

A woman wearing a patterned headscarf is smiling and hugging another woman from behind. The woman being hugged has her hair in a ponytail. The background is a blurred outdoor setting.

Artelo
BIOSCIENCES®

Corporate Presentation

Nasdaq: ARTL

April 2024

Forward-Looking Statements

Artelo Biosciences, Inc. (the “Company”) cautions you that statements contained in this presentation regarding matters that are not historical facts are forward-looking statements. These statements are based on the Company’s current beliefs and expectations. Such forward-looking statements include, but are not limited to, statements regarding: 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, ESG performance, 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. The inclusion of forward-looking statements should not be regarded as a representation by the Company that any of its plans will be achieved. Actual results may differ from those set forth in this presentation due to the risks and uncertainties inherent in the Company’s business, including, without limitation: potential delays in the commencement, enrollment and completion of clinical trials; disruption to the Company’s operations from the ongoing global outbreak of the COVID-19 pandemic, including clinical trial delays; the success of any of the Company’s clinical trials and preclinical studies for its product candidates; regulatory developments in the United States and foreign countries; unexpected adverse side effects or inadequate efficacy of our product candidates that may limit their development, regulatory approval and/or future commercialization; the Company’s ability to obtain and maintain intellectual property protection for its product candidates; the Company may use its capital resources sooner than it expects; and other risks described in the Company’s prior communications and the Company’s filings with the Securities and Exchange Commission (the “SEC”). You are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof, and the Company undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date hereof. All forward-looking statements are qualified in their entirety by this cautionary statement, which is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. This presentation includes statistical and other industry and market data that we obtained from industry publications and research, surveys and studies conducted by third parties as well as our own estimates of potential market opportunities. Industry publications and third-party research, surveys and studies generally indicate that their information has been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. Our estimates of the potential market opportunities for our products include several key assumptions based on our industry knowledge, industry publications, third-party research and other surveys, which may be based on a small sample size and may fail to accurately reflect market opportunities. While we believe that our internal assumptions are reliable, such assumptions have not been verified by any third party. The industry in which we operate is subject to a high degree of uncertainty and risk due to a variety of important factors that could cause results to differ materially from those expressed in the estimates made by third parties and by us. Trademarks in this presentation are the property of their respective owners and used for informational and education purposes only.

The Company’s SEC filings are available at artelobio.com.

Artelo Biosciences, Inc.

Clinical stage biopharmaceutical company developing a portfolio of lipid-signaling modification product candidates to treat people living with cancer, pain, anxiety, and other serious diseases



NOVEL DRUG PIPELINE



NEAR-TERM
MILESTONES



BILLION DOLLAR
MARKETS

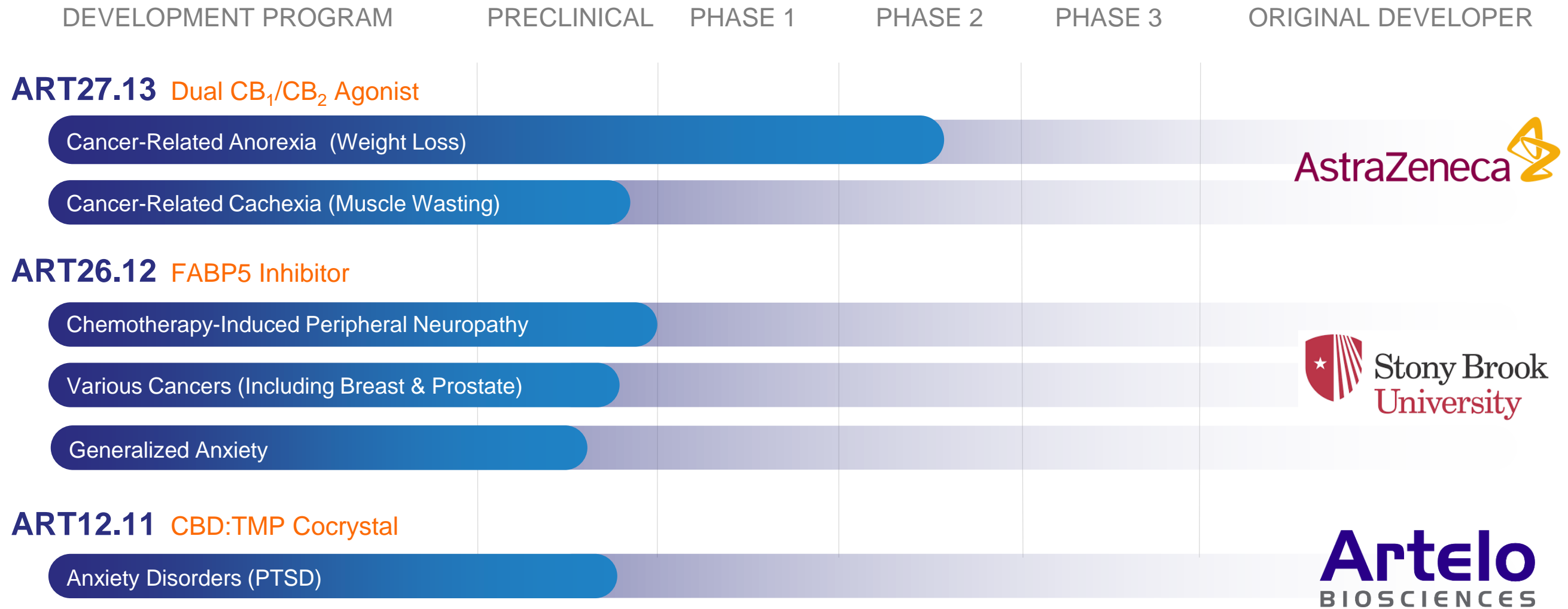


ROBUST
PATENT ESTATE



PROVEN
LEADERSHIP

Lipid-Signaling Modification Pipeline



ART27.13

**Dual Cannabinoid Agonist Program for
Cancer-Related Anorexia and Weight Loss**

Cancer Anorexia Cachexia Syndrome (CACCS)

CACCS is often a devastating and debilitating aspect of any stage of malignancy that can alter the course of treatment



Edinburgh Cancer Centre 2022. Used with permission.

“When you pull a pair of trousers up and they just fall right back down again, it sort of hits home how quickly the weight dropped off. That was scary.”

Global Opportunity to Impact Cancer Care

High Unmet Need

Cancer-related anorexia affects >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

No therapeutic is approved for the treatment of CACS in North America, United Kingdom, or Europe



European Society for Clinical Nutrition and Metabolism

“To counter malnutrition in patients with advanced cancer there are few pharmacological agents and pharmaconutrients with only limited effects.”⁷

Large Global Market

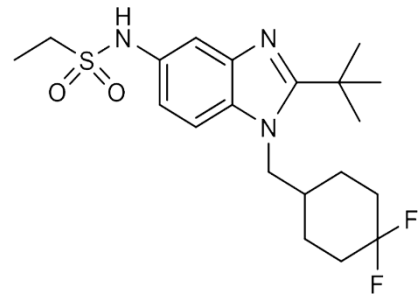
Therapeutic market for CACS is estimated to be \$2 billion globally and expected to increase significantly with a proprietary new market entry²



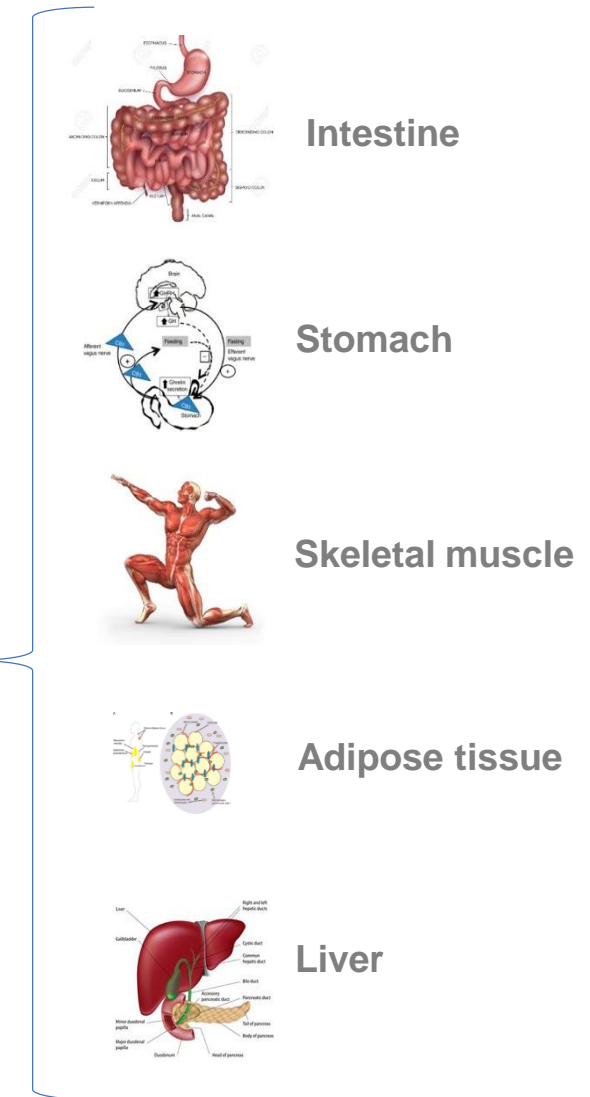
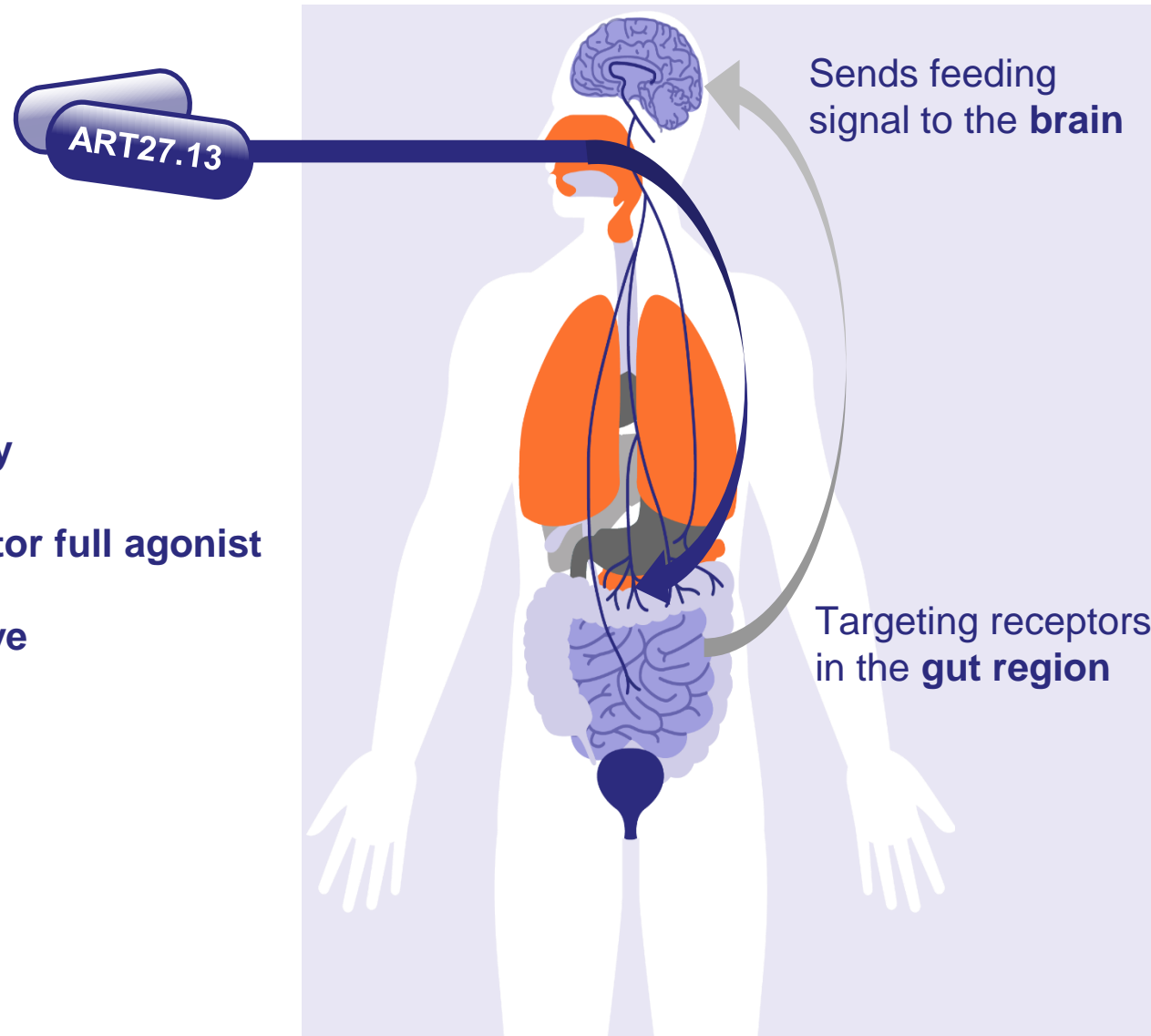
Drugs are used off-label with limited success^{3, 5}

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

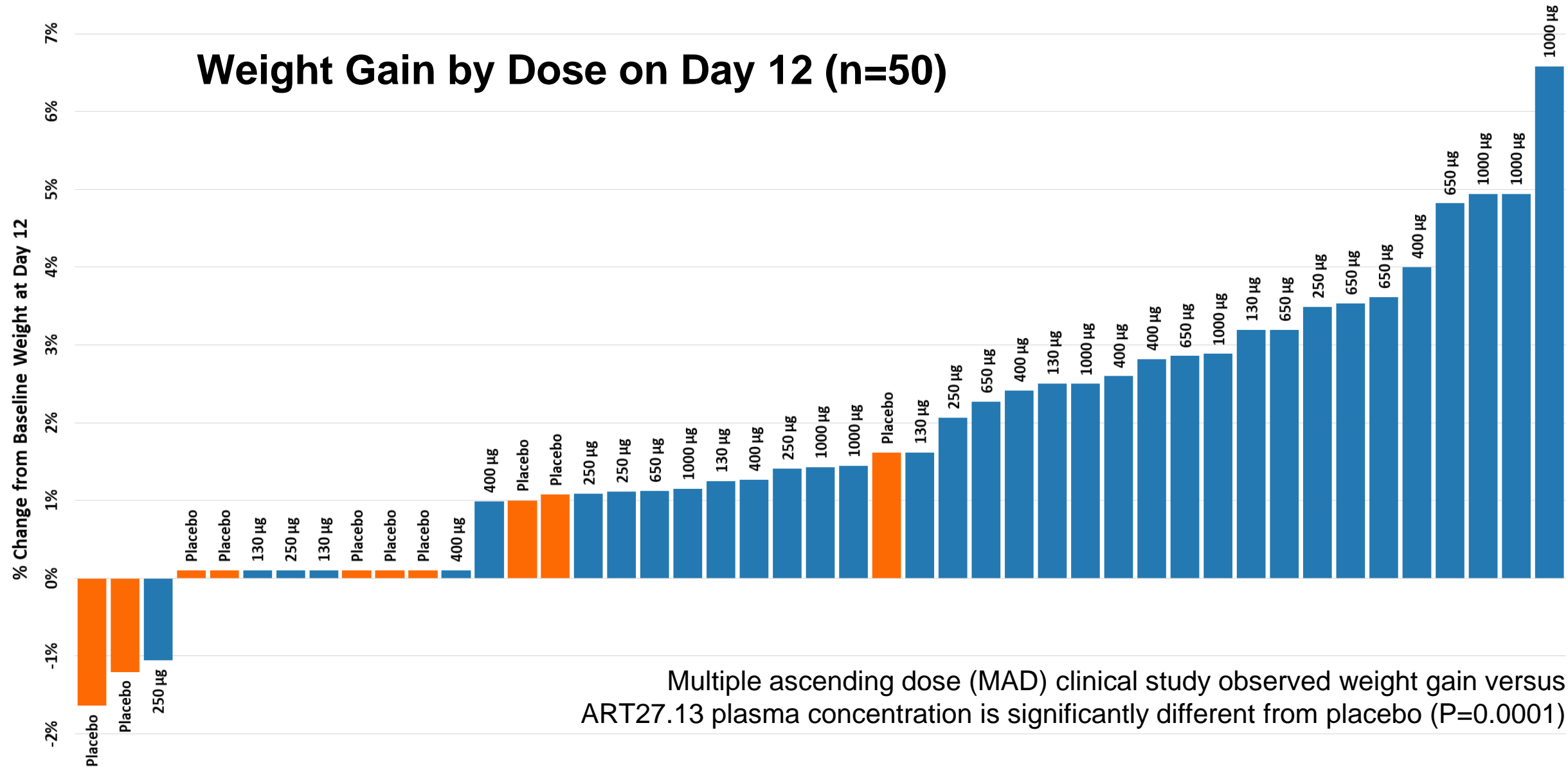
Leveraging a Well-Established Appetite Pathway



- New Chemical Entity
- Dual CB₁/CB₂ receptor full agonist
- Peripherally selective



Observed Weight Gain in Prior Phase 1 Study

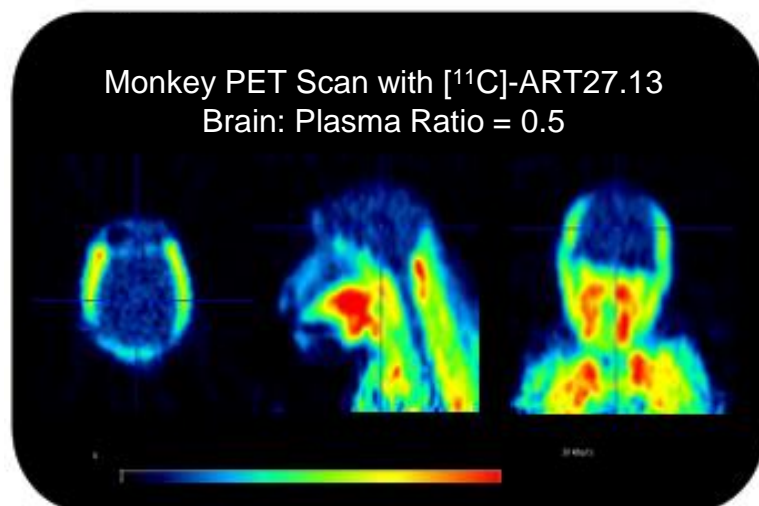


Multiple ascending dose (MAD) clinical study observed weight gain versus ART27.13 plasma concentration is significantly different from placebo (P=0.0001)

Peripherally Selective Targeting of Receptors in the Body, not the Brain

Adverse Events Observed in Clinical Studies

ART27.13 is designed to minimize undesired CNS effects of CB₁ agonism



Prior Phase 1 (MAD study)¹

Subjects with AEs	Placebo N = 10	130 µg N = 8	250 µg N = 8	400 µg N = 8	650 µg N = 8	1000 µg N = 8
Mild	4 (40.0%)	4 (50.0%)	-	1 (12.5%)	5 (62.5%)	8 (12.5%)
Moderate	4 (40.0%)	2 (25.0%)	5 (62.5%)	2 (25.0%)	2 (25.0%)	4 (50.0%)
Severe	-	1 (12.5%)	1 (12.5%)	5 (62.5%)	1 (12.5%)	3 (37.5%)
Subjects with any AE	8 (80.0%)	7 (87.5%)	6 (75.0%)	8 (100.0%)	8 (100.0%)	8 (100.0%)

CAReS Phase 1b

ART27.13 has been well-tolerated with no serious adverse events attributable to the investigational drug in patients suffering from anorexia associated with cancer, up to 650µg.²

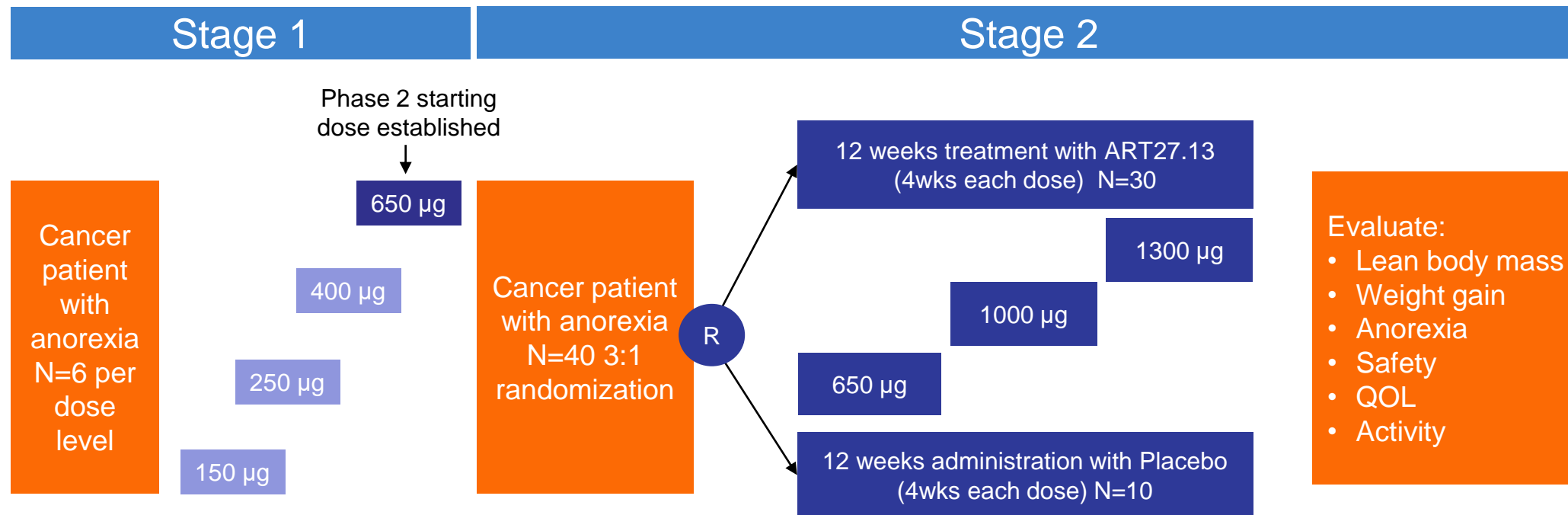
Currently Enrolling the CARES Study



- Title:** 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 to be used in Phase 2a
Phase 2a - Determine point estimates of activity of **ART27.13** in terms of lean body mass, weight gain, activity, and improvement of anorexia
- Status:** Phase 1b completed; Phase 2a enrolling
- Size:** 64 patients
- Region:** UK & Ireland, and Norway
- Lead Investigator:** Barry J. A. Laird, M.D., Institute of Genetics and Cancer, University of Edinburgh, Scotland
- Expected Completion:** Phase 2a enrollment in 2H - 2024

CAReS Study Design

Establishing safety, an optimized dose, and a proof-of-concept in cancer patients with anorexia



QOL = Quality of Life
R = Randomization

ART26.12

**FABP5 Inhibitor Program for Chemotherapy-
Induced Peripheral Neuropathy & Various Cancers**



FABP Inhibitor Platform

Fatty Acid Binding Proteins (FABPs) are intracellular proteins that serve as carriers for lipids including endocannabinoids and fatty acids with potential for broad application in therapeutics development.

Pain and Inflammation

Inhibition of FABP5 can cause a direct analgesic effect via cannabinoid receptors as well as reducing inflammation via altering fatty acid metabolism.

Anxiety Disorders

Inhibition of FABP5 is capable of modulation of the CB₂ receptor in the CNS, which is involved in the control of both fear and anxiety.

Cancer

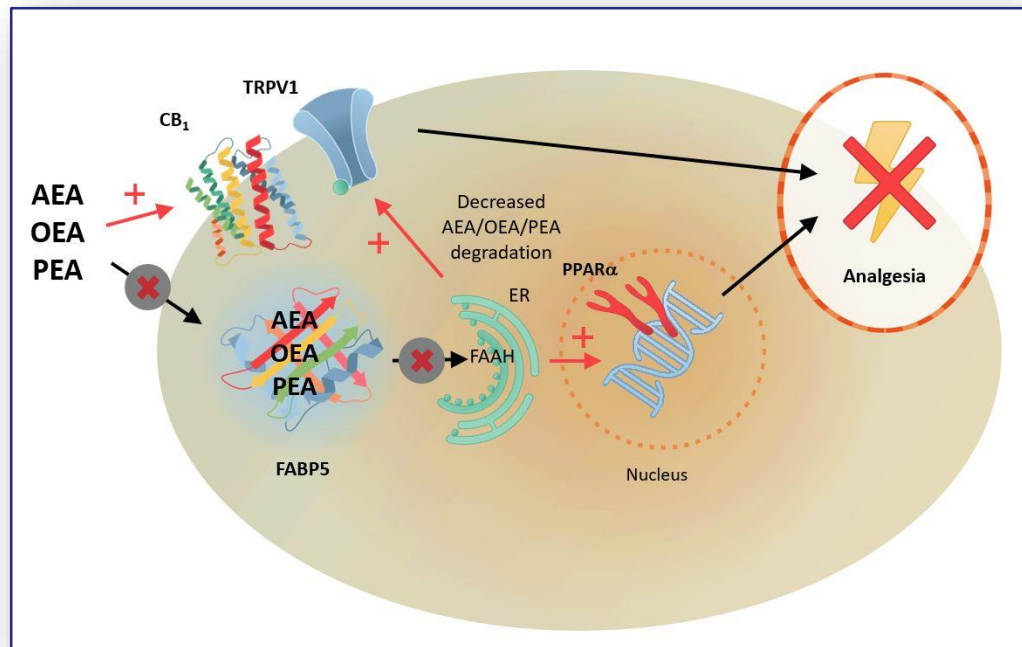
Inhibition of FABP5 suppresses the growth and migration of several cancers.

Artelo has a worldwide exclusive license to multiple FABP inhibitors under pre-clinical evaluation.

Lipid Signaling Pathways as a Key Mechanism for the Treatment of Pain

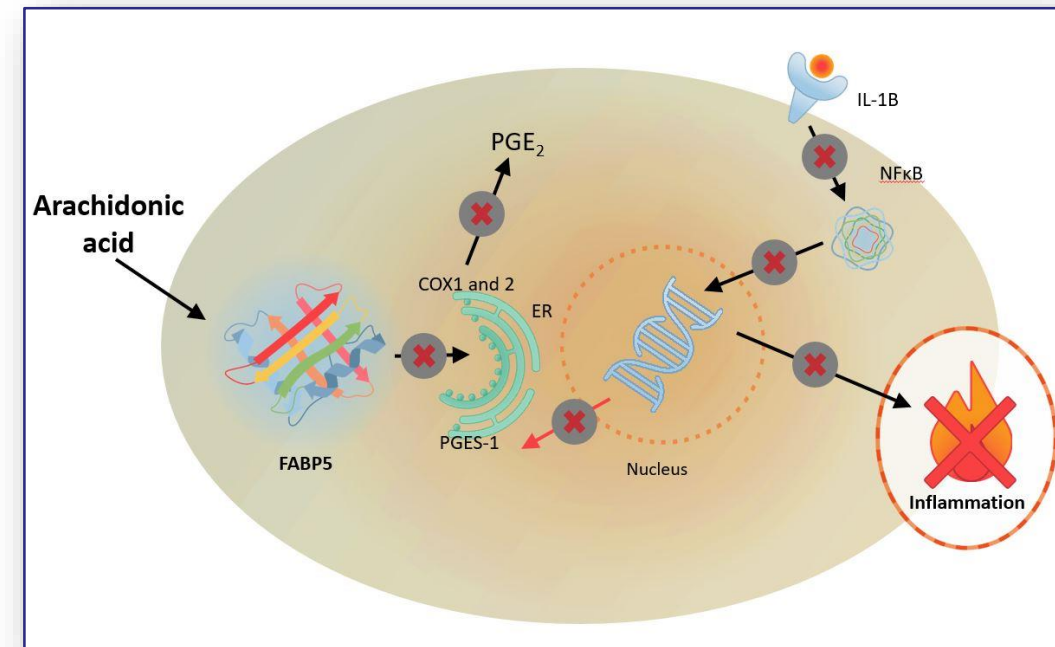
Inhibiting Fatty Acid Binding Protein 5 (FABP5) has potential as a next-generation, non-opioid, non-psychoactive, dual mechanistic approach to pain and inflammation

Pain



FABP5 inhibition is capable of increasing levels of endocannabinoids (AEA, OEA, and PEA) and in turn these can cause a direct analgesic effect via cannabinoid receptors (CB₁, TRPV1, and PPAR α)

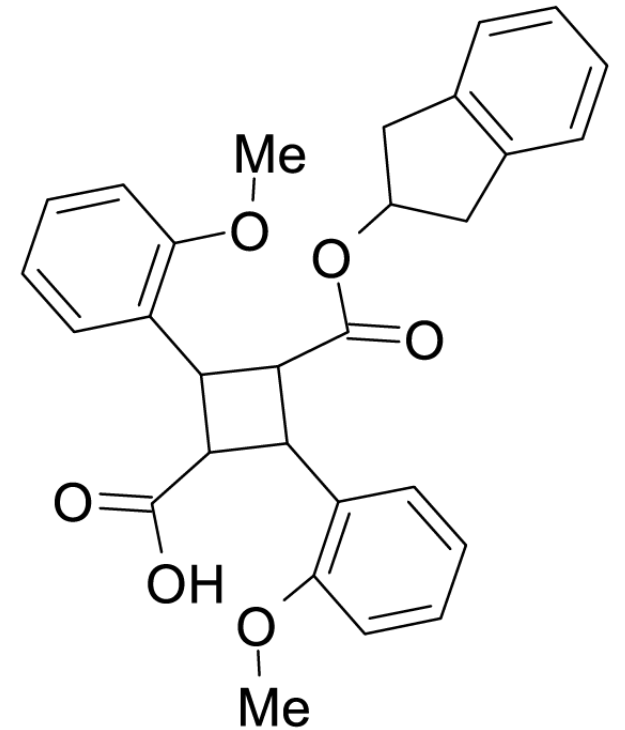
Inflammation



FABP5 inhibition is believed to disrupt fatty acid metabolism resulting in reduced inflammatory prostaglandins reducing inflammation

Lead Development Candidate from FABP Inhibitor Platform

- Sub-micromolar FABP binding affinity showing selective binding to FABP5
- Attractive Non-Clinical Safety Profile
 - No off-target liability against a broad panel of enzymes and receptors of concern
 - No *in-vitro* safety pharmacology of concern
 - NOAEL* of 1,000 mg/kg/day in a 14-day dog and rodent toxicology study
 - Non-controlled substance
- GLP IND enabling studies & GMP drug-substance scale-up (6kg) complete
- Intended for development as an orally dosed prevention and treatment with an initial indication for chemotherapy-induced peripheral neuropathy (CIPN), and other forms of neuropathy (e.g., diabetic)

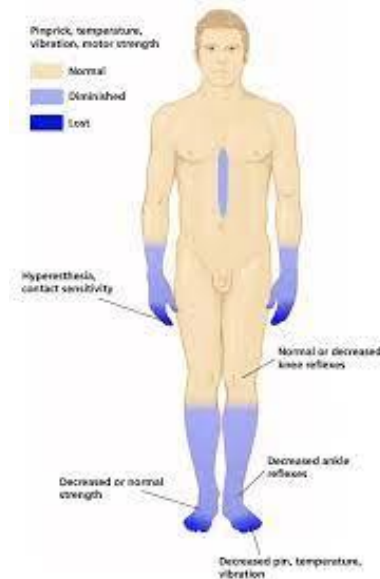


ART26.12

Chemotherapy-Induced Peripheral Neuropathy (CIPN)

Impacts Ability to Treat

Up to 40% of cancer patients treated with chemotherapy will develop neuropathic pain¹ which often requires dose reduction or cessation of therapy.²



For many patients, CIPN is one of the least expected and most upsetting side effects of cancer treatment. Symptoms described as “pins and needles” on feet, legs, hands and arms.³

No Approved Therapy



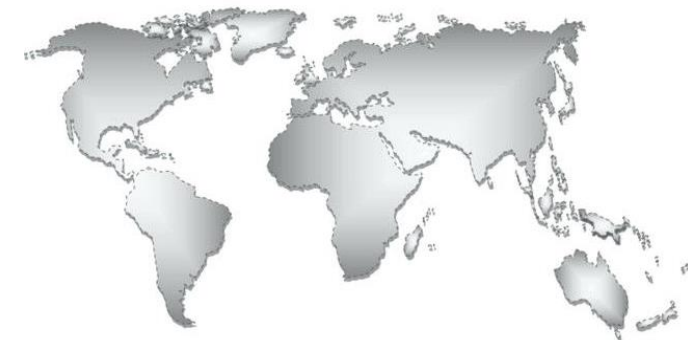
Prevention and Management of CIPN: ASCO Guideline 2020

“Clinicians should assess, and discuss with patients, the appropriateness of dose delaying, dose reduction or stopping chemotherapy (or substituting with agents that do not cause CIPN) in patients who develop intolerable neuropathy and/or functional nerve impairment.”⁴

As of January 2024, no therapeutic is approved for the treatment of CIPN in North America, United Kingdom, or Europe.

Growing Market

The global CIPN market held a market value of \$1 Billion in 2021 and is forecasted to reach \$1.5 Billion by the year 2030 without any new marketed product.⁵



According to the National Cancer Institute, as of 2020, around 1,806,590 new cancer cases were estimated to be diagnosed in the United States, many of which will also experience CIPN.

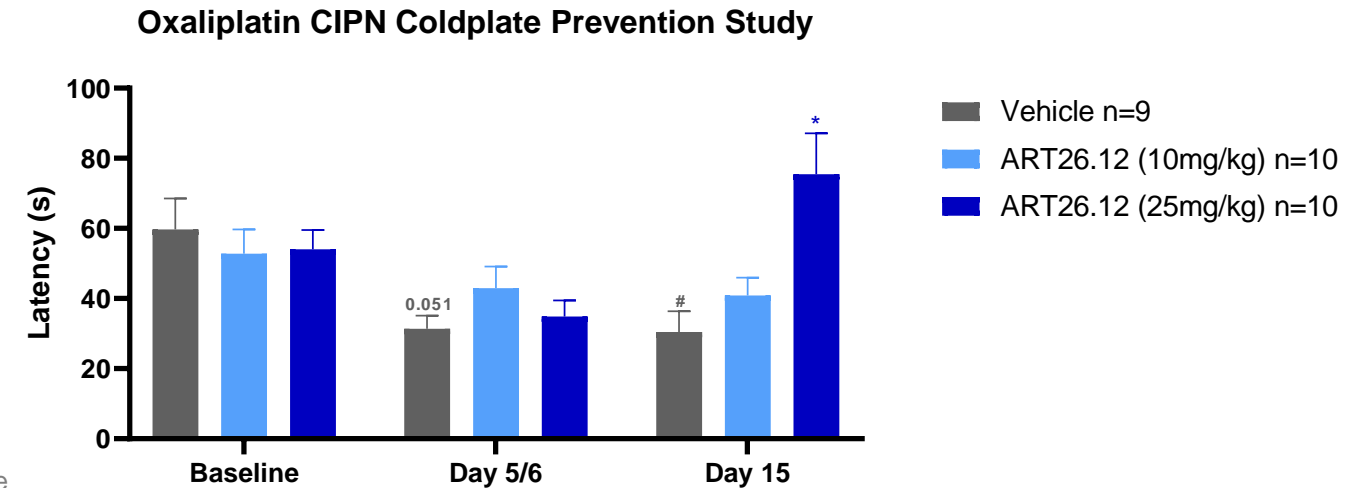
ART26.12: Non-Clinical Evidence for the Prevention and Treatment of Neuropathies

Prevention of CIPN

Prophylactic daily treatment with 25 mg/kg p.o. BID ART26.12 in multiple CIPN animal models

- **Significantly reversed cold allodynia** latencies in oxaliplatin induced CIPN by day 15
- **Reduced mechanical and cold allodynia** associated with paclitaxel induced CIPN by day 15[^]

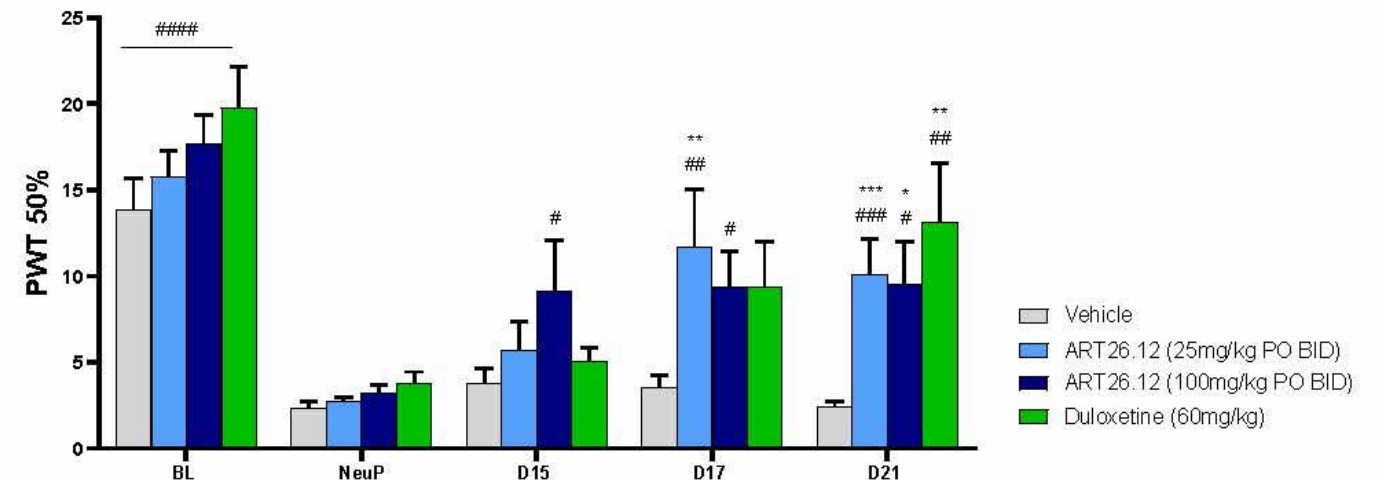
Values are presented as mean ± s.e.m. (n=9-11). Study was performed in male Sprague Dawley Rats. [^]Data on file



Treatment of Diabetic Neuropathy (DN)

Oral treatment with 25 or 100 mg/kg, BID ART26.12 for seven days⁺ in male Wistar rats with streptozotocin (STZ) induced DN

- **Significantly increased withdrawal thresholds[‡]** over baseline after first dose of 100mg/kg
- **Significantly increased withdrawal thresholds** in both 25 and 100 mg/kg on third and seventh days of dosing
- Duloxetine delayed significant effect until seventh day



⁺Day 1 of treatment after two weeks of STZ treatment = D15; [‡]reduced mechanical allodynia. *p<0.05, **p<0.01, ***p<0.001, and ****p<0.0001 indicate statistically significant difference when compared to the STZ+vehicle group at the same timepoint (between-group comparison). #p<0.05, ##p<0.01, ###p<0.001, and ####p<0.0001 indicate statistically significant difference when compared to NeuPin the same group (within-group comparison). Data on file.

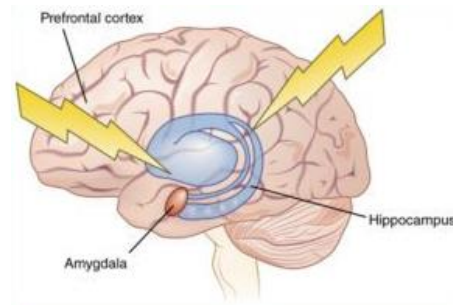
ART12.11

Proprietary CBD:TMP Cococrystal

Can Anxiety be Treated Better?

Anxiety

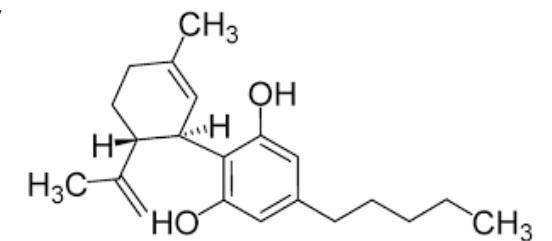
- Most common mental health condition in the US**
 - Prevalence of 40 million adults
 - Incidence of ~19% of the adult population each year
 - Anxiety disorders include generalized anxiety disorder (GAD), panic disorder, social anxiety disorder (SAD), obsessive-compulsive disorder (OCD), and post-traumatic stress disorder (PTSD), among others
- 2021 \$11b WW market, \$16.25b by 2029 †
- Most commonly used drugs are suboptimal
 - Issues of slow onset, dependence and drug interactions leave many unmet needs



Can CBD be Improved?

Cannabidiol (CBD)

- FDA approved Epidiolex® as safe and effective
 - Indicated for two forms of childhood epilepsy
 - Developed by Greenwich Biosciences and acquired by Jazz Pharmaceuticals for \$7.2b
 - 2022 revenue of \$736m
- Known therapeutic potential for the treatment of anxiety, depression, sleep, pain and inflammation
- Therapeutic utility is limited by its properties
 - High lipophilicity
 - Poor solubility and stability
 - Low oral bioavailability



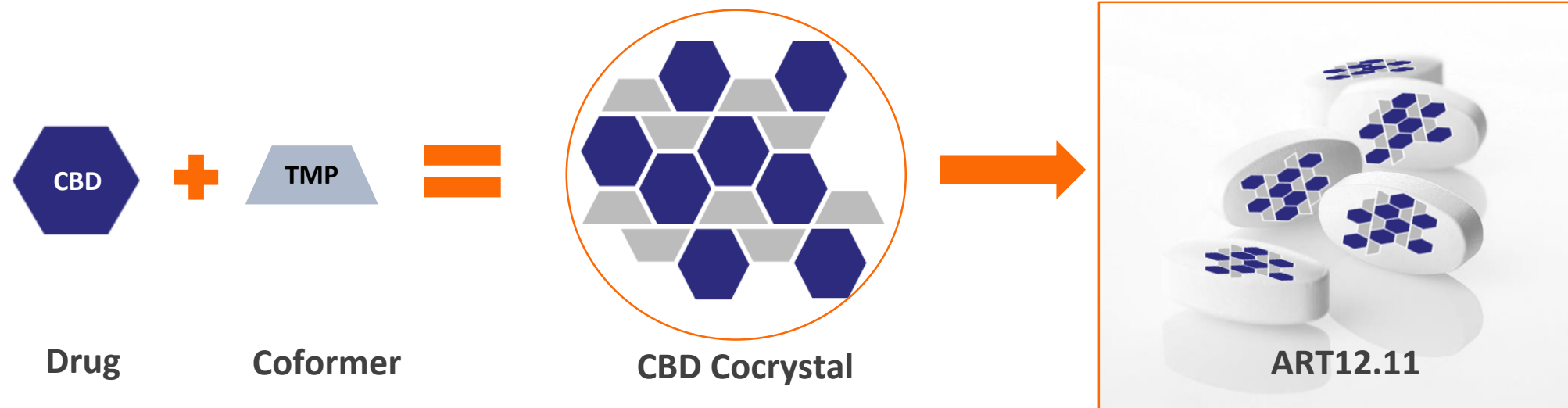
ART12.11 Leverages Cocrysalization to Improve CBD

Cocrysalization of CBD with TMP

- A validated pharmaceutical method for overcoming problematic drug properties
- A 1:1 ratio of CBD and tetramethylpyrazine (TMP; also called ligustrazine)
- Allows for precise control over purity, potency, and consistency
- TMP is a plant-derived compound from the Ligusticum species
- European Food Safety Authority (EFSA) approved TMP as a safe food additive

ART12.11

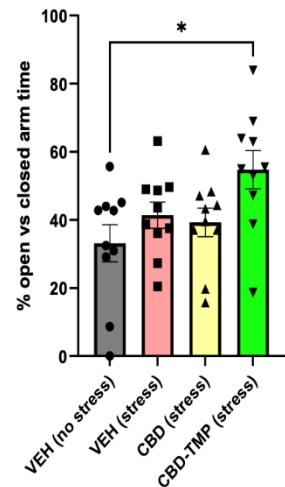
- Delivers higher levels of CBD and its major metabolite CBD-7COOH compared to CBD alone
- More soluble in Fasted State Simulation Intestinal Fluid (FaSSIF) and Fed State Simulated Intestinal Fluid (FeSSIF)
- CBD dissolution is improved in FaSSIF and FeSSIF
- A single crystalline melt and higher melting point (91 °C) than either individual component (CBD 65 °C)
- US Patent issued composition of matter and use Dec 10, 2038; PCT National phase filings WW underway



ART12.11 Data Shows Superior Preclinical Efficacy Compared to CBD

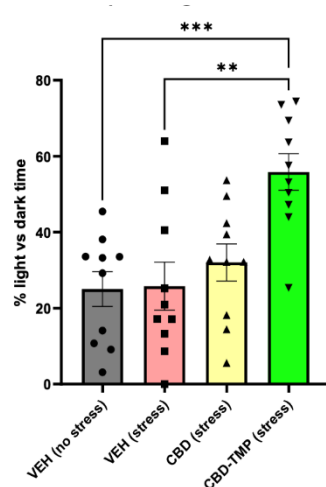
Anxiety

% time spent in open vs closed arm*



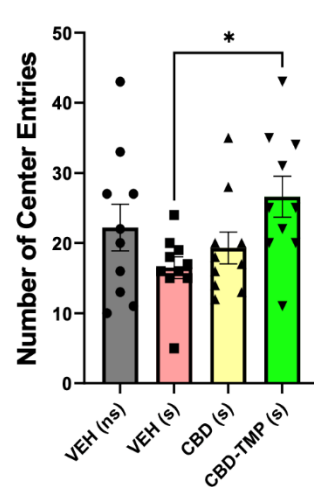
Elevated Plus Maze

% time spent in light vs dark chamber



Light-Dark Chamber

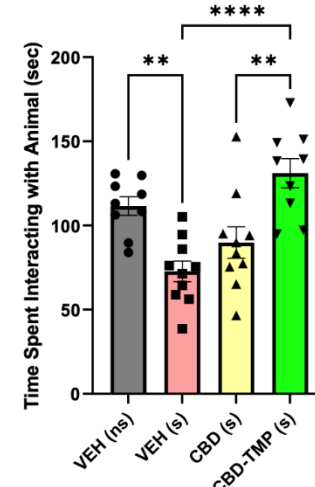
of center entries*



Open Field Test

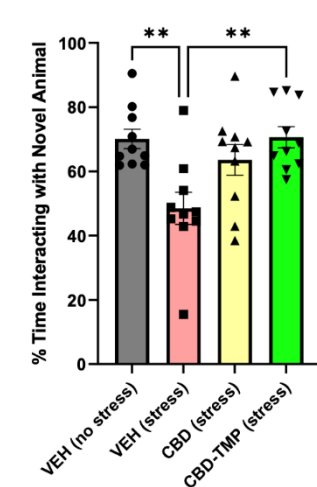
Sociability

Time spent interacting with stranger animal



Social Motivation

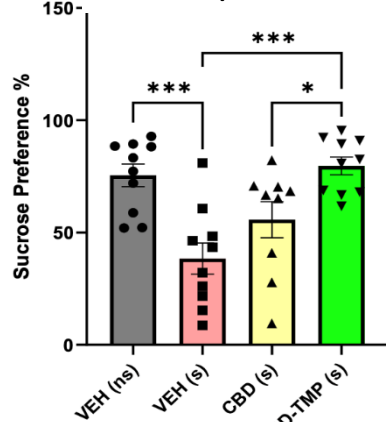
% time spent interacting with novel vs familiar animal



Social Discrimination

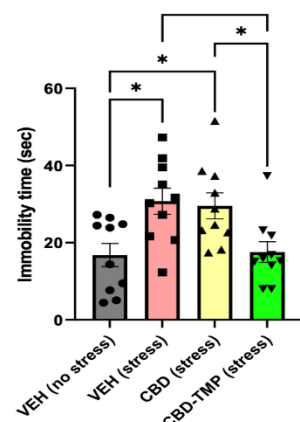
Depression

% sucrose preference



Sucrose Preference

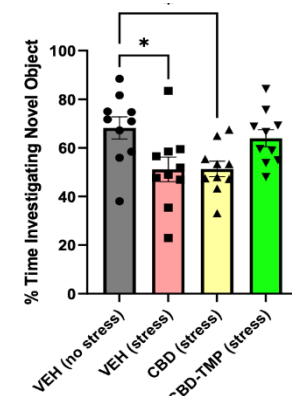
Immobility over 5 min



Forced Swim Test

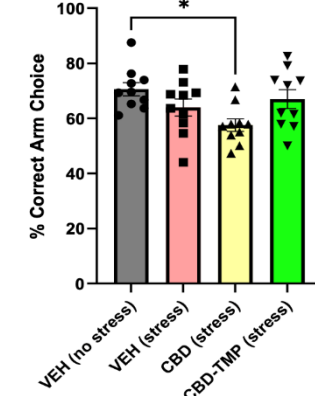
Cognition

% time spent investigating novel object



Novel Object Recognition
Short-term working memory

% correct arm choice*



Spontaneous Alternation
Spatial memory

ART12.11 Summary of Superior Preclinical Efficacy Compared to CBD

Clinical Behavior	Behavioral Test	ART12.11 (3.5 mg/kg CBD + 1.5 mg/kg TMP p.o.)	CBD-alone (10 mg/kg p.o.)	
Anxiety	Elevated plus maze	✓ Anxiolytic	X No effect	✓ Positive Effect
	Light-dark chamber	✓ Anxiolytic	X No effect	X No Effect
	Open field test	✓ Anxiolytic	X No effect	X Negative Effect
Depression	Sucrose preference	✓ Anti-depressive (reversed stress effect)	X No effect	
	Forced swim test	✓ Anti-depressive (reversed stress effect)	X No effect	
Sociability	Social motivation	✓ Pro-social (reversed stress effect)	X No effect	
	Social discrimination	✓ Pro-social (reversed stress effect)	X No effect	
Cognition	Novel-object recognition	✓ Protected short term memory (reversed stress effect)	X No effect	
	Spontaneous alternation	✓ Protected spatial memory (reversed stress effect)	X Impaired spatial memory	

Company

**Milestones, Capitalization Structure,
Leadership, & Investor Summary**

Accomplished and Anticipated Near-Term Milestones

- 2H 2022** ✓ ART26.12 Results from key non-clinical studies
- 1H 2023** ✓ ART27.13 Initiate Phase 2a CArES cancer anorexia study
- ✓ ART12.11 Results from key non-clinical studies
- 2H 2023** ✓ ART26.12 Pre-IND meeting minutes from FDA
- 1H 2024** ART26.12 IND Submission
- ART12.11 Results from key non-clinical studies
- 2H 2024** ART27.13 Complete enrollment of Phase 2a CArES cancer anorexia study

Company Capitalization (Nasdaq: ARTL)



Capitalization (as of 11/30/2023)	
Common Shares Outstanding	3,188,959
Warrants (WAEP \$55.60)	252,964
Options (WAEP \$15.79)	519,105
Total	3,961,028
Cash, Cash Equivalents, and Marketable Securities (As of 9/30/2023)	\$12.9M
No Debt	

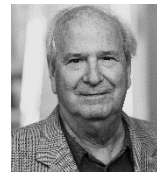
Fully diluted ownership: 6% Officers/Directors

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



Saoirse O'Sullivan, PhD
VP, Translational Science
Professor, University of Nottingham, UK



Jason Baybutt
SVP, Finance
PubCo Reporting

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Chair of the Board
Wells Fargo, Biogen IDEC, Sutro Biopharma,
Halozyme



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



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University of Michigan, NCI



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Visgenx

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Artelo Biosciences Summary



NOVEL DRUG PIPELINE

Cutting edge science focused on lipid-signaling and endocannabinoid system modulation

Risk mitigated by:

- Development stage
- Probability of success
- Mechanism of action



NEAR-TERM MILESTONES

Well-capitalized to achieve multiple non-clinical and clinical achievements

Planning ART26.12 IND submission in 1H2024

Expecting completion of enrollment of CArES Phase 2a clinical study in 2H2024



BILLION DOLLAR MARKETS

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

- CIPN \$1B+
- Cancer anorexia \$2B+
- Prostate cancer \$9B
- Breast cancer \$18B
- Anxiety \$11B
- PTSD \$7B



ROBUST PATENT ESTATE

Issued (38) and pending (37) patents (includes owned, licensed, and partnered)

Granted 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

Artelo

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