R&D DAY

Next Gen Maravai: Extraordinary science. Everyday miracles.™

September 2023

maravai LifeSciences

R&D Day

Welcome and opening remarks

Deb Hart
Head of Investor Relations

September 2023

maravai LifeSciences

Forward looking statements and use of non-GAAP financial measures

This presentation contains, and our officers and representatives may from time-to-time make, "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Investors are cautioned that statements in this presentation which are not strictly historical statements constitute forward-looking statements, including, without limitation, statements regarding estimated financial metrics for 2028; expectations for favorable macroeconomic and industry trends; expected growth in serviceable addressable markets; our ability to execute on expected inorganic M&A opportunities to drive growth; our ability to deliver expected future innovations; the expected progression of customers to late phase or commercial GMP production; our ability to capture additional mass spectrometry business; our ability to develop and release new MockV kits in the future; and our ability to deliver the expected strategic benefits of the MyChem and Alphazyme acquisitions, constitute forward-looking statements and are identified by words like "believe," "expect," (including its abbreviation "E"), "target," "future," "opportunities," "may," "will," "should," "seek," "anticipate," or "could" and similar expressions. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not rely on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following: The extent and duration of our revenue associated with COVID-19-related products and services are uncertain and are dependent, in important respects, on factors outside our control. Changes in economic conditions could negatively impact our revenue and earnings. Certain of our products are used by customers in the production of vaccines and therapies, some of which represent relatively new and still-developing modes of treatment. Unforeseen adverse events, negative clinical outcomes, development of alternative therapies, or increased regulatory scrutiny of these and their financial cost may damage public perception of the safety, utility, or efficacy of these vaccines and therapies or other modes of treatment and may harm our customers' ability to conduct their business. Such events may negatively impact our revenue and have an adverse effect on our performance. We are dependent on our customers' spending on and demand for outsourced nucleic acid production and biologics safety testing products and services. A reduction in spending or demand could have a material adverse effect on our business, financial condition, results of operations, cash flows and prospects. We compete with life science, pharmaceutical and biotechnology companies who are substantially larger than we are and potentially capable of developing new approaches that could make our products, services and technology obsolete. Our acquisitions expose us to risks that could adversely affect our business, and we may not achieve the anticipated benefits of acquisitions of businesses or technologies. We depend on a limited number of customers for a high percentage of our revenue. If we cannot maintain our current relationships with customers, fail to sustain recurring sources of revenue with our existing customers, or if we fail to enter into new relationships, our future operating results will be adversely affected. We rely on a limited number of suppliers or, in some cases, sole suppliers, for some of our raw materials and may not be able to find replacements or immediately transition to alternative suppliers. Such other factors as discussed throughout the "Risk Factors" section of our most recent Annual Report on Form 10-K, as well as other documents on file with the Securities and Exchange Commission. Any forward-looking statement made by us in this presentation is based only on information currently available to us and speaks only as of the date on which it is made. We undertake no obligation to publicly update any forward-looking statement, whether written or oral, that may be made from time to time, whether as a result of new information, future developments or otherwise.

This presentation presents certain "non-GAAP Measures" as defined by the rules of the Securities Exchange Commission ("SEC") as a supplement to results presented in accordance with accounting principles generally accepted in the United States of America ("GAAP"). These non-GAAP Measures, as well as other statistical measures, including Adjusted EBITDA (as defined herein) and Adjusted EBITDA as a percentage of revenues, are presented because the Company's management believes these measures provide additional information regarding the Company's performance and because we believe they are useful to investors in evaluating operating performance compared to that of other companies in our industry. In addition, management believes that these measures are useful to assess the Company's operating performance trends because they exclude certain material non-cash items, unusual or non-recurring items that are not expected to continue in the future, and certain other items. The non-GAAP Measures are not presented in accordance with GAAP, and the Company's computation of these non-GAAP Measures may vary from those used by other companies. These measures have limitations as an analytical tool and should not be considered in isolation or as a substitute or alternative to net income or loss, operating income or loss, cashflows from operating activities, total indebtedness or any other measures of operating performance, liquidity or indebtedness derived in accordance with GAAP. A reconciliation of historical non-GAAP Measures to historical GAAP measures and additional information on the Company's use of non-GAAP financial measures is provided in the appendix.

Past performance may not be a reliable indicator of future results.

This presentation also contains estimates and other statistical data made by independent parties and by the Company relating to market size and growth and other data about the Company's industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. Neither the Company nor any other person makes any representation as to the accuracy or completeness of such data or undertakes any obligation to update such data after the date of this presentation. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which the Company operates are necessarily subject to a high degree of uncertainty and risk.

The trademarks included herein are the property of the owners thereof and are used for reference purposes only. Such use should not be construed as an endorsement of the products or services of Maravai LifeSciences Holdings, Inc. and its subsidiaries.

Agenda

01	**Welcome & opening remarks**	10:00 AM	Deb Hart
02	**Next Gen Maravai: Extraordinary science. Everyday miracles. ™**	10:05 AM	Trey Martin
03	**Customer's first choice: Leading innovation**	10:20 AM	Kate Broderick
04	**Nucleic Acid Production**	10:40 AM	
	• Overview & products		Drew Burch
	• Enzymes		Chad Decker
	• Services		Becky Buzzeo
05	**Break**	11:25 AM	
06	**Biologics Safety Testing**	11:35 AM	
	• Overview & strategy		Christine Dolan
	• Innovation		Eric Bishop
	• MockV: Deep dive		David Cetlin
07	**Next Gen Maravai: Investments & financial outlook**	12:05 PM	Kevin Herde
08	**Break**	12:20 PM	
09	**Q&A**	12:30 PM	All

Trey Martin, Chief Executive Officer

More than 25 years of executive leadership experience
in life sciences operations, engineering, sales, product development and marketing

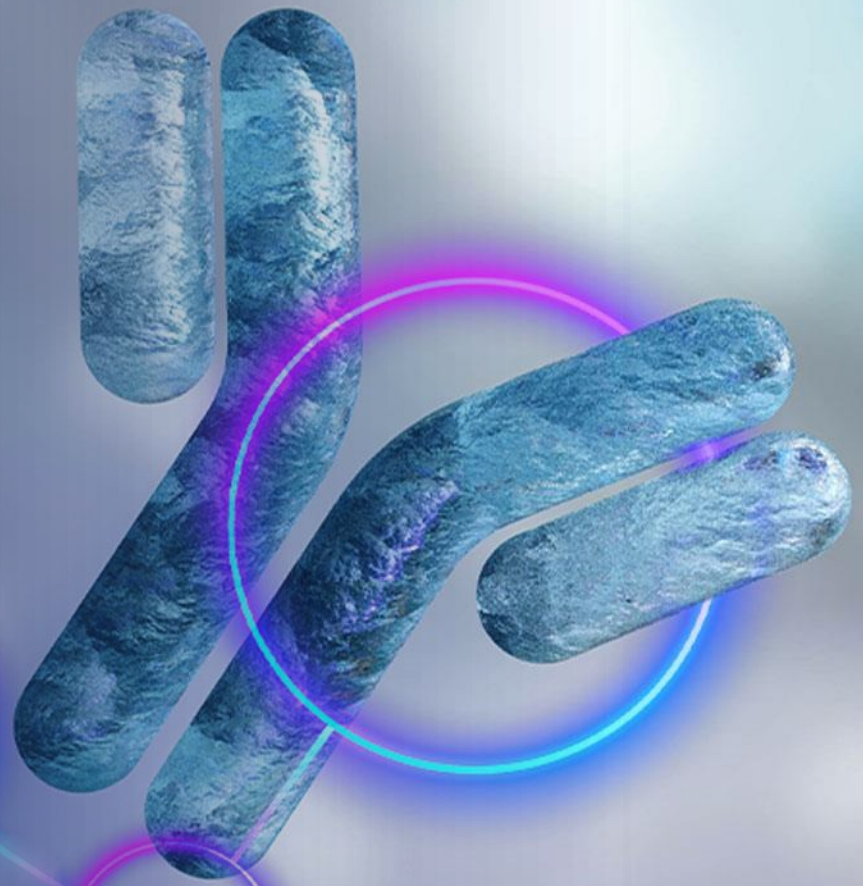
Integrated DNA Technologies (IDT)
held positions of increasing responsibility over more than two decades at IDT, and contributed to the consistent growth and competitiveness of the business through global organic and inorganic growth investments

Joined Danaher with the acquisition of IDT in 2018
and served as President of IDT before assuming the role of Senior Vice President, Genomic Medicines in July 2021

Served as President, Biologics Safety Testing
at Maravai since December 2022

R&D DAY

Next Gen Maravai: Extraordinary science. Everyday miracles.™



Trey Martin, Chief Executive Officer

September 2023

maravai LifeSciences

Maravai: Strong foundation positioned for the next chapter of growth

Strong financial foundation

- **23%** base revenue 5 Year CAGR[1]
- **Strong** balance sheet
- **$580M** cash position
- **1.8x** gross debt to TTM adjusted EBITDA[2]

Innovative talent

- **122** granted patents
- **9** major innovation areas for RNA and **4** for BST
- R&D department **55% with advanced degrees**
- CleanCap® featured in **950+ publications in 8 years**

Broad reach

- **~200,000 sq. ft.** of lab and production space
- **7 US** locations
- **Global** commercial presence

Strong customer base

- **96%** of top R&D spenders are Maravai customers
- CleanCap® involved in **250+** preclinical or clinical customer/molecules
- **17 of 17** approved CAR-T cell and gene therapy drugs use Cygnus kits

1. CAGR from 2018-2022
2. Using trailing twelve months adjusted EBITDA of $295M

Proven leadership team with significant life sciences experience

Carl Hull
Executive Chairman
of the Board

Trey Martin
Chief Executive Officer

Kevin Herde
Executive Vice President
and Chief Financial Officer

Pete Leddy, PhD
Executive Vice President and
Chief Administrative Officer

Kate Broderick, PhD
Chief Innovation Officer

Becky Buzzeo
Chief Commercial Officer
And Chief Operating Officer,
Nucleic Acid Services

Christine Dolan
Chief Operating Officer,
Biologics Safety Testing

Drew Burch
Executive Vice President
and General Manager,
Nucleic Acid Products

Chad Decker
Vice President, General
Manager, Enzymes

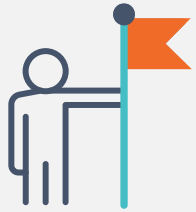
Deb Barbara
Vice President, Strategic
and Business Development

Leveraging strategic goals to bring the miracles of science to life

Own the **front end of the funnel** and win in discovery

Be the **customer's first choice**

Leverage world class **employee base of industry experts**



Deliver **industry leading technology and IP**

Capitalize on entrepreneurial spirit with focus on speed and agility

Strong track record of making value-enhancing acquisitions

Nucleic Acid Production

TriLink BIOTECHNOLOGIES part of Maravai LifeSciences

- 25+ years in nucleic acid product development and manufacturing
- Early support of mRNA development

Acquired September 2016

GLEN RESEARCH part of Maravai LifeSciences

- 35+ years DNA and RNA oligonucleotide synthesis, labeling, and modification

Acquired December 2017

MyChem

- Increases capabilities serving high-growth cell and gene therapy market

Acquired January 2022

AlphaZyme

- Premier partner for custom, industrial-scale, molecular biology enzymes

Acquired January 2023

Biologics Safety Testing

CYGNUS TECHNOLOGIES part of Maravai LifeSciences

- 25+ years in impurity detection and analytics

Acquired October 2016

MOCKV SOLUTIONS

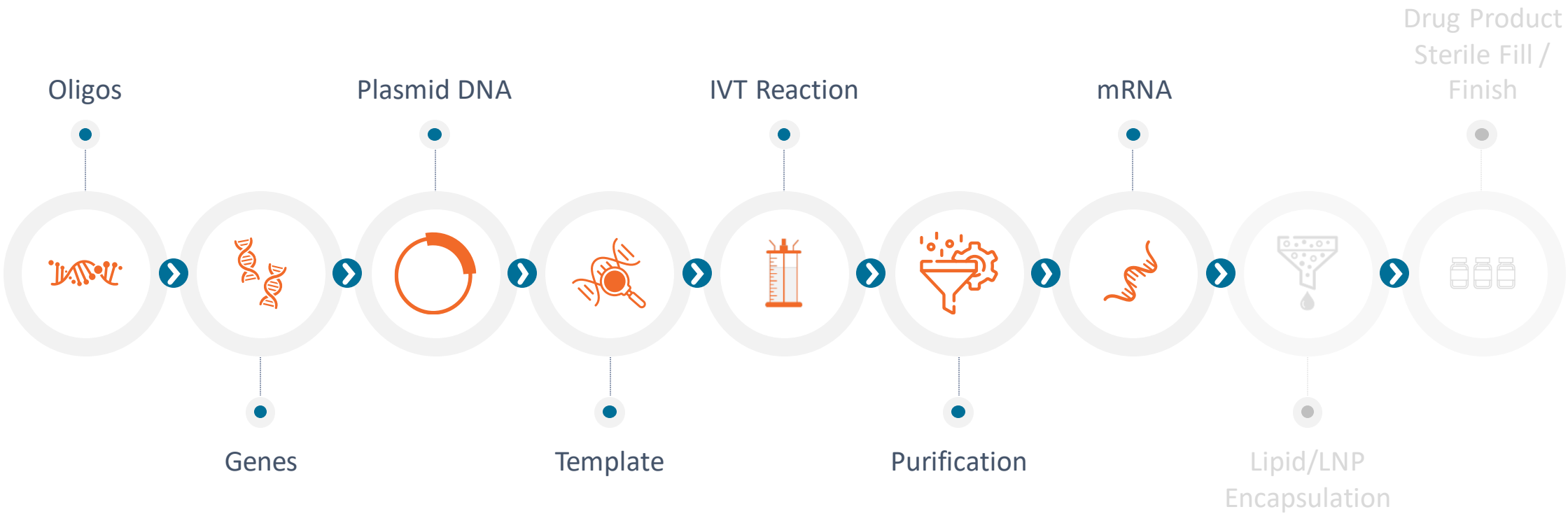
- Helping customers develop and optimize their manufacturing processes to effectively remove virus

Acquired March 2020

maravai LifeSciences

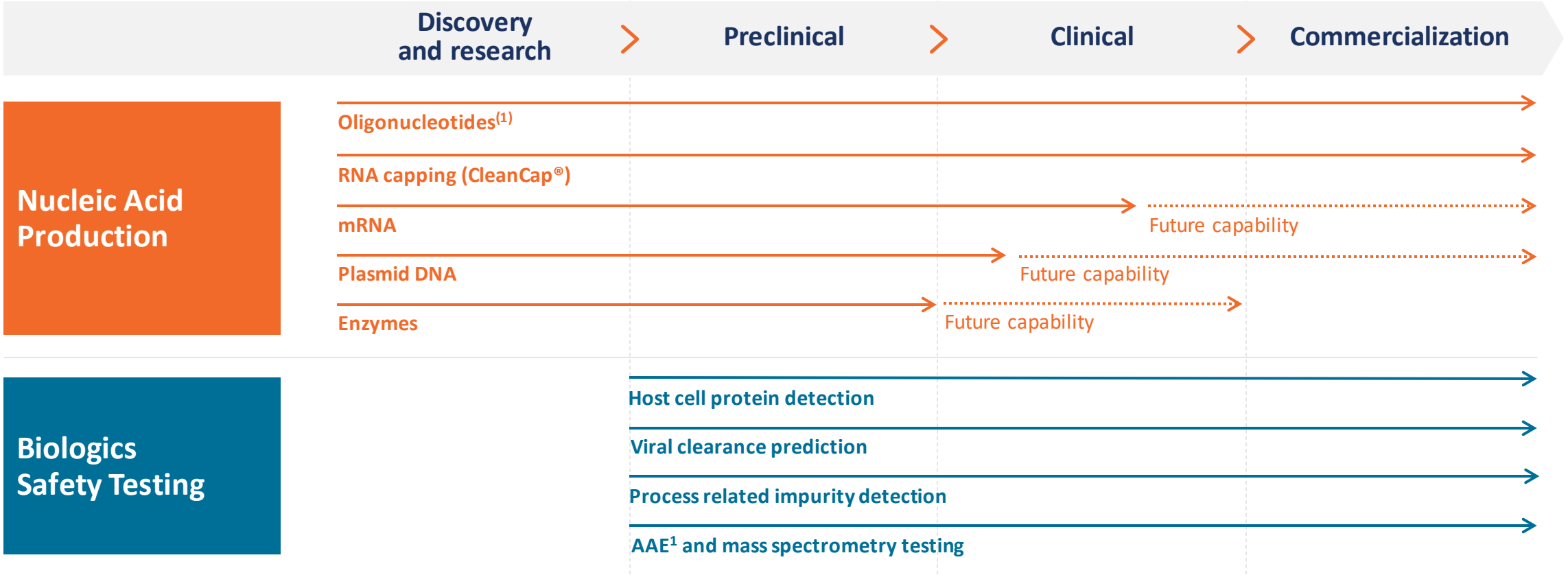
Focus on innovative products to enable in vitro transcription

Nucleic acid chemistry is the basis for all genomics



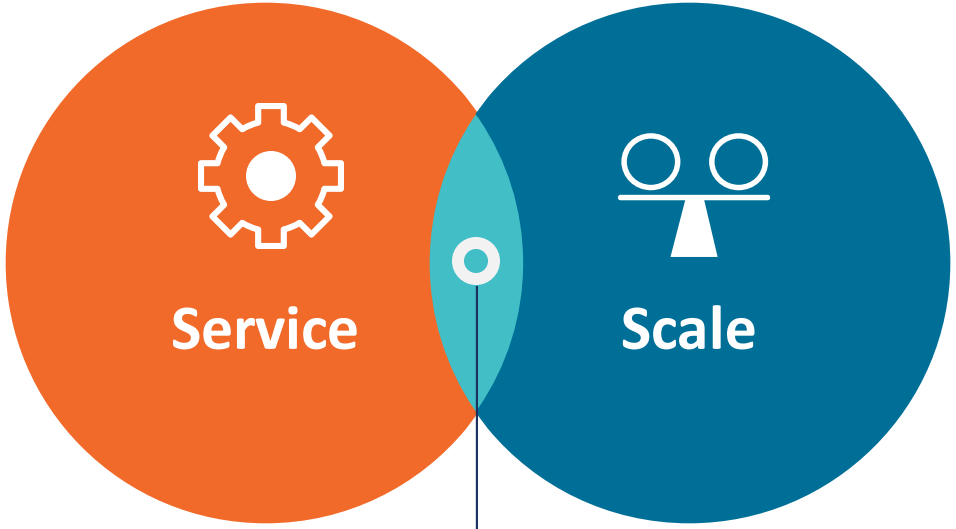
Innovation from discovery to commercialization across our two reporting segments

Enables low barrier of entry for customers and stickiness of products



(1) Commercial Diagnostics

Innovative and reliable partner: Driving customer's first choice

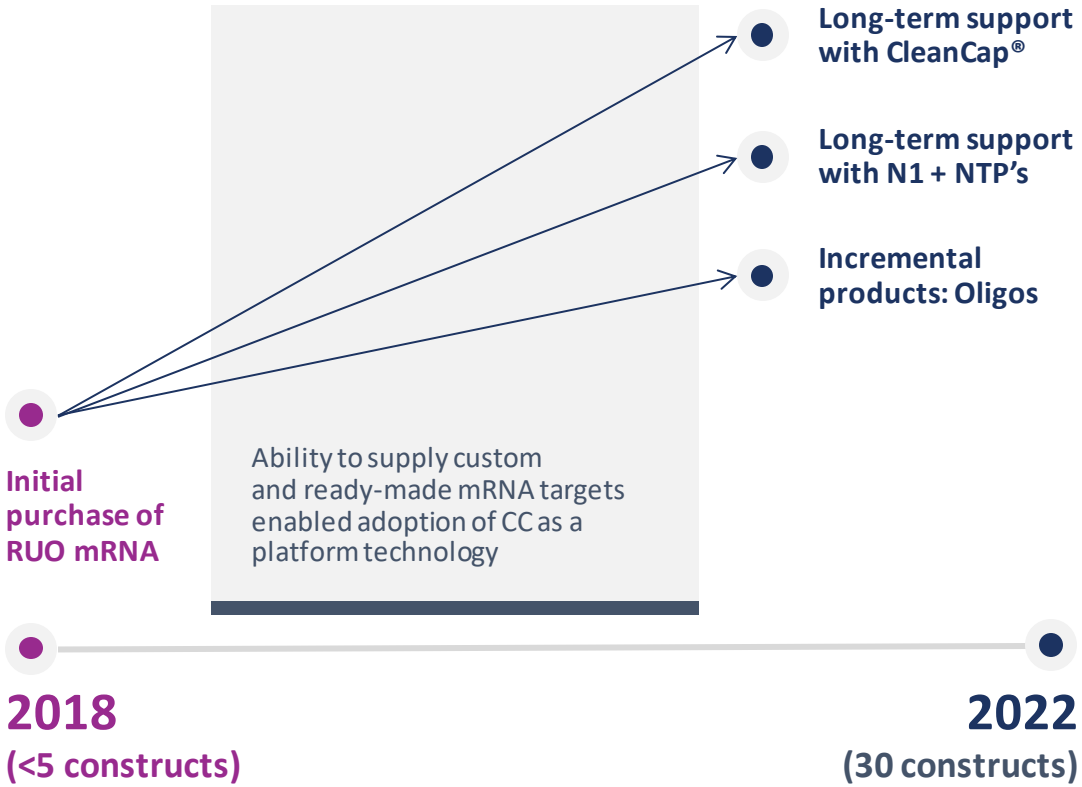


- Specialized expertise
- Responsiveness
- Agility
- Collaboration
- Sticky relationships
- Quality

- Reliable supply
- Consistent execution
- Rigor
- Assurance
- Quality

Services pull products

Customer example developing CAR-T cell therapy used to treat small cell lung cancer

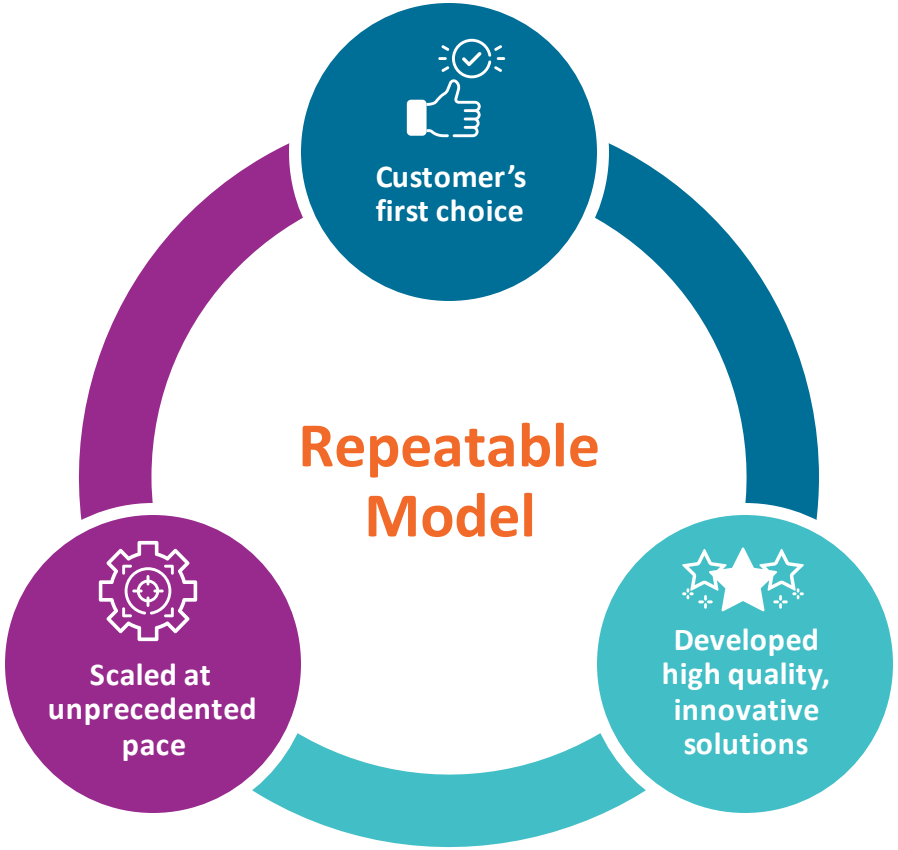


Proof of principle established at unprecedented scale

Pandemic accelerated mRNA research and adoption with Maravai well positioned to capture opportunity

Maravai outcomes

- Moved from RUO enabling products to GMP production
- Clinical proof of CleanCap® technology
- Capital investment in four new facilities and two added businesses
- Enhanced cash position

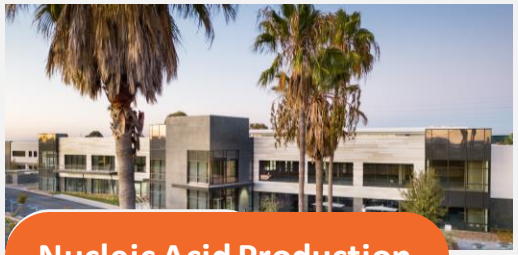


Optimize and leverage manufacturing footprint

Since 2022, we have expanded our facility footprint by 95,000 sq ft to support growth

Wateridge

Win in discovery



Nucleic Acid Production

Flanders 1

Additional GMP small molecule capabilities and redundancy for CleanCap®

Nucleic Acid Production

Flanders 2

Expand GMP mRNA services into late phase and commercial to extend our market reach and drive customer stickiness

Nucleic Acid Production

Leland

Optimization related to BST including R&D, laboratory and automation upgrades

Biologic Safety Testing

Optimization Opportunities

Drive capacity utilization through commercial and operational planning and execution

Customizable capacity with the ability to support multiple customer campaigns with multiple clean rooms simultaneously

maravai LifeSciences

Favorable macrotrends enable growth

3 to 5 year expectations

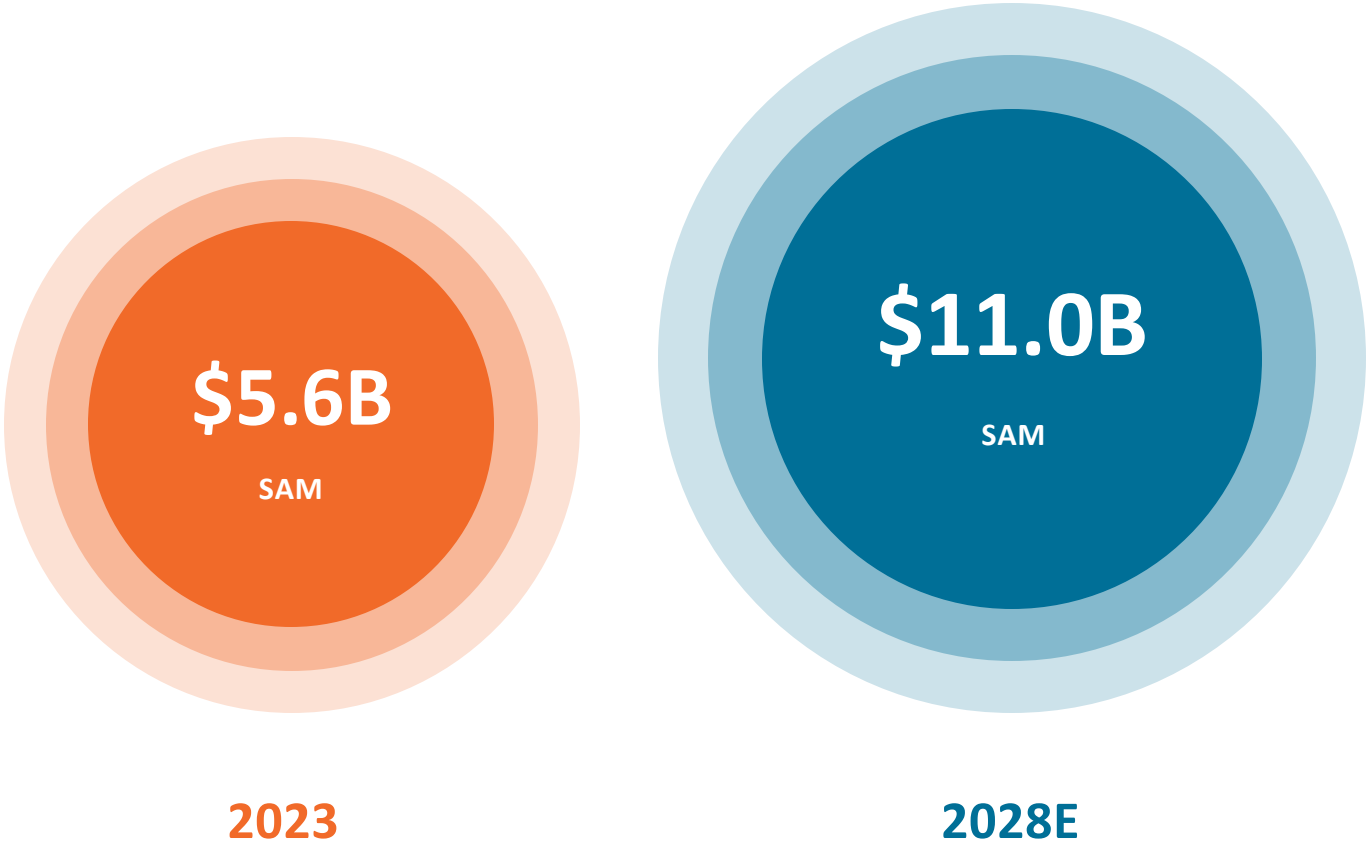
Meaningful pipeline progression for mRNA-based therapies

Increased clinical success driven by chemistry and delivery innovations

CRISPR-based therapeutics, which enables gene editing, positioned for approval at end of 2023

Increasing demand for GMP quality inputs

Serviceable addressable market anticipated to nearly double by 2028



Operating in attractive and growing markets

Tailwinds

- Pipeline expansion
- mRNA modality expansion
- Global commercial strategy
  - International expansion into Europe, Japan, and S. Korea
  - Commercial operations, CRM and team expansion

Headwinds

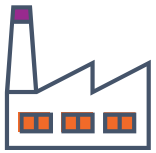
- Increased capacity from large CDMO players
- Project rationalization leading to later project starts

Comprehensive strategy positions us well to capture market opportunities

01

Invest in innovation

02



Leverage manufacturing scale

03

Scale commercial organization

04

Inorganic growth opportunities

maravai LifeSciences

Investing in innovation

Customer-focused innovation allows Maravai to align initiatives that solve pain points

Delivering innovation through Maravai core pillars

Catalyze the customer journey

Focus on customer centric culture to deliver best-in-class products and service technology

- Customer led innovation
- Focus on unmet needs
- Identify customers' challenges and solve them

Find a better way

Identifying challenges for developers and applying rational innovation to solve them

- Rational approach to R&D
- Continuous growth of our technology platforms
- Mandate to bring technology innovation rapidly to the field

Deliver unquestionable quality

Quality science underpins our innovation

- World class scientific teams driving the innovation
- Deep expertise in chemistry, biology and analytical sciences
- 38% of the R&D team has a PhD

Lead together

Leverage our expertise and collaborative culture to accelerate our innovation

- Communicate together to build a creative mindset
- Cross divisional collaborations encouraged
- Innovation a mandate for the company

Scaling our commercial strategy

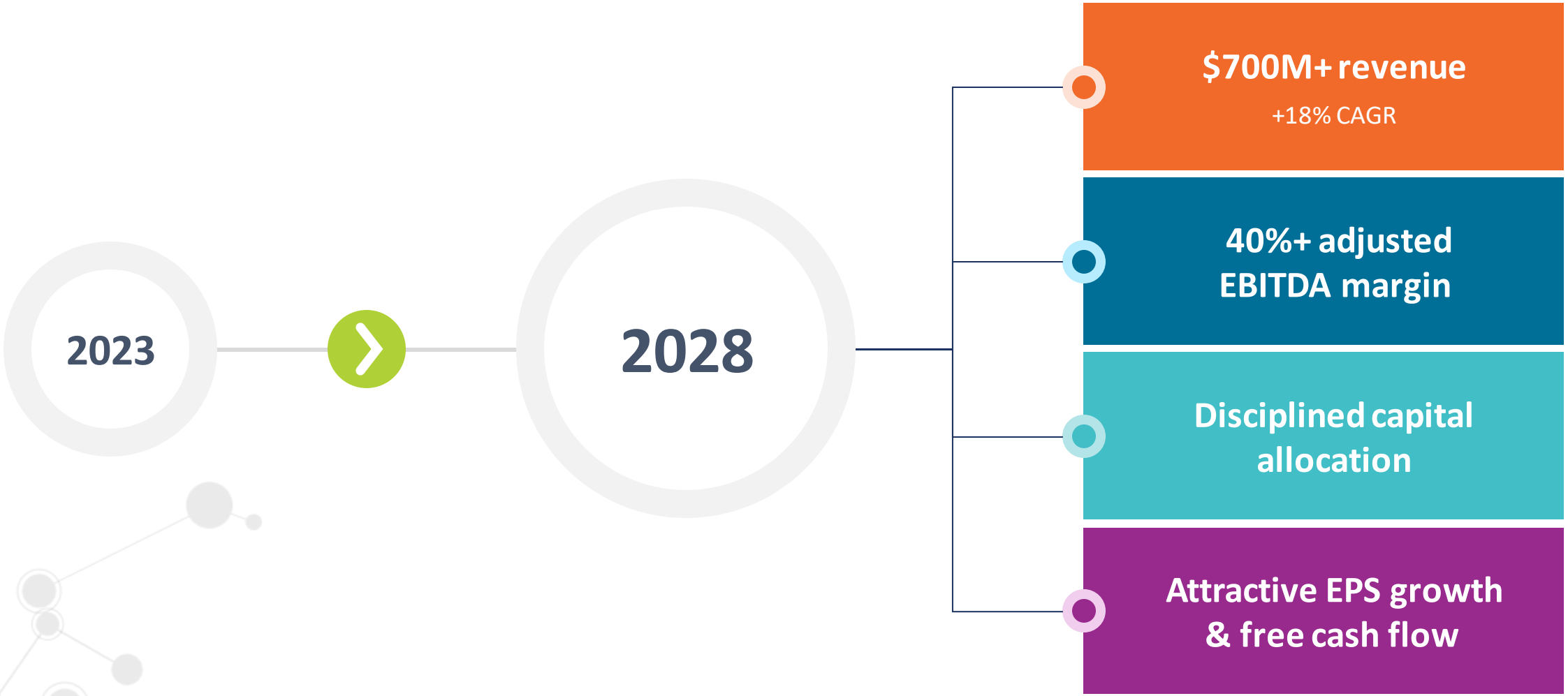
Delight customers by establishing best-in-class customer experience with robust systems and processes	Establish specialized teams to **align with how customers buy**	**Simplify how customers work** with us through standard processes and workflows	Invest in automation solutions to **drive access, trackability and transparency**
Hire, train and enable a world class commercial organization	**Invest in commercial and technical customer facing roles**	**Continuous training programs** focused on technical and sales fundamentals	**Create a culture of accountability**, customer centricity and continuous improvement
Expand globally through commercial footprint and M&A	Recruit and hire **in-country representation**	**Win in key high growth geographies**: EMEA, Japan, Korea and Singapore	**Enhance the way we work** with our distribution partners

Continued exploration of inorganic opportunities to accelerate growth beyond current targets

Inorganic growth levers	Strategic criteria
Strategic M&A to expand customer base, grow revenue and accelerate innovation	**Complimentary or synergistic capabilities** **International expansion**
Partner with industry leaders to gain access to new technologies that expand or enhance our core offerings	**Vertical integration of supply chain** **Best in class technologies**

Accelerated growth opportunities

Next Gen Maravai:
2028 financial targets and priorities focused on top-line growth and margin expansion



Key messages

We are the **customer's first choice** through entire product life-cycle

Positioned in strong markets with innovative solutions across Nucleic Acid Production and Biologics Safety Testing

Comprehensive portfolio of products and services drives **stickiness across the Maravai** ecosystem

Targeting long-term high double-digit growth through **differentiated technologies and execution**

Investing in the next generation of Maravai to drive long-term sustainable growth

maravai LifeSciences

R&D DAY

Customer's first choice: Leading innovation

Kate Broderick, PhD
Chief Innovation Officer

September 2023

maravai LifeSciences

“Innovation is the process of turning ideas into manufacturable and marketable form”

Watts Humphrey

Maravai's significant history of innovation positions us well for long-term growth

Decades of consistent customer-led innovation drives foundational proprietary technology and solidifies Maravai as a pioneer in the field

122 granted patents

9 major innovation areas for RNA and 4 for BST

R&D department 55% with advanced degrees

CleanCap®:
950+ publications in 8 years

2020
CleanCap® chosen as the capping technology for the Pfizer-BioNTech COVID vaccine

2021
Scaled CleanCap® production to meet pandemic need

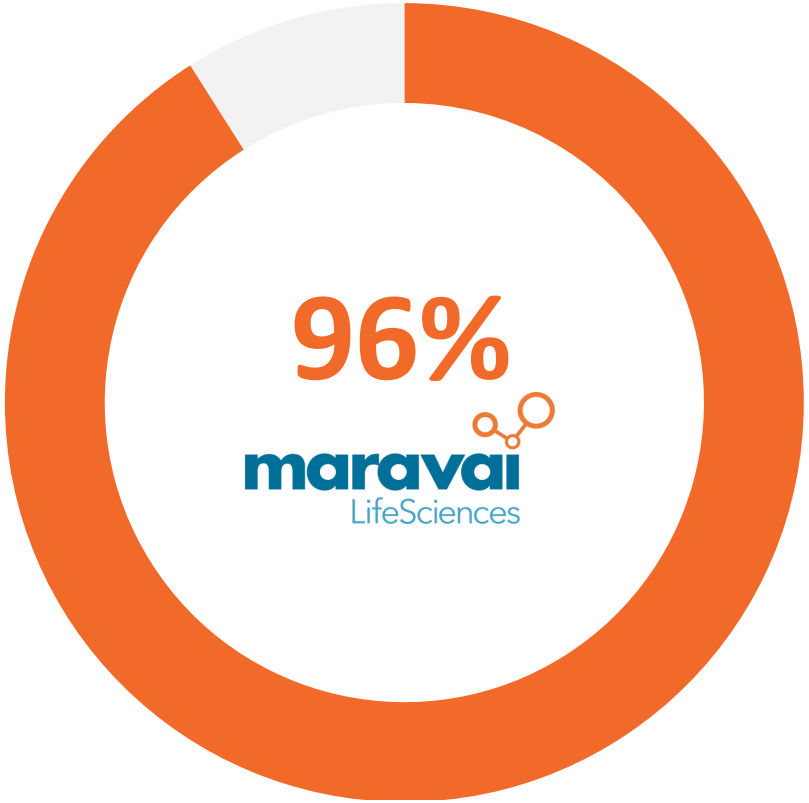
2022
Launch of CleanScript® as a next-generation IVT process

2023
Grew the family of cap analogs and launched CCM6

96% of top R&D spenders are Maravai customers

Top 25 R&D spenders in 2022

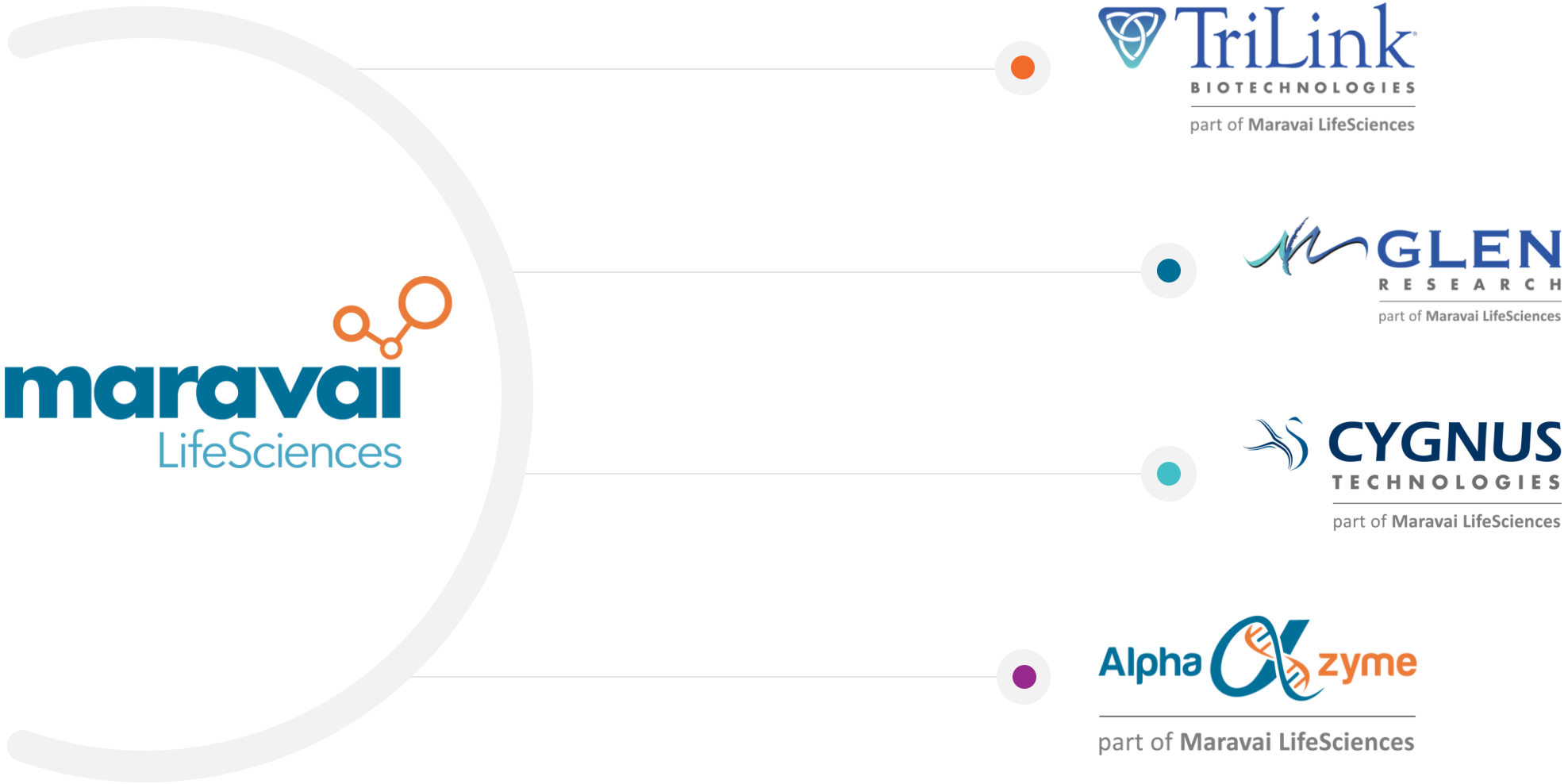
REGENERON, VERTEX, Boehringer Ingelheim, Lilly, MERCK, janssen, AstraZeneca, EMD SERONO MERCK, Biogen, Bristol Myers Squibb, NOVARTIS, Daiichi-Sankyo, gsk GlaxoSmithKline, BAYER, moderna, GILEAD, AMGEN, Takeda, Otsuka, abbvie, Pfizer, CSL Behring Biotherapies for Life™, Roche, ucb, sanofi



Source: Drug, Discovery & Development, May 12, 2023

maravai LifeSciences

Strong portfolio of brands enabling innovation



maravai
LifeSciences

We have a comprehensive approach to address the most challenging customer needs

Expansive network of internal and external experts

Best practices learned from industry leading conferences

maravai LifeSciences

Capturing the voice of customer

Well-informed by literature in the field

Holistic approach to mRNA improves the outcome of the molecule

mRNA component and function	5’ CAP	5’ UTR / 3’ UTR	CDS – Coding Sequence	Poly A Tail
	Essential for protection of the mRNA Critical for recognition of the ribosome and efficient translation	Untranslated regions – contain the instructions to the CDS Can be adapted to improve protein expression	Contains your gene sequence of interest Modified bases and sequence optimization significantly impact translation	Essential for stability of the mRNA Critical for efficient translation
Maravai Impact	**CleanCap® Family**	**No current technology**	**Research grade, GMP WT and modified bases**	**No current technology**

Our long-term vision for RNA products

MRVI existing products
- CC
- CC 3’OMe
- CC M6
- CC AU

MRVI current innovations
Novel CCs with additional physiological characteristics for different product characteristics

CleanCap®

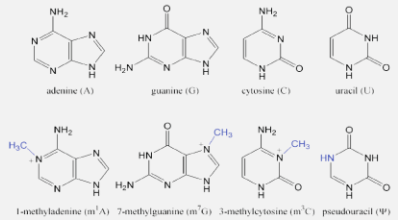
MRVI future innovations
Novel CCs with additional physiological characteristics for different product characteristics

CleanCap®

MRVI future innovations
Enhanced sequence technologies for differentiated targets

MRVI existing products
- Research grade and GMP NTP’s
- Modified bases – PsuedoU etc.

MRVI current innovations
Novel bases



MRVI future innovations
Enhanced sequence technologies for differentiated targets

MRVI current innovations
Tailing technologies

AAAAAAAAAA(n) 3’

maravai LifeSciences

Our long-term vision for RNA services

DNA

RNA

Enzymes

MRVI existing services

- High quality plasmid

MRVI current service innovations

- Novel DNA templates

MRVI future service innovations

- GMP plasmid
- Gene synthesis
- Sequence optimization

MRVI existing services

- Research grade RNA
- GMP RNA
- CC M6 mRNA offering
- RUO gRNA

MRVI current service innovations

- dsRNA quantification
- dsRNA prevention/elimination
- saRNA method improvements
- GMP gRNA services

MRVI future service innovations

- HT small scale mRNA offerings
- Circular RNA
- RNA sequence optimization/algorithms
- Synthetic mRNA

MRVI current service innovations

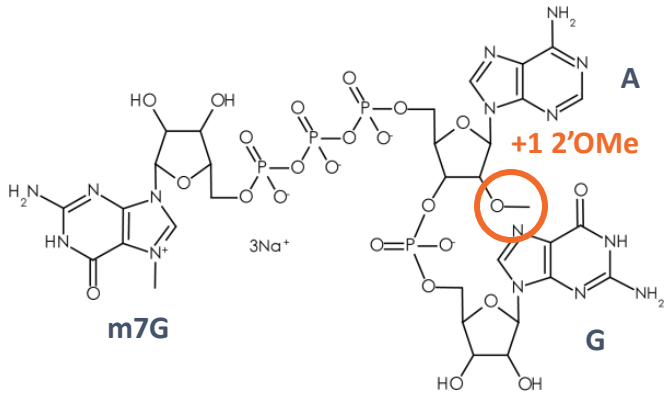
- Novel IVT enzymes
- Novel analytical enzymes

MRVI future service innovations

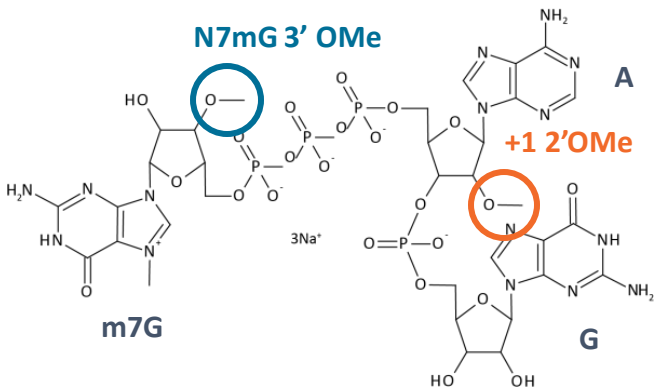
- Novel enzymes for new applications

Growing with the AG CleanCap® family

CleanCap® AG

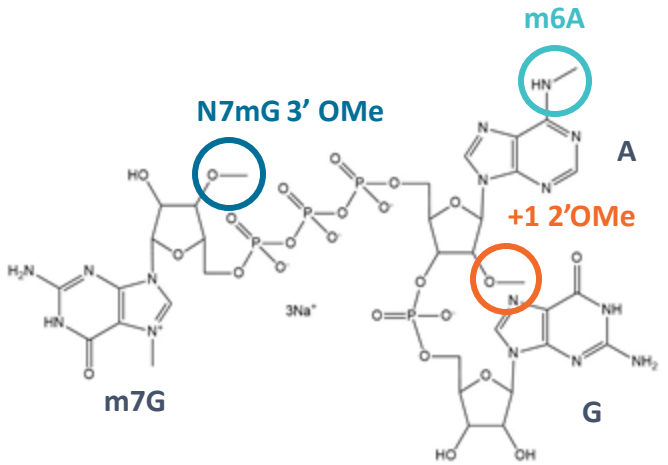


CleanCap® AG 3'OMe



Utilized in the Pfizer-BioNTech COVID-19 vaccine

CleanCap® M6



CleanCap® M6 analog: Innovation driving outcome

Higher protein expression

New cap structure can produce 30%+ protein expression

- Potential to increase potency of mRNA drug substance
- Lower doses result in higher manufacturing yield

Capping efficiency

Provides category leading capping efficiency of >95%

- Increased IVT efficacy resulting in high manufacturing yield
- Demonstrates reduced immunogenicity compared to other cap analogs

Driving discovery

Offered within RUO and GMP services

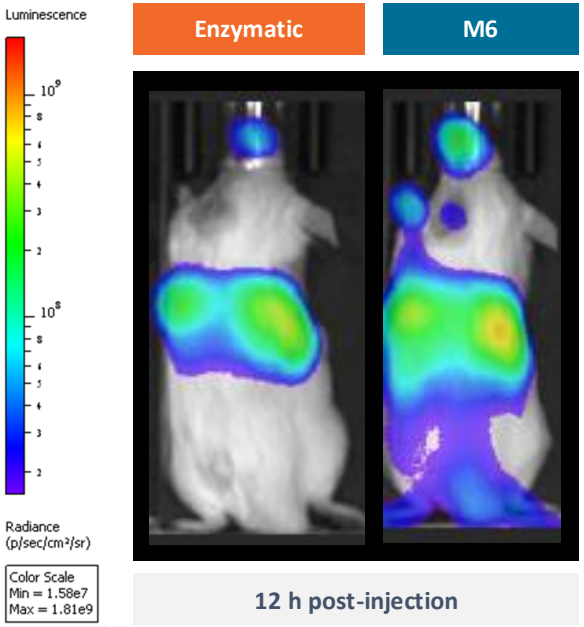
- Winning at the earliest stage of the clinical pipeline
- Grow with our customers within later-stage development

Manufacturing ease

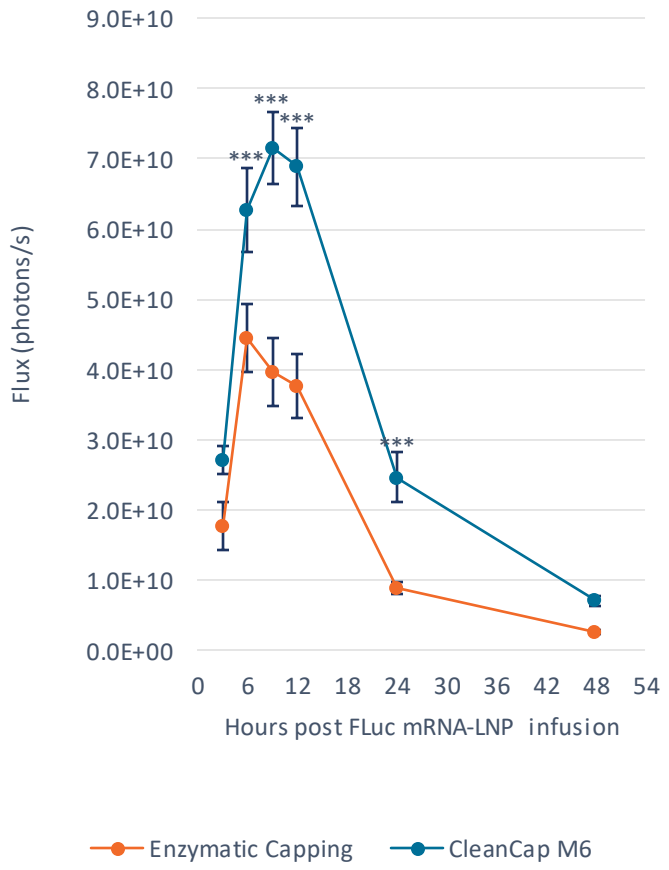
Maintains the one-pot workflow benefit of CleanCap® technology

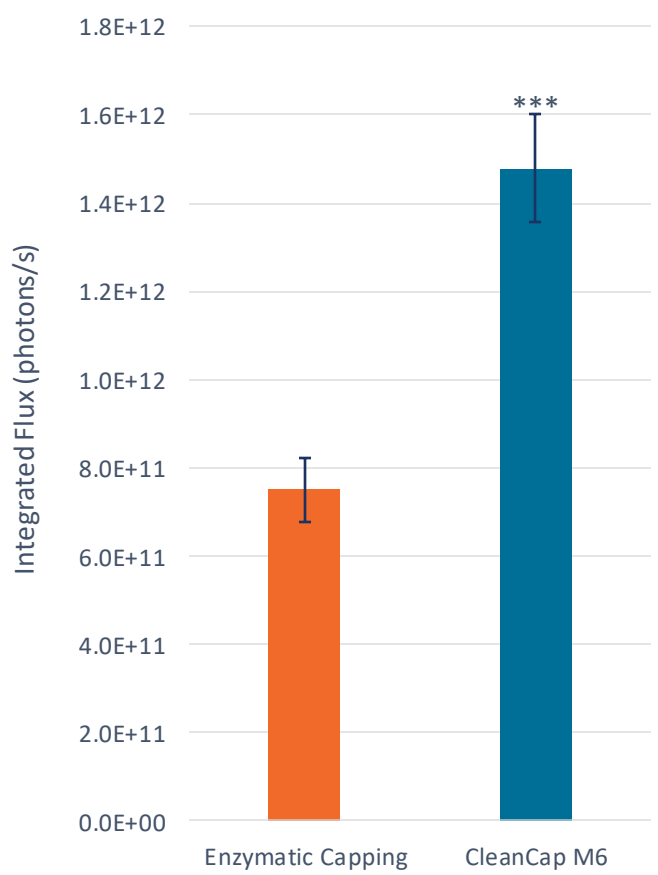
- Simplified manufacturing process, decreasing process risk
- Lowers time, labor, and cost to manufacture

CleanCap® M6 makes mRNA more potent –
superior protein expression compared to enzymatically capped mRNA



Performance of FLuc mRNA in an LNP-formulated, tail vein delivered mouse model. 1 mg/kg dose in each group. Luciferase activity, as photos per second, is measured after luciferin injection. The difference between groups is the capping strategy. All other variables are controlled.





*** $p < 0.001$, two-tailed T test. Error bars are standard error of mean. n = 9/group

Innovation within Biologics Safety Testing

Process impurity testing is essential for all complex biologic manufacturing

CYGNUS TECHNOLOGIES
part of Maravai LifeSciences

Cygnus Technologies® kits

24 expression systems with 29 different kits
24 different process impurities with 51 different kits

Protein Therapies

Antibodies
- Mammalian
- Microbial

Other Proteins
- Mammalian
- Microbial

Cell and Gene Therapies

Cell Therapy
- Mammalian

Gene Therapy
- Human
- Insect with baculovirus

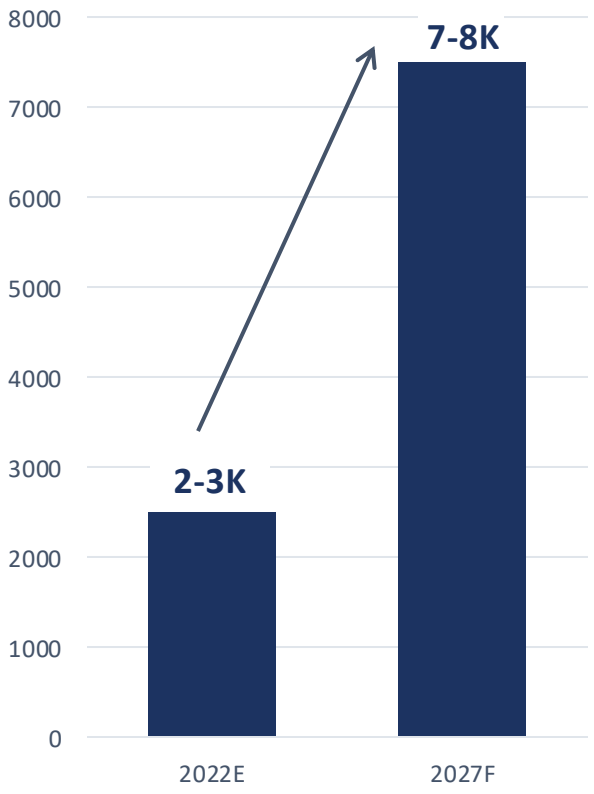
Nucleic Acids
- Microbial
- Transcribed

Vaccines

Vaccines
- Mammalian
- Insect
- Microbial

Attractive opportunities our solutions are well positioned to address and capture

Worldwide mRNA, Cell & Gene Therapy Pipeline[1]



Infectious disease vaccines

Validate mRNA as a breakthrough therapeutic modality

mRNA therapeutic

Assets in development expected to grow 4x from 2022-2027[2]

Expanding MS services

Implement absolute quantification of problematic HCPs by MS-MRM

Cell & gene therapy

FDA expects more than 200 INDs/year & 10-20 approvals/year starting 20252

Cygnus kits are used in all approved CAR-T CGT products

CleanCap® & small molecules

Are included across growing mRNA customer base

MockV expansion

MockV Viral Clearance product and services adoption and regulatory positioning

1. L.E.K. I.P., research and analysis, Pharmaprojects, FDA
2. Alliance for Regenerative Medicine

maravai LifeSciences

Targeted approach to innovation with key areas identified for future expansion

Within NAP:

- Novel enzymes
- In-house cell based assays
- Formulations
- Enhanced saRNA capabilities
- Circular RNA

Within BST:

- MockV portfolio
- Mass spectrometry service
- DNA portfolio
- New Cygnus kits

Maravai priorities drive our innovation focus across the organization

Catalyze the customer journey

Focus on customer centric culture to deliver best-in-class products and service technology

- Customer first approach
- Focus on unmet needs
- Identify customers' challenges and solve them

Find a better way

Identifying challenges for developers and applying rational innovation to solve them

- Rational approach to R&D
- Continuous growth of our technology platforms
- Mandate to bring technology innovation rapidly to the field

Deliver unquestionable quality

Quality science underpins our innovation

- World class scientific teams
- Deep expertise in chemistry, biology and analytical sciences
- 38% of the R&D team has a PhD

Lead together

Leverage our expertise and collaborative culture to accelerate our innovation

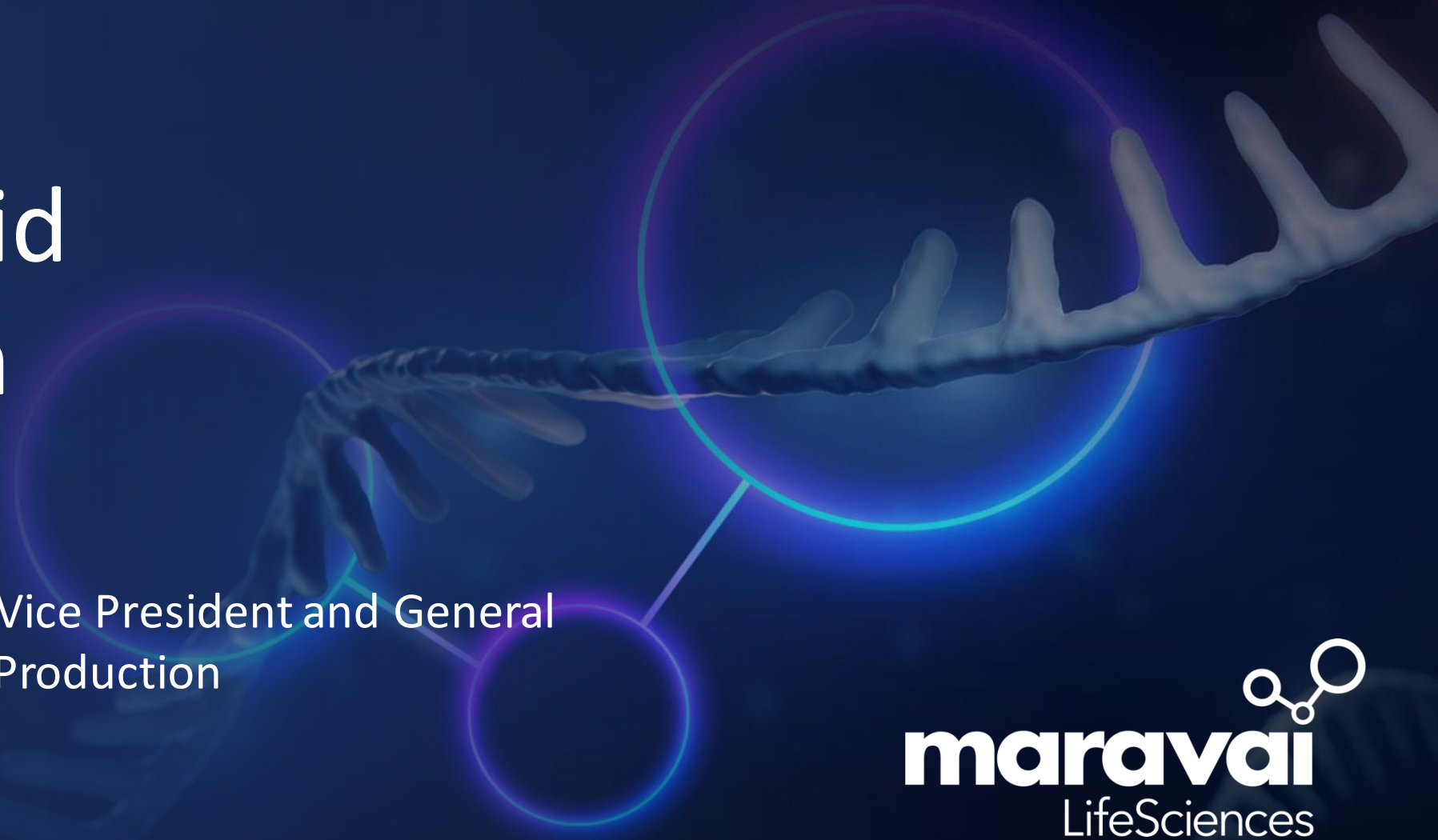
- Communicate together to build a creative mindset
- Cross divisional collaborations encouraged
- Innovation a mandate for the company

R&D DAY

Nucleic Acid Production overview

Drew Burch, Executive Vice President and General Manager, Nucleic Acid Production

September 2023



maravai LifeSciences

Nucleic Acid Production

Delivering innovative nucleic acid products and services to help our customers bring transformative nucleic acid medicines and tools from research to patients.

Technical expertise to support customer programs:

- Capping analogs, NTPs, and modified NTPs
- Custom oligonucleotides
- Custom chemistry
- Specialized enzymes
- Plasmid manufacturing for mRNA
- Discovery mRNA Services (>25 years, >975 customers served)
- GMP mRNA Services (>7 years of GMP manufacturing experience; 100+ GMP batches)
- Process development, analytics, and quality systems

Products & Technology

Oligonucleotides 

NTPs 

mRNA capping technology CleanCap®

Enzymes 

Services

pDNA  IVT reaction  mRNA  Analytics 

Expert Support

Discovery  Clinical GMP manufacturing

Process development, analytics, quality systems

Innovation

Innovative R&D  Technology advances

maravai LifeSciences

Industry leading companies with deep scientific expertise

Scientific innovation teams focused on **Nucleic acid chemistry and mRNA production**

40 scientists on R&D team

55% with advanced degrees

38% with PhDs

TriLink BIOTECHNOLOGIES

GLEN RESEARCH part of Maravai LifeSciences

MyChem

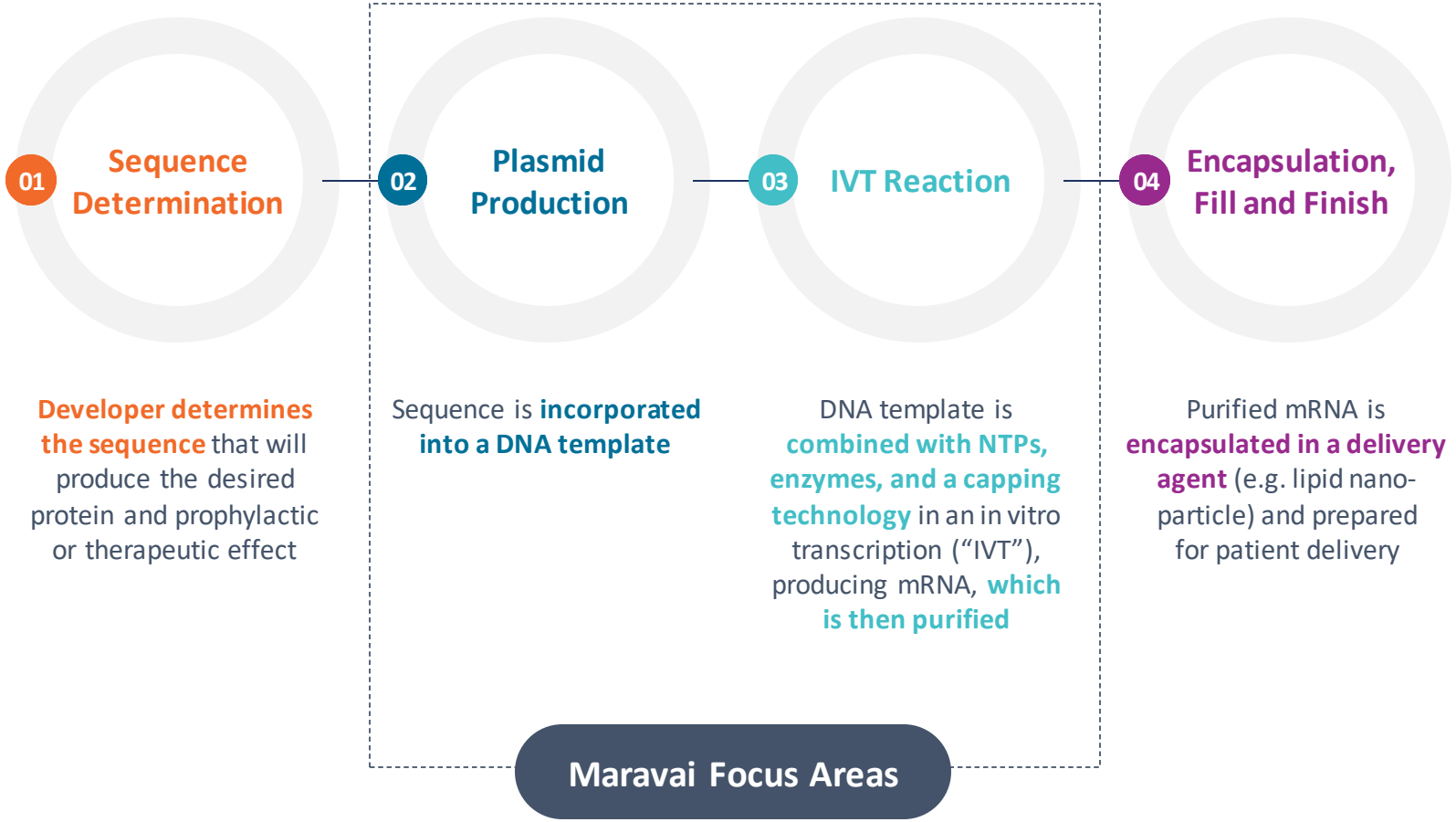
Alphazyme, acquired in Q1 2023, adds foundational capabilities in **enzyme production**

Alphazyme

maravai LifeSciences

Dedicated to helping our customers unlock mRNA's potential

Delivering differentiated solutions by leveraging proprietary technologies and innovative advancements



maravai LifeSciences

Over 20 years of experience bringing unique and differentiated capabilities to genomic medicine

Disruptive product innovation

- Product Innovation enhances the potency, purity and cost-effectiveness of mRNA medicine production
  - — CleanCap® analogs
  - — Oligonucleotides
  - — Modified NTPs
  - — Enzymes

Unmatched mRNA production expertise

- **Experience** - TriLink has been producing mRNA for over 20 years
- **GMP Capability** - TriLink has produced >100 mRNA batches under GMP conditions

Leading analytical capabilities

- TriLink's Analytical Sciences Center of Excellence provides the most robust set of analytical testing capabilities available

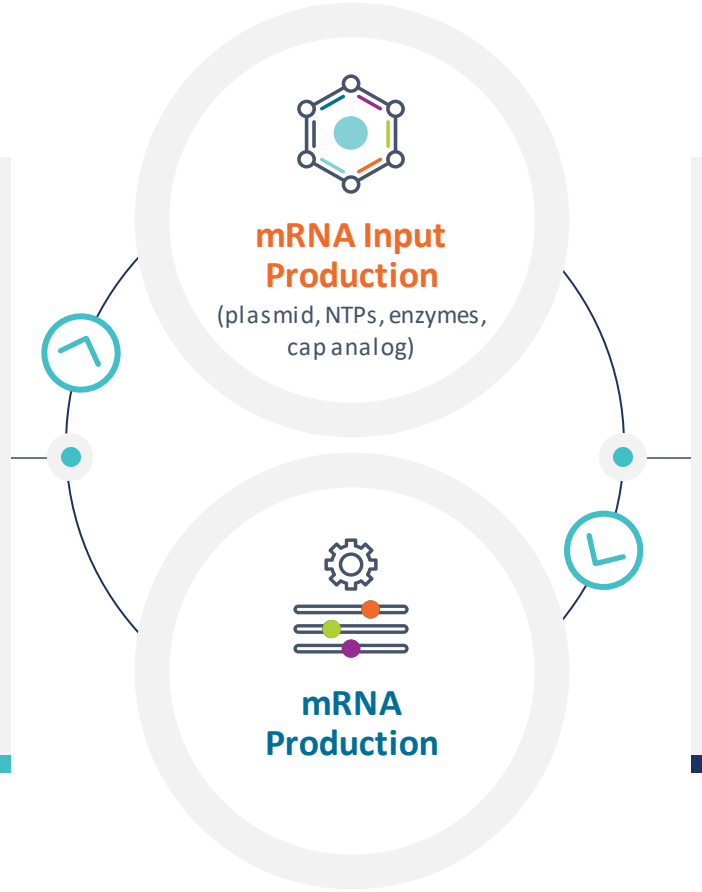
Unparalleled customer experience

- **Scaled** - successfully to meet pandemic era demands
- **Focused** - on enabling customer success

Combining products and services to drive flywheel effect

Maravai's mRNA production activities enable trial and error and innovation of new products:

- CleanCap® M6
- CleanCap® AG 3'OMe
- CleanCap® AG
- CleanCap® AU
- N1-Methylpseudouridine



Maravai's innovative product inputs have yielded process improvements enabling:

- Improved capping efficiency
- Higher yield
- Reduced dsRNA
- Higher mRNA potency

Customized Support:

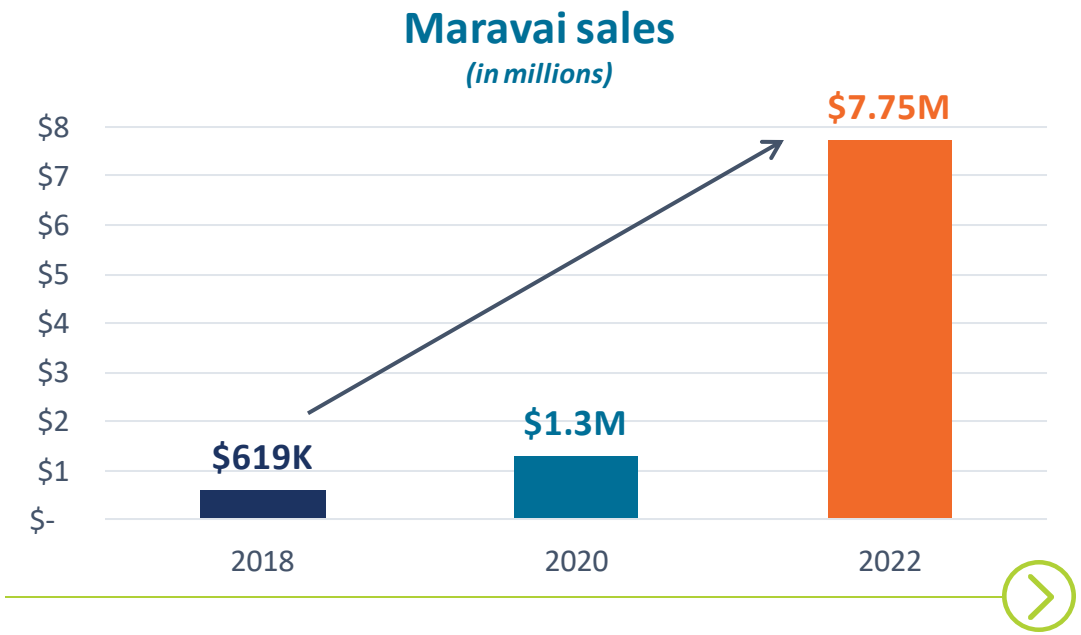
Experienced and innovative teams advancing product and process technology

maravai LifeSciences

Nucleic acid products and services cross-pollinate revenue opportunities

Customer A: Developing precision medicines for genetic diseases and T-cell cancers

- Products: CleanCap® and N-1 methylpseudouridine-triphosphate



Purchasers of CleanCap® and other nucleic acid products progress their research and later need support for:

- GMP mRNA production
- HQ plasmid production
- Analytical services

Purchasers of nucleic acid services like mRNA production may progress to insource late phase or commercial GMP production and then need to purchase:

- CleanCap® technology
- Other NTPs
- Oligonucleotides
- Enzymes

COVID accelerated mRNA development within incremental opportunity areas Maravai is well positioned to capture

COVID administrations demonstrated efficacy and safety

Continued focus around pandemic **preparedness initiatives**

Biden NextGen, **$5B** for COVID vaccines and TX

High levels of investment and clinical trials in mRNA from pharmaceutical researchers and VCs

Influenza programs maturing in 2025

Other infectious diseases, bacterial infections, personalized cancer vaccines

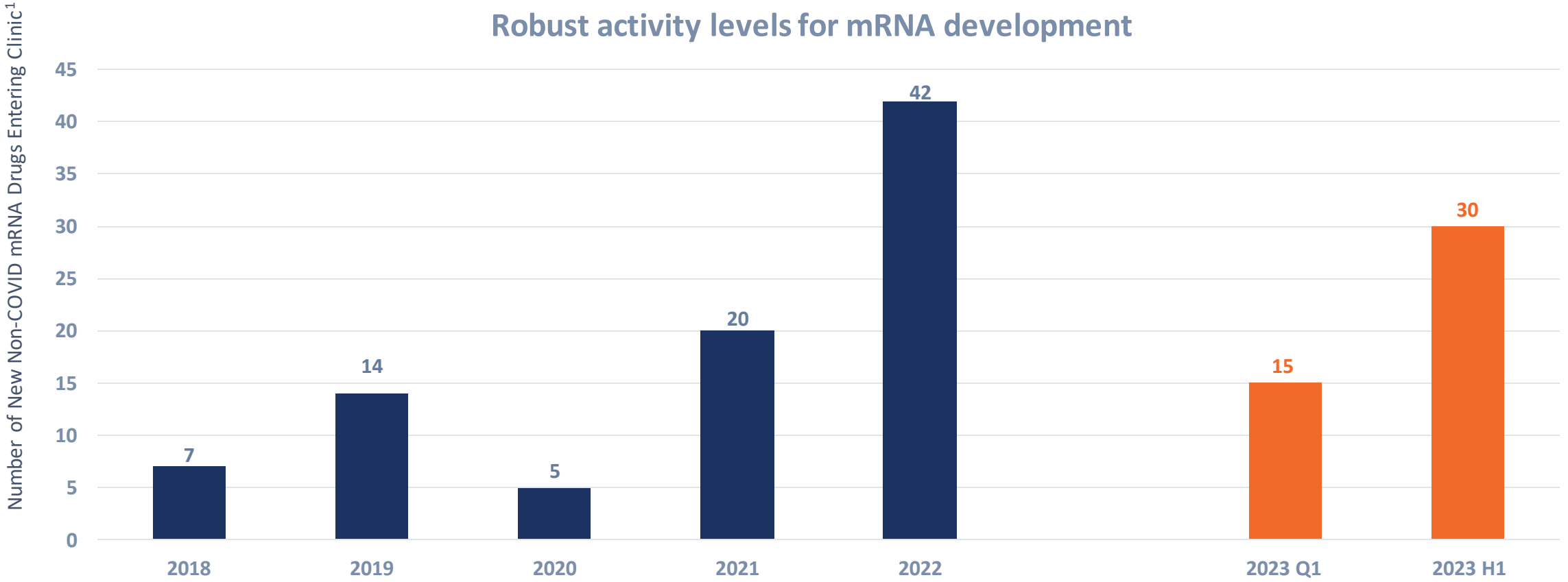
Biden cancer moonshot, CUREIT **funding of $24M** for RNA-encoded therapies

Demonstration of efficacy for investigational **mRNA cancer treatments** (Moderna and Merck, BioNTech and Roche)

Technologies applicable to newer modalities progressing in the clinic

In vivo gene editing and ex vivo cell therapies

Non-COVID mRNA modalities growing at faster rate than pre-pandemic



1. Source: Beacon RNA

With funding and research expanding beyond traditional mRNA focused customers

As mRNA application opportunities expand, a wide variety of companies look to explore potential benefits and use cases

Major vaccines companies with clinical programs

- AstraZeneca
- CSL
- GSK
- Merck
- Pfizer
- Sanofi

Leading biopharmaceutical developers with clinical programs

- Amgen
- Arcturus
- Bayer
- Beam
- BioNTech
- CureVac
- Daiichi Sankyo
- Intellia
- Roche/ Genentech
- Gilead
- J&J
- Moderna
- Novartis
- Regeneron

mRNA focused biotechs with significant 2023 financing rounds

- Metagenomi ($100M – Jan. 23)
- Orbital Therapeutics ($270M – April 23)
- ReNAgade Therapeutics ($300M – May 23)
- Alltrna ($109M – August 23)
- ADARx ($200M – August 23)

maravai LifeSciences

Diving deeper into Nucleic Acid Production

Products

- CleanCap® technology
- NTPs
- Oligonucleotides
- Other inputs

Drew Burch

Enzymes

- Alphazyme acquisition

Alphazyme part of Maravai LifeSciences

Chad Decker

Services

- Catalog mRNA
- Custom mRNA
- GMP mRNA
- Plasmid
- HQ plasmid

Becky Buzzeo

maravai LifeSciences

Innovative products will continue to optimize the production of mRNA

Maravai is focused on **developing products** that enable **improved mRNA production:**

- mRNA integrity
- Capping efficiency
- Better yield
- Simpler process
- Better purity
- Reduced dsRNA
- Reduced residual DNA
- Reduced residual protein

MORE POWERFUL mRNA

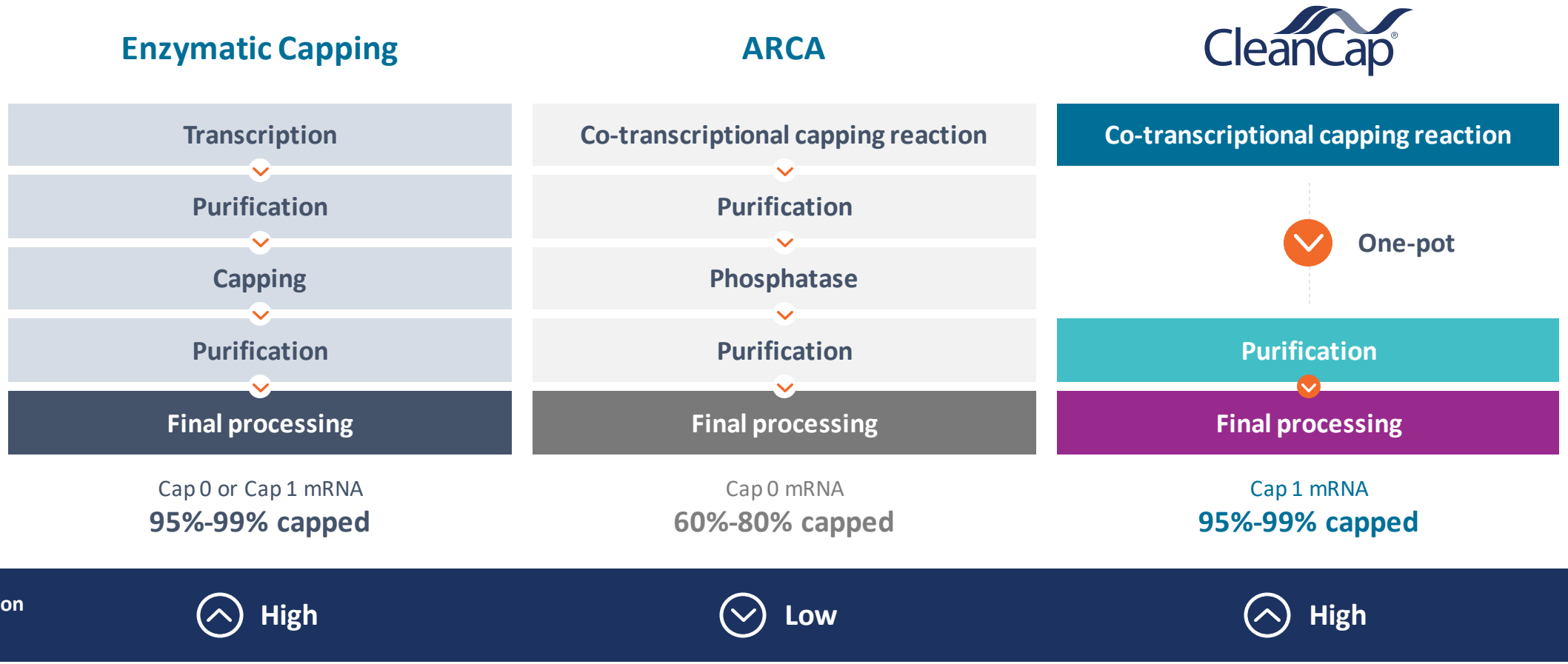
Portfolio of products provides customization and support across the mRNA development process

CleanCap® Technology	**CleanCap® AG** ✓ Already in approved vaccine **CleanCap® 3'OMe** ✓ Already in approved vaccine	**CleanCap® AU** Self-amplifying mRNA **CleanCap® M6** Potential for 30%+ higher protein production
NTPs	Decades of experience developing and producing modified NTPs	Brings scientific capabilities and innovative chemistry approaches for NTP development and production
Oligonucleotides	Foundational oligonucleotide producer for next-generation sequencing, molecular diagnostics and genomic tools companies	Provides reagents, supports, modifiers and labelling technologies for oligonucleotide synthesis
Enzymes	Provides unique expertise in molecular biology, enzyme scale-up, and production services	

With a demonstrated pathway to GMP production

	Custom Products	Research Use Catalog	GMP Products
CleanCap® Technology	✓	✓ • CleanCap® AG • CleanCap® 3'OMe • CleanCap® AU • CleanCap® M6	✓ • CleanCap® AG • CleanCap® 3'OMe • CleanCap® AU
NTPs	✓	✓ Broad catalog	✓ N1-Methylpseudouridine
Oligonucleotides	✓	✓	
Enzymes	✓	✓	

Enabling faster, cost-effective mRNA development



Driving better customer outcomes

Simplified process with better results

3x transcriptional yield

Significant yield increase compared to legacy capping agents, such as ARCA

>95% capping efficiency

Simplified process eliminates steps while maintaining high capping efficiency

Reduced immunogenicity

Producing more biologically active mRNA, evading the innate immune response to foreign RNA

Faster and at lower costs

Faster process

Reduced production process by nearly one week

Cost savings

Overall manufacturing costs estimated to be **20-40%** lower than other capping methods

CleanCap® M6 analog : Continuous innovation unlocks new opportunities

Higher protein expression

- New cap structure can produce 30%+ more protein expression
- Potential to increase potency of mRNA drug substance
- Lower doses results in higher manufacturing yield, potential to reduce immunogenicity

Capping efficiency

Provides category leading capping efficiency of >95%

- Increased IVT efficacy resulting in high manufacturing yield
- Demonstrates reduced immunogenicity compared to other cap analogs

Manufacturing ease

Maintains the one-pot workflow benefit of CleanCap® technology

- Simplified manufacturing process, decreasing process risk
- Lowers time, labor, and cost to manufacture

CleanCap® M6 is a win-win solution for both Maravai and our customers

Over 80 customers have purchased

CleanCap® M6, or mRNA produced with CleanCap® M6, to test in mRNA development

Over 25 customers have re-purchased

CleanCap® M6 following initial delivery

Servicing a wide array of customers

Major vaccine producers

Leading biopharmaceutical developers

mRNA focused biotechnology companies

Expanding oligonucleotide capabilities with broad-based application

Genomic tools

Critical oligonucleotides and monomer reagents for nucleic acid synthesis **required for every sample and workflow**

Areas of focus

Next generation sequencing

- Democratization and reduction in cost
- Scaling use in clinical diagnostics
- Emerging diversity of technology platforms

Molecular diagnostics

- Increased global installed base as result of COVID-19 pandemic
- Clinical utility in oncology and infectious disease
- Point of care solutions
- Technology advancements

Guide strand

- Expansion of gene editing toolkit
- Rapidly growing clinical pipeline

Market expansion opportunity driven by leading innovation capabilities

Leading innovator and supplier to mRNA producers

mRNA innovations that add value to workflow

Leverage oligonucleotide capabilities – guide strand

Address key customer need in cell & gene therapy (often using mRNA)

Opportunistic supplier to genomic tools

Level up our customer acquisition and retention tools

Customer Overlap with Enzymes

Executing against Maravai initiatives within nucleic acid products

Catalyze the customer journey

Activate innovation engine for customer and revenue growth

- Innovate new products (Cap Analogs, NTPs, oligonucleotides, enzymes)
- Rapid response to custom needs
- Advance guide strand oligonucleotide deployment

Find a better way

Drive continuous improvement across Maravai

- Improved manufacturing processes
- Advanced analytical technologies
- Improved digital interface

Deliver unquestionable quality

Implement industry-leading, and quality-focused culture, processes and systems

- Robust process from custom -> research use catalog -> GMP
- Flanders 1 GMP suites developed with BARDA support

Lead together

Make people and culture a competitive advantage

- Leveraging chemistry expertise from TriLink BioTechnologies, Glen Research, and MyChem
- Capture opportunities in enzymes with Alphazyme expertise
- Flywheel effect with nucleic acid services

R&D DAY

Nucleic Acid Production segment: Enzymes

Chad Decker, Vice President and
General Manager, Enzymes

September 2023

maravai LifeSciences

Alphazyme: Premier provider of industrial-scale molecular biology enzymes

Products

- Common molecular biology enzymes
- In vitro transcription
- Molecular diagnostics
- Next generation sequencing

Supported by Alphazyme's robust and customizable product and services offering

Services

- Custom enzyme development
- Scaling up
- Production and testing

CUSTOM ENZYMES DESIGNED TO SCALE

Enzymes are the currency of the bio-economy

Genetic literacy is driven by enzymes

Reading, writing, and editing of DNA and RNA is a growing opportunity as customers pursue development of products

Genetic literacy

- Accelerated by global COVID response
- Driven by need for more customizable solutions to drive speed, efficiency, and outcomes for customers

Driven by enzymes

- Disease detection (PCR, sequencing)
- Vaccine production (RNA, DNA)
- Biological data storage
- Large-scale xNA synthesis

Today's challenges

- Production capacity is insufficient
- Customization is a challenge
- RA/QA requirements are unclear
- Enzymes are too expensive

Key input in nucleic acid production

Maravai is accelerating Alphazyme's growth with multiple opportunities to capture synergies while serving internal sponsored and customer sponsored projects

TriLink BIOTECHNOLOGIES part of Maravai LifeSciences

Customer expansion:
Leveraging strong TriLink customer base to capture additional enzymes customers

Resource expansion:
Bringing TriLink expertise and additional resources to build credibility and expand long-term opportunity

Attractive synergies **accelerate opportunities** for both brands

Alpha zyme part of Maravai LifeSciences

Quality focus:
eQMS and ISO13485: 2016 Certification

Vertical integration:
Enabling TriLink to solidify supply chain and reduce COGS

maravai LifeSciences

Progress since acquisition

Achieved over last six months

Alphazyme's enzymes currently moving into production at TriLink supporting nucleic acid production and reducing COGS

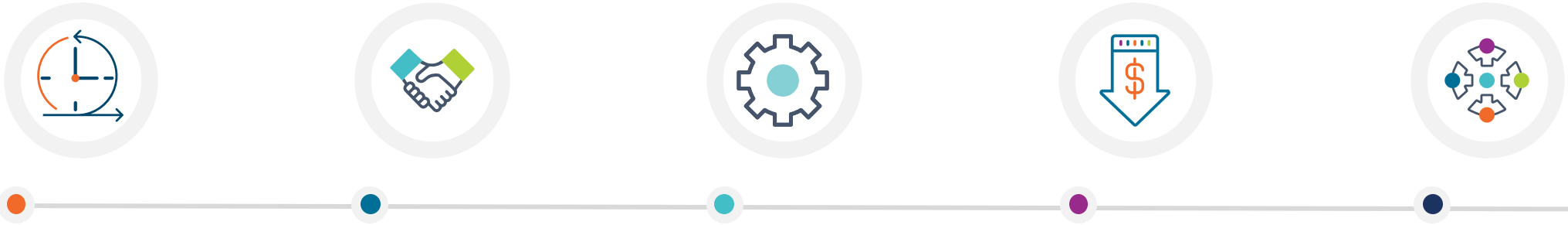
Leveraging TriLink to increase cross-pollination by broadening Alphazyme's applicability into nucleic acid services and create new partnerships focused at growing the core business

Accelerated the newly implemented commercial team allowing capture of incremental customers while focusing on deepening existing customer relationships

Integrated the Codexis and In Silico/AI business partnerships to **enhance manufacturing process**

Alphazyme's competitive advantages further strengthened under Maravai

Competitive Advantages:



Speed

Industry leading development cycle times

Flexibility

Ability to customize virtually any aspect of the product formulation

Sophistication

Advanced eQMS foundation, infrastructure ready to support regulatory

Low production costs

With ability to compete and win on price

Scalability

Fully integrated value chain allowing for manufacturing of large fed-batch lots

Alphazyme's customer driven approach drives success

01 **Customer driven solutions start with the customer's end goal in mind** and leverage deep collaboration throughout to ensure customer success

02 **In-house manufacturing capabilities** are flexible to respond to customer requirements driving speed and agility

03 **Fostering customer collaboration** to enhance enzyme customization

04 **Ability to expand outside of Alphazyme's enzyme catalogue** to meet customer demand and intra-company needs

maravai LifeSciences

Innovation is core to Alphazyme

Culture of innovation at Alphazyme proliferated within Maravai portfolio

Focus areas

- Driving productivity
- In-licensing opportunities driven by partnerships
- Enzyme customization

Delivering innovation through construct design

Key value drivers:

Construct design

- Ruthless pursuit of three KPI's - mg/g, g/L, time
- Maximizing efficiency at the front-end of development
- Rapid screening of "molecular toolbox" quickly reveals highest-performing host strain, expression vector, and promoter combination

Advanced method development

- **Fermentation:** Data collected drives final methods to result in cell densities 10-15x higher than competitors
- **Purification:** Leveraging novel construct designs, completing downstream processing faster and with higher purity

Processing time

- Vertical integration of all processes (fermentation, purification, quality control testing)
- Sourced with simple, easy to acquire raw materials
- Construct design enables highly streamlined, short processing cycle times

Driving customer productivity

- Substantial reduction in COGS and reduction of time to market

Streamlining processes: Maximizing efficiency at the front-end of development

Product

High-volume enzyme that is consumed in many applications with constrained market availability

Metric	Alphazyme	Industry	Delta (Industry)	Value drivers
Product yield (final)	800mg/L	50 mg/L	16x	Advanced construct, method development
Time to result	5 days	84 days	17x	Vertical process integration, lean process

Differentiator

>15x efficiency advantage in two dimensions vs. competitors with similar gains realized for other products

Expanding innovation reach through partnerships and in-licensing opportunities

Partnerships

Codexis – Expanding custom development for evolved content

- Produce and co-market engineered enzymes for life science and diagnostics

In Silico/AI companies for manufacturability gains

- Crystal structure predictive algorithms

Going forward

Leveraging TriLink to explore new partnerships for Alphazyme and further support core business

Outcome

Custom enzyme projects that Alphazyme can license

Enzyme customization: A key differentiation opportunity

Investment into manufacturing facilities is positioning Alphazyme well to capture further opportunities and build on customization strengths

Whole process from experimental design to quality control is kept in-house

Ability to alter any part of the enzyme manufacturing process

Sophisticated manufacturing systems to adapt to complex requirements

Highly tunable manufacturing process for every customer

Maravai priorities drive integration and expansion of enzymes

Catalyze the customer journey

Activate innovation engine for customer and revenue growth

- Cross sell enzymes within Nucleic Acid Production

Find a better way

Drive continuous improvement across Maravai

- Add engineered enzymes through partnerships
- Continued evolution of second and third generation enzymes

Deliver unquestionable quality

Implement industry-leading and quality-focused culture, processes and systems

- Integration of enzymes within Nucleic Acid Production offerings to drives further quality efficiency

Lead together

Make people and culture a competitive advantage

- Development of a world class commercial team
- Accelerating the transition from a service model to a product focused business

R&D DAY

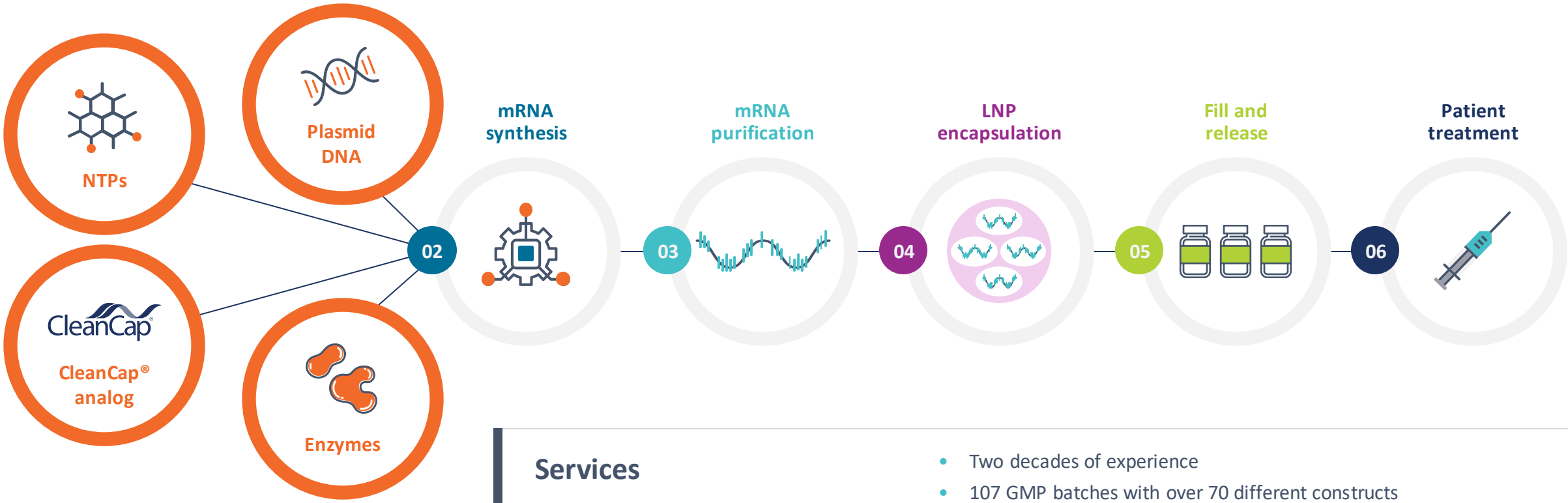
Nucleic Acid Production segment: services

Becky Buzzeo, Chief Commercial Officer and
Chief Operating Officer, Nucleic Acid Services

September 2023

maravai LifeSciences

Beginning with a story of services



Services

Brings together our technologies, portfolio of products, and expertise to deliver mRNA services the fit customer needs and goals

- Two decades of experience
- 107 GMP batches with over 70 different constructs
- >16,000 products made
- >975 discovery customers

Providing mRNA CDMO services to accelerate drug development

- Process development
- Analytical services
- Consultive and logistical support

Discovery → Preclinical/Toxicology → Phase I → Late Phase

Discovery mRNA (RUO) manufacturing
µg to g scale

High-quality plasmid DNA template for mRNA

GMP mRNA Manufacturing
gram to 100-gram scale

Streamlined process drives customer's first choice

Full lifecycle integration delivering differentiation across key capabilities:

1

Speed

- In-house, streamlined process
- Ownership of value chain

2

Scale

- From microgram to gram
- Reliable supply and consistent execution

3

Quality

- Robust quality management system
- Internal expertise

Delivering effective method development

that meets objectives at each stage of product development

maravai LifeSciences

Strengthening differentiated capabilities in nucleic acid services

Investing in and expanding our capabilities

- Facilities to meet demand and customer need
- Unmatched analytical capabilities
- Supported by a team of experts

Driving our focused strategy forward

- mRNA service expansion
- Ancillary service expansion
- Elevated customer experience
- Commercial expansion

Facilities to meet the demand in scale and phase of mRNA products and services

Wateridge

mRNA & related raw materials

- Discovery mRNA, HQ Plasmid, Phase 1 GMP mRNA
- CleanCap® reagents and NTP innovation; Oligos and custom chemistry
- R&D, QC, Analytics
- Supply chain management

Flanders 1

Nucleic acid products

- CleanCap® reagents and NTP manufacturing
- GMP chemistry
- GMP-grade raw materials for clinical and commercial use

Flanders 2

Late phase clinical mRNA manufacturing

- mRNA development and manufacturing space
- Phase 2 clinical and beyond
  - Integrated clean utility processes
  - In-house analytical services – development, validation, release
  - Process optimization, development and scale up, & validation capabilities

maravai LifeSciences

Unmatched analytical capabilities

Boutique experience with a full service offering across the development cycle

	Discovery	Preclinical/Toxicology	Phase I	Late Phase
Type of material	RUO material	Engineering material	Phase I GMP material	Late Phase GMP material
Level of analytical method evaluation	Feasibility recommended	Feasibility	Method* qualification/ verification	Method* validation
Parameters	Generic method based on structure	Generic method based on structure	Specific method • Specificity** • Linearity • Dynamic range • Accuracy • Precision**/IP • LOD**/LOQ	Specific method • Specificity** • Linearity • Dynamic range • Accuracy • Precision**/IP • LOD**/LOQ • Robustness • Sample stability

Evaluation of stability indicating methods

Cross-labs qualification, validation, and training

*For intended use e.g. to support safety, integrity, strength, purity, and quality
** Qualitative assessment

Supported by a team of experts

Delivering mRNA expertise at each stage of the process

Team of recognized experts

In nucleic acid characterization and analysis

Delivering the right solutions

Extensively trained with in-house solutions (CleanCap®) and ability to leverage robust tech transfer positions us well to serve wide-array of customer needs

Providing comprehensive support

From method development through analytical and QC testing, our teams support customers through the entire lifecycle

Innovative technologies drive differentiation

Simplified mRNA manufacturing with cornerstone CleanCap® technology

Fast-track mRNA manufacturing with CleanCap® mRNA capping technology

Achieve:

- **Proper capping:** Produce cap 1 for the most biologically active and least immunogenic mRNA
- **High yield:** 3x the yield of capped material compared to ARCA and legacy cap analogs
- **Cost-saving:** Less expensive and more robust than enzymatic capping
- **Streamlined manufacturing:** Co-transcriptional capping reaction

85% of our 975+ mRNA services' customers utilize our proprietary CleanCap® technology

CleanCap®	Enzymatic capping
Co-transcriptional capping reaction	Transcription
↓	↓
Purification	Purification
↓	↓
	Capping
	↓
Purification	Purification
↓	↓
Final processing	Final processing

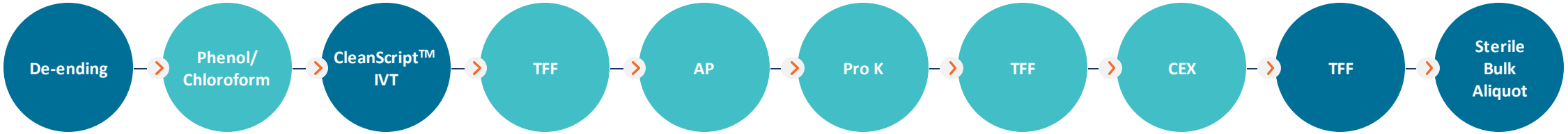
maravai LifeSciences

Late phase manufacturing optimization with CleanCap®

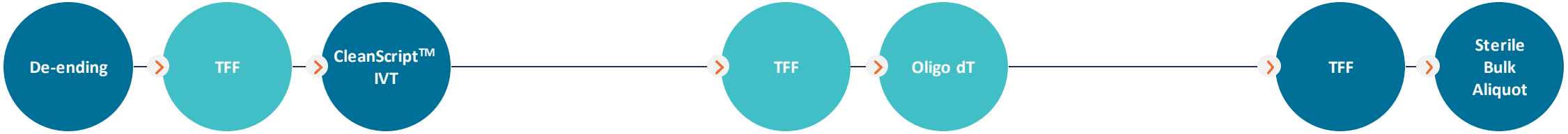
Simplified, phase appropriate processes are:

✓ More reproducible | ✓ More robust | ✓ More reliable

Current Process:



Optimized Process:



Transition to completely aqueous process by removing residual solvents

Removal of additional enzymatic steps due to high capping efficiency with CleanCap® AG and purification process

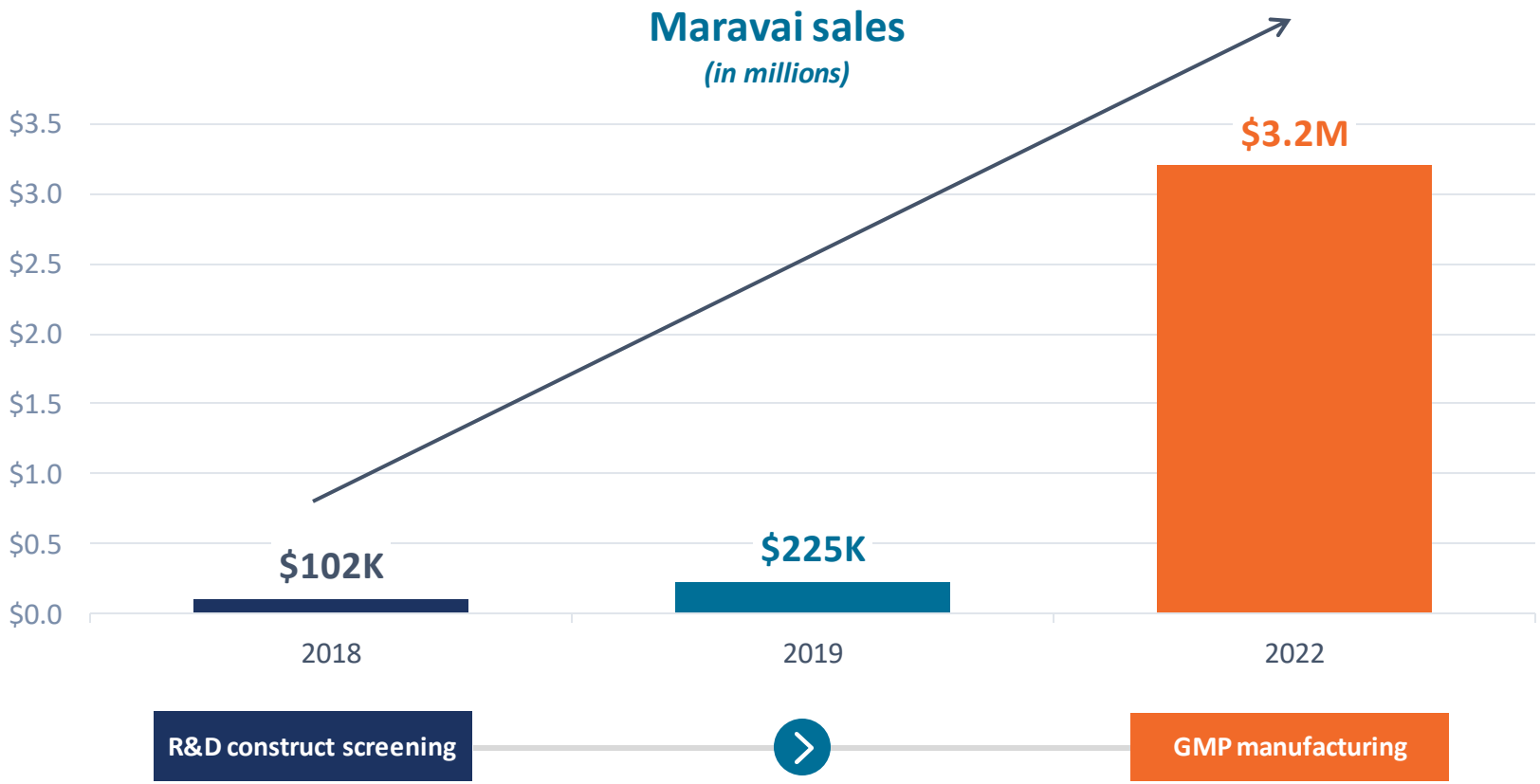
Enhanced purification via affinity chromatography, increase purity and decrease residuals

Increased mRNA integrity from CEX to oligo dT

Catalyzing the customer journey to enable the miracles of science

Customer B: Developing personalized cancer vaccine

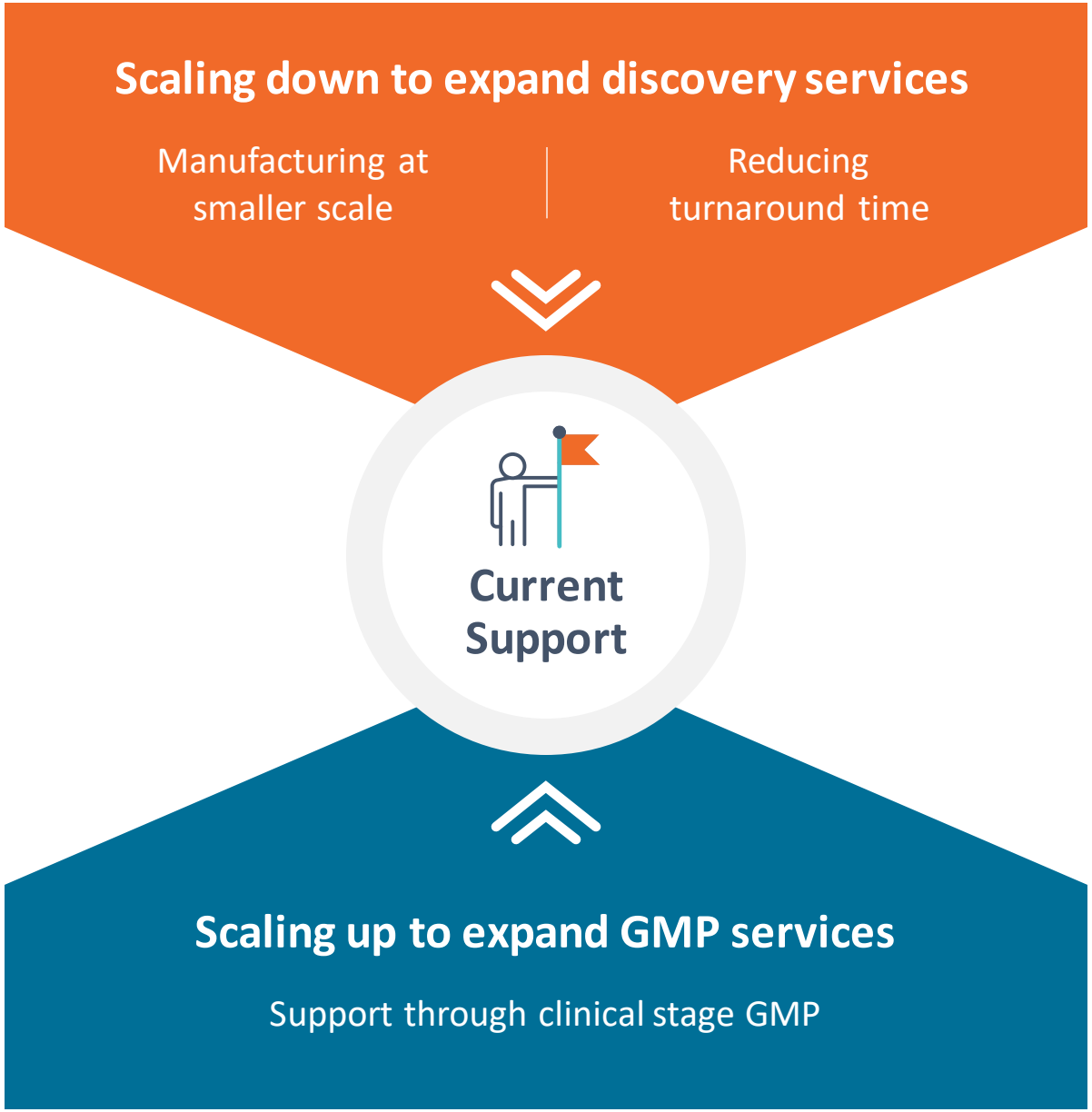
Product: GMP CleanCap mRNA manufacturing



The customers' first choice since the beginning of their journey

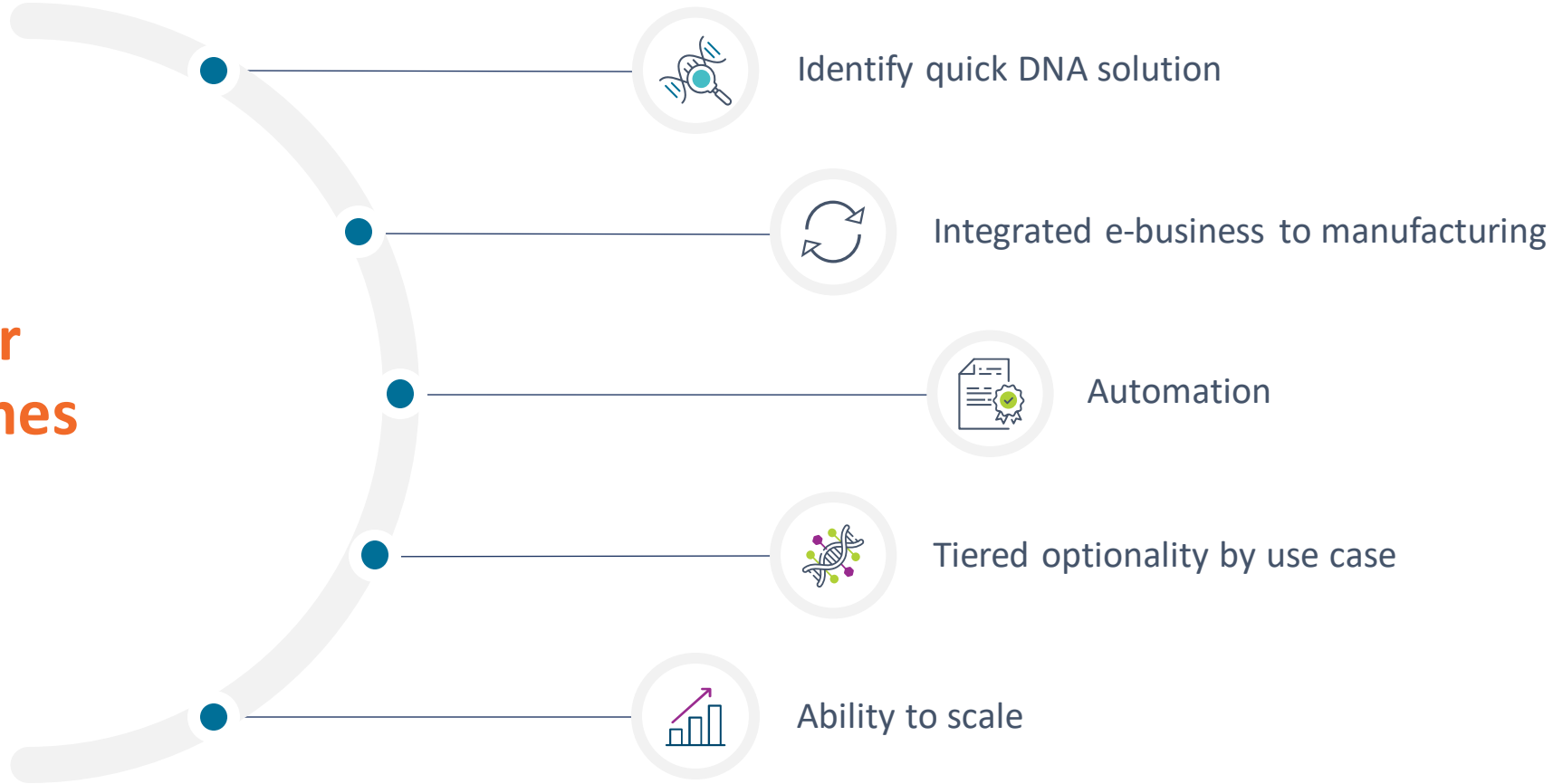
Driving service expansion

Expanding service offerings expands customer funnel and drives stickiness



Expanding capabilities in discovery phase mRNA

Targeting faster turnaround times



Driven by RUO order processing and manufacturing improvements

Complex, time dependent projects

Request received → Quote generation → Order acceptance → Work order generated → Plasmid ordered

Production record → DNA linearization → In vitro transcription → Purification 1 → Purification 2 → Final fill

Final release QC's → CoA check by QA → Shipment

Expanding opportunities for efficiency

Batched, micro gram scale approach can significantly reduce cost and TAT

- Incorporation of ug scale offering to support customer screening activities
- Overall reduction in touch time of 94% leading to significant cost savings
- Leverage a standardized batch record to decrease labor associated with documentation, led to a 90% reduction in time spent documenting data

Significantly improving TAT

TAT in 2022:	Actual TAT 2023:
8-12 weeks	4-6 weeks

mRNA CDMO services to accelerate drug development

Supporting customers from RUO to GMP

Customers start their discovery journey with Maravai and continue through clinical stage GMP services at the right scale

Discovery	Preclinical/Toxicology	Phase I	Late Phase & Commercial
Discovery mRNA (RUO) manufacturing	Process development and transfer to GMP team	GMP mRNA manufacturing	

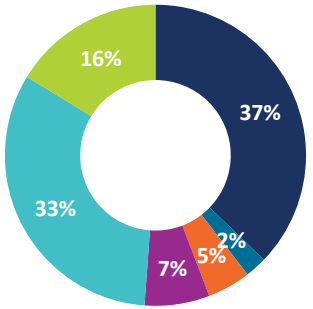
µg to 100's of grams
Offering the right scale at the right stage in the process to service diversified customer needs

Sticky pipeline well positioned for future capture

Over 107 GMP batches since inception 10+ years ago and **over 70 different constructs**

62 CleanCap® mRNA GMP customers **all** began their product development journey with our discovery services

Servicing a diversified customer base



Indication split for GMP service customers (2021-2023)

- Cell Therapy
- Gene Editing
- Protein Replacement
- Vaccine Cancer
- Vaccine Covid
- Vaccine Infectious Disease

Executing against Maravai initiatives within nucleic acid services

Catalyze the customer journey

Activate innovation engine for customer and revenue growth

- **Integrated HQ plasmid offering**
- Scaling down for expanded discovery services
- Expand late phase manufacturing capabilities through Flanders 2

Find a better way

Drive continuous improvement across Maravai

- **Decrease TAT RUO mRNA through automation and process optimizations**
- End-to-end customer experience refresh
- **Optimize CMC DS development and technical transfer process**

Deliver unquestionable quality

Implement industry-leading, and quality-focused culture, processes and systems

- **Continue to invest in Analytical testing offering**
- CFR and ICH compliant quality systems at Flanders 2 by launch

Lead together

Make people and culture a competitive advantage

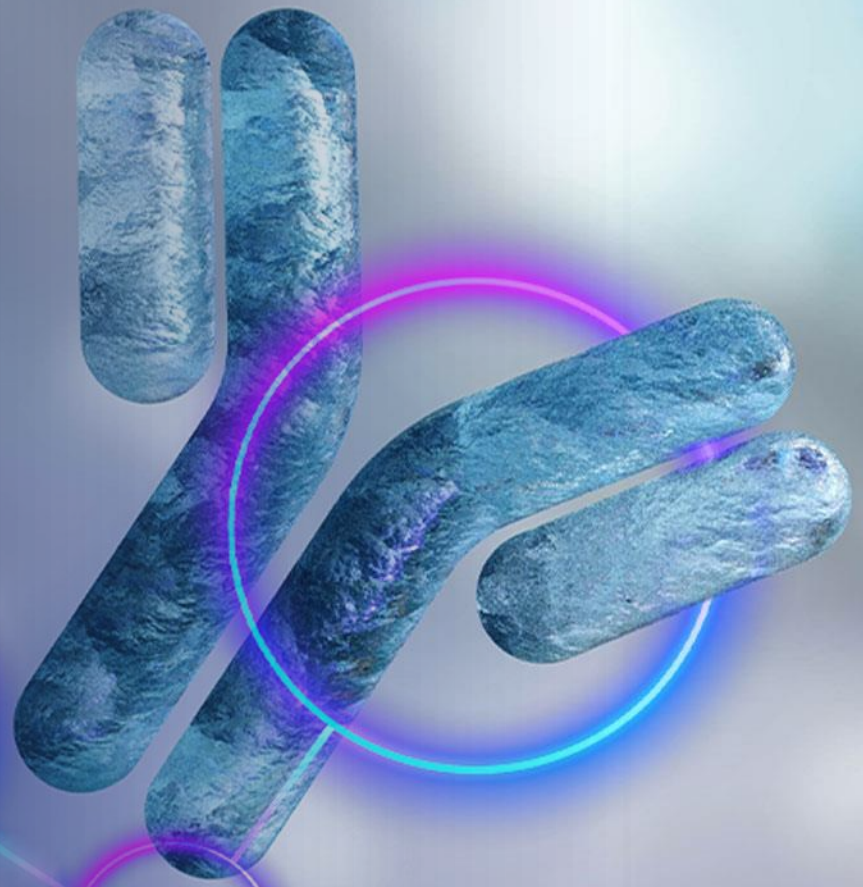
- **Building commercial teams**
- Hiring talented late-phase manufacturing expertise
- Enhanced training and development

Break

maravai LifeSciences

R&D DAY

Biologics Safety Testing overview and strategy



Christine Dolan, Chief Operating Officer,
Biologics Safety Testing

September 2023

maravai LifeSciences

A history of innovation and industry leadership within Cygnus

Developed and launched generic kits for 24 expression platforms and 24 bioprocess impurities

1997

Founded with the publication and adoption demonstrating a novel approach to host cell protein analysis

2010

Generic ELISA for HEK293 launched ahead of the cell and gene therapy market demand

2012

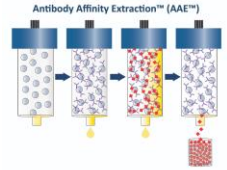
Generic kits for host cell DNA extraction and detection introduced

2013

Launched Protein A Mix-N-Go™ kit

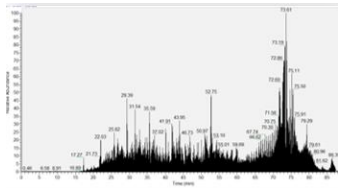
2014

Introduced new analytical method: Antibody Affinity Extraction (AAE) to replace Western Blot Assays



2016

Launched mass spectrometry offering for quantitative analytics



2019

Introduced EndonucleaseGTP® for viral vector vaccine manufacturing

2022

Launched second particle RVLP MockV® kit

2023

Launched 24th cell line PG-13 HCP kit and 24th Bioprocess Impurity AAV residual reagent kit

Providing critical analytical tools for complex biologic manufacturing

Biopharmaceutical manufacturers

HCP clearance

- Demonstrates purification process consistency
- Potential to impact drug substance (DS) pharmacokinetics
- Potential to interfere with DS stability
- Potential to increase DS immunogenicity
- Confidence entering phase I-III clinical trials

Regulatory guidance

- Comprehensive drug substance characterization in IND submissions
- Published guidelines for HCP minimization
  - ICH Q11 (2012)
  - 21CFR610.13 (2018)
  - USP Chapters 1132, 1132-1 [draft]
  - European Pharmacopoeia 2.6.34

We are the gold standard in host cell protein detection

Unmatched product and service portfolio

- Generic HCP ELISA kits for 24 expression platforms
- Custom HCP kits for late stage and marketed products
- Generic ELISA kits for purification leachates and cell culture media additives (Protein A, BSA, Insulin, etc.)
- Custom services for orthogonal assay characterization

Decades of expertise

- Pioneer in HCP analytics with 25 years as the market leader
- Deep understanding of all areas of process-related impurity testing

Credibility

- Thought leaders within HCP analytics market
- Develop and advise best practices to clients and regulatory bodies

Trusted by industry and regulators

- Leader in process related impurity testing
- Established relationships with customers and regulators
- Over 100 process-specific HCP assay supporting late stage and marketed biologics

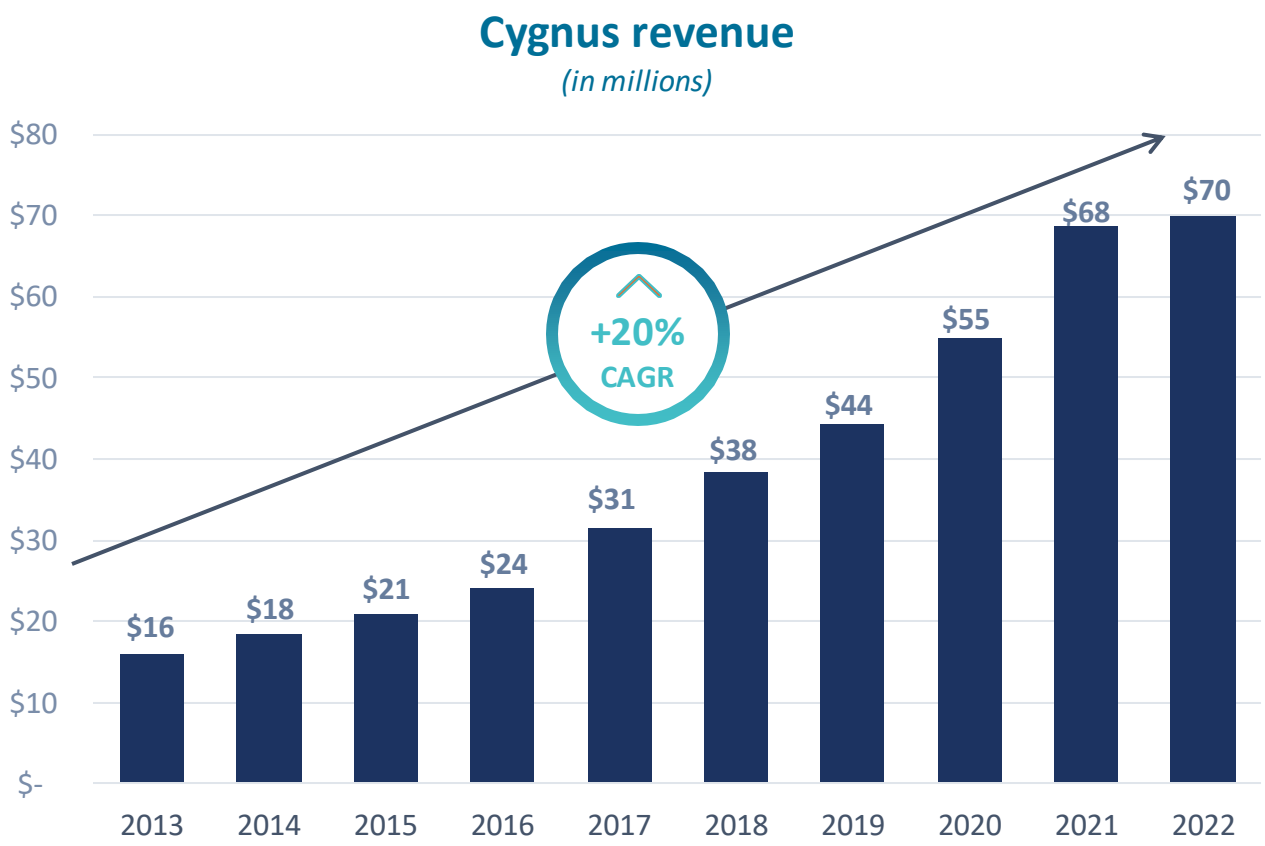
Cygnus kits are filed in

17 of 17

approved Car-T cell and gene therapy products

maravai LifeSciences

Strong growth over the past decade



Reached milestone of **$500M** in historical revenues

Strong growth
driven by leadership position supporting high growth markets in biologic drug manufacturing, vaccines and cell gene therapy

2023 serves as normalization year
as therapeutic COVID programs played role in increases during 2020 and 2021 and subsequent plateau in 2022

Well positioned for future growth
through innovation and continued market leadership position

Vast portfolio of critical products for process impurity detection and quantification

Full service offering across the development and commercialization product life cycle

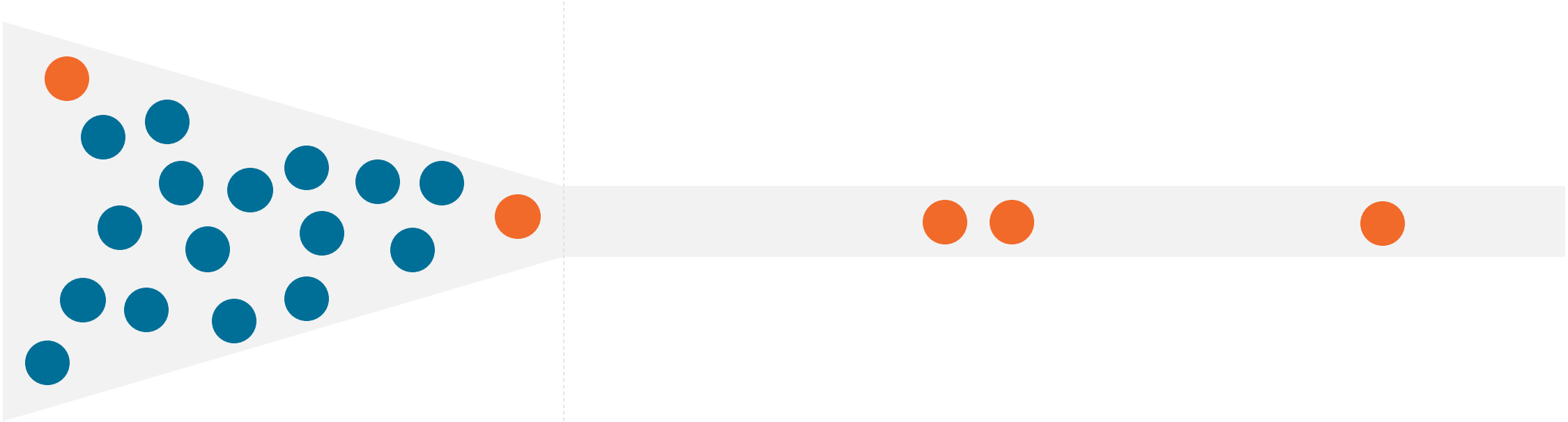
	Process Development	Clinical Manufacturing	Validation	Quality Control
Product development phase	Preclinical to phase 1	Phase 1 & phase 2	Phase 3 to BLA	Commercial manufacturing
Analytics required	• New protein detection and process impurities	• Clinical manufacturing • Impurity assay development and qualification	• Purification process and analytics validation for late-stage manufacturing	• Routine quality control
Cygnus products and services utilized	**Products** • Generic HCP ELISA Kits • Host Cell DNA Kits • Albumin ELISA Kits • Insulin ELISA Kits • Transferrin ELISA Kits • Protein A Mix-N-Go™ ELISA Kits • EndonucleaseGTP® ELISA • MockV Kits	**Products** • Generic HCP ELISA Kits • Protein A Mix-N-Go™ ELISA Kits • EndonucleaseGTP® ELISA • Other Bioprocess Impurity ELISA Kits • MockV Kits **Services** • HCP antibody coverage analysis by Antibody Affinity Extraction (AAE) with 2D-PAGE and/or MS • Assay qualification • Sample testing by ELISA and orthogonal methods: AAE, AAE-MS™	**Products** • Generic HCP ELISA Kits • Protein A Mix-N-Go™ ELISA Kits • EndonucleaseGTP® ELISA • Other Impurity ELISA Kits • MockV Kits **Services** • HCP antibody coverage analysis by AAE with 2D-PAGE and/or MS • Assay qualification: dilution linearity, spike & recovery analysis, precision, accuracy • Custom process-specific HCP antibody and assay development	**Products** • Generic HCP ELISA Kits • Protein A Mix-N-Go™ ELISA Kits • EndonucleaseGTP® ELISA • Other Impurity ELISA Kits **Services** • Custom process-specific HCP ELISA • AAE-MS™

Sticky Offering

With Our Clients All the Way

Participation in process development through the entire product life cycle

Engaging with customers in early process development creates an attractive funnel that drives product stickiness and customer loyalty



Early process development

Engaging with customers when pipeline is largest

Commercialization

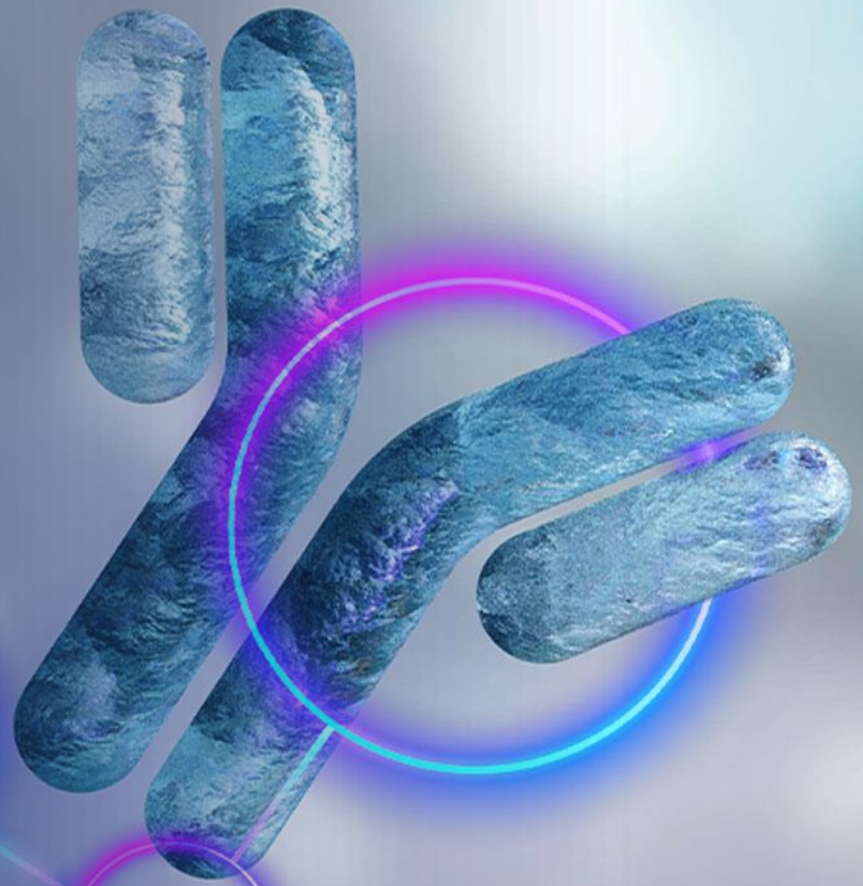
Only 10% of products make it through development

Pulls engagement through commercialization

With Maravai built into successful development

R&D DAY

Biologics Safety Testing: Innovation



Eric Bishop, VP of Research & Development,
Cygnus Technologies

September 2023

maravai LifeSciences

Our innovation strategy

Maravai differentiators informs innovation strategy

Own the front end of the funnel	Comprehensive offering of high-quality products and services drive customer loyalty
Be the customer's first choice	Close collaboration with customers, industry track record, world class quality and continuous innovation drive customer choice
Deliver industry leading technology and IP	Continuous improvement of current programs and innovative offerings driven by customer needs

Key BST innovations

- **ELISA kit expansion**
- **DNA portfolio expansion**
- **Mass spectrometry**
- **MockV expansion**

maravai LifeSciences

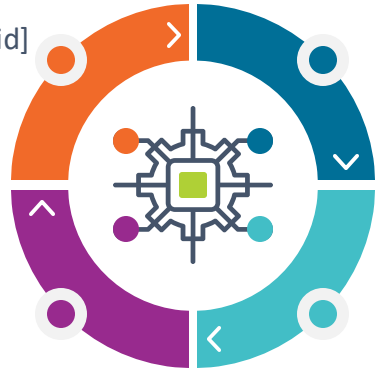
Cygnus ELISA kits for vaccine, cell & gene therapies

Host cell proteins

- HEK 293
- PER.C6®
- NS/0
- Vero Cells
- Sf9
- HeLa
- CAP®
- BHK
- A549
- MRC5
- MDCK
- PG13
- E. coli [plasmid]

Host cell & plasmid DNA

- Specie & cell line specific host cell DNA assays
- Production system specific PCR assays



Growth media additives

- BSA
- HSA
- Bovine Transferrin
- Human Transferrin

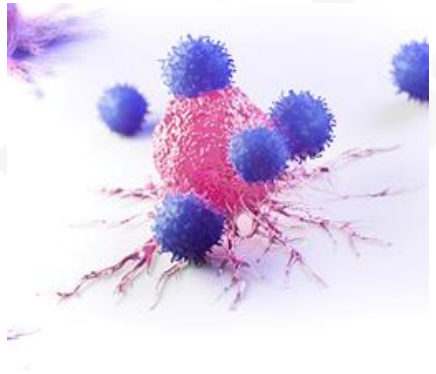
Processing enzymes & purification leachates

- Benzonase/ Endonuclease
- AviPure® AAV2, AAV8, AAV9 Residual Ligand Assays
- IsoTag™-AAV

Surveillance drives innovation: PG13 HCP ELISA kit

PG-13 (1) is a murine fibroblast cell line genetically modified to express retroviral packaging proteins and serve as a producer cell line

- **Application:** stable producer of retrovirus-based viral vectors for CAR-T therapies
- **Customer profile:** bioanalytical groups supporting process development and manufacturing at companies that utilize PG13 as a platform for RV production
- **Customer advantages:**
  - **Saving time and improving manufacturing process reproducibility:** once a PG-13 clone producing certain viral vector carrying therapeutic gene has been established, it can be grown at scale to produce sufficient amount of viral vector without the need for initial transfection process



Strong performance since March 2023 launch

WINS:

Strong uptake in China	Repeat customers in the US	EU customer developing second generation CAR-T cell therapy platform

DNA portfolio expansion

Attractive opportunity within host cell DNA portfolio

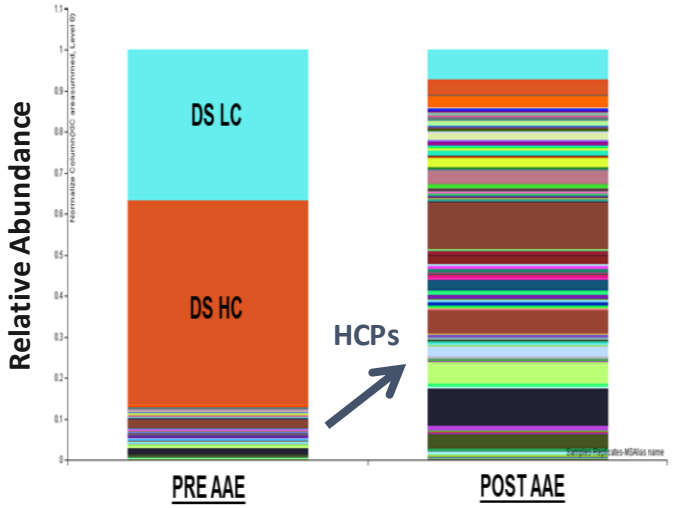
- **Best residual DNA/RNA extraction kit** on the market
- Competitive **price** point
- **Unmet need** for DNA detection kits for many common expression platforms
- **User-friendly offering** removes need to automation or instrumentation to perform extraction

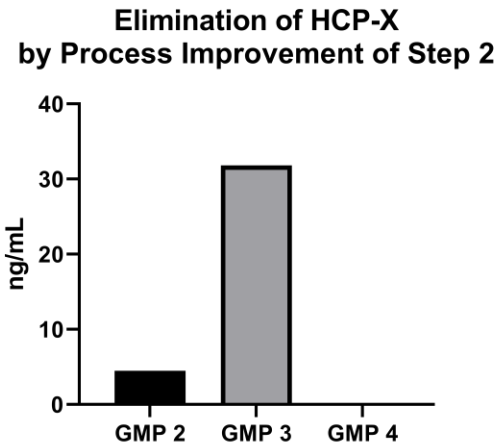
Innovation opportunities for the DNA portfolio position Cygnus for further capture

- Conversion of the CHO and E. Coli qPCR methods to **USP compendial method**
- **Development of residual host cell DNA qPCR methods** for other cell lines
- Exploration of **Droplet Digital PCR**
- **Explore other automation platforms** for residual DNA methods

Expanding power of AAE and mass spectrometry through innovation

Proprietary offering delivers valuable risk assessment tool with further differentiation opportunities identified





Opportunity

- Identification of HCP in drug product
- Assessment of process changes affecting HCP levels

Actionable insights for clients' drug development programs

- Valuable risk assessment of negative impacts to patient safety or product integrity
- Guide process engineers to remove problematic proteins

Growth in mass spectrometry service offerings

Established industry leader with attractive opportunities for further differentiation

Attractive opportunities in mass spectrometry services

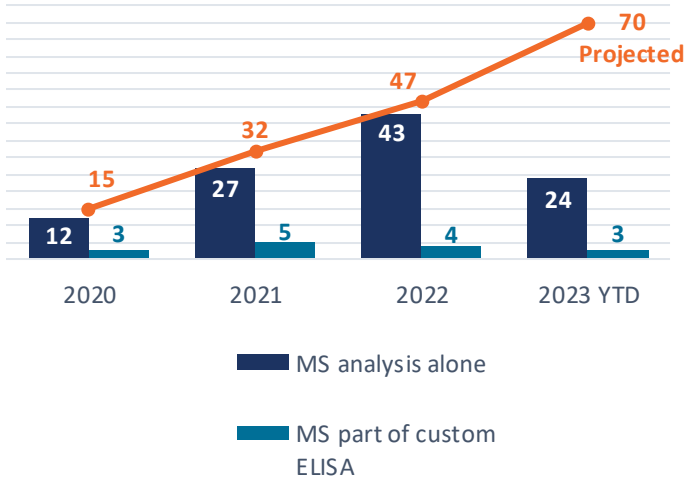
- Well curated databases for common expression platforms
- Antibodies required for antibody affinity extraction
- Established as the industry leader in orthogonal testing services
- USP Chapter 1132.1 on Residual Host Cell Protein Measurement in Biopharmaceuticals by Mass Spectrometry, currently in review to be released Jan 2024

Innovation opportunities for expansion of mass spectrometry services position Cygnus for further capture

- Development of peptide libraries for broader range of species
- Development of labeled peptide panels for quantification of individual HCP
- Implementation of nanoflow HPLC to reduce sample requirements and drive customer efficiency

Total MS projects

MS analysis alone + MS as part of custom ELISA[1]



70+ total projects projected for FY 2023

1. Represents data collected through August 29, 2023

R&D DAY

Biologics Safety Testing: MockV deep dive

David Cetlin, Senior Director, MockV Products

September 2023

maravai LifeSciences

Customers face unique challenges within viral clearance testing

A key development hurdle

- Regulatory agencies require proof of viral clearance before clinical (pre-phase 1) and commercial (post-phase 3) approval
- Spiking studies are required to validate
  - Live mammalian virus
  - Specialized facility
- Panel of viruses typically used for mammalian cell process (ex. CHO): XMuLV, MVM, Reo3, PRV

Historically expensive with risk of failure

- CRO led (on-site at CRO)
- BSL-2/3
- **Costs:** $100K - $500K
- **Timing:** One month planning + one month for results

Expensive

In the dark

Increased risk of failure

MockV platform solves these challenges

- **Replaces live virus with non-infectious Mock Virus Particles (MVP)**
  - MVPs mimic the physicochemical characteristics of the live virus
  - Differentiated approach protected by U.S. and global patents
- Kits include **all components necessary** to perform ~10 viral clearance tests
- **Different kits** that model different viruses

Faster, more flexible, and at lower cost than traditional viral clearance spiking studies

Method	Cost per experiment	Testing environment	Analysis duration
Live viral clearance spiking study	$2,000 - $10,000	BSL-2 (on-site at CRO)	3-4 weeks
MockV MVM kit spiking study	$400-$1,000	BSL-1 (in-house at biotech company)	1 day

Allows customers to optimize for viral clearance during process development by

Gaining control over viral clearance
to conduct required studies when and how clients want

Optimizing the process early–
challenge process steps early in downstream purification development, optimize chromatography steps, test new purification products, employ viral clearance to QbD, DOE and HTS approaches

Eliminating surprises –
confirm downstream purification process steps provide sufficient viral clearance prior to validation studies

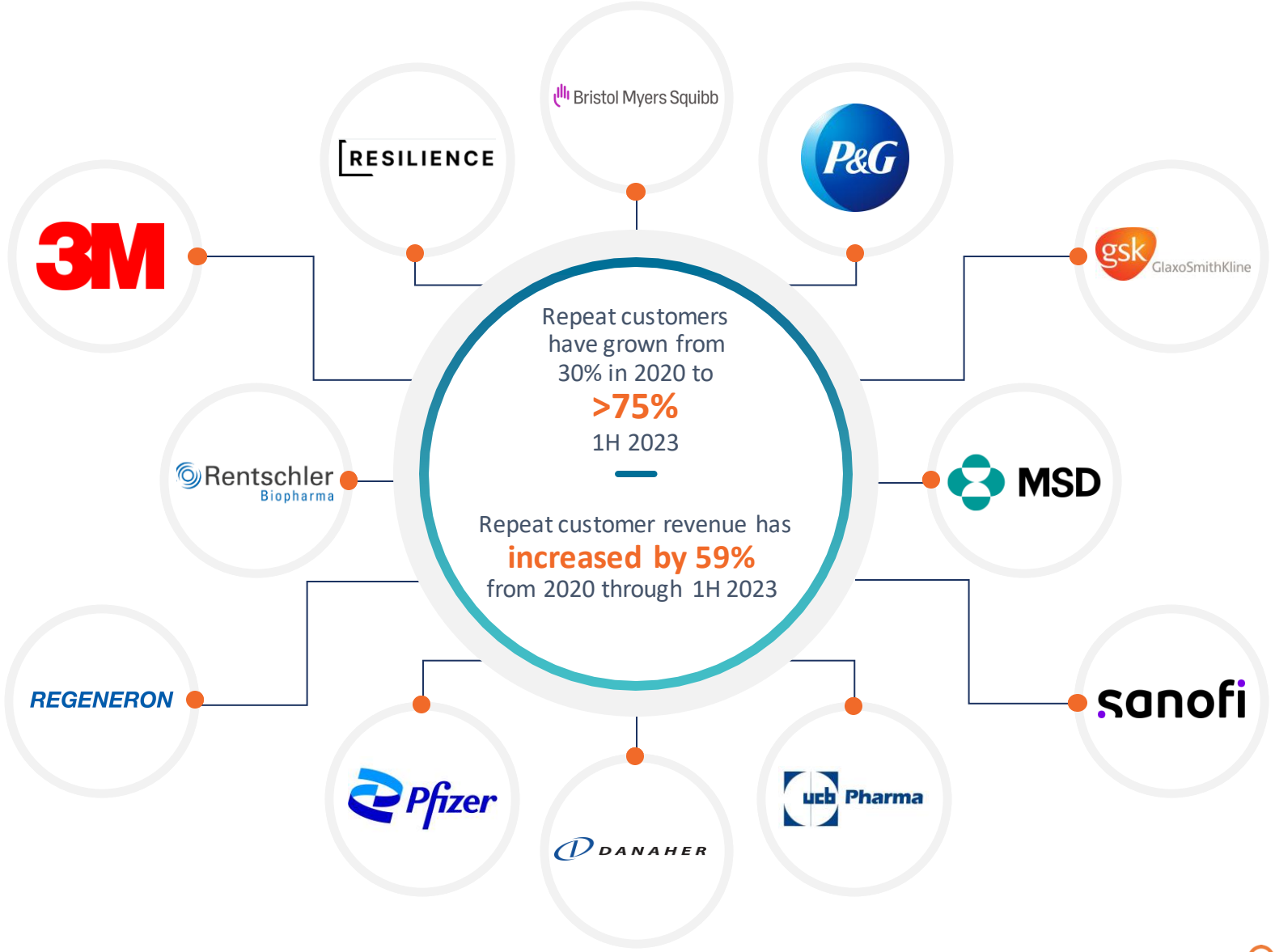
Our customers validate the value of our technology and innovation

> Non-infectious MockV® MVM & RVLP Kits from Cygnus Technologies are an excellent tool for viral clearance (VC) validation studies. **These mock-virus kits are safe, user-friendly, and economical for VC efficacy determination in standard laboratory conditions.** The Cygnus Technology MockV VC kits offered us a valuable assay to confirm the superiority of our prepacked column technology for both batch and multi-column chromatography (MCC) applications."
>
> – JUKKA KERVINEN, PHD
>
> MANAGER – APPLICATIONS DEVELOPMENT, TOSOH BIOSCIENCE LLC

> Manufacturing cost is a key barrier hindering the development of novel vaccines. Cost of outsourced virus clearance validation studies using live virus is a significant contributor to this cost, and thus is a factor in reducing the number of vaccines which can be evaluated in clinical trials. **MockV kits represent a paradigm shift in traditional virus clearance done using live virus spiking. The use of MockV kit will thus increase potential public health benefits from the development of novel vaccines while carrying negligible increased risk to trial volunteers.** Furthermore, the use of the RVLP Kit for such work is supported by the recently updated ICH Q5A guidelines for viral clearance which explicitly mentions the use of CHO derived RVLP as an acceptable particle for viral clearance studies and can be carried out in most PD laboratories."
>
> – SHAWKAT HUSSAIN, PHD CENG MICHEME
>
> SENIOR SCIENTIST IN BIOPROCESS AND ANALYTICAL DEVELOPMENT (BIPAD), JENNER INSTITUTE (NDM), UNIVERSITY OF OXFORD

maravai LifeSciences

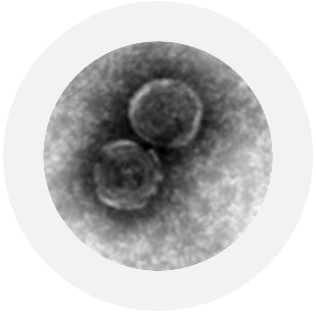
Driving repeat customers and revenue



maravai LifeSciences

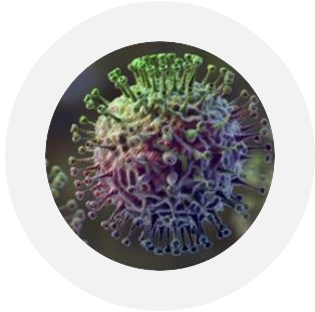
Continuing our history of strong innovation through consistent product pipeline development

1st Gen MockV MVM Kit
(Commercially available since 2019)



MockV RVLP Kit
(Commercially available since Q4 2022)

3rd MockV SV40
(anticipated release in Q4 2024)



4th MockV Kit (TBD)
(anticipated release in Q2 2025)

2022 2023 2024 2025

Favorable regulatory developments drive additional opportunities

Updated guidance and the MockV™ approach

Q5A (R2) is the viral clearance guidance for late-stage biopharmaceuticals (i.e. BLA)

First revision since 1999

Expanded concepts include:

- **Continuous processing**
- **Cell/gene therapy products**
- **CHO-endogenous RVLP**
- **The use of prior knowledge**


GUIDANCE DOCUMENT

Q5A(R2) Viral Safety Evaluation of Biotechnology Products Derived From Cell Lines of Human or Animal Origin

NOVEMBER 2022

Validating with MockV RVLP Kit

> **For CHO cell-derived products, CHO-derived endogenous virus particles [RVLP] can also be used for viral clearance experiments.**

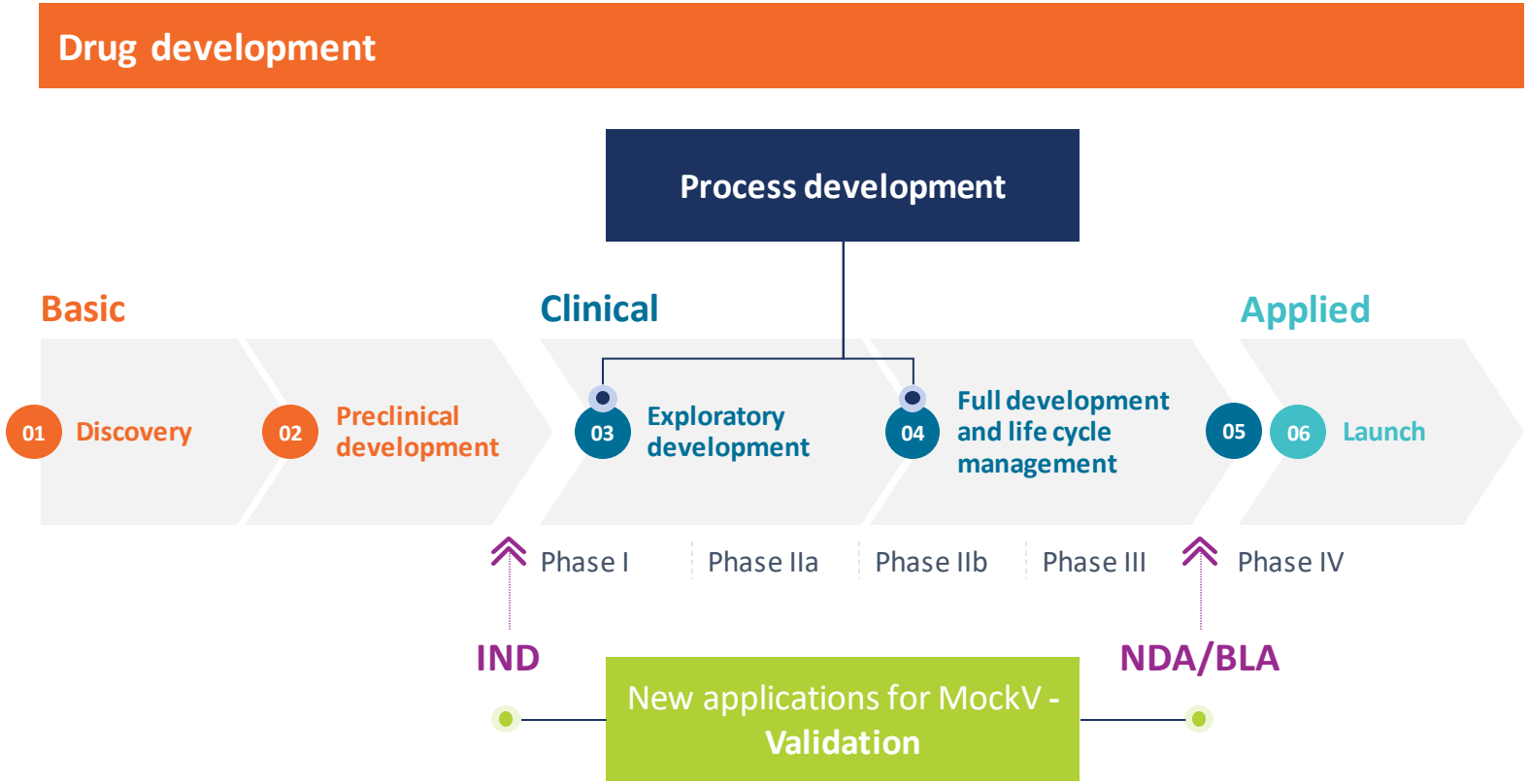
Validating with MockV through prior knowledge

- Use of prior knowledge if utilized properly, can be leveraged to reduce the dependence and scope of viral clearance validation studies
- The MockV™ approach offers an economic and easy way to accumulate viral clearance data
- Through this data, companies can increase their process knowledge, leading to better justifications in support of prior knowledge

Supplementing a company's existing prior knowledge with MockV™ derived clearance data could effectively reduce the scope and/or need of conducting process-specific live viral validation spiking studies

Expanding use cases for MockV

Generate data throughout process development and beyond



01 Test new products

02 Predict potential failures prior to **required** viral clearance validation (ex. IND filing)

03 Generate viral clearance data during process development

04 Generate viral clearance data during process characterization (ex. DOE studies)

05 Predict potential failures prior to **required** viral clearance validation (ex. BLA filing)

06 Deviation support, second generation development

MockV will be a solid contributor to Biologics Safety Testing revenues in the short and long-term

Addresses an unmet need in the biopharmaceutical process development industry

Underlying technology **non-infectious surrogates is patent protected**

Rich product pipeline of kits are being developed and commercialized

Driving customer stickiness through **positive regulatory developments leading to expanding opportunities**

2023 R&D 100 WINNER

maravai LifeSciences

Long-term strategy focused on customer acquisition and capturing growth that outpaces the market

Maintain the gold standard status

Genetic kit performance and stability programs; thought leadership, regulatory preference

Elevate the customer journey

Provide a best-in-class customer experience from the initial kit use to orthogonal services to "lock-in" HCP method to custom assay development

Increase customer acquisition and expand existing customer base

Expand MS services

Implement absolute quantification of problematic HCPs by MS-MRM

MockV innovation and market disruption

MockV viral clearance product and services adoption and regulatory positioning

As **current market leader** we are well positioned to grow with industry and capture more market share

Executing against Maravai initiatives within Biologics Safety Testing

Catalyze the customer journey

Activate innovation engine for customer and revenue growth

- Cygnus expertise helps customers drive success at every stage of development though commercial
- Strategic partnerships to enable innovative therapies

Find a better way

Drive continuous improvement across Maravai

- Further build out pipeline and enhance regulatory position
- Mass spectrometry analytics
- Host cell DNA portfolio expansion
- MockV particle expansion

Deliver unquestionable quality

Implement industry-leading, and quality-focused culture, processes and systems

- Continuous innovation to maintain gold standard status
- Innovation adding products in adjacent markets that meet gold standard

Lead together

Make people and culture a competitive advantage

- Partner with regulators and industry advocates
- Investing in technical development
- Build talent pipeline

R&D DAY

Next Gen Maravai: Investments and long-term financial goals

Kevin Herde, Executive Vice President
and Chief Financial Officer

September 2023

maravai LifeSciences

Strong financial position

Operating in attractive markets with favorable macrotrends

- Pipeline progression for mRNA-based therapies
- Increased clinical success driven by chemistry and delivery innovations
- Demand for GMP quality inputs

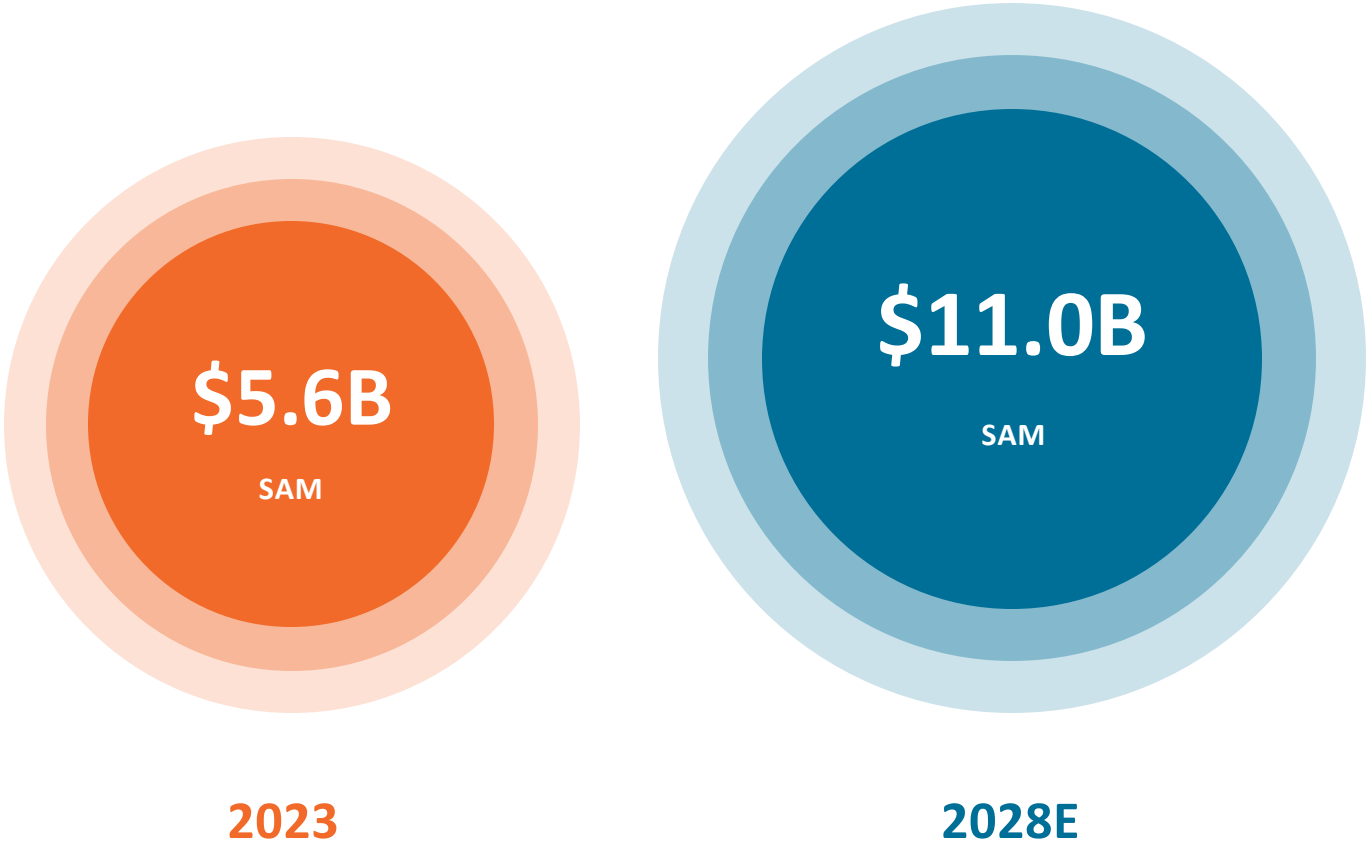
Driving future revenue growth targets through a combination of:

- Leveraging established capabilities
- Innovation and strengthening key differentiators
- Using free cash flows to build on history of inorganic tuck-in acquisitions

Targeting margin expansion through:

- Robust cost control and operational excellence
- Leveraging world-class facility cost structure

Well positioned in attractive and growing markets



Nucleic Acid Production

>14.0%

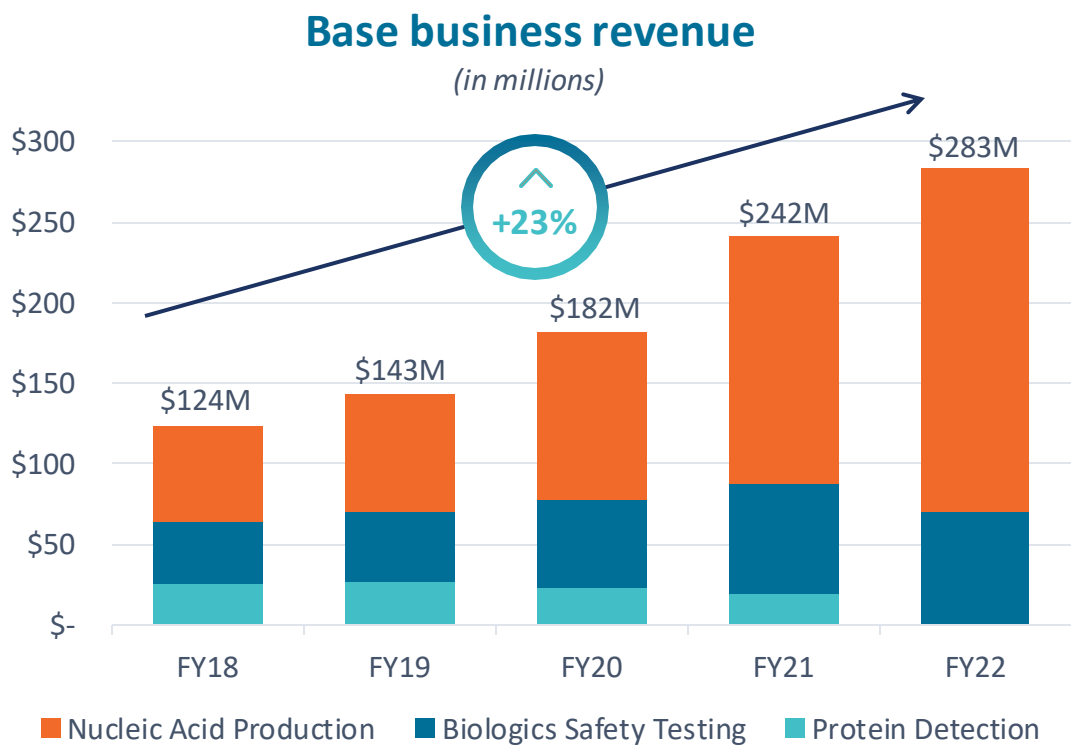
SAM CAGR
(2023 – 2028)

Biologics Safety Testing

~10.0%

SAM CAGR
(2023 – 2028)

History of strong base business growth



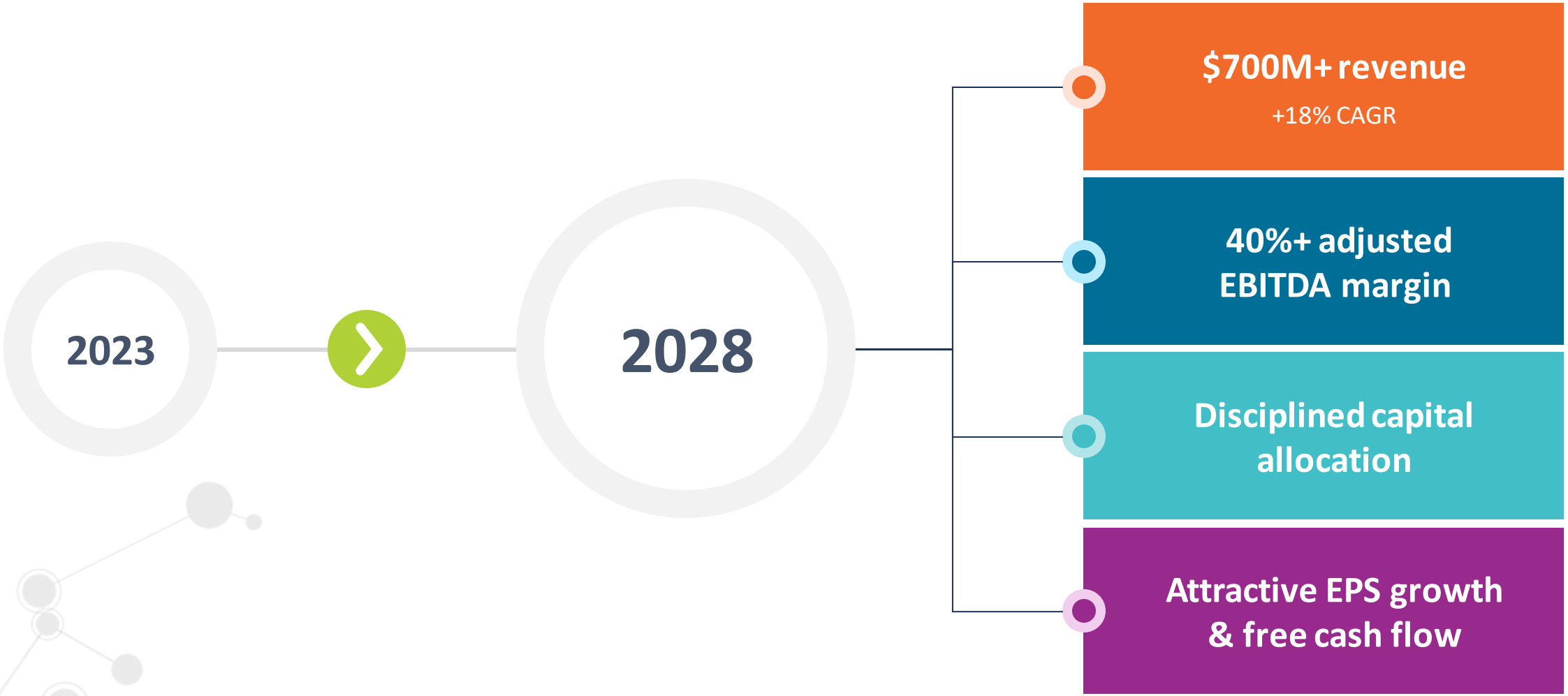
Core business growth since 2018

- Strong growth in non-COVID revenue resulting in CAGR of +23% from 2018 to 2022

Core business 2023 performance

- Accelerating velocity of new non-COVID mRNA clinical entries
- Non-COVID CleanCap® sales were up 21% year-over-year in the second quarter
- Expanding Biologics Safety Testing presence in cell and gene therapy space

Next Gen Maravai:
2028 financial targets and priorities focused on top-line growth and margin expansion



Strategic initiatives expected to drive double-digit organic growth

Nucleic Acid Production

Products

- Leading innovator and supplier to mRNA producers
- Leverage oligonucleotide capabilities and chemistry products
- Continued innovation in capping analogs

Enzymes

- Innovation efforts focus on:
  - Driving productivity
  - In-licensing opportunities driven by partnerships
  - Enzyme customization

Services

- Expanding capabilities in discovery phase mRNA
- mRNA custom solutions and services to accelerate drug development
- Expanding R&D capabilities to support CNG innovations

Biologics Safety Testing

- Innovative new products and services
- Strong leadership presence in host cell DNA portfolio expansion
- MockV product expansion and services

Targeting long-term organic revenue growth

2028 target

+$700M
Annual revenue

~18%
CAGR
2023 - 2028

Expected revenue growth drivers

- Leveraging established capabilities
- Delivering innovation and strengthening key differentiators
- Using free cash flows to build on history of inorganic tuck-in acquisitions

With margin expansion opportunities

2023

22%
1H 2023
adjusted EBITDA
margin

2028 target

>40%
adjusted EBITDA margin

Attractive
EPS growth

Strong balance sheet provides financial flexibility

$580M

Cash position

1.8x

Gross debt/TTM Adj. EBITDA[1]

Investing in Maravai since 2018 to drive growth through 2028

- Five new high-quality, purpose-built facilities
- People, processes, and systems to support innovation and operational excellence

Focused M&A

- Complimentary and synergistic capabilities
- Vertical integration
- Best-in-class technologies

(1) Using trailing twelve months adjusted EBITDA of $295M

Our capital deployment initiatives

Talent

- Building our commercial team with global sales and marketing presence
- Increased support and training resources
- Investing in data and technology to drive team efficiency

Innovation & technology

- Addressing workflow challenges
- Advancing capabilities
- Manufacturing innovation
- Created office of innovation

Manufacturing capabilities

- Win in discovery at Wateridge
- Expand capabilities at Flanders 1 and 2
- Expand biologic safety testing in Leland

Customer first experience

- Focused on scale, service, and quality
- Expanding products and services
- Global commercial strategy

History of acquiring and integrating strong brands with powerful IP

March 2014

Formed Maravai LifeSciences with GTCR

Headquartered in San Diego, CA

September 2016

Acquired TriLink Biotechnologies

San Diego, CA

October 2016

Acquired Cygnus Technologies

Southport, NC

December 2017

Acquired Glen Research

Sterling, VA

March 2020

Acquired MockV Solutions

January 2022

Acquired MyChem

San Diego, CA

January 2023

Acquired Alphazyme

Jupiter, FL

Proven track record of strong, strategic M&A integration

2020

MOCKV SOLUTIONS

Merger and Acquisition Criteria Met

- ✓ Complimentary/synergistic capabilities
- ○ International expansion
- ✓ Vertical integration
- ✓ Enhance quality systems

MockV Contributions

- Expands Maravai's leadership position in bioprocess impurity testing
- Extends our offerings to viral clearance testing

2022

MyChem

Merger and Acquisition Criteria Met

- ✓ Complimentary/synergistic capabilities
- ○ International expansion
- ✓ Vertical integration
- ✓ Enhance quality systems

MyChem Contributions

- Increases capabilities serving high-growth cell and gene therapy market
- Deep chemistry expertise

2023

AlphaCzyme

Merger and Acquisition Criteria Met

- ✓ Complimentary/synergistic capabilities
- ○ International expansion
- ✓ Vertical integration
- ○ Enhance quality systems

Alphazyme Contributions

- Sophisticated enzyme developer and producer focused on one-to-one industrial partnerships
- Enzyme genomic literacy expands presence for genomic tools

maravai LifeSciences

Focused M&A with the potential to drive long-term value creation

Pursuing targeted opportunities

Technology and innovation focused

⊕

Alignment of company culture

⊕

Focused R&D

⊕

Bolt-on targets

maravai LifeSciences

Extraordinary Science.
Everyday Miracles.

What this means for our customers

Complimentary or synergistic capabilities

⊕

Vertical integration of supply chain

⊕

International expansion

⊕

Best-in-class technologies

maravai LifeSciences

Compelling investment thesis

Customers' first choice supported by best-in-class innovation, agility, expertise, customization and quality.

Trusted experts in most differentiated initiatives that have been in process for two decades –evolutionary trade secrets with mRNA.

Strategically positioned in a large and growing markets (Genomics & Biologics).

Broad portfolio of critical assets with high value-added and differentiated core technologies, trade secrets and IP.

Sticky revenue generation driven by solutions servicing a customer's full product lifecycle with "win in discovery" strategy.

Strong balance sheet and investment into the infrastructure and innovation supports continued growth.

Credible leadership team positioned to drive next generation Maravai.

Break

maravai LifeSciences

Q&A Session

maravai LifeSciences

R&D DAY

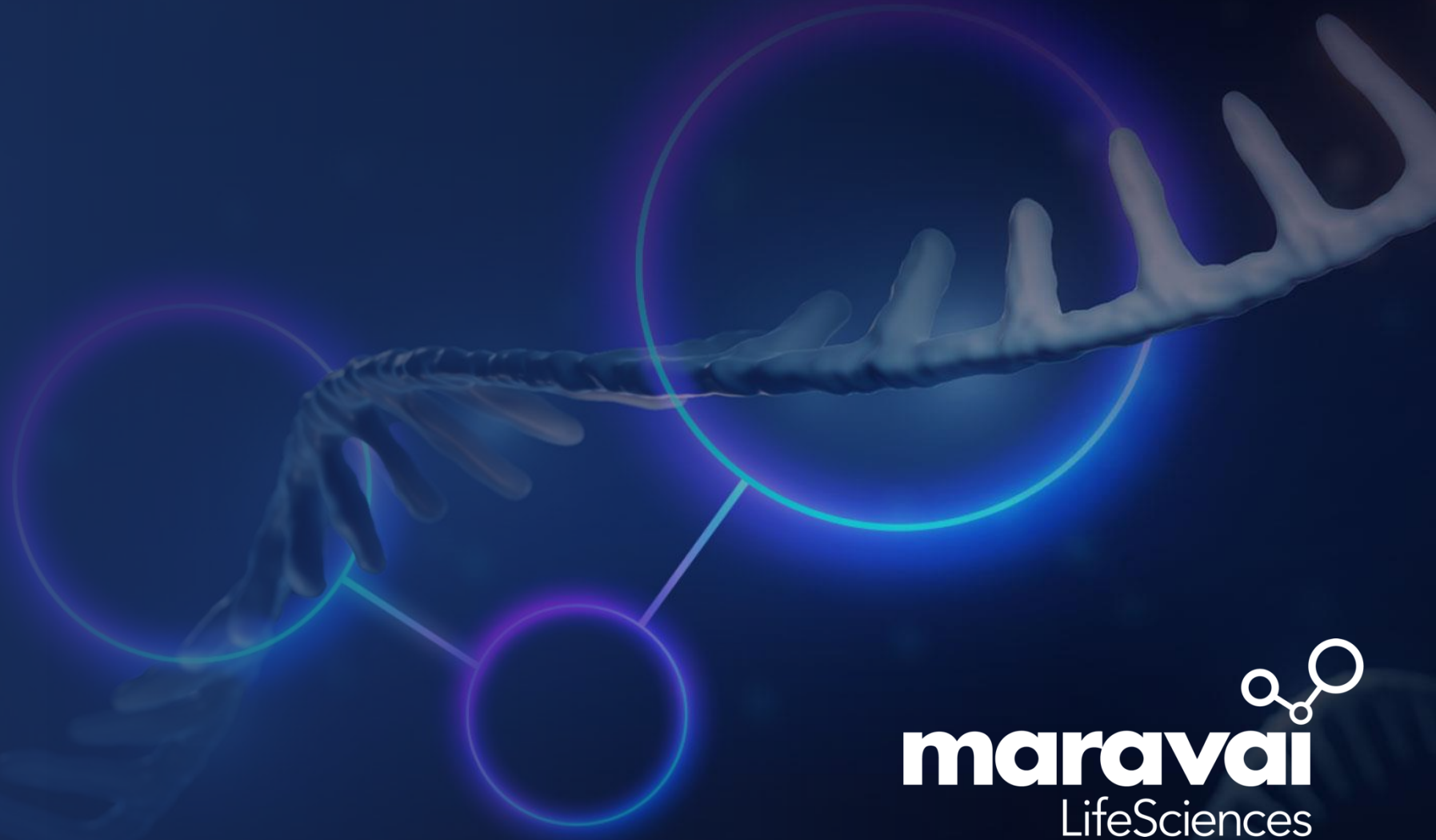
Closing remarks

Trey Martin, Chief Executive Officer

September 2023

maravai LifeSciences

Thank you



maravai LifeSciences

Appendix

Trey Martin

CHIEF EXECUTIVE OFFICER

Trey Martin has more than 25 years of executive leadership experience in life sciences operations, engineering, sales, product development, and marketing. Prior to assuming the CEO role in July 2023, Mr. Martin served as President, Biologics Safety Testing at Maravai from December 2022 to July 2023. Previously, he was Senior Vice President, Genomic Medicines at Danaher Corporation, where he oversaw new business creation in the areas of mRNA, gene editing and gene therapy. Mr. Martin originally joined Danaher with the acquisition of Integrated DNA Technologies (IDT) in 2018, serving as President of IDT. Prior to the acquisition by Danaher, Mr. Martin held positions of increasing responsibility over his more than two decades of tenure at IDT and contributed to the consistent growth and competitiveness of the company's genomic solutions business through directing organic and inorganic growth investments, including product portfolio and service capability expansions, strategic customer collaborations and global M&A in the nucleic acid space. Mr. Martin holds a bachelor's degree in biochemistry from the University of Iowa.

Kate Broderick, PhD

CHIEF INNOVATION OFFICER

Dr. Kate Broderick has more than 15 years of experience in the life science industry. A recognized vaccine expert, Dr. Broderick has a broad background in device and product development in the DNA therapeutic and drug delivery field. Prior to joining Maravai in 2022, Dr. Broderick held roles of increasing responsibility at Inovio Pharmaceuticals, most recently as Senior Vice President, R&D. Dr. Broderick has served as a principal investigator for a variety of grants and awards from government agencies and non-profits, including the National Institutes of Health. She received her PhD from the University of Glasgow in Scotland and completed her post-doctoral research at the University of California, San Diego.

Drew Burch

EXECUTIVE VICE PRESIDENT AND GENERAL MANAGER, NUCLEIC ACID PRODUCTS

Drew Burch has over 30 years of strategic, operational, commercial and financial experiences in the life sciences industry. Prior to joining Maravai, he was President, Softgels at Thermo Fisher Scientific, where he led the division's CDMO services in the U.S. and Europe. He also held multiple leadership positions across other Thermo Fisher Scientific's business segments, including Instrument and Enterprise Services and European Drug Product Division as President, and Life Sciences Solutions as Vice President, Strategy and Business Development. Previously, Mr. Burch worked as an advisor to healthcare companies on M&A during his tenures at Barclays Capital, Lehman Brothers and Merrill Lynch & Co. He holds an MBA from Stanford University Graduate School of Business and a B.A. in Economics and Political Science from Yale University.

Becky Buzzeo

CHIEF COMMERCIAL OFFICER AND CHIEF OPERATING OFFICER, NUCLEIC ACID SERVICES

Becky Buzzeo has more than 20 years of commercial leadership experience. Before joining Maravai, in October of 2022, she was the Vice President and General Manager, Advanced Therapies, at Thermo Fisher Scientific, where she oversaw CDMO services for plasmid DNA, cell therapy and mRNA. Prior to that, Mrs. Buzzeo led commercial operations at Brammer Bio and held commercial roles of increasing responsibility at Patheon Biologics and Life Technologies, before its acquisition by Thermo Fisher in 2014. Mrs. Buzzeo holds a B.S. in biology from Slippery Rock University of Pennsylvania.

Chad Decker

VICE PRESIDENT AND GENERAL MANAGER, ENZYMES

Chad Decker co-founded Alphazyme in 2018 as Chief Operating Officer, and has been instrumental in building the company from its inception and was key in managing its acquisition by Maravai in 2023. With over 20 years of experience in commercial and operational leadership roles across biotech, healthcare, life science, and diagnostics industries, Mr. Decker has built global organizations from the ground up, efficiently integrated new acquisitions, developed strategies for aligning multiple business units and launching disruptive technologies, and had full P&L oversight. Prior to founding Alphazyme, Mr. Decker served as Chief Commercial Officer of TwinStrand Biosciences after heading commercial operations for Quad Technologies, overseeing their successful exit to Bio-Techne. Previously, he led the Qiagen Custom and OEM businesses as their Vice President of Sales, and served in roles of increasing responsibility at ThermoFisher Scientific, ultimately leading the global healthcare sourcing initiative worth over $100 million.

Christine Dolan

CHIEF OPERATING OFFICER, BIOLOGICS SAFETY TESTING

Christine Dolan has served as Chief Operating Officer of Maravai LifeSciences' Biologics Safety Testing business segment since 2017. Prior to joining Maravai, she held several operational and business leadership roles, including Senior Vice President of Product Development, Vice President of Global Operations and VPGM of Development and Analytical Services at Catalent Pharma Solutions. Prior to joining Catalent Pharma Solutions, she was Director of Nuclear Operations and Global Quality Control at GE Healthcare and Amersham Health, respectively. Christine holds a B.S. in Biology from Lenoir-Rhyne College.

Eric Bishop

VICE PRESIDENT, RESEARCH AND DEVELOPMENT, CYGNUS TECHNOLOGIES

Eric Bishop joined Cygnus Technologies, part of Maravai LifeSciences in 2010 and brings over 20 years of biotechnology industry experience to his role. At Cygnus, he is responsible for business development, technical support, new product development and custom services. Prior to joining Cygnus, Eric was with MedImmune, where he worked in various positions, as an Analytical Representative on CMC teams, Head of New Technology Development group and as In-house host cell protein expert. He has played a pivotal role in guiding projects from IND to BLA submissions, supervised scientists in the Immunoassay laboratory, and has overseen the development, validation, tech transfer of HCP and other analytical assays. Prior to that, Eric also worked for CropTech Development. Eric holds an MBA from Hood College, an M.S. in Biotechnology from John Hopkins University and a B.S. in Biology from Radford University.

David Cetlin

SENIOR DIRECTOR, RESEARCH AND DEVELOPMENT, CYGNUS TECHNOLOGIES

David Cetlin is the Founder and former CEO of MockV Solutions. He joined Cygnus Technologies in 2020, after Maravai acquired MockV Solutions. As Senior Director, Research and Development, at Cygnus, he is continuing the work begun at MockV Solutions by leading the R&D efforts to develop and commercialize a series on non-infectious viral clearance prediction kits for the downstream bioprocess industry. Prior to MockV, David worked as a Bioprocess Scientist for Human Genome Sciences (now part of GlaxoSmithKline) developing, optimizing and validating purification strategies for monoclonal antibody therapies and transferring these strategies to large scale production facilities. David holds an M.S. in Biotechnology from Johns Hopkins University and a B.S. in Cellular, Molecular Biology and Genetics from the University of Maryland.

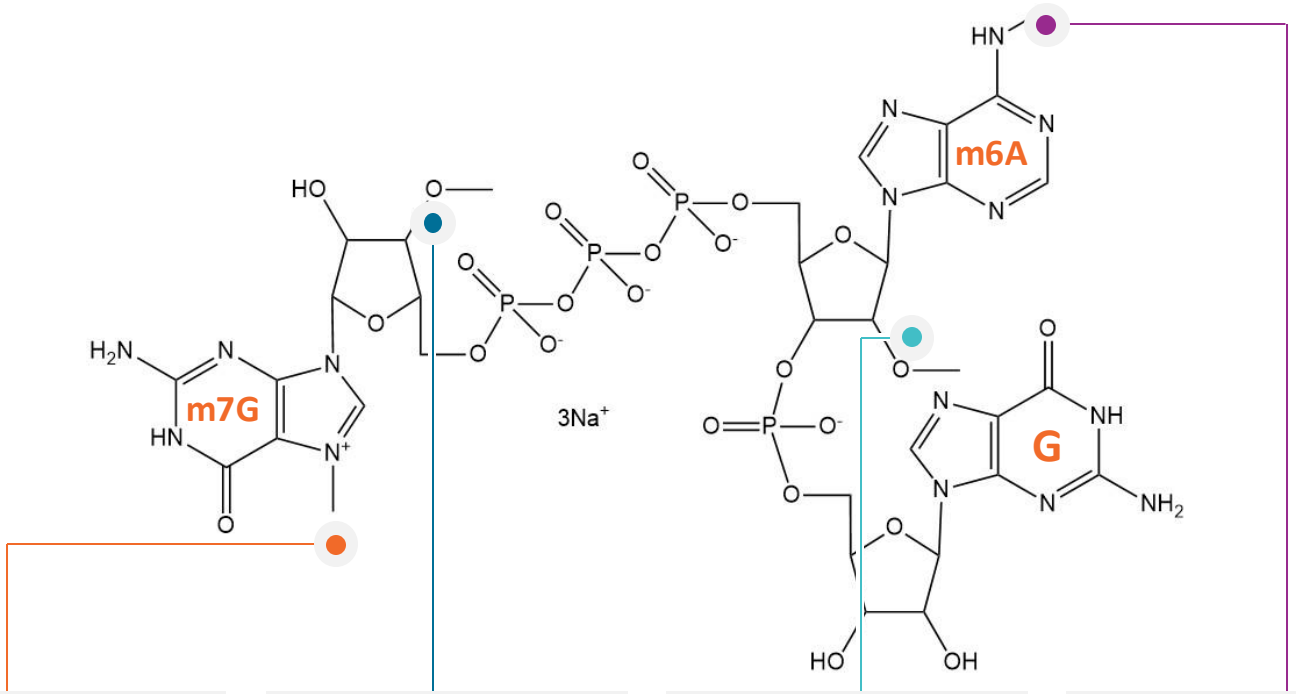
Kevin Herde

EXECUTIVE VICE PRESIDENT AND CHIEF FINANCIAL OFFICER

Kevin Herde is an experienced financial management executive with over 25 years of experience in finance, accounting and general management focusing on diagnostics, biopharmaceutical development and technology. Prior to joining Maravai, Kevin worked with Sorrento Therapeutics as Executive Vice President and Chief Financial Officer and with Hologic as Vice President of Global Blood Screening, where he worked in conjunction with the company's strategic partners at Grifols and Novartis, managing a multinational business providing molecular diagnostics solutions to improve blood safety. He also worked with Carl Hull as Vice President, Finance and Corporate Controller, for Gen-Probe prior to its acquisition by Hologic in 2012. Kevin is a CPA and began his career with KPMG. He holds a B.B.A. in Business Administration from the University of San Diego.

CleanCap® M6

The newest cap analog in the CleanCap® portfolio



Methylation of the N7 position to give positive charge – required for eIF4E binding

3' OMe modification – enhances translation

2'OMe modification giving the Cap1 structure

m6A modification hinders decapping and promotes translation‡

‡ Mauer, J., Luo, X., Blanjoie, A. et al. Reversible methylation of m6Am in the 5' cap controls mRNA stability. Nature 541, 371–375 (2017). https://doi.org/10.1038/nature21022

Synonyms

CleanCap® m6AG (3'OMe)

m7(3'OMeG)(5')ppp(5')m6(2'OMeA)pG