Artelo BIOSCIENCES®

Clinical stage biopharmaceutical company developing a portfolio of therapeutic candidates focused on novel targets and significant unmet needs in the treatment of cancer

Nasdaq: ARTL

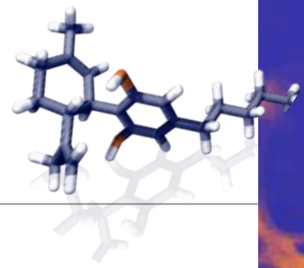
June 2021

Forward-Looking Statements

This presentation of Artelo Biosciences, Inc. (the “Company”) contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, Section 21E of the Securities Exchange Act of 1934 and Private Securities Litigation Reform Act, as amended, including those relating to the Company’s product development, clinical and regulatory timelines, market opportunity, competitive position, possible or assumed future results of operations, business strategies, potential growth opportunities and other statements that are predictive in nature. These forward-looking statements are based on current expectations, estimates, forecasts and projections about the industry and markets in which we operate and management’s current beliefs and assumptions.

These statements may be identified by the use of forward-looking expressions, including, but not limited to, “expect,” “anticipate,” “intend,” “plan,” “believe,” “estimate,” “potential,” “predict,” “project,” “should,” “would” and similar expressions and the negatives of those terms. These statements relate to future events or our financial performance and involve known and unknown risks, uncertainties, and other factors which may cause actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Such factors include those set forth in the Company’s filings with the Securities and Exchange Commission (the “SEC”), including our ability to raise additional capital in the future. Prospective investors are cautioned not to place undue reliance on such forward-looking statements, which speak only as of the date of this presentation. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future events or otherwise, except to the extent required by applicable securities laws.

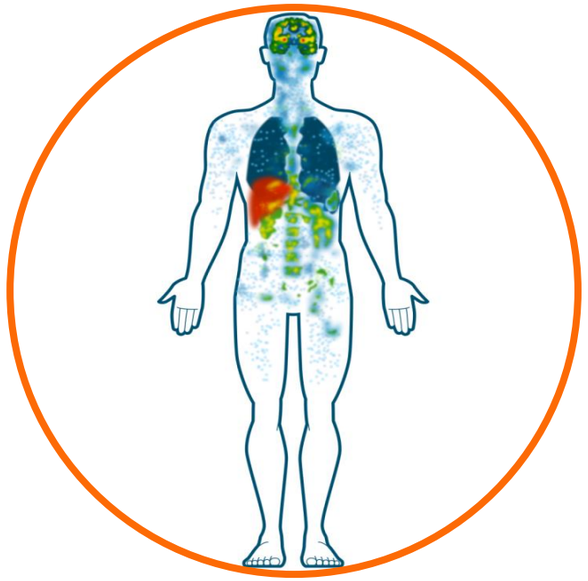
Artelo Biosciences, Inc.



Clinical stage biopharmaceutical company developing a portfolio of therapeutic candidates focused on novel targets and significant unmet needs in the treatment of cancer

- NOVEL DRUG PIPELINE
- NEAR-TERM MILESTONES
- BILLION DOLLAR MARKETS
- ROBUST PATENT ESTATE
- PROVEN LEADERSHIP

Modulating the Endocannabinoid System



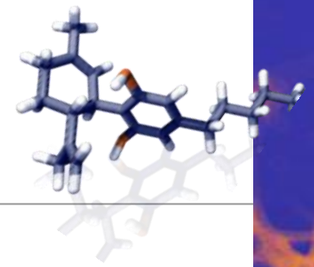
- **The ECS is a family of receptors and neurotransmitters that form a biochemical communication network throughout the body**
- **The ECS maintains a healthy state in response to environmental changes**
- **For the treatment of disease, stress, and adverse medical conditions, modulating the vast potential of the ECS may lead to new and significantly improved medical treatments**

*"**Modulating ECS activity holds therapeutic promise for a broad range of diseases,** including neurodegenerative, cardiovascular and inflammatory disorders, obesity/metabolic syndrome, cachexia, chemotherapy-induced nausea and vomiting, tissue injury and pain, among others."*

Artelo BIOSCIENCES

Quote: Laboratory of Physiologic Studies, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, Bethesda, Maryland, USA – May, 2013

Diversified Pipeline with Near Term Milestones



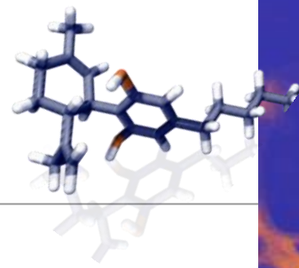
Product Candidate	Pre-clinical	Phase 1	Phase 2	Market	Patents	Original Developer
ART 27.13 Cannabinoid Receptor Agonist	Anorexia associated with Cancer			Cancer Anorexia Cachexia Syndrome (CACS): $2B	2 issued 1 pending	AstraZeneca
ART 26.12 FABP5 Inhibitor	Breast Cancer Prostate Cancer			Prostate Cancer: $9B Breast Cancer: $18B	3 issued 14 pending 2 planned	Stony Brook University
ART 12.11 Cocrystal CBD:TMP	PTSD – Anxiety/Sleep			Post-Traumatic Stress Disorder: $7B	1 issued 3 pending	Artelo Biosciences

Therapeutics market size based upon total global annual Rx sales in 2016, 2017 or 2018 rounded to nearest billion

Artelo BIOSCIENCES

Sources: CACS, 2018: https://www.databridgemarketresearch.com/reports/global-cancer-cachexia-market; Breast Cancer, 2018: https://www.fortunebusinessinsights.com/industry-reports/breast-cancer-therapeutics-market-100163; Prostate Cancer, 2018: https://www.researchandmarkets.com/reports/4850658/prostate-cancer-global-drug-forecast-and-market; IBD, 2017: https://www.prnewswire.com/news-releases/the-global-inflammatory-bowel-diseases-ibd-drug-market-is-estimated-at-6-7bn-in-2017-and-7-6bn-in-2023--300688523.html; PTSD, 2017: https://www.credenceresearch.com/report/post-traumatic-stress-disorder-therapeutics-market

Accomplished and Anticipated Milestones



2H 2020	✓ ART26.12 Added 12 new Generation 3 compounds to Stony Brook license
	✓ ART27.13 Successful drug product manufacture
	✓ ART27.13 Received Ethics Committee and CTA regulatory approvals to commence CAReS trial
	✓ ART26.12 Expand patent estate (compositions and method claims)
1H 2021	✓ ART27.13 Filed patent covering proprietary manufacturing methods
	✓ ART27.13 Enrolling cancer patients in CAReS cancer anorexia study
	✓ ART26.12 Initiate regulatory enabling non-clinical studies
2H 2021	❑ **ART27.13 Initial clinical data from CAReS cancer anorexia study**
	❑ **ART12.11 Results from key non-clinical studies**
1H 2022	❑ **ART27.13 Complete clinical data from CAReS cancer anorexia study**

COMPANY

ART 27.13

CANCER ANOREXIA CLINICAL PROGRAM

Artelo BIOSCIENCES

Cancer Anorexia and Cachexia Syndrome (CACS)

High Unmet Need

Cancer-related anorexia affects greater than **60%** of advanced stage cancer patients[1,4,5,]

"It is characterized by **loss of appetite**, **weight loss** and **tissue wasting**, accompanied by a **decrease in muscle mass and adipose tissue**, **impoverishing quality of life** and often **preceding the patient's death**." [6]

No Standard of Care

Management of Cancer Cachexia: ASCO Guideline 2020

"In the absence of more robust evidence, no specific pharmacological intervention can be recommended as the standard of care;" [5]

ASCO®
AMERICAN SOCIETY OF CLINICAL ONCOLOGY

As of April 2021, no therapeutic is approved for the treatment of CACS in North America, United Kingdom, or Europe.

Large Global Market

Therapeutic market for CACS is estimated to be $2 billion globally and could increase significantly with a proprietary new market entry[2]

Drugs are used off-label with limited success [3, 5]

- Appetite stimulants
- Anabolic agents
- Cytokine & metabolic inhibitors
- Progesterone analogs
- Short-term (weeks) corticosteroids

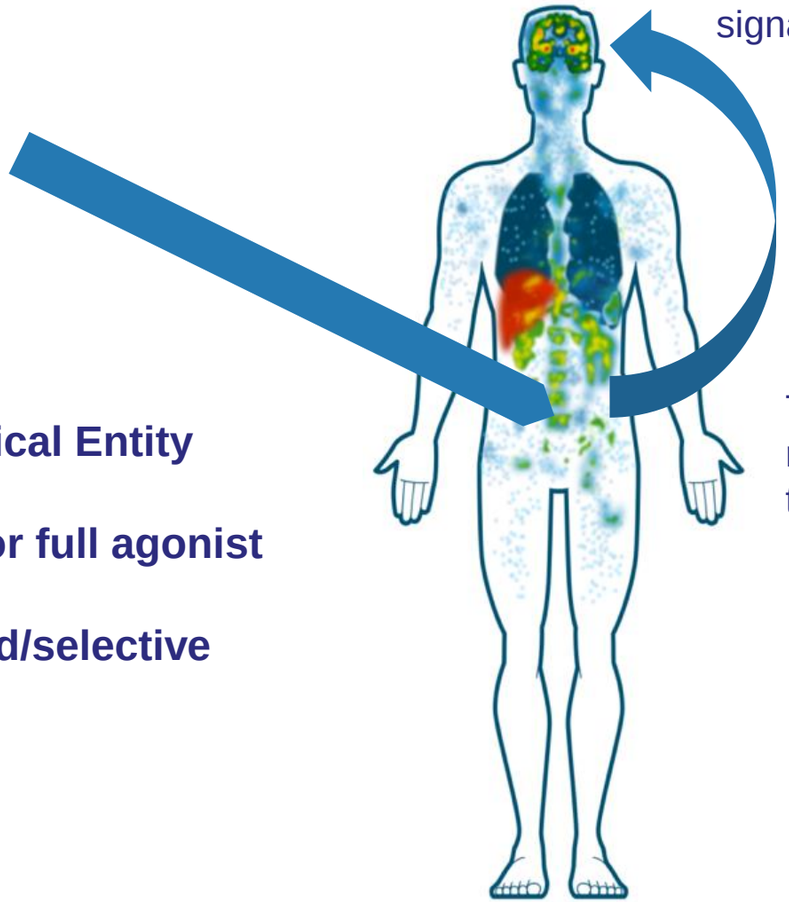
Artelo BIOSCIENCES

Sources: **1:** Nonsteroidal selective androgen receptor modulator Ostarine in cancer cachexia. Zilbermint MF, Dobs AS, Future Oncol. 2009 Oct; 5(8):1211-20; **2:** Data from Market Intel Reports 2016 as quoted in Innovus Pharma to Enter the Oncology Supportive Care Market With an Exclusive License to Two GRAS-Listed OTC Compounds for Cachexia and Muscle Growth and Repair From the University of Iowa Research Foundation. Innovus Press Release June 6, 2017, ex-US estimate based upon market forecast model from US sales figures; **3:** Pharmacological management of cachexia in adult cancer patients: a systematic review of clinical trials. Advani, Shailesh M et al., *BMC cancer* vol. 18,1 1174. 27 Nov. 2018, doi:10.1186/s12885-018-5080-4; 4. Sánchez-Lara K, Ugalde-Morales E, Motola-Kuba D, Green D. Gastrointestinal symptoms and weight loss in cancer patients receiving chemotherapy. Br J Nutr 2013;109:894-7, 5. Management of Cancer Cachexia: ASCO Guideline, May 2020; 6. Megestrol acetate for treatment of anorexia-cachexia syndrome. *Cochrane Database of Systematic Reviews* 2013, Issue 3. Art. No.: CD004310.

Link Between Cannabinoid Receptor Activation and Appetite is Well-Established

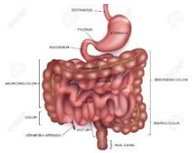
ART 27.13

- **Synthetic New Chemical Entity**
- **Dual CB_1/CB_2 receptor full agonist**
- **Peripherally restricted/selective**

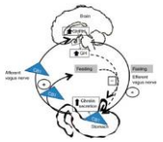


Sends feeding signal to the **brain**

Targeting receptors in the **gut region**

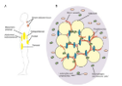


Intestine

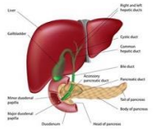


Stomach

Skeletal muscle



Adipose tissue

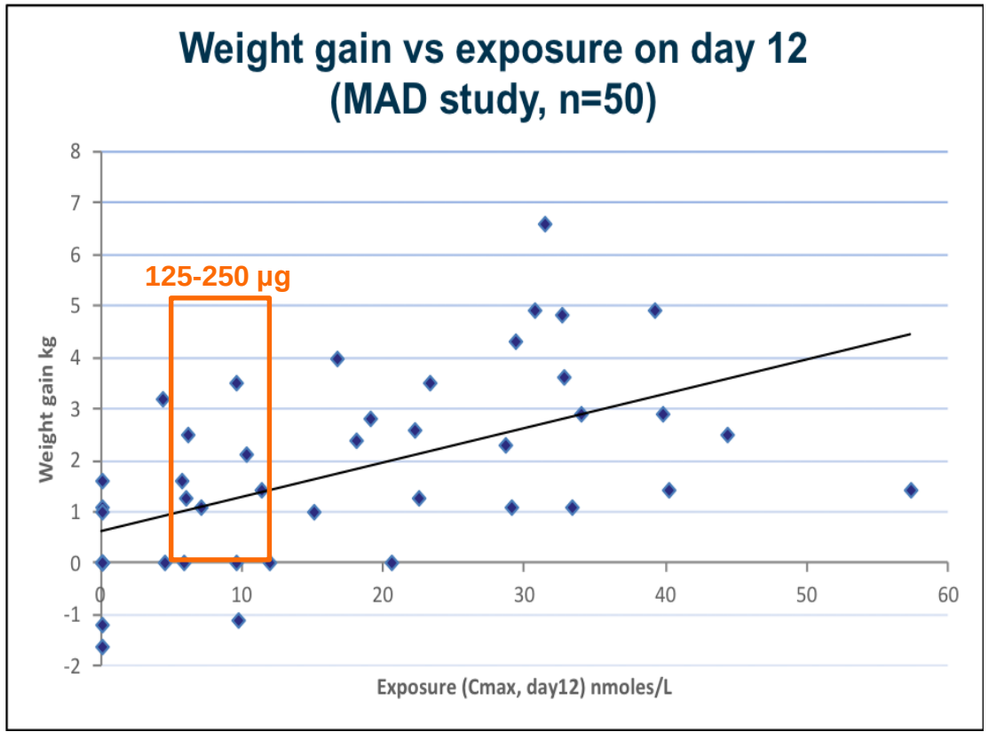


Liver

Sources: https://www.ncbi.nlm.nih.gov/pubmed/22249824; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6027162/

ART27.13 is Rationally Designed, Differentiated, and Developed on Evidence

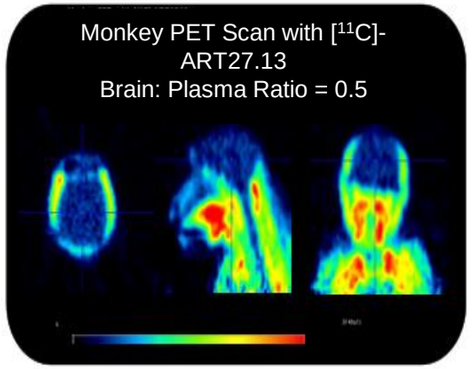
Increase in weight observed in Phase 1 study



Multiple ascending dose (MAD) clinical study observed weight gain slope is significantly different from placebo (p=0.0001)

Peripheral acting avoids undesired CNS effects by targeting the body, not the brain

Enables systemic metabolic effects while minimizing central nervous system mediated toxicity



Side effects	Placebo	ART27.13 (250 µg)
Mild	91%	89%
Moderate	9%	10%
Severe	0%	1%
# Events/subjects	121/10	169/8

Multiple Ascending dose study with 8 subjects receiving **ART27.13** at 250 µg and 10 receiving placebo

Source: AstraZeneca, adMare. Data on file

The CAReS Study

Study:	A Phase 1b/2a, Randomized, Placebo-Controlled Trial of the Synthetic Cannabinoid **ART27.13** in Patients with Cancer Anorexia and Weight Loss
Objectives:	Phase 1b - Determine the most effective and safe dose (recommended Phase 2 dose, or RP2D) to be used in Stage 2 Phase 2a - Determine point estimates of activity of **ART27.13** in terms of weight gain, lean body mass, and improvement of anorexia at the RP2D
Regulatory:	Clinical Trials Authorization and Ethics approval received in UK
Size:	Planned 43 subjects (option for 6 more patients in Phase 1b)
Sites:	All clinical sites in UK (assessing options to expand with sites in Ireland, Australia, Canada, and Norway)
Lead Investigator:	Barry J. A. Laird, M.D., Institute of Genetics and Cancer, University of Edinburgh, Scotland
Expected Duration:	Phase 1b data by year end 2021 and Phase 2a results in 1H 2022

Cancer Appetite Recovery Study

https://www.isrctn.com/ISRCTN15607817

ART 26.12

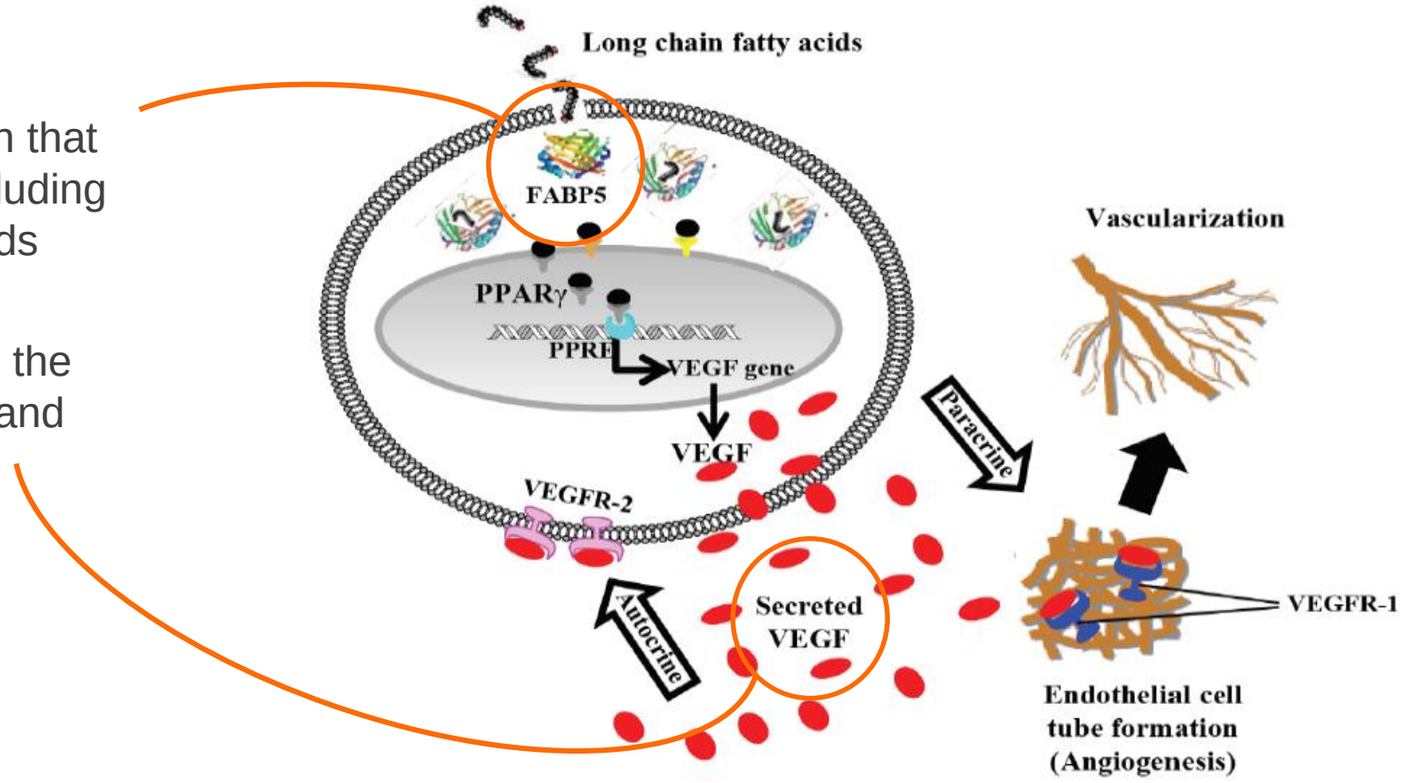
FABP5 INHIBITOR PROGRAM

Artelo BIOSCIENCES

Lipid Signaling Pathways are a Next-Generation Target for Cancer Therapeutics

ART26.12 was developed at Stony Brook University, supported by $3.8M NIH funding and recently awarded $4.2M NCI grant for development in prostate cancer

- FABP5 is an intracellular protein that serves as a carrier for lipids including endocannabinoids and fatty acids
- Inhibition of FABP5 suppresses the growth and migration of breast and prostate cancers
- Modulating lipid signaling has the potential to be the next revolution in cancer therapeutics

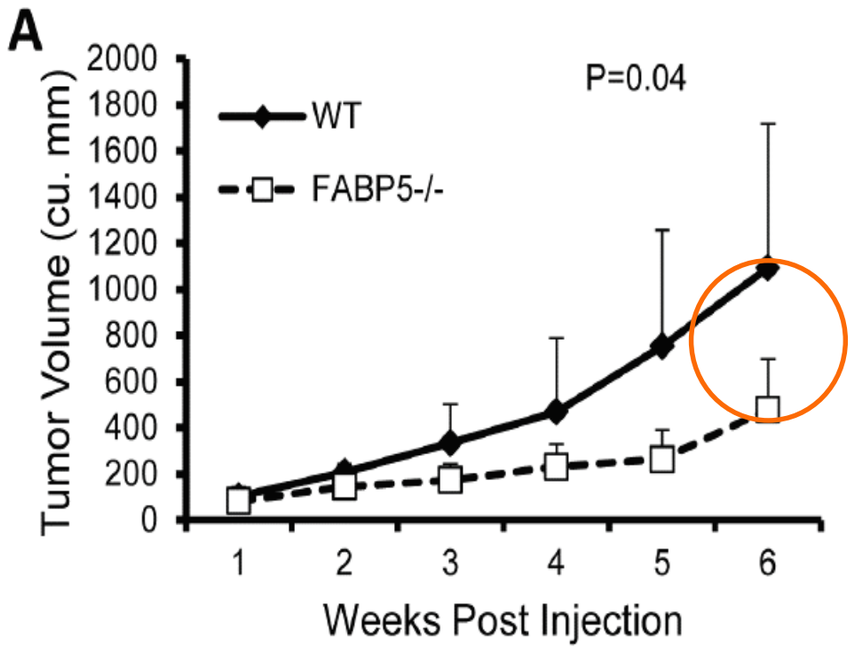


Artelo BIOSCIENCES

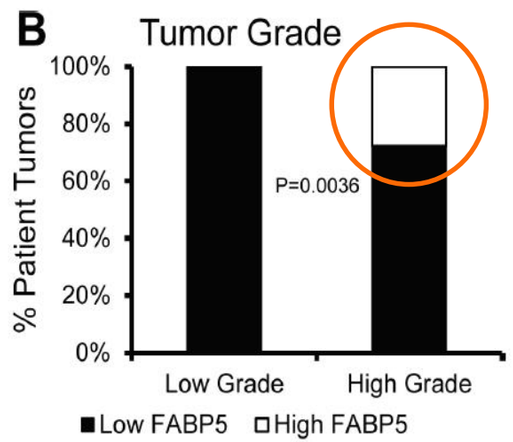
Sources: Kaczocha, et al., Molecular Pain Vol.13:1-6, 2017. Al-Jameel, et al., Oncotarget, 2017, Vol. 8, (No. 19), pp: 31041-31056. Powell et al., 2015 Oncotarget Vol 6, no. 8 p6373-6385. Forootan et al., 2010. NCI grant (1 RO1 CA237154-01A1) starts February 1, 2020

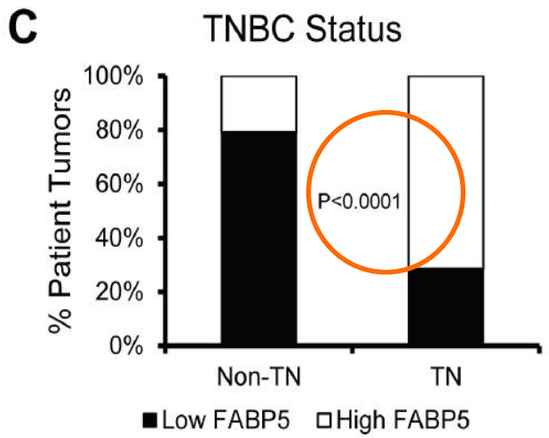
FABP5 is a Validated Target in Breast, Prostate and Cervical Cancer

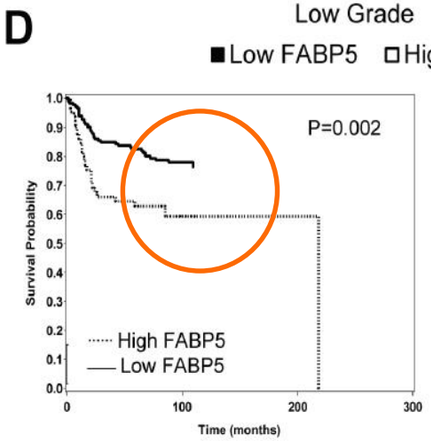
Genetic silencing of FABP5 is anti-tumoral (A)



FABP5 correlates with tumor grade (B), is upregulated in triple negative breast cancer (C) and is associated with poor prognosis (D).





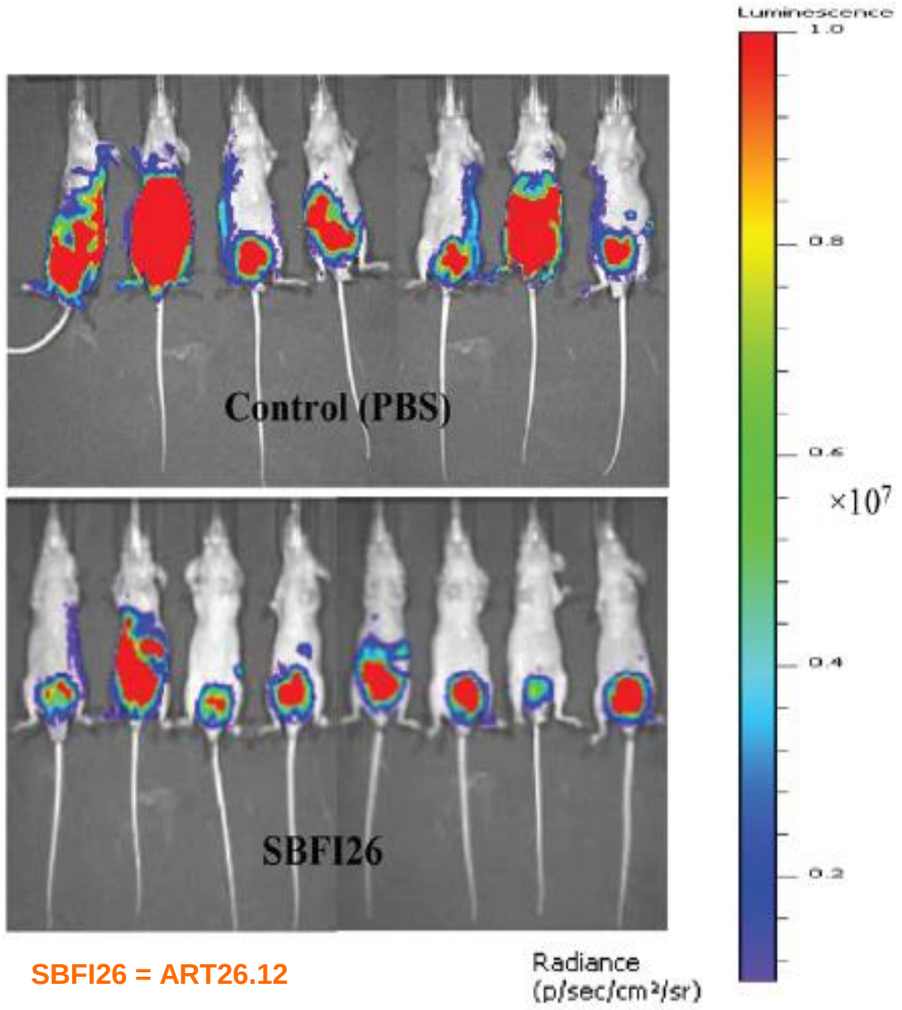


WT = Wild Type.

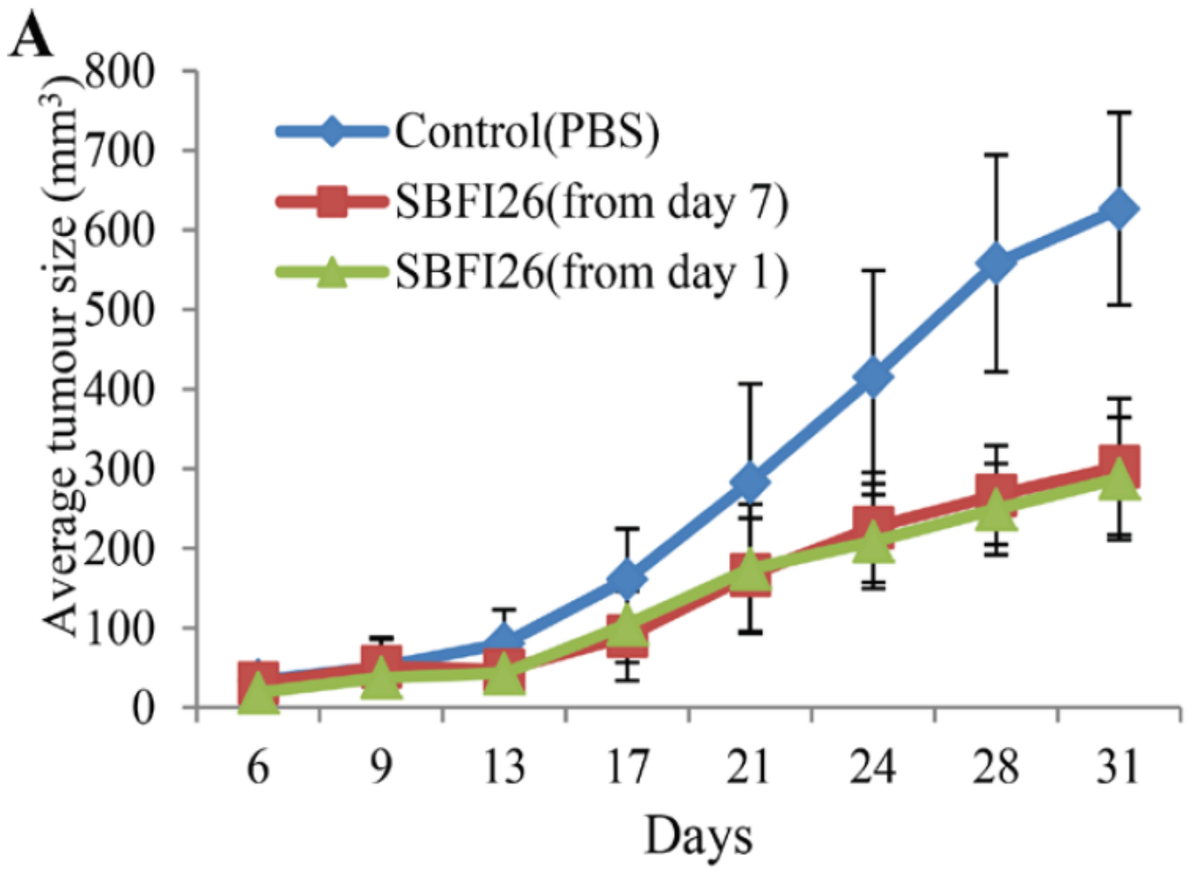
Artelo BIOSCIENCES

Sources: Chart A: Powell et al., 2015 Oncotarget vol 6, no. 8 p6373-6385; Charts B, C, D: Data 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. Note: TNBC = Triple Negative Breast Cancer

ART26.12 Monotherapy Decreases Tumor Growth in Prostate Cancer



SBFI26 = ART26.12

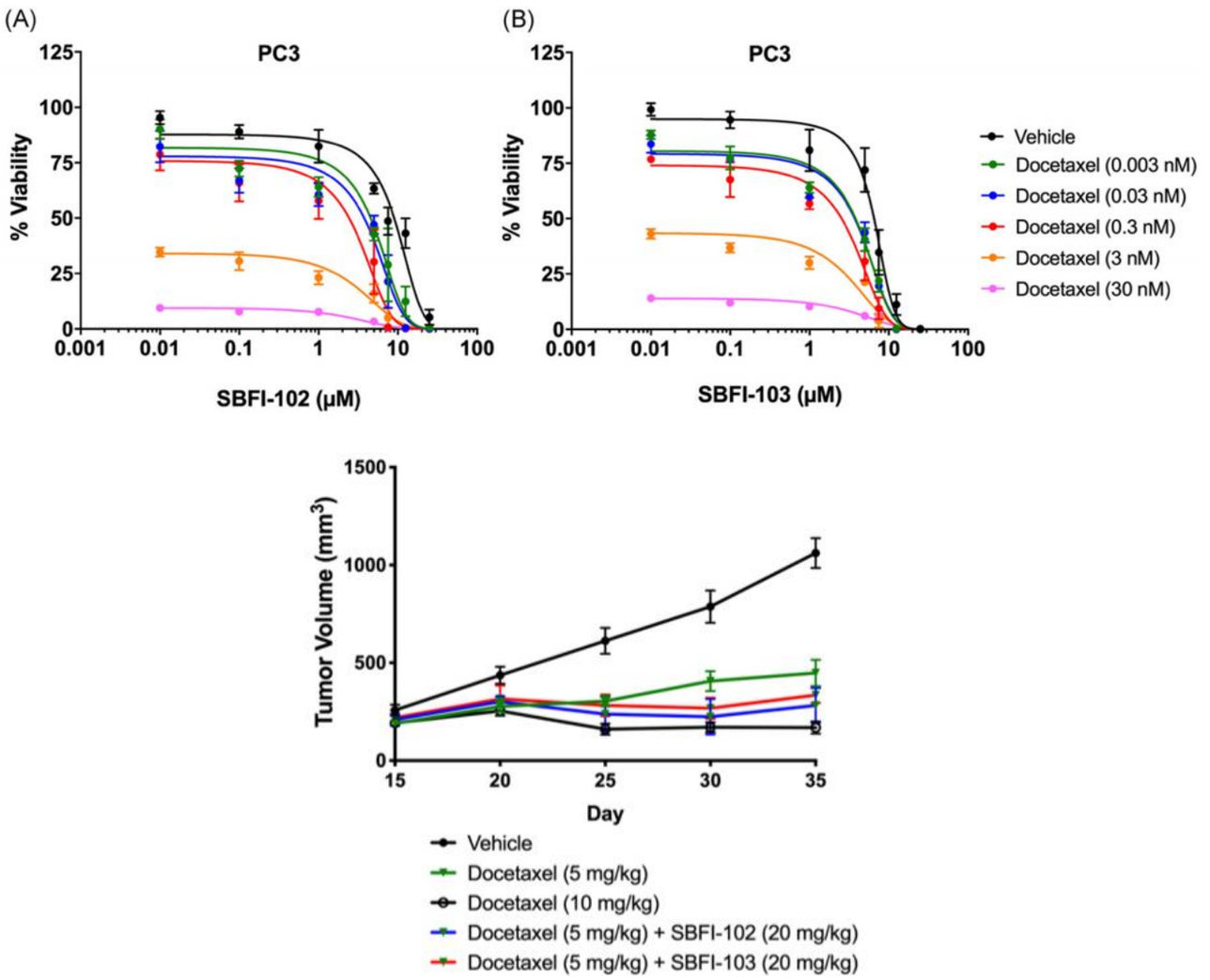


Artelo BIOSCIENCES

Source: Inhibitor SBFI26 suppresses the malignant progression of castration-resistant PC3-M cells by competitively binding to oncogenic FABP5, W. Al-Jameel, Oncotarget, 2017, Vol. 8, (No. 19), pp: 31041-31056

FABP5 Inhibitors and Taxanes Produce Synergistic Inhibition in Prostate Cancer

- FABP5 inhibitors combined with docetaxel or cabazitaxel produce synergistic cytotoxicity in numerous prostate cancer cell lines *in vitro*
- FABP5 inhibitors combined with docetaxel potentiate the antitumor effects of docetaxel *in vivo* in nude mice implanted with PC3 cells
- Ability of these drugs to synergize could lead to new combination therapies with enhanced tumor-suppressive efficacy



Source: Carbonetti, G., et al. Docetaxel/cabazitaxel and fatty acid binding protein 5 inhibitors produce synergistic inhibition of prostate cancer growth. The Prostate. 9 October 2019

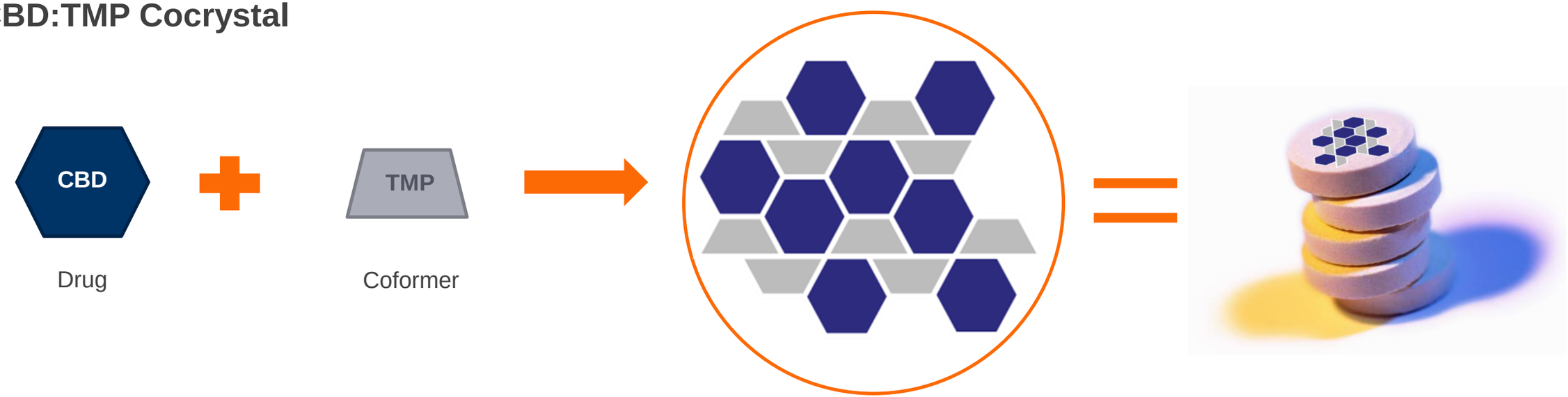
ART 12.11

PROPRIETARY CBD:TMP COCRYSTAL PROGRAM

Artelo BIOSCIENCES

ART12.11 Patented CBD Cocrystal with Enhanced Pharmaceutical Properties

CBD:TMP Cocrystal



ART12.11 Advantages

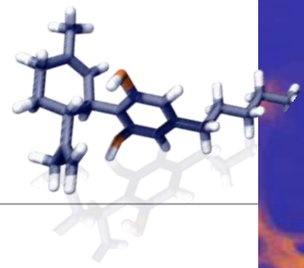
- Improved drug-like properties
- Potential synergy and contribution of TMP
- Issued patent in the US through December 10, 2038

Sources: 1.) 2018 https://www.novartis.com/investors/financial-data/product-sales; 2.) 2008 https://seekingalpha.com/article/1156401-forest-laboratories-goes-off-lexapro-what-happens-next; TMP=Tetramethylpyrazine or ligustrazine; Hsiao et al., 2011; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6115350/

COMPANY

Artelo BIOSCIENCES

Company Capitalization (Nasdaq: ARTL)



Capitalization as of 4/12/2021 (Date of last 10-Q filing)	
Common Shares Outstanding	**23,133,112**
Warrants (WAEP $4.63)	4,433,412
Options (WAEP $2.43)	2,966,934
Total	**30,848,358**

Cash, Cash Equivalents, and Marketable Securities **$11.2M**

(No Debt or Equity Line)

Fully diluted ownership: 13% Officers/Directors

Nasdaq

COMPANY

Proven Leadership

MANAGEMENT TEAM

Gregory Gorgas
President & CEO, Director
Biogen Idec, Chiron, Cetus, Upjohn, MAST

Steven D. Reich, MD
Chief Medical Officer
Pfizer, Ligand, Biogen, PAREXEL

Andrew Yates, PhD
Chief Scientific Officer
UK Pharmacist, AstraZeneca, Bristol Myers

Randy Schreckhise
VP, Finance & Operations
Ardea, Human Genome Sciences, aTyr, Abilita, Trius, ZymoGenetics

Jason Baybutt
SVP, Finance
PubCo Reporting

Peter O'Brien
SVP, European Operations
HSBC, Medical Staff Ireland, SPR Global Technologies, Nursing Station

BOARD OF DIRECTORS

Connie Matsui
Chair of the Board
Wells Fargo, Biogen Idec, Board Chair Halozyme, Board Chair Sutro Biopharma

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

Douglas Blayney, MD
Nominating & Governance Committee Chair ASCO President, Stanford Cancer Center, University of Michigan, NCI

John Beck
Audit Committee Chair
Ritter Pharmaceuticals, Ardea, Metabasis, Neurocrine Biosciences

R. Martin Emanuele, PhD
DuPont, Avanir, DaVita, MAST

Tamara A. Seymour
Immunic, HemaQuest, Favrille, Agouron, Deloitte & Touche, PricewaterhouseCoopers

Greg Reyes, MD, PhD
Celgene, Biogen Idec, Pfizer, Schering-Plough Research Institute

SCIENTIFIC COLLABORATORS

Saoirse O'Sullivan, PhD
Professor, University of Nottingham, UK

Steven Laviolette, PhD
Professor, University of Western Ontario, Canada

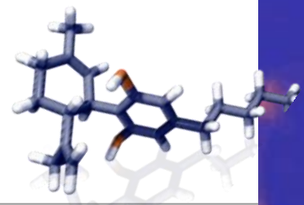
Iwoa Ojima, PhD
Distinguished Professor, Chemistry, and Director, Institute of Chemical Biology and Drug Discovery, Stony Brook University, New York, US

Martin Kaczocha, PhD
Assistant Professor of Anesthesiology and Biochemistry and Cell Biology, Stony Brook University, New York, US

Richard K. Porter, PhD
Associate Professor, Biochemistry & Immunology, Trinity Biomedical Sciences Institute, Trinity College Dublin, Ireland

COMPANY

Artelo Biosciences Summary



NOVEL DRUG PIPELINE

Cutting edge science focused on lipid signaling and the endocannabinoid system

Risk mitigated by:

- Development stage
- Probability of success
- Mechanism of action

NEAR-TERM MILESTONES

Clinical milestone readouts expected for lead program in 2021

Multiple pre-clinical and clinical achievements expected over next 12-18 months

Anticipating significant value inflections over next 2-3 years

- Phase 2 results
- Multiple INDs
- Initiate phase 3

BILLION DOLLAR MARKETS

Target indications for the portfolio are in multi-billion dollar markets

- Cancer anorexia $2B
- Prostate cancer $9B
- Breast cancer $18B
- PTSD $7B

ROBUST PATENT ESTATE

Comprehensive issued (6) and pending (16) patents (includes owned, licensed, and partnered)

Anticipating filing additional patent applications / receiving issued patents in 2021/2022

Composition of matter and broad method claims ensure strong prospects for meaningful worldwide market exclusivity

PROVEN LEADERSHIP

Experienced team of biopharmaceutical executives, drug developers, and top tier researchers

Proven track records in developing and commercializing high-impact federally regulated therapeutics

Investor Relations Contact:
Crescendo Communications, LLC
Tel: 212-671-1020
Email: ARTL@crescendo-ir.com

NASDAQ: ARTL
www.artelobio.com