



willow

May 2024

willow

The Next Generation of Nature

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willowbio.com

TSX: WLLW
OTCQB: CANSF

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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 products; the expected growth in the biosynthetic market.

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To be a global leader in developing and commercializing biobased processes for manufacturing high value ingredients

Need

- Chemical methods for producing many high-value compounds can be expensive, toxic, and unsustainable
- Extraction from nature can be exploitive and often rely on animal-derived ingredients

Solution

- Willow has developed an AI-driven bioengineering platform that combines the best of chemistry and natural extraction with biology
- The result can lower manufacturing costs by 90% and enable production of rare ingredients with higher purity

Team

- Willow's experienced leadership team has long history of developing biobased solutions
- Supported by a seasoned Board of Directors and advisors who provide unparalleled access into top tier pharma and food ingredients companies across the globe

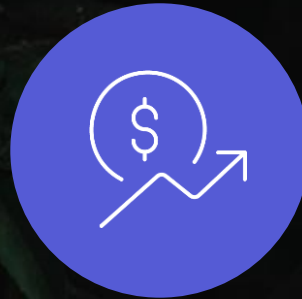
To be a global leader in developing and commercializing biobased processes for manufacturing high value ingredients



Full pipeline of partnerships for existing and new markets



Low regulatory risk due to focus on established markets



Near term R&D and milestone revenue with high upside from royalty and supply revenue



First mover advantage with proprietary BioOxi™ platform and multiple patents filed to date



Large universe of targets with highly transferable platform

Willow develops practical biobased processes for manufacturing ingredients in the pharmaceutical, food & beverage, and personal care markets, and has a proven track record of commercialization

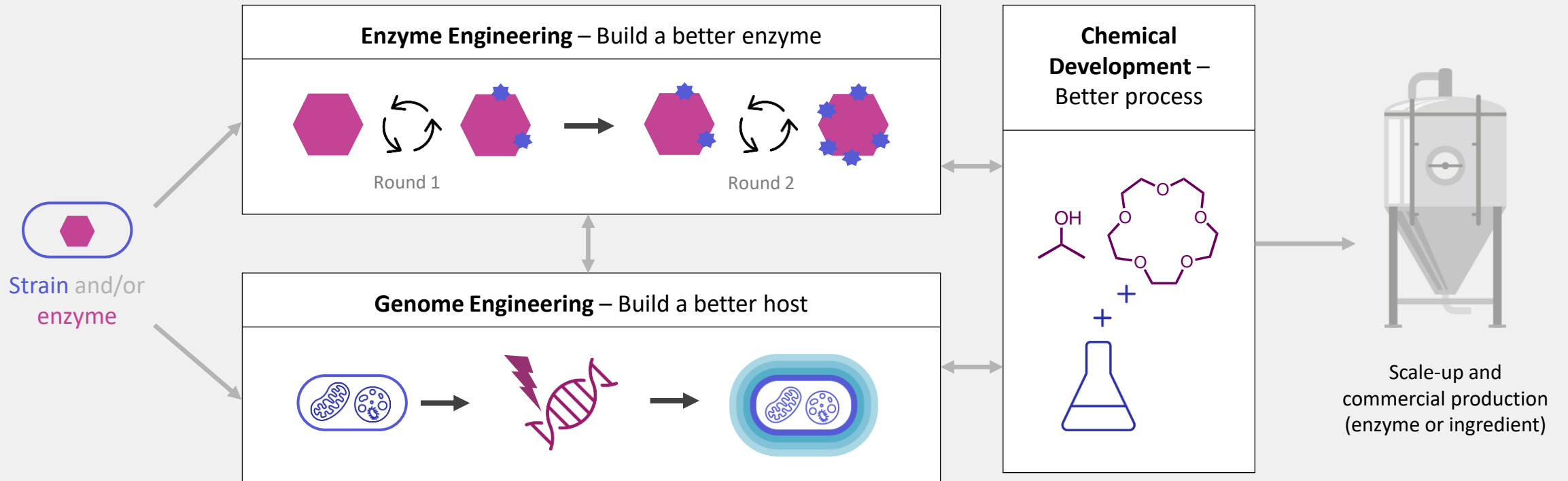
FutureGrown™

Proprietary AI-enabled technology platform to identify, optimize, and commercialize enzymes and strains for industrial processes

BioOxi™

Proprietary biobased selective hydroxylation platform that can reduce manufacturing costs by up to 90% for many high-value ingredients

Fully integrated AI-driven technology platform rapidly delivers biomanufacturing processes at scale



Willow's AI-Driven Multivariate Engineering Accelerates Biomanufacturing



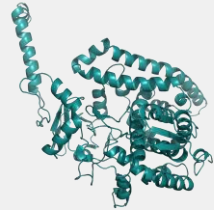
Best-in-Class
AI Tools for Engineering
Industrial Enzymes & Strains



Accelerated Development
& Time to Market
(1/2 the time)



Smaller Teams Executing on
Multiple Programs Lowers Costs
(1/4 the cost)



Starting Enzyme

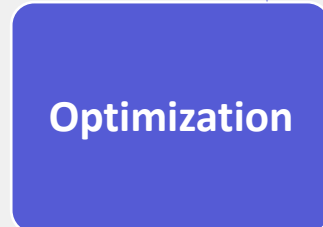


Industrial Enzyme

AI-Enabled Technology Platform Accelerates Discovery and Reduces Cycles



AI-driven algorithms to
identify top gene
candidates



ML-guided predictive models
for rapid diversity generation
and recombination



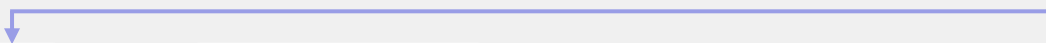
HTP assays designed to
mimic commercial
processes



Automated platform for
pooled, parallel
sequencing and analysis



Large sets of representative data
further enhances AI models and
accelerates development





- Hypothesis driven modification
- AI-driven modification

Case Study: Engineering a highly challenging enzyme, Cytochrome P450, for commercial manufacturing of an Active Pharmaceutical Ingredient (API)

Identified 6 Key Mutations




- 1 mutation > **Hypothesis-driven**
- 5 mutations > **Willow's AI-driven platform**

1,800-fold improvement in enzyme performance

- Turnover improved from 10 mg to 20 g
- From concept to commercial in
 - 3 cycles (versus 9 industry std.)
 - 6 months (versus >12 industry std.) with 3 FTEs

Willow technology delivers where others have failed!

Willow continues to build out its pipeline with partnerships that bring in near-term R&D and milestone revenue and long-term royalty or supply revenue

	R&D Revenue		Milestone Revenue		Royalty or Supply Revenue
<ul style="list-style-type: none">• Lower-risk, near-term R&D revenue earned to offset costs• Designed to cover direct costs of R&D and to ensure partners have “skin in the game”		<ul style="list-style-type: none">• Medium-risk, medium-term revenue as programs achieve agreed performance targets• Designed to cover indirect costs associated with program		<ul style="list-style-type: none">• Multi-year, success-based commercial revenue• Allows for capital recycling to finance next stage of growth	

R&D, milestone, and commercial revenue anticipated from multiple partnerships in 2024

Existing Ingredient Markets

Large volume ingredient opportunities that can be improved with biology

- Ursodeoxycholic acid (UDCA)
- Hydrocortisone
- Prednisolone
- Food ingredients
- Large volume generic APIs

Innovator Driven Ingredients

Novel ingredient opportunities that can be enabled with biology

- Kalsec natural food ingredient
- Enterin
- Biopharma development candidates
- Large pharma APIs

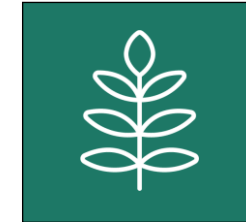
Large Volume Natural Food Ingredient Partnership With Kalsec

- Bulk ingredient for use in savory food applications, currently chemically synthesized
- R&D expected to finish mid-2024 with commercial scale up and safety work starting in late-2024
- Commercial agreement under negotiation that includes milestone and royalty payments starting as early as 2024
- As a leader in sustainable technologies, Kalsec has also invested in Willow to further drive our innovation



Petrochemical

Multistep Chemistry
(Synthetic)



Low-cost raw material
(Plant derived)

BioOxi™
(1 step; Clean Label)

**Natural
Ingredient for
Savory Foods**

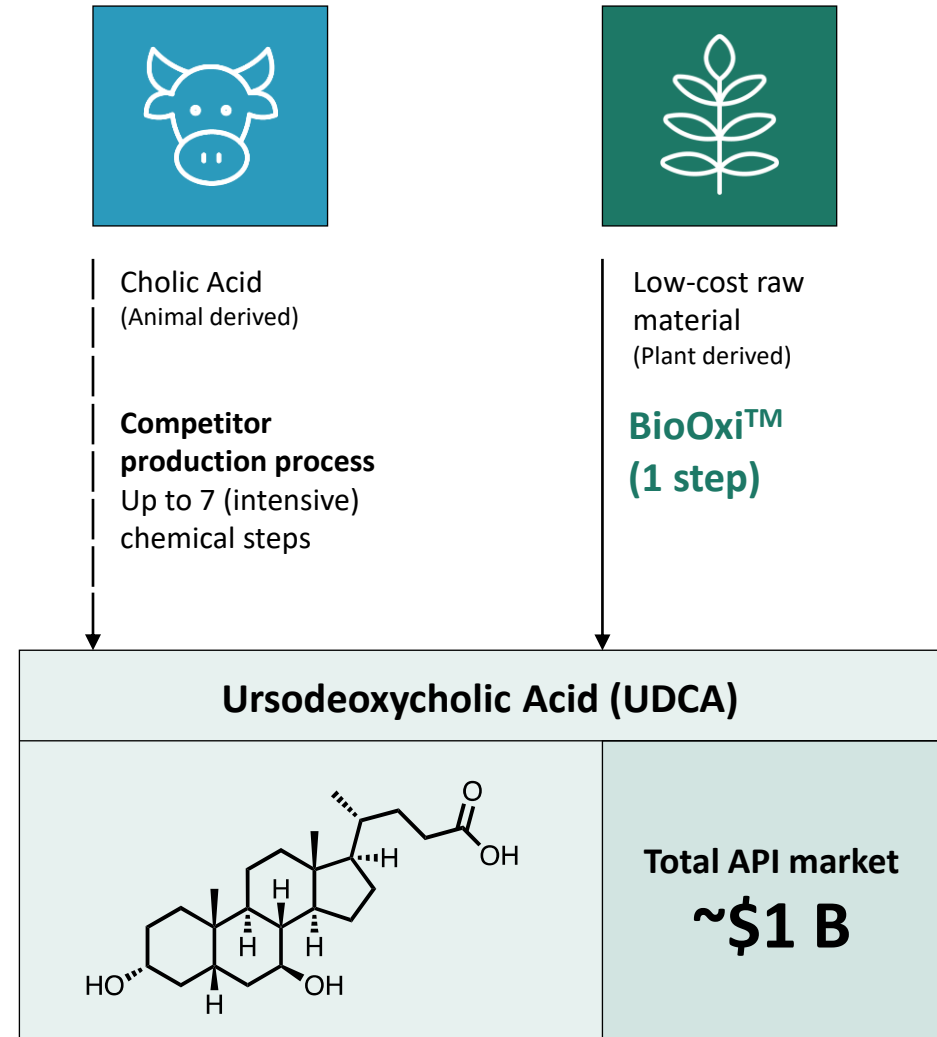


k a l s e c®

Ursodeoxycholic Acid (UDCA) Partnership with Global API Producer

- Large volume API (>1,000 tons) for treatment of cholestatic liver disease and gallstone conditions
- BioOxi process replaces multiple chemistry steps and eliminates reliance on animal-derived raw materials
- R&D completed in 2023 with commercial scale up in progress
- Multi-year deal with global API producer that includes milestones and profit split payments starting in 2024

Commercial Partnership with a Confidential Global API Manufacturer

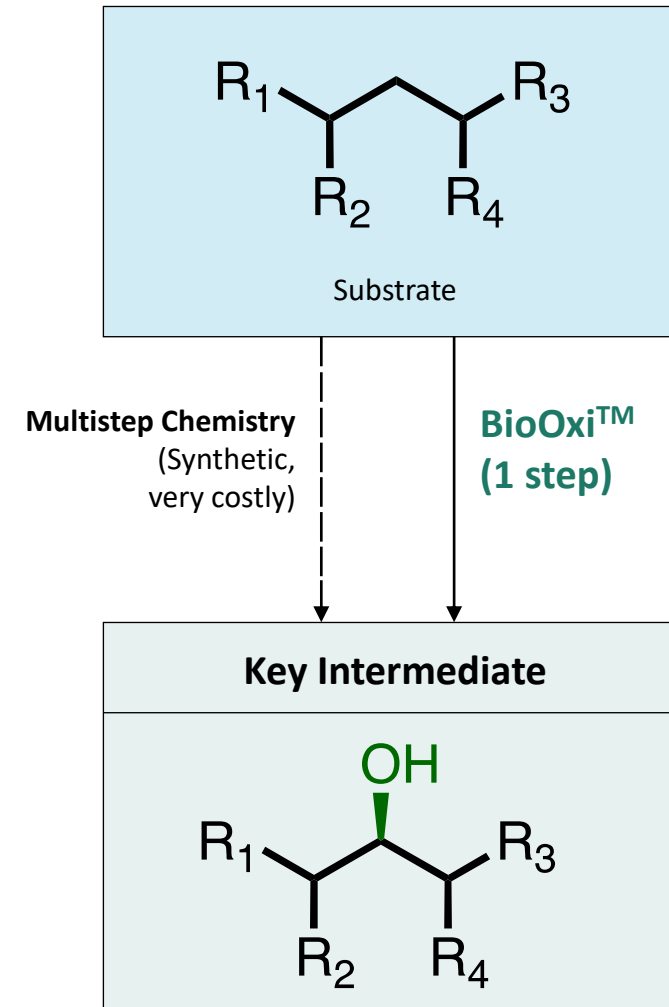


Building the Pipeline of Innovator Partnerships

- Key intermediates for therapeutic candidates under development
- Current synthetic routes prohibitively expensive and unsustainable for manufacturing
- BioOxi approach can achieve in 1 step, enabling secure supply at significantly reduced cost
- Nasdaq-listed Biopharma: Successful feasibility in Fall 2023 with optimization ongoing
- Enterin: Successful feasibility in Spring 2024 with continued optimization expected in 2024-25
- Key milestones: Commercial ingredient supply in 2024 and 2025



**Confidential Nasdaq-listed
Biopharma**




Willow's Full Pipeline of Commercial Opportunities

Opportunity	R&D	Commercial Scale-up	Anticipated First Commercial Sale
Ingredients			
API Manufacturing Deal (Laurus Labs) \$4.1M R&D in year one plus multi-million-dollar royalties upon commercialization			2025
UDCA (Sandhill & Confidential) Multi-million-dollar milestones and profit split			2024
API (Confidential Nasdaq-listed pharma) Ingredient supply in early 2025			2025
Food ingredient (Kalsec) Multi-million-dollar milestones & royalty			2024
API (Suanfarma) License payment(s) (negotiating)			2025
API (Enterin) Royalty payments (negotiating)			2025
API (Confidential) Commercial license payments			2025
Agrichemical Multi-million-dollar R&D / royalty (negotiating)			2026
Multiple existing and innovator deals in progress Fill the funnel of opportunities			

Milestone payment

Multi-Million-Dollar API Manufacturing Deal With Laurus

Who is Laurus Labs?



Laurus Labs is a research-driven pharmaceutical and biotechnology company with an aim to improve the quality of life for millions of people around the world. Laurus has a global leadership position in select Active Pharmaceutical Ingredients (APIs) including anti-retroviral, oncology drugs (incl High Potent APIs), Cardiovascular, and Gastro therapeutics.

- ✓ **Market Cap:** market capitalization of 3.9 billion CAD¹
- ✓ **Global presence:** Collaborates with top generic pharma, distributing APIs in 56 countries
- ✓ **Strong workforce:** Employs 6500+ people, including 1250+ scientists across 11 approved facilities
- ✓ **Patent strength:** Holds 322 filings, owning 203 patents.
- ✓ **Strong Financial performance:** Reported C\$982 million in revenue for FY2023²
- ✓ **Stock exchange listings:** Listed on BSE and NSE as LAURUSLABS.

1. Data Source: Tradingview on 5/22/2024

2. Data Source: LaurusLabsFinancialResultsQ4FY2024InvestorPresentation

3. Data Source: Precedence Research

willow + LAURUS Labs



Why Willow?

- Advanced AI bioengineering tech (BioOxi platform).
 - ✓ **Benefits:** Estimated savings between 50% and 90% in the cost of goods on API manufacturing.
 - ✓ Willow was the First to achieve large-scale bio-based hydroxylation.

Willow's Development for Laurus Labs:

- Innovating bio-based manufacturing for 7 pharmaceutical ingredients.
 - ✓ **Result:** Replace the traditional chemistry-based manufacturing processes.

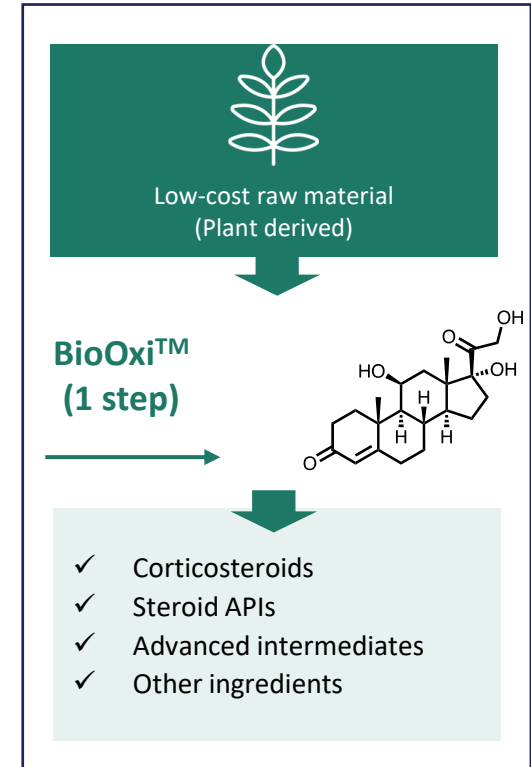
How Willow Receives Royalties:

- Based on API net sales; Laurus has a strong market share.
 - ✓ Market size for corticosteroids: \$4.7 billion.
 - ✓ Total market size for undisclosed APIs: \$1.5 billion.³

Key APIs:

- ✓ **Hydrocortisone:** Anti-inflammatory and immune treatments.
- ✓ **Prednisolone:** Used in Omnipred, Pred Mild, Pred Forte.
- ✓ **Prednisone:** In Rayos, Deltasone, Prednisone Intensol.
- ✓ **Budesonide:** Found in Entocort, Uceris, Rhinocort Allergy, Pulmicort.
- ✓ **Confidential APIs:** Three APIs remain undisclosed at this time.

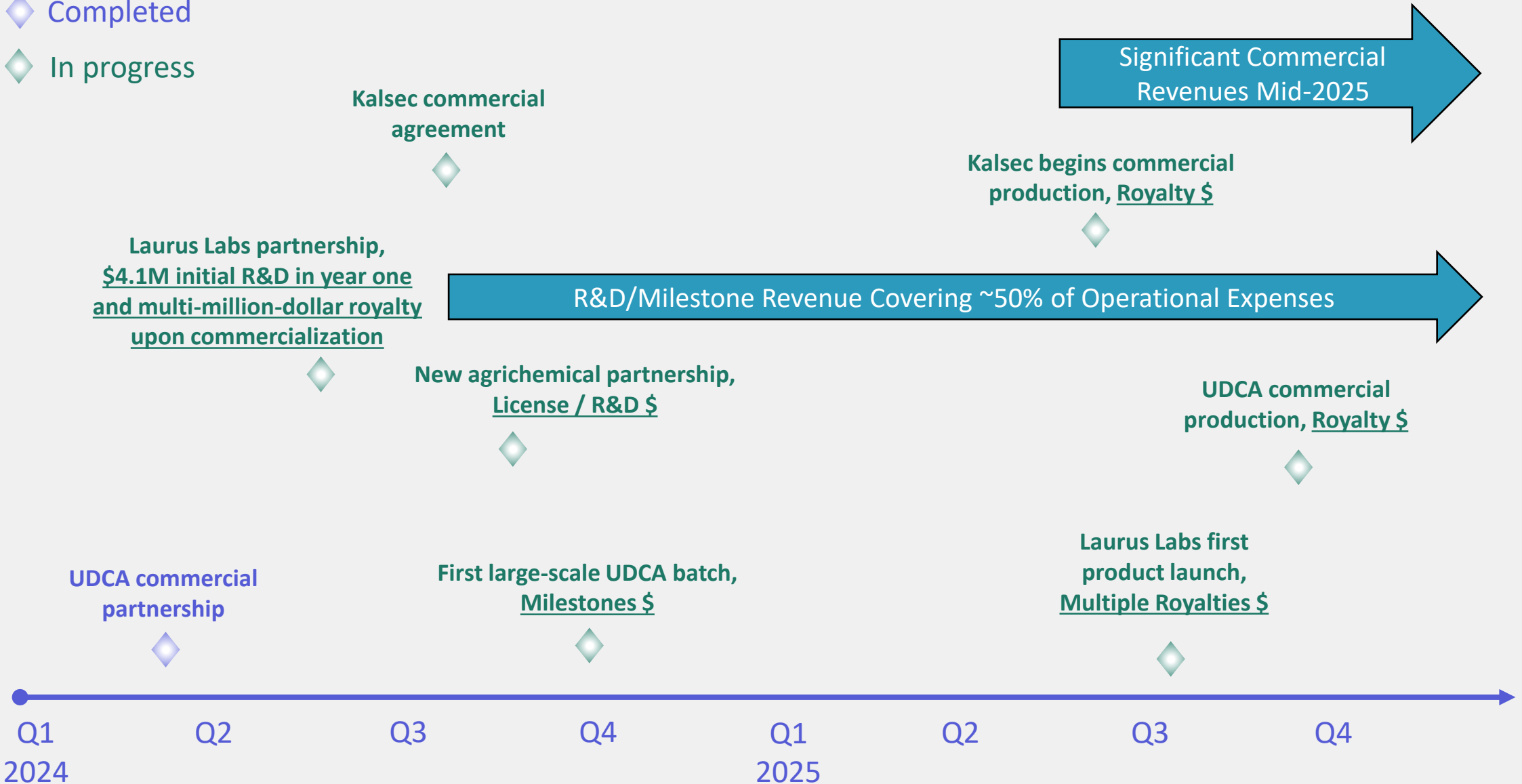
Multi-Product Royalty Stream



Anticipated Key 2024 & 2025 Milestones

◆ Completed

◆ In progress



Experienced and Accomplished Leadership



Chris Savile, Ph.D.
President and CEO

20 years of experience in scientific and business roles focused on commercialization of biobased processes



Travis Doupe, CPA, CA
CFO

20+ years of experience in financial, corporate, and investment leadership roles



Trish Choudhary, Ph.D.
SVP – R&D

20 years of experience in various technical roles focused on rapid engineering of biological systems



James Lalonde, Ph.D.
Chairman

30+ years of experience leading R&D teams that have commercialized more than 25 biobased processes

Willow's team draws its experience from top bioengineering companies:



- Over CAD\$65.0 million raised to date with Management and Board investing more than \$8.0 million personally into Willow
- Up-listed to the TSX in 2019 (TSX: WLLW) and trade on the OTCQB[®] Venture Market (OTCQB: CANSF)
- Strong insider ownership at just under 25%
- Convertible debentures of \$800,000 due October 10, 2027; 64% held by Directors and Officers of the Company

Willow Share Capitalization (TSX: WLLW) as of May 24th, 2024

Basic shares outstanding	127,131,037
Employee options ⁽¹⁾ , RSUs and PSUs	11,584,114
Warrants ⁽²⁾	3,809,600
Warrants ⁽³⁾	679,928
Warrants ⁽⁴⁾	576,565
<u>Convertible debentures⁽⁵⁾</u>	<u>7,619,048</u>
Fully diluted shares outstanding	151,400,292

1. Weighted average strike price of \$0.34 for options

2. Exercise price of \$0.105/share, October 10, 2025, with early acceleration provisions if common shares trade at a premium of > \$0.15/share

3. Exercise price of \$0.14/share, expire Feb 20, 2025, with early acceleration provisions if common shares trade at a premium of > \$0.18/share

4. Exercise price of \$0.16/share, expire March 1, 2025, with early acceleration provisions if common shares trade at a premium of > \$0.21/share

5. Convertible at \$0.105/share until October 10, 2027



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Contacts

Travis Doupe, CPA, CA
Chief Financial Officer

Chris Savile, Ph.D.
Chief Executive Officer

Email: info@willowbio.com

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