Gb Sciences

AI-Designed, Plant-Inspired Therapies for Multi-Billion Dollar Drug Markets

October 2024

OTCQB:GBLX

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 drug 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

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 70% 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

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Partnering to Advance Unique Plant-Inspired Pipeline of Novel Therapies

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Gb Sciences Potential Product Licenses

US & Global Patents Issued

- Parkinson’s disease
- Prevention and treatment of Heart Failure through reduction of cardiac hypertrophy
- TRPV1-related Heart Disease, Renal Cystitis, and Hearing Loss
- Overactive Bladder
- Refractory Cough
- Nanoparticles for time released delivery of novel Pain treatments

- Pain including Pain related to Arthritis, Shingles, Irritable Bowel Syndrome, Sickle Cell Disease, and Endometriosis
- Inflammation due to Allergy, Atopy, Allergic Asthma, Eczema, Rhinitis, Physical & Chemical Urticarias, Idiopathic Urticaria, Crohn's disease, Inflammatory Bowel Disorder, Dermatitis & Contact Dermatitis, Arthritis & Rheumatoid Arthritis, Mast Cell Activation Syndrome (MCAS)

GbSciences Potential Product Licenses

US & Global Patents-Pending

- Novel Generative AI-Powered Drug Discovery Engine
- Parkinsonian Movement Disorders
- Alzheimer’s disease
- Lewy-body Dementia & Dementia
- Time-released Nanoparticles containing Cannabinoids and/or Terpenes for Chronic Pain
- Neuropathic Pain
- Peripheral Neuropathy & Post-herpetic Neuralgia

- Heart Failure (Prevention & Treatment)
- Time-released Nanoparticles containing Cannabinoids and/or Terpenes for Heart Disease
- Anxiety & Stress Relief
- Cytokine Syndromes
- Inflammation due to Allergy, Atopy, Allergic Asthma, Eczema, Rhinitis, Physical & Chemical Urticarias, Idiopathic Urticaria & Crohn's disease
- Inflammatory Bowel Disorders

Gb Sciences Multi-Billion-Dollar Markets

Targeted Rx Markets in USD Billions (Year)

Treatment Category	US Market	Global Market	Treatment Category	US Market	Global Market	Treatment Category	US Market	Global Market
Pain	34.8 (2031)	193.2 (2032)	**Neurodegenerative Diseases**	39.6 (2032)	94.3 (2032)	**Heart Disease**	35.3 (2033)	207.8 (2033)
Chronic Pain	75.2 (2030)	159.6 (2030)	**Parkinson's Disease**	4.9 (2030)	12.8 (2030)	**Heart Failure (Prevention & Treatment)**	17.5 (2033)	60.2 (2033)
Neuropathic Pain	4.3 (2031)	11.4 (2029)	**PD Movement Disorders**	4.0 (2030)	10.2 (2030)	**Anti-Inflammatory Treatments**	62.5 (2032)	233.6 (2032)
Peripheral Pain	2.4 (2031)	6.5 (2029)	**Alzheimer's disease**	2.6 (2030)	5.2 (2030)	**Cytokine Syndromes**	37.7 (2029)	129.8 (2029)
Peripheral Neuropathy	1.2 (2030)	2.4 (2032)	**Renal Cystitis**	8.7 (2032)	32.3 (2032)	**Inflammatory Bowel Disorders**	10.6 (2031)	28.0 (2031)
Post-herpetic Neuralgia	0.8 (2034)	1.4 (2034)	**Hearing Loss**	5.0 (2030)	19.4 (2030)	**Stress & Anxiety**	4.8 (2027)	13.0 (2027)
Overactive Bladder	2.0 (2032)	5.1 (2032)	**Refractory Cough**	3.0 (2034)	14.1 (2034)	**AI-Powered Drug Discovery Engine**	4.6 (2030)	9.1 (2030)

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All Potential First-in-Class

Novel Plant-inspired Therapeutics Pipeline

Therapeutic Area	Target Val	Lead	Candidate	IND-enabling	Phase I/II
Parkinsonian Movement			GBS.PD119		
Chronic Pain			GBS.CP225		
Anxiety			GBS.ANX65		
Cytokine Syndromes					
Heart Disease					

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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%)

GbSciences AI-Drug Discovery Comparables

Company	HQ	Founded	Private	Exchange	Symbol	Market Cap	Development Stage
absci	Vancouver, WA	2011	no	NASDAQ	ABSI	USD $397.45M	**Preclinical phase**; Collabs w/ **Merck & Astrazeneca**; **IPO in 2021**
Exscientia	Oxford, UK	2012	no	NASDAQ-GS	EXAI	USD $621.72M	**2 clinical trials** (ph Ib/II, ph I/II); Collabs w/**Evotec & Bristol Meyers Squibb; $2.9 Billion IPO in 2021**
Recursion	Salt Lake City, UT	2013	no	NASDAQ	RXRX	UDS $1,727M	**5 clinical trials** (all ph II); Collabs w/**Roche, Genetech, Bayer; IPO in 2021**
BenevolentAI	London, UK	2013	no	EN Amsterdam	BAI	EU 95.8M	**2 clinical trials** (ph I, ph IIa)**;** Collabs w/**Astrazeneca & Merck; IPO in 2022**
Relay Therapeutics	Cambridge, MA	2016	no	NASDAQ-GM	RLAY	USD $1,273M	**3 clinical trials** (ph I/ II); Collabs w/ **Roche & Genentech**; **IPO in 2020**
Insilico Medicine	New York, NY & Hong Kong	2014	yes				**3 clinical trials** (ph I/ II); Private stock= $16.04 (9-9-2024); Collabs w/**Exelixis & FOSUN Pharma; June 2022 Raised $95M in Series D**
insitro	San Francisco, CA	2018	yes				**Preclinical phase**; Collab w/Bristol Meyers Squib; Private stock= $9.39 (9-9-2024); Raised $628.6M to date; **April 2021 raised $399.9M in Series C**

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

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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.

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Summary

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

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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

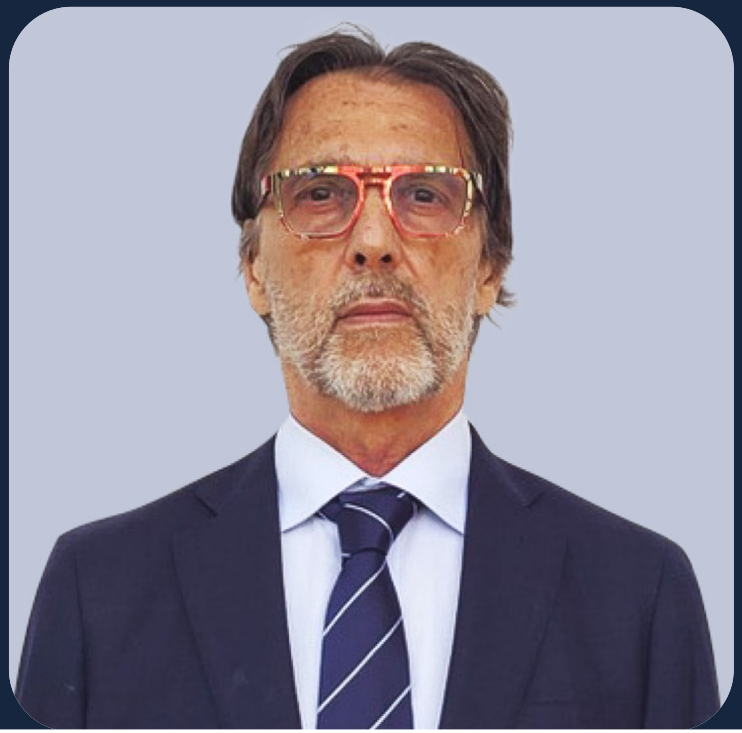
Purisys is a global leader in custom synthesis of active pharmaceutical ingredients and advanced intermediates. They support pharma & biotech companies with APIs, reference standards, controlled substances, cannabinoids, and cGMP clinical & niche commercial CDMO services. Formed as a spin-off from Noramco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

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 strategic 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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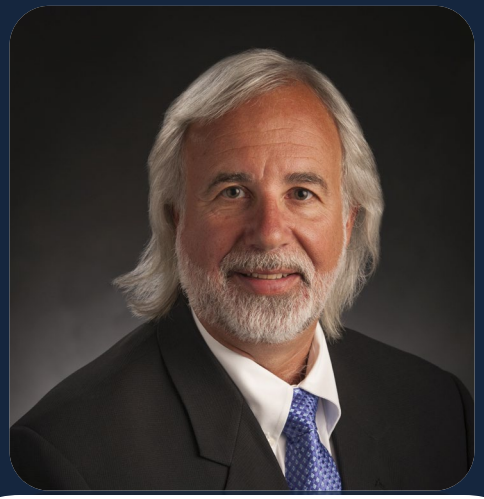
GbSciences' Scientific Advisory Board



Dr. Norbert Kaminski
Director, Institute for Integrative Toxicology & Professor, Pharmacology & Toxicology Department at Michigan State University. Nationally recognized expert on cannabinoids & the immune system.
20+ years experience as a leader in research on human immune system disorders

Dr. Zoltan Mari
Director, Parkinson's Disease & Movement Disorders Program and the Ruvo Center Chair at the Cleveland Clinic's Lou Ruvo Center for Brain Health
Director, Center of Research Excellence in Parkinson's Disease & Movement Disorders.
20+ years of human clinal trial experience

Dr. Helen Turner
Dean, Natural Sciences & Mathematics, Professor, Biology at Chaminade University
Nationally recognized leader in data science. Extensive scientific advisory board service.
20+ years of research experience in immunology, 15+ years leading cutting-edge, government-funded AI & ML projects

Dr. Carlos Rios-Bedoya
Corporate Director of Scholarly Inquiry at McLaren Health
Dr. Rios-Bedoya oversees clinical research across 13 health care facilities over 30 residency programs in Michigan. He has served as a clinical strategy advisor to many drug companies.
20+ years of human clinical trial oversight

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