Gb Sciences

# Novel Generative-AI Designed, Plant-Inspired Therapies for Multi-Billion Dollar Prescription Drug Markets

August 2024

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# Business Overview

## Proprietary Generative-AI Powered Drug Discovery Platform

- AI-Powered Drug Discovery Platform Market projected to reach USD 9.1 Billion by 2030 (CAGR 29.7%)
- Leverages demonstrated healing from within 12 global Traditional Medical Systems (TMS)
- Pre-validates novel, simple, plant-based mixtures to address multi-billion-dollar markets

## Lead Parkinson's Disease Drug in preparation for First-in-Human Trial

- Parkinson's Disease Market projected to reach USD 12.2 billion by 2030
- First-in-Class Cannabinoid-based mixture in easy-to-dose Oral Dissolving Tablets
- First Licensing Agreement signed, other potential development partners being vetted

## Non-Opioid Chronic Pain Therapy in Delivery-Enhanced Time-Released Nanoparticles

- Chronic Pain Market projected to reach USD 159.6 billion by 2030
- First-in-Class, Terpene-based mixture delivered in Oral Time-Released Nanoparticles
- Time-Released Oral Delivery provides continuous relief for 1 week* from a single dose (*animal study)
- Animal Validation Study will be completed in December of 2024

# GB Sciences

OUR MISSION:
GB Sciences is committed to using generative AI-powered drug design and our global network of collaborators to develop innovative plant-inspired medicines backed by cutting-edge science.

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# Proprietary Generative-AI Drug Discovery Platform

- Leverages demonstrated healing from within 12 global Traditional Medical Systems (TMS)
- Pre-validates novel, simple, plant-based mixtures to address multi-billion-dollar markets
- Goes beyond looking at what has worked within plant-based medicines in the past, to predicting the efficacies of entirely new formulations that have not existed anywhere
- These new proprietary mixtures often include components from different plants growing on different continents in different TMS that may never have been used together before
- GB Sciences has achieved positive proof-of-concept milestones in animal models of Parkinson's disease, pain, inflammation, stress and anxiety, which validates the platform
- Gb Sciences is working collaboratively with other parties to utilize similar digital strategies leveraging AI & ML for informed drug discovery and innovative human health solutions
- Independent Prior Art Searches support the novelty of our Generative-AI Drug Discovery Platform.
- AI Powered Drug Discovery Platform Market projected to reach USD 9.1 Billion by 2030 (Grandview Research Report-CAGR 29.7%)

# First-in-Class Parkinson's Drug

## First-in-Class Parkinson's Drug in Oral Dissolving Tablets

- Strategic Advantages: Novel cannabinoid-based formula uses molecular synergies between the ingredients to increase efficacy. The ODT dissolves in the mouth within 5 seconds without swallowing, which is an advantage because greater than 50% of Parkinson's patients struggle while swallowing.
- Primary Indication: Parkinsonian Movement Disorders
- Global Market Size: USD 12.2 billion by 2030 (Grandview Research Report)
- Active Pharmaceutical Ingredients: Ratio-controlled mixture of three synergistic cannabinoids
- Delivery Method: Oral Dissolving Tablet (ODT) Format increases stability & patient compliance
- Regulatory Pathway: New Chemical Entity
- Development Stage: IND-enabling Studies preparing for First-in-Human

## Parkinson's Drug Competitor Analysis

- Most Symptomatic Drugs for Parkinson's disease on the Market Have Limited Duration of Activity
- Current Disease-Modifying Drugs Not Working (pre-market)

**GB Sciences' PD Therapeutic may be used in conjunction with current PD therapies to reduce Parkinsonian movement symptoms or to alleviate Levodopa-based Dyskinesia**

# GB Sciences

# First-in-Class, Non-Opioid Chronic Pain Drug

## First-in-Class Chronic Pain Therapeutic in Oral Time-Released Nanoparticles

- Strategic Advantages: Non-opioid drug. In animal studies, a single oral dose in our proprietary nanoparticle delivery provided 11 days of relief relative to 3 hours for the non-nanoparticle control group.
- Primary Indication: Chronic Pain
- Global Market Size: USD 159.6 billion by 2030 (Prescient & Strategic Intelligence Report)
- Active Pharmaceutical Ingredients: Ratio-controlled mixture of three synergistic terpenes & cannabinoids
- Delivery Method: Oral Time-Release Nanoparticles (GRAS lipids) increases stability & duration of activity
- Regulatory Pathway: New Chemical Entity
- Development Stage: Animal Proof of Concept Studies preparing for IND-enabling studies

## Chronic Pain Drug Competitor Analysis

- Non-Opioid Drugs: Effective pain relief range for NSAIDs is limited
- Opioid Drugs: High potential for Abuse and Addiction. Quick Onset, but Short Duration of pain relief. Tolerance develops that requires higher doses to achieve the same level of pain relief.

**GB Sciences' Oral Time-Release Pain Drug may provide one week* of relief from a single dose, based on animal studies. Novel delivery method increases the stability & bioavailability of the active ingredients.**

# Research Development Partners

**NATIONAL RESEARCH COUNCIL, CANADA**

Animal Models used for establishing a Proof-of Concept for our Optimized Therapeutic Mixtures for the treatment of Parkinson's disease and neuropathic pain, in separate projects.

**THE UNIVERSITY OF LETHBRIDGE, CANADA**

Animal Models and "Home Cage Small World" assessments using cameras and Artificial Intelligence-to assess efficacy of our Optimized Therapeutic Mixtures for Parkinson's disease.

**UNIVERSITY OF HAWAII**

Animal Models used for establishing a Proof-of-Concept for our Optimized Therapeutic Mixtures for the treatment of Heart Failure.

**UNIVERSITY OF CADIZ, SPAIN**

Animal Models used for establishing a Proof-of-Concept for our Optimized Therapeutic Mixtures in oral nanoparticles for the treatment of neuropathic pain.

**UNIVERSITY OF ATHENS, GREECE**

Plant-based Metabolomics research discovering new phytochemical components and novel uses for phytochemicals.

**CHAMINADE UNIVERSITY**

Cell & Computer-based Models used in Drug Discovery Process; Ideation and creative contributions to IP portfolio.

**MICHIGAN STATE UNIVERSITY**

Cell-based Models used in Drug Discovery Process; Expertise in the role of cannabinoids in inflammation.

**UNIVERSITY OF SEVILLE, SPAIN**

Oral Nanoparticle Technology used to enhance drug delivery of our Optimized Therapeutic Mixtures.

# Product Development Partners

**PURISYS, LLC**

Purisys is a global leader in custom synthesis of active pharmaceutical ingredients and advanced intermediates. They support pharma & biotech companies with APIs, reference standards, controlled substances, cannabinoids, and cGMP clinical & niche commercial CDMO services. Formed as a spin-off from Noramco in 2019, Purisys began manufacturing in 1979 as part of Johnson & Johnson.

**CATALENT, INC.**

Catalent is the leading global provider of advanced delivery technologies and development solutions for drugs, biologics, and consumer health products. With 85 years serving the industry, Catalent has proven expertise in bringing more customer products to market faster, enhancing product performance, and ensuring reliable clinical and commercial product supply. Catalent employs over 11,000 people, including over 1,800 scientists, at more than 30 facilities across five continents.

# Assets & Pipeline

## IP Portfolio Protects >50 Plant-Based Drugs & Generative AI-Powered Discovery Platform

- 8 US & 14 Global Patents Issued (covering 28 unique formulas for human health disorders)
- 15 US & 41 Global Patents Pending (covering 25 unique formulas for human health disorders)
- 5 Drugs in Late Preclinical Phase with cell & animal data (PD, pain, anxiety, cytokine syndromes & heart)

## Proprietary Generative AI-Powered Drug Discovery Platform

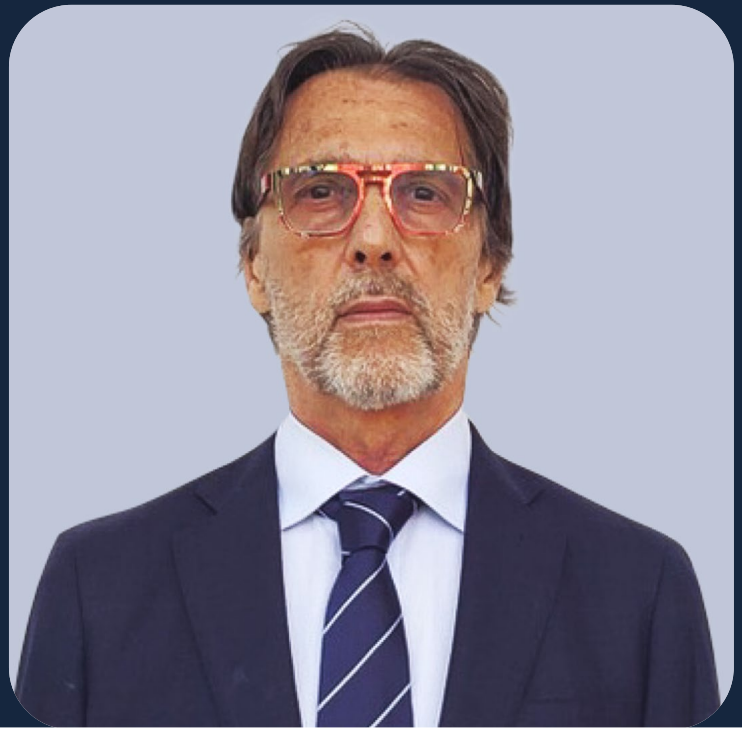
- Predicts novel, simple, plant-based mixtures to address multi-billion-dollar markets
- Greater than 90% hit-rate for efficacy of AI-predicted formulations
- Enhanced hit-to-lead rates and multiple effective drug candidates per health disorder

## Five Drug Candidates in Late Preclinical Stage of Development

- Preparing First-in-Class, Cannabinoid-based, Parkinson's Drug Candidate for First-in-Human Trial (Q2 2026)
- Q4 2024: Animal Validation Study for Terpene-based Chronic Pain Drug in Oral Time-Released Nanoparticles
- Q4 2023: Completed Animal Validation Study for Kavalactone-based Anxiety Drug Candidates at NRC Canada
- Completed Preclinical Studies of Cannabinoid- and Terpene-based Cytokine Syndrome Drug Candidates at MSU
- Animal Studies supporting our Heart Failure program were completed at the University of Hawaii

# Executive Leadership


**Dr. Andrea Small-Howard, CEO & CSO**, has 20+ years of executive experience in the biopharma industry. She has shaped corporate strategies and messaging, led partnering efforts, and raised capital. In addition, she has supervised research & development, manufacturing, and quality control in global divisions. She has taken novel biological products from ideation through commercialization by structuring licensing deals and partnerships.



**Dr. Michael Farley, President & Director** of GbS Global Biopharma, the wholly-owned Canadian subsidiary of GB Sciences, has 20+ years of experience in the biopharma industry leading business development, partnering, and M&A. He has also served as a corporate advisor for multiple publicly traded companies listed in Canada and the U.S. assisting with comprehensive management strategies and financing.

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# Summary

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|---|---|
| Unique Biotech Assets | Generative-AI Drug Discovery Platform & >50 Plant-Inspired Drug Candidates, 5 Late-Preclinical Stage Programs (PD, Chronic Pain, Anxiety/Stress, Cytokine Syndrome, Heart Failure) |
| Experienced Leadership | 20+ Years of Industry & Finance Experience within Executive Leadership & Advisory Board Members |
| Development Milestones | CMC (Q2 2025) & First-in-Human Trial for Parkinson's (Q4 2025), Animal Validation Study of Non-Opioid Drug Candidate for Chronic Pain (Q4 2024) |
| Partnering Strategy | First Licensing Agreement Signed for Lead PD Program, Vetting Other Development Partners, Strong Existing Partners & Collaborators in Biotech Pipeline |

August 2024

# Disclaimer: Forward Looking Statements

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