

Corporate Presentation  
May 2023

willow.

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The Next Generation  
of Nature is FutureGrown™

[willowbio.com](http://willowbio.com)

TSX: WLLW  
OTCQB: CANSF

# DISCLAIMER

Certain information included in this presentation constitutes forward-looking information under applicable securities legislation. Forward looking information typically contains statements with words such as "will", "may," "anticipate", "believe", "expect", "plan", "intend", "estimate", "propose," "could," "potential," "positioned for," "becoming," "likely," or similar words suggesting future outcomes or statements regarding an outlook. Forward-looking information in this presentation includes, but is not limited to, statements relating to: the business, strategies, expectations, planned operations and future actions of Willow Biosciences Inc. ("Willow" or the "Company"), including research and development programs at the facility located in California; the Company's ability to commercially biosynthesize and create proprietary genomes; the Company's milestone projections, including the timing of commercialization of the various products in its portfolio; the sustainability of traditional manufacturing processes and benefits/impacts of Biosynthesis; expected therapeutic benefits of the Company's portfolio CBG; expected benefits and cost-savings resulting from commercial-scale production via the Company's fermentation manufacturing platform, including manufacturing performance estimates and forecasts; the development of the Company's intellectual property portfolio; the arrangements under, and potential benefits of, the Company's strategic partnerships; discussions with cosmetics and consumer-packaged goods entities, manufacturing partners and other key stakeholders; the performance of the Company's business and operations; the financial strength of the Company; the ability of the Company to fund its business plan using cash on hand and existing resources; the availability of future R&D funding; the size of the biosynthetic cannabinoid market, including potential demand for the Company's cannabinoids from the pharmaceutical, cosmetics and consumer packaged goods industries; forecasted or potential revenue; statements made by other companies indicating their commitments to bio-based products; the Company's expected customer-base and potential addressable markets; the competitive conditions of the industry in which the Company operates and the competitive advantages of the Company; the performance of the current science team, management and board and the ability to find other qualified personnel with operational experience; the Company's ESG efforts and objectives; and the Company's future product offerings, including the development of other cannabinoids in the Company's product portfolio and the future production levels, quality, consistency and costs thereof.

The forward-looking statements contained in this presentation are based on certain key expectations and assumptions made by the Company, including, but not limited to, expectations and assumptions concerning: the future operations of, and transactions completed by, the Company; the Company's ability to implement corporate strategies; the potential for strategic partnerships to open new and larger markets (including nonpharmaceutical markets); the Company's ability to generate higher quality cannabinoids at lower costs; cost synergies created by its strategic partnerships and the successful implementation thereof; the adequacy of current capital; the availability of and access to qualified personnel; the results of scientific research; the Company's ability to protect its intellectual property; the Company's ability to successfully create and launch brands and

further create, launch, and scale CBG or other consumer products; the expected growth in the biosynthetic CBG market, including demand for cultured CBG from the pharmaceutical, cosmetics and consumer packaged goods industries; expectations regarding the regulatory framework for cultured cannabinoids; changes in prices and costs of inputs; the medical benefits, viability, safety, efficacy, dosing and social acceptance of CBG, a cannabinoid; the capital markets and the general economy; changes to laws and regulations in Canada, the United States and Europe; the legalization of the use of cannabinoids for medical and/or adult use in jurisdictions outside of Canada; and applicable laws not changing in a manner that is unfavorable to the Company.

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# KNOWLEDGE IS OUR POWER. SCIENCE IS OUR TOOL.

## SUSTAINABLE PRODUCTS AND INGREDIENTS FOR A BETTER FUTURE

- High value functional ingredients for the personal care, food & beverage, and pharmaceutical markets produced sustainably at lower cost
- **FutureGrown™** and **BioOxi™** enabled precision fermentation processes for commercial manufacturing
- Complete lab-to-manufacturing-to-customer solution
- Pipeline of fully owned ingredients and partnerships
- Research & Development is strategically located in San Francisco Bay Area
- Network of global manufacturing partners
- 35 staff, with >70% in scientific and technical roles



# EXPERIENCED AND ACCOMPLISHED MANAGEMENT TEAM POSITIONED TO LEAD GROWTH INTO DIVERSE MARKETS



**Chris Savile, Ph.D.**  
President and CEO



**Travis Doupe, CPA, CA**  
CFO



**Trish Choudhary, Ph.D.**  
SVP – Research and Development



**Pedro Jorge**  
VP – Quality

Willow's scientific team draws its experience from top companies and products:

CODEXIS®

intrexon

CANGENE  
bioPharma

DU PONT®

bp  
BP Biofuels

Willow's team has previously executed commercial deals with world-leading partners:

Pfizer

TATE & LYLE

JM Johnson Matthey  
Inspiring science, enhancing life

MERCK

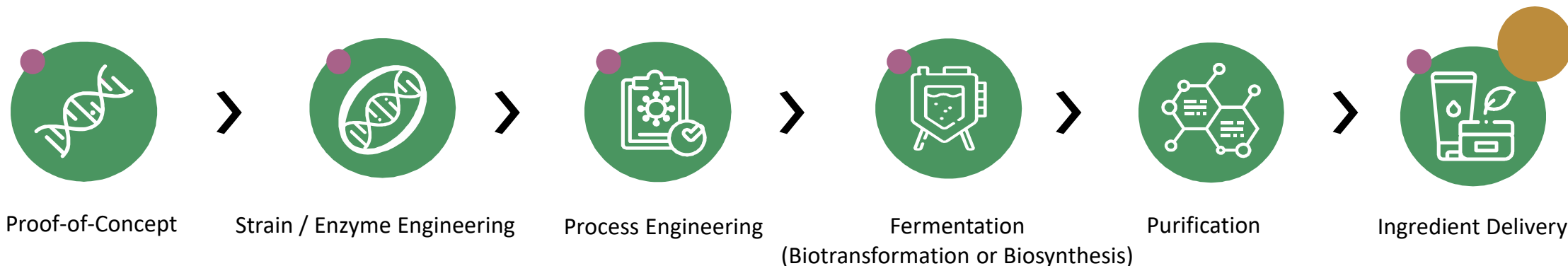
DSM

Sumitomo Dainippon  
Pharma

Lilly

# WILLOW'S MULTI-CHANNEL REVENUE MODEL

Willow delivers high-value functional ingredients through effective product selection, integrated technologies and capabilities, regulatory understanding, and expert manufacturing network



## PARTNERED PROGRAMS

- Willow generates R&D revenue, project milestones, and back-end license payments
- Willow may supply product, or license strain/enzyme for partner to manage supply chain
- IP generated belongs to Willow, enabling foundation to accelerate future programs

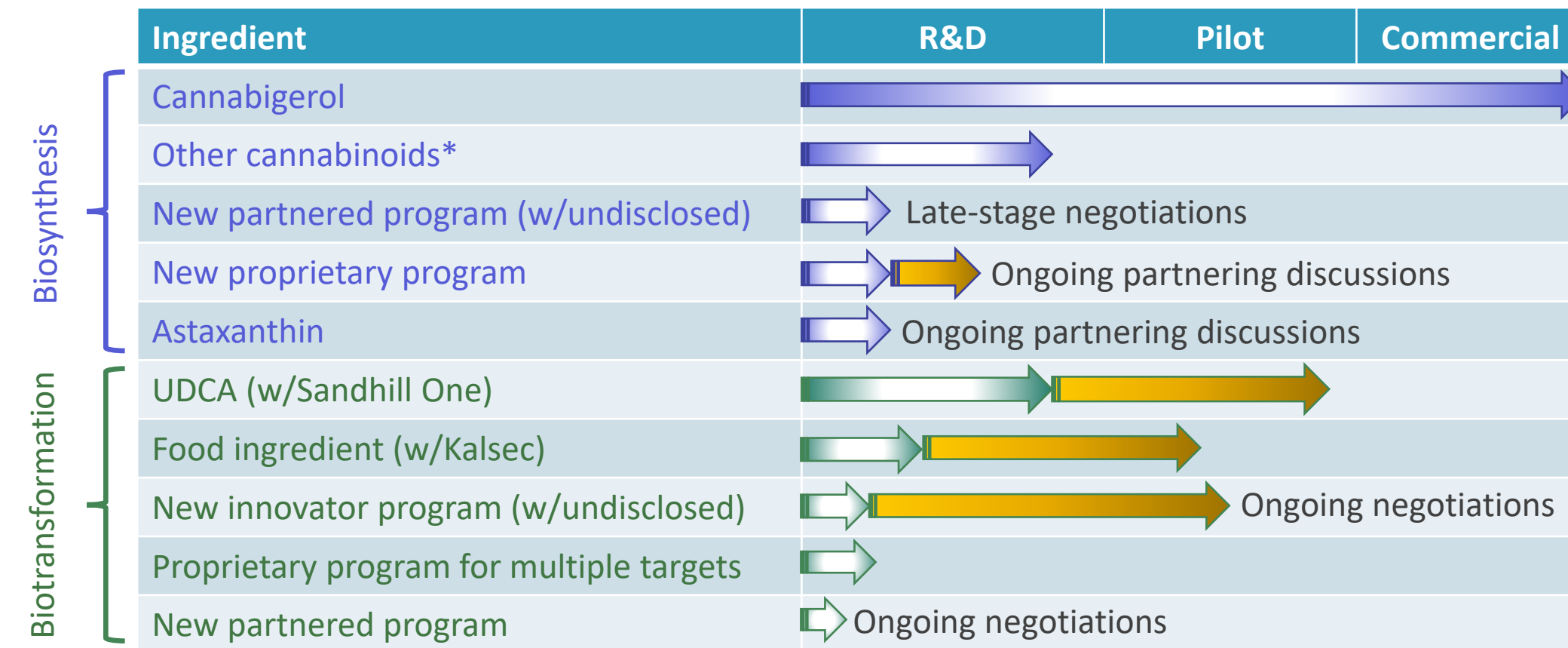


## WILLOW-OWNED PRODUCTS

- Willow develops ingredient, from proof-of-concept through scale-up to delivery
- Simple \$/kg revenue model
- Options to grow distribution channels or partner post-launch

# WILLOW'S PIPELINE

## FUNCTIONAL INGREDIENTS REPLACING UNSUSTAINABLE PLANT AND ANIMAL SOURCES

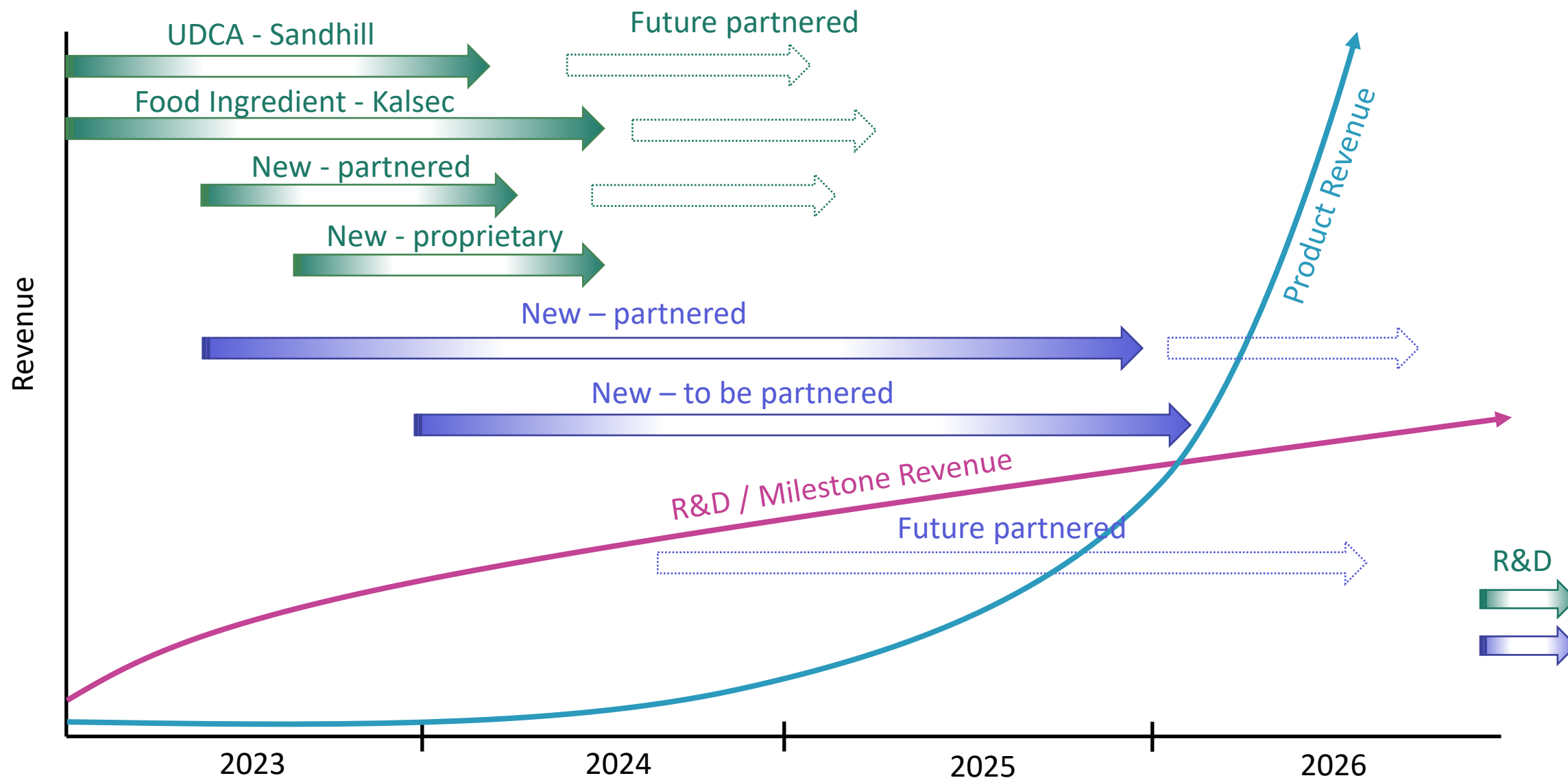


➡ Status May 2023

➡ Plan for December 2023

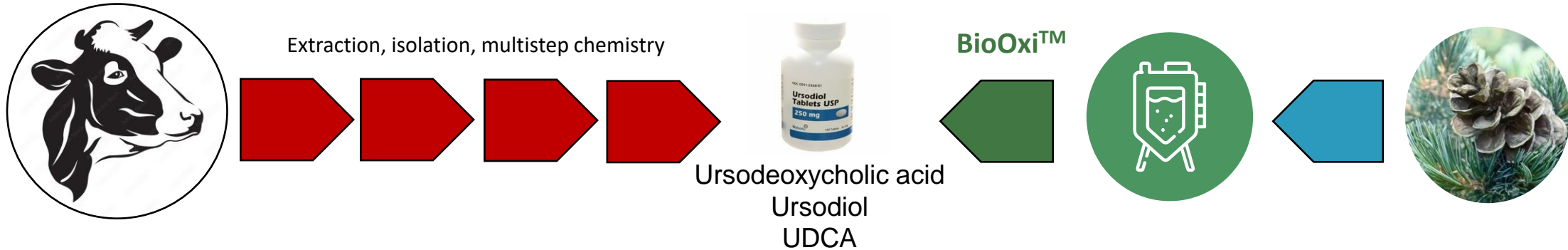
\* Paused until partnered

# FROM R&D PARTNERSHIP TO PRODUCT REVENUE



## Product: Ursodeoxycholic acid (UDCA), multi-hundred tons per year

- Treatment of cholestatic liver disease and gallstone conditions
- Intermediate for Tauroursodeoxycholic acid (TUDCA) for treatment of amyotrophic lateral sclerosis (ALS)



## The Willow Solution:

- Partnered with large, global nutraceutical and pharmaceutical company
- Replaced long chemical synthesis with bioconversion approach
- Replaced animal-based starting material
- Proof-of-concept complete; fully customer funded development with piloting in 2023 and commercialization in 2024
- Revenue generation via R&D fees, milestones & revenue share

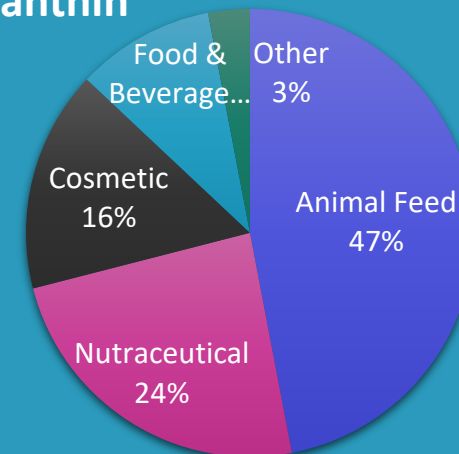


## The Opportunity

- Carotenoid that acts as a powerful antioxidant
- Willow-owed product opportunity
- Large, addressable market
- \$750m in 2022, 8% CAGR (>\$1bn in 2027)
- High market price point
- >90% of market is chemically produced
- Cost competitive, “natural” astaxanthin in demand



## Current Astaxanthin Market



Source – Future Market Insights market segmentation

## The Market



### Animal Feed

Salmon / shrimp colorant  
Egg yolk colorant  
General health promoter



### Nutraceutical

Antioxidant  
Cholesterol control  
Cognitive performance



### Cosmetic

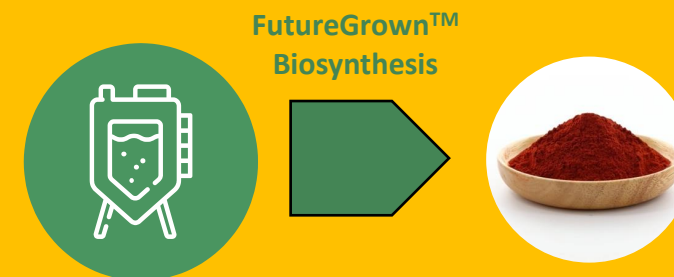
Anti-aging  
Reduces free radicals  
UV protectant



### Food & Beverage

Colorant  
Antioxidant  
Cognitive performance

## Development Timeline



Learn, Design,  
Build, Test

2023

Process  
Development

2024

Pilot &  
Production

2025

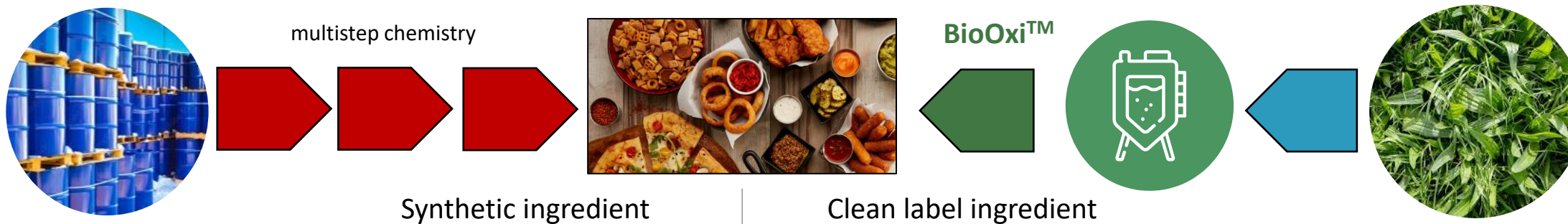
Product  
Integration

2026



## The Product: high volume, natural food opportunity

- Bulk product for use in food applications, currently chemically synthesized
- Brings a natural, sustainable product to an existing, accessible market



## The Willow Solution:

- Replaced chemical synthesis with bioconversion approach
- Finished Phase 1, optimization is ongoing for commercialization in 2024
- Revenue generation via R&D fees, milestones & license payments

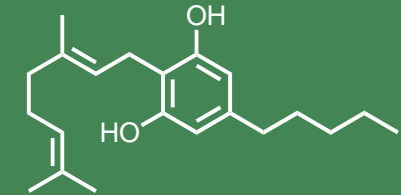
“We look forward to this collaboration with Willow to introduce new, precision-fermented products to benefit our customers and the environment.”

Dr. Roger Nahas, Executive Vice President of Global R&D and Chief Innovation Officer

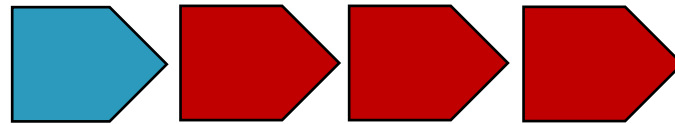
# CANNABIGEROL (CBG): WILLOW'S FIRST COMMERCIAL FUNCTIONAL INGREDIENT

## The Product: Cannabigerol

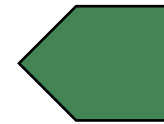
- Skin care and beverage applications
- Starting point for many other rare cannabinoids



Extraction, isolation, purification



FutureGrown™  
Biosynthesis



## The Willow Solution:

- 50,000-fold strain performance improvement in 18 months
- Commercially relevant product titer (4 g/l) proven at 15,000 L (~30 kg per batch)
- Robust, simple purification (~75% yield); exceeds industry standard
- Clinical study with 0.1% CBG formulation shown to be potent anti-inflammatory
- Currently selling to cosmetic & personal care market
- Sampled nutrition, food & beverage companies with sales pending GRAS conclusion in 2023
- Scaling to >100,000 L (~400 kg per batch) when market demands

# THE OPPORTUNITY: FUNCTIONAL INGREDIENTS

## SUSTAINABLE PRODUCTS AND INGREDIENTS FOR A BETTER FUTURE

Our FutureGrown™ technology replaces unsustainably produced ingredients at lower cost across multiple market segments





## PATH TO COMMERCIAL SUCCESS

2022

- Expanded portfolio beyond cannabinoids adding multiple functional ingredients
- Booked first R&D revenue from partnered programs
- Consolidated all R&D in Mountain View, CA

2023

- Finalize development of two partnered Biotransformation programs ready for scaleup
- Significantly increase R&D revenue with addition of partnered programs
- Build solid pipeline of proprietary and partnered programs
- Ensure runway to end of 2024

2024

- First commercial production for partnered product
- Growing R&D and product revenue
- Expand pipeline equally with partnered and proprietary programs
- Growing R&D team and manufacturing network

2025

- Substantial growth in product revenue from Biotransformation programs
- Initial product revenue from partnered Biosynthesis programs
- Healthy mix of R&D, Product, and Royalty revenue

# CAPITAL MARKET SUMMARY

- ▶ Over CAD\$65.0 million raised to date with Management and Board investing more than \$8.0 million personally into Willow
- ▶ Uplisted to the TSX Main Board in 2019 (TSX: WLLW) and trade on the OTCQB® Venture Market (OTCQB: CANSF)
- ▶ Started 2023 with CAD\$15 million with no debt
- ▶ Strong insider ownership at 30%
- ▶ Funded to commercialize production and expand portfolio



Willow share capitalization (TSX: WLLW) - As of March 21, 2023	
Basic shares outstanding	123.7
Employee options, PSU's and RSU's <sup>1</sup>	10.2
Performance warrants <sup>2</sup>	15.0
Incentive performance warrants <sup>3</sup>	12.1
Fully diluted shares outstanding	161.0

1. Weighted average strike price of \$1.18 for options.

2. 15.0mm issued in the April 2019 financing to strategic investors, management and board with a 5 year term. These warrants have a strike price of \$0.88 per share. 1.0mm broker warrants issued in connection with the February 2021 financing with a 2 year term, strike price of \$2.15 per warrant and the ability for Willow to force convert at a 20 day VWAP of \$3.05. Remaining warrants have a weighted average strike price of \$4.00 per share.

3. Additional warrants issued if the 20 day VWAP exceeds a share price of \$3.50 per share and Willow is listed on the TSX (or equivalent exchange).

## WILLOW'S KEY ADVANTAGES TO FOSTER REVENUE GROWTH AND DIVERSIFICATION



- Best in class precision fermentation technology platform
- Proven chemical development and scale-up capabilities



- Technical credibility demonstrated by successful CBG product launch in 2021
- Expansion of platform into related product verticals



- Strong Willow intellectual property position
- 19 patents filed to date



- Proprietary and partnered programs
- Existing multi-channel revenue model
- Near- and long-term revenue streams



- ESG Solution – significant environmental and sustainability benefits
- Increasingly sought by consumers and market participants



- Experienced and accomplished management team that's vested in the business

# Contacts

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Chief Executive Officer  
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# FUTUREGROWN™ PLATFORM

FULLY-INTEGRATED, PROVEN PLATFORM FOR RAPID STRAIN OPTIMIZATION, PROCESS DEVELOPMENT AND SCALE UP TO MANUFACTURING

willow

willowbio.com

## Process Development (USP & DSP)

- Demonstration of **scalability** from microtiter plate (~300  $\mu$ L) to bench-scale (e.g., 5 L)
- Lab-scale fermentation **process optimization** to **maximize growth and titer**
- Lab-scale chemical development for **downstream processing and purification** to **increase yields**

## Discovery & Characterization

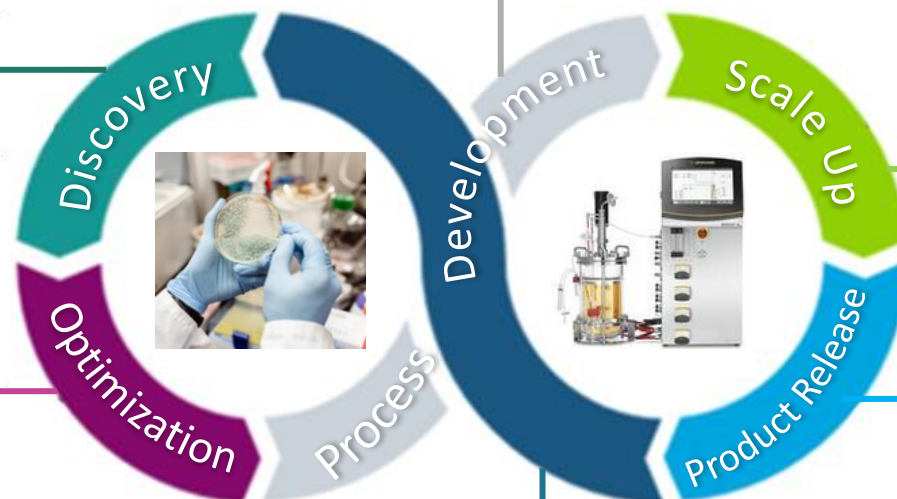
- Proprietary **genomic databases** (identification of homologs based on structure/sequence/enzyme class)
- Tools to design/build/test **POC pathways** in range of proprietary production hosts

## Scale up Partnerships

- Effective management of **tech transfer** > engineered strains and optimized USP/DSP processed
- Upscale to >100,000 L bioreactors at multiple **Global CDMOs**

## Accelerated HTP Enzyme Engineering & Strain Optimization

- Engineering Levels:
  - **Enzyme** (single edits + recombination) > Improve **enzyme performance & secure IP**
  - **Pathway** (optimize gene expression for **flux balance**; endogenous pathway engineering)
  - **Genome-Wide** (off-pathway targets edited in HTP via multiplexed **KO and OE libraries**)
- Method development & **HTP screening** capabilities
- **Machine learning**-guided: Predictive Modeling of **Sequence-Function Relationships**



## Testing and Release of Products

- Management of **QC & QA**
- Experienced in safety testing/ **GRAS** certification process
- Experienced in requirements for **Release of Product** for multiple markets
  - ✓ Consumer care
  - ✓ Flavor & fragrance
  - ✓ Food & Beverage
  - ✓ Pharma

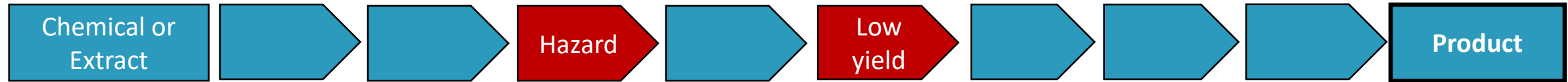
## Market/Customer Engagement

- R&D driven by **commercial metrics** & customer/**partner requirements** (stat with the end in mind)
- Commitment to continued **process and product improvement**

# FUTUREGROWN™ TECHNOLOGY SOLUTIONS TO MATCH THE OPPORTUNITY

## SUSTAINABLE PRODUCTS AND INGREDIENTS FOR A BETTER FUTURE

### Industry (Current) Standard Manufacturing



### FutureGrown™ Manufacturing Options

#### Biotransformation



*Can improve current manufacturing route by reducing chemical steps by up to 75%*

#### **Exemplary biotransformation: BioOxi™**

**BioOxi™ is a novel biotransformation that can replace up to 5 chemical manufacturing steps!**

#### Biosynthesis



*Transformative process that can both enable manufacturing and reduce costs by an order of magnitude!*