A clinical stage biopharmaceutical company developing and commercializing a portfolio of novel therapeutic candidates targeting the endocannabinoid system

OTCQB: ARTL
Forward Looking Statements

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It is important to note that actual outcomes and results could differ materially from those in such statements due to numerous factors beyond the Company’s control including misinterpretation of data, inaccurate estimates of timelines, uncertainty of the requirements demanded by governmental agencies, Company's ability to raise financing, breach by third-parties, inability to retain employees/consultants, competition for equipment, inability to obtain permits, delays in operations, problems with licensing agreements, the likelihood that no commercial markets exist for our products, and our ability to develop products.

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Company Highlights

NOVEL DRUG PIPELINE
Portfolio approach to endocannabinoid system modulation provides multiple “shots on goal”
Developing best-in-class therapeutics from leading edge science

ROBUST PATENT ESTATE
Comprehensive issued and pending intellectual property
Broad claims assure meaningful market exclusivity

NEAR-TERM MILESTONES
Upcoming IP, pre-clinical milestones and initiation of clinical studies over the next 12 months

HIGH-GROWTH SECTOR
Cannabis-based Pharmaceutical Market is expected to surpass $20 billion by 2020

PROVEN LEADERSHIP TEAM
Experienced team of pharmaceutical executives and cannabinoid researchers with proven track records developing and commercializing federally regulated drugs
Using Endocannabinoid System (ECS) Modulation to Improve Health

The ECS is a family of receptors and neurotransmitters that form a biochemical communication network throughout the body

- Primary receptors of the ECS are CB$_1$ and CB$_2$
- Receptors located in the central and peripheral nervous systems
- Endocannabinoids and cannabinoids can penetrate the blood-brain barrier
- The ECS is involved in regulating a variety of physiological and cognitive processes
- Emerging science suggests ECS modulation may be relevant to multiple diseases and medical conditions

The ECS is widely distributed throughout the human body.
Three Primary Approaches to Modulating the ECS

Modulating the ECS can be accomplished through several treatment strategies:

- Naturally occurring cannabinoids are chemical compounds that exist in nature.
- Synthetic cannabinoids are small molecules with cannabinoid-like activities.
- Endocannabinoid modulators are molecules that aim to regulate the cannabinoids produced in the body.
# Development Pipeline

<table>
<thead>
<tr>
<th>Product Candidate</th>
<th>Pre-clinical</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Expected Milestones</th>
</tr>
</thead>
</table>
| **ART 27.13**  
Dual CB₁/CB₂ Agonist | Anorexia / Cachexia  
Anti-Cancer | | | Start Phase 1b/2a study in anorexia associated with cancer in 2019  
Cancer cell line screen data readout Q3 2018 |
| **ART 12.11**  
Proprietary Cannabidiol (CBD) | Inflammatory Bowel  
Rare Diseases | | | Planning pre-IND meeting with FDA to initiate human studies  
Patent issues in 2019 |
| **ART 26.12**  
FABP5 Inhibitor | Prostate Cancer  
Breast Cancer | | | Initiate IND-enabling studies in 2019 |
# Patent Estate Offers Significant Market Exclusivity Potential

<table>
<thead>
<tr>
<th>Product Candidate</th>
<th>Patents</th>
<th>Term</th>
<th>Potential Addressable Market*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART 27.13</td>
<td>Multiple issued patents in US and ex-US covering composition of matter</td>
<td>NOV 2025</td>
<td>Anorexia: 60% of people treated for cancer</td>
</tr>
<tr>
<td>Dual CB&lt;sub&gt;1&lt;/sub&gt;/CB&lt;sub&gt;2&lt;/sub&gt; Agonist</td>
<td>Potential extension through MAY 2031</td>
<td>Lung cancer: $6.2B (target market will depend upon readout of pre-clinical evidence)</td>
<td></td>
</tr>
<tr>
<td>ART 12.11</td>
<td>Composition of matter patent application with broad claims</td>
<td>Patent pending (expecting to be issued in 2019)</td>
<td>IBD (Crohn’s and Colitis): $9B</td>
</tr>
<tr>
<td>Proprietary Cannabidiol (CBD)</td>
<td>Product by process application</td>
<td>Planned filing in 2H 2018</td>
<td>Stroke: $4B</td>
</tr>
<tr>
<td>ART 26.12</td>
<td>Multiple issued and pending applications</td>
<td>Applications filed during 2009 through 2017</td>
<td>Breast Cancer $13B</td>
</tr>
<tr>
<td>FABP5 Inhibitor</td>
<td>Covers the target, composition of matter, and utility claims</td>
<td></td>
<td>Prostate Cancer $8.2B</td>
</tr>
</tbody>
</table>

*Global therapeutics market based upon total annual Rx sales or treatable population in 2016 (unless otherwise specified). References on file and available upon request.
ART 12.11
PROPRIETARY COCRYSTAL CBD PROGRAM
CBD’s Protection Challenge for Pharmaceutical Development

- CBD was FDA approved in June 2018
- The US CBD market is projected to approach $3B in 2021*
- CBD is in the public domain
- Market exclusivity strategies used by others
  - Delivery method (proprietary patch, spray, ointment, chewing gum, etc.)
  - Derivative manipulation (change the molecule to create new chemical entity)
  - Development in a narrow disease (Orphan Drug protection and discrete use patents)
- Artelo’s solution: based upon **cocrystalization**; a well-developed and established pharmaceutical strategy
- A pharmaceutical cocrystal of CBD offers Artelo the exclusive opportunity to:
  - 1) Develop a cannabidiol-based drug product with the potential for improved safety and efficacy
  - 2) Establish a strong proprietary position as cocrystals are viewed as patentable subject matter
- In 2017, Artelo filed a patent application for ART12.11 with broad claims
- Artelo currently conducting IND-enabling studies and planning to discuss with FDA a pathway to approval

ART12.11 Cannabidiol (CBD) Cocrystal: The Same and Different

**The Same** - US FDA perspective: Cocrystals can be engineered to enhance bioavailability, stability and improve chemical processing. Essentially, they can be viewed as a new polymorph of the Active Pharmaceutical Ingredient and the same pharmacologically.

**Different** - US Patent Office perspective: Cocrystals can be new and distinct solid state forms that satisfy the requirements for novelty, utility and non-obviousness for a composition of matter claim. Distinct pharmaceutically.

<table>
<thead>
<tr>
<th></th>
<th>Isolated from Nature</th>
<th>Synthetically Created</th>
<th>ART12.11 Cocrystal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CBD - Active Pharmaceutical Ingredient</strong></td>
<td><img src="image" alt="CBD structure" /></td>
<td><img src="image" alt="CBD structure" /></td>
<td><img src="image" alt="CBD structure" /></td>
</tr>
<tr>
<td><strong>Composition of Matter Patent Protection</strong></td>
<td>None</td>
<td>None</td>
<td>Pending</td>
</tr>
<tr>
<td><strong>Problematic Polymorphism</strong></td>
<td>Inherent</td>
<td>Inherent</td>
<td>None identified (single polymorph)</td>
</tr>
<tr>
<td><strong>Expected Superiority</strong></td>
<td>Natural</td>
<td>Purity</td>
<td>Improved stability Consistency in absorption Increased safety / efficacy</td>
</tr>
</tbody>
</table>
ART 27.13
CANCER / ANOREXIA CLINICAL PROGRAM
ART27.13 – Cannabinoid Agonist that Targets the Body not the Brain

- Peripherally restricted, highly-potent, synthetic agonist that enables systemic metabolic effects while minimizing CNS mediated toxicity

- Compelling development profile established in five well-controlled clinical studies

- Artelo is planning for the next clinical study in cancer patients with anorexia

- Upside potential from direct anti-cancer activity also being evaluated in pre-clinical studies

ART27.13 - Established Clinical Profile with Potential in Anorexia and Cancer

- Dose-related weight gain observed in Phase 1 trials
- Desired activity (weight gain) observed with AE profile similar to placebo
- Weight loss among most common side effects of cancer treatment
- Artelo to initiate Phase 1b/2a in anorexia (loss of appetite) associated with cancer in 2019
- Cannabinoid agonists show anti-proliferative potential for multiple cancers based on established sensitivities
  - Application for multiple potential cancers based on sensitivity to cannabinoids, including breast, lung, skin, prostate, blood cancers, and pancreatic
  - Preclinical studies show activation of $\text{CB}_1$ and $\text{CB}_2$ leads to tumor shrinkage, cell killing and reduction in metastasis
  - Artelo currently conducting cell line screening to determine best tumor candidate for a clinical study in 2019
Multiple ascending dose (MAD) clinical study results over **12 days**

- **25%** of subjects gained **3%** or greater of baseline body weight
- Acceptable side effect profile at the intended **low dose** (125-250 μg)

**Observed slope is significantly different from flat line (p=0.0001).**

**Side effect profile of ART27.13 (MAD study) at intended dose**

<table>
<thead>
<tr>
<th>Side effects</th>
<th>Placebo</th>
<th>ART27.13 250 μg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
<td>91%</td>
<td>89%</td>
</tr>
<tr>
<td>Moderate</td>
<td>9%</td>
<td>10%</td>
</tr>
<tr>
<td>Severe</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td># AEs/subjects</td>
<td>121/10</td>
<td>169/8</td>
</tr>
</tbody>
</table>

Source: Data on file
• FABP5 is an intra-cellular protein that serves as a carrier for certain lipids, including endocannabinoids and fatty acids

• ART26.12 is a small molecule FABP5 inhibitor developed at Stony Brook University and exclusively licensed to Artelo that has the potential to treat an array of disorders

• Inhibition of FABP5 suppresses the growth and migration of breast and prostate cancers

• Working with the team at Stony Brook, Artelo plans to be ready to initiate IND-enabling studies in 2019
FABP5 Inhibitor Decreases Tumor Growth in Prostate Cancer Model

Artelo’s Portfolio Approach to Modulating the ECS

Artelo is developing a portfolio of product candidates designed to modulate the ECS with the potential of best-in-class compounds in each therapeutic strategy.

<table>
<thead>
<tr>
<th>COMPANY</th>
<th>METHODOLOGY</th>
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<tbody>
<tr>
<td>Artelo Biosciences</td>
<td>🟠 🟣 🟡</td>
</tr>
<tr>
<td>GW Pharmaceuticals</td>
<td>🟡</td>
</tr>
<tr>
<td>SpringWorks (Pfizer)</td>
<td>🟡</td>
</tr>
<tr>
<td>Corbus Therapeutics</td>
<td>🟠</td>
</tr>
<tr>
<td>Zynerba Pharmaceuticals</td>
<td>🟡</td>
</tr>
<tr>
<td>Janssen</td>
<td>🟡</td>
</tr>
<tr>
<td>Arena Pharmaceuticals</td>
<td>🟠</td>
</tr>
</tbody>
</table>
Building Shareholder Value

Creating Value with Potential Best-in-Class Therapeutics

Our novel programs, patent portfolio, and proven team are the foundation for significant value creation in a high-growth sector.
Proven Leadership

EXECUTIVE MANAGEMENT

GREGORY GORGAS
President & CEO, Director
Biogen Idec, Chiron, Cetus, Upjohn

STEVEN D. REICH, MD
Chief Medical Officer
Pfizer, Ligand, Biogen, PAREXEL

PETER O’BRIEN
SVP, European Operations, Director
HSBC, Driver & Labour Recruit, Nursing Station

BOARD OF DIRECTORS

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Compensation Committee Chair
Carisma, Theracrine, Amgen, IDEC, Sanofi

DOUGLAS BLAYNEY, MD
ASCO President, Stanford Cancer Center,
University of Michigan, NCI

GEORGIA ERBEZ
Audit Committee Chair
Jefferies, Cowen, H&Q, Raptor Pharmaceuticals

R. MARTIN EMANUELE, PhD
DuPont, Avanir, DaVita

SCIENTIFIC COLLABORATORS

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Cannabinoid Research Expert

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UK Pharmacist, AstraZeneca

STEVE LAVIOLETTE, PhD
University of Western Ontario, Canada
### Company Capitalization

<table>
<thead>
<tr>
<th>Markets: Symbol</th>
<th>OTCQB: ARTL</th>
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<tbody>
<tr>
<td>Market Cap (1)</td>
<td>USD $14.3M</td>
</tr>
<tr>
<td>Shares Outstanding (2)</td>
<td>12,781,195</td>
</tr>
<tr>
<td>Warrants (2)</td>
<td>3,261,195</td>
</tr>
<tr>
<td>Options (2)</td>
<td>None</td>
</tr>
<tr>
<td>Restricted Stock (2)</td>
<td>520,000</td>
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<tr>
<td>Fully Diluted (2)</td>
<td>16,562,390</td>
</tr>
</tbody>
</table>

(1) May 15, 2018  
(2) May 11, 2018  
(3) February 28, 2018

### Investor Contact

**Ioana Hone**  
**Investor Relations / Corporate Communications**  
**Office:** 760-943-1689  
**Email:** ir@artelobio.com

Note: S-1 Registration was made effective for selling stockholders May 30, 2018
# Achieved & Near-Term Anticipated Milestones

<table>
<thead>
<tr>
<th>EVENT</th>
<th>EXPECTED TIMING</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART12.11 Discovered cocystal and filed patent application</td>
<td>✔</td>
</tr>
<tr>
<td>ART26.12 Obtained world-wide exclusive license to FABP5 target and compounds</td>
<td>✔</td>
</tr>
<tr>
<td>Steven D. Reich, MD appointed Chief Medical Officer</td>
<td>✔</td>
</tr>
<tr>
<td>ART27.13 Cancer cell line screening results</td>
<td>Q3 2018</td>
</tr>
<tr>
<td>ART12.11 Pre-IND meeting with FDA</td>
<td>Q4 2018</td>
</tr>
<tr>
<td>ART12.11 Composition of Matter patent issues</td>
<td>Q2/Q3 2019</td>
</tr>
<tr>
<td>ART27.13 Exercise option to full license</td>
<td>Q1 2019</td>
</tr>
<tr>
<td>ART27.13 Initiate clinical study in anorexia associated with cancer</td>
<td>2H 2019</td>
</tr>
<tr>
<td>ART26.12 Begin IND-enabling studies</td>
<td>2H 2019</td>
</tr>
</tbody>
</table>
**Investment Summary**

**Three novel programs**
- Developing best-in-class therapeutics from leading edge science
- Portfolio approach to endocannabinoid system (ECS) modulation provides multiple “shots on goal”

**High-growth sector**
- Cannabis Biotech/Pharma Market is expected to surpass $20 billion by 2020
- Premium pricing potential within regulated and protected pharmaceutical market

**Near-term catalysts**
- Pre-clinical development milestones and initiation of clinical studies in 2019

**Robust patent estate**
- Comprehensive issued and pending intellectual property
- Broad claims assure meaningful market exclusivity

**Proven leadership team**
- Unmatched combination of deep scientific insights, discovery research, and clinical experience
- Led by recognized experts in regulated drug development and global commercial management
Cannabidiol’s Inherent Polymorphism Challenge for Drug Development

- Polymorphism in pharmaceuticals refers to the ability of a solid material to exist in two or more crystalline forms
- Polymorphic forms typically differ in their physicochemical properties and exhibit differences in pharmacological properties including absorption rate and overall bioavailability
- “Polymorphism can affect the quality, safety, and efficacy of the drug product.” (1)
- A drug based on a specific polymorphic form or with reduced polymorphism is likely to have an improved safety and efficacy profile

(1) Andre S. Raw, Director - Division of Chemistry I FDA-CDER-Office of Generic Drugs Regulatory Consideration on Pharmaceutical Solids: Polymorphs / Salts and Cocrystals

Cannabidiol revisited: T. Mayr, T. Grassl, N. Korber, a V. Christoffelb and M. Bodensteinerc, IUCrData (2017), 2, x170276
https://doi.org/10.1107/S2414314617002760
ART 12.11 and Native CBD Compared Using X-Ray Pattern Diffraction

Cocrystal shows distinct pattern compared to native CBD indicating a new polymorph, while pharmacologically remaining CBD.
Multiple cannabinoid agonists are already approved in the US and some other major markets for the treatment of nausea and vomiting related to cancer chemotherapy.

Clinical studies with cannabinoid agonists have evaluated the potential for cannabinoids to be used for anorexia and cachexia associated with cancer.

1500 peer review articles demonstrated anti-tumor effects of cannabinoids in multiple different cancer types.

Potential for Cannabinoid Agonists for Anorexia and Cancer

- Litigation CB₁ and/or CB₂ directed anti-tumor activity demonstrated in 1) ex-vivo, 2) in-vitro, 3) in-vivo, 4) human epidemiology 5) human clinical data.
- Future Estimates for total worldwide sales in cancer types obtained from Developments in Cancer Treatments, Market Dynamics, Patient Access and Value Global Oncology Trend Report 2015 IMS.
History of ART 27.13

2005

**AZD1940**
- Developed at AstraZeneca: AZN (NYSE)
- 5 clinical trials conducted in pain
- Administered orally in 205 humans and its safety, tolerability, pharmacokinetics and pharmacodynamics investigated
- Excellent pharmacokinetic properties
- Limited brain access, consequently a better CNS risk profile compared to other available cannabinoid agonists

2012

**NEO1940**
- IP transferred to The NEOMED Institute
- Significant effect on weight observed at the doses where CNS side effect profile was similar to placebo led to development plan in cachexia
- Suitable for once-daily dosing

2017-Current

**ART27.13**
- Artelo fully-negotiated option to trigger full license in Q1 2019
- Clinic ready for Phase 2
- Cancer cell-line screening research for potential indication as anti-tumor agent
- Target indications: Anorexia, Cancer
Supportive Activity Data for CB₁/CB₂ Agonists as Anti-Tumor Agents

- Synthetic cannabinoids have anti-tumor effects as a monotherapy
- Effects are blocked by cannabinoid antagonists
- Driven by both CB₁ and CB₂ effects
- >50% inhibitory effects observed for cell killing, tumor shrinkage and reduction in metastasis
- JWH (CB₂) and Win (CB₁) are not suitable for the clinic and very few dual CB₁/CB₂ agonists have been designed to be peripherally restricted; reducing potential CNS side effects
ART26:12 Endocannabinoid Modulator with Potential for Multiple Indications

- Highly-selective, highly-potent FABP5 inhibitor created at Stony Brook University (NY)
- Nearly $4M invested via NIH grants
- Two promising applications:
  - Novel and exciting mechanism of modulating the endocannabinoid system
  - New approach to cancer treatment as FABP5 overexpressed in many cancers
- Potential for indications in pain, inflammation, and cancer
- Entering IND-enabling studies in 2019
FABP5 and the Endocannabinoid System

- Overexpression of FABP5 increases the hydrolysis of anandamide (AEA)
- FABP5 inhibition decreases AEA hydrolysis
- FABP5 inhibition increases AEA levels
- Alternative mechanism to increase endocannabinoid tone
- FABP5 inhibition leads to CB₁-mediated analgesia
FABP5 is a Validated Target for Cancer Drug Development

- FABP5 delivers fatty acids to the nucleus to activate PPARβ/δ and PPARγ
- Activation induces cell growth, survival genes, and angiogenic factors

Forootan et al., 2016 Oncotarget vol 7, no. 8 p9322-9339
FABP5 is Upregulated in Breast, Prostate, and Cervical Cancer

In cancer patients, FABP5 is upregulated, correlates with tumor grade, and is associated with poor prognosis.

Data above from breast cancer. Liu et al., 2011; Levi et al., 2013; Powell et al., 2015; Guaita-Esteruelas et al., 2017. Similar findings published in prostate and cervical cancer. Forootan et al., 2010; Jeong et al., 2012.

Genetic silencing of FABP5 is anti-tumor

Powell et al., 2015 Oncotarget vol 6, no. 8 p6373-6385