, development, and commercialization of pharmaceuticals, products, and services.



**Iain Chalmers, BA, BEd, MBA**

**Strategic Marketing and Innovation**

Professor of Marketing at Centennial College Business School. Former Vice-President Marketing and Innovation at Diageo, the world's largest spirits company. Over 25 years' experience in consumer products with Gillette and Proctor and Gamble.



**David Elsley, MBA**

**President and CEO**

Founder and former President and CEO of Vasogen Inc., with 25 years experience developing, financing, and managing all aspects of corporate development of biotechnology and high-growth organizations.



**Deborah Brown, BSc, MBA**

**Partner at Accelera Canada**

Advised pharmaceutical clients on strategy and initiatives, market research, market access, and regulatory affairs for many years. Previously President, EMD Serono Canada (division of Merck KGaA, Merck Serono).



**Terry Lynch, BBA (Hon)**

**Chairman, Chilean Metals Inc.**

Founder of Pallet, Pallet, Inc. and Partner with Kingsmill Capital. Entrepreneur with extensive experience and expertise in financing the development of new technologies.

# International Scientific Advisory Board



**James Young, MD**

Chief Academic Officer at the Cleveland Clinic. Professor of Medicine and former Executive Dean of the Cleveland Clinic Lerner College of Medicine of Case Reserve University. Co-founder of the Kaufman Center for Heart Failure, Heart & Vascular Institute, and holds the George and Linda Kaufman Chair. Dr. Young is certified as Diplomate of the American Board of Internal Medicine and subspecialties of Cardiovascular Disease and Advanced Heart Failure and Transplant Cardiology. He has participated in more than 150 clinical trials, and published almost 600 manuscripts and several textbooks.



**Jonathan Howlett, MD, FRCPC, FACC**

Clinical Professor of Medicine at University of Calgary, at the Foothills Medical Centre and Director of Heart Failure. Currently doing clinical research in heart failure, evaluation of health care delivery. Chair of the Canadian Cardiovascular Society Heart Failure Guidelines Primary Panel, co-Chair of the CCS Heart Failure Workshop Initiative, and a member of the recent Canadian Heart Health Strategy initiative. Created over 80 abstract presentations and over 70 peer-reviewed articles published or in press.



**Afsaneh Lavasanifar, PharmD, PhD**

Professor in the Pharmaceutical Sciences division of the faculty of Pharmacy and Pharmaceutical Sciences, University of Alberta. Recognized expert in pharmaceuticals and drug delivery. Her research is on the design and development of polymer-based delivery systems that can increase the efficacy of different therapeutic agents. She has more than 120 peer-reviewed published/in press manuscripts and named inventor on five patent applications on novel polymer-based formulations for drug and siRNA delivery.



**Graham Pockley, PhD**

Professor of Immunobiology & Director of the John van Geest Cancer Research Centre at Nottingham Trent University, UK. Previously, directed the experimental transplantation program in the Professorial Surgical Unit at the Medical College of St. Bartholomew's Hospital, London, and later was appointed Professor of Immuno-biology at the University of Sheffield where he retains an Honorary Professorship in the Dept. of Oncology; research focus is the development of innovative therapeutics and diagnostics in the area of immuno-oncology, and he has over 170 peer-reviewed publications.

Full bios available at: <https://www.cardiolrx.com/about-us/scientific-advisory-board/>

# Capital Structure

## Ownership by pharmaceutical partners and research collaborators

### TSX: CRDL

Common Shares Outstanding	25.9 M
Fully Diluted Common Shares <sup>(1),(2),(3),(4)</sup>	33.0 M
Insider & Employee Ownership	33%
Pharmaceutical Partners and Research Collaborators Ownership, Excluding Insiders	8%

Cash and Cash Equivalents as at 31 December, 2018	\$ 16.7 M
Working Capital as at 31 December, 2018 <sup>(5)</sup>	\$ 21.9 M
Current Debt	\$ 0.0 M

(1) Includes 1,415,000 options outstanding with exercise prices ranging from \$4.30 to \$5.77, of which 370,000 are exercisable.

(2) Includes 3,509,576 warrants outstanding with exercise prices ranging from \$5.00 to \$6.50.

(3) Includes 824,000 warrants outstanding with an exercise price of \$4.00, payment of which is settled through a USD\$3.0 M research contract.

(4) Includes 1,420,000 common shares potentially issuable in relation to clinical trial related milestones for future research services to be delivered.

(5) Includes \$6.3 M of prepaid inventory.

# Positioned with Strong Growth Drivers



Pharmaceutical CBD Launch  
2019



Scaled Supply of CBD  
(1M grams)



Developing Future CBD  
Science



Heart Failure Therapies



Brain Cancer Solutions



International Research  
Partnerships



Experienced Executive  
Team





CARDIOL

THERAPEUTICS

TSX:CRDL

THE NEXT GENERATION OF CBD