

Fourth Quarter & Full Year 2024 Financial Results

- March 2025

Agenda

Introduction
Jennie Willson, Director, Communications

CEO Perspective & Corporate Progress
Jacqueline Shea, PhD, President & Chief Executive Officer

INO-3107 Update
Michael Sumner, MBBS, MBA, Chief Medical Officer
Steve Egge, Chief Commercial Officer

Financial Results
Peter Kies, Chief Financial Officer

Forward-Looking Statements

This presentation includes statements that are, or may be deemed, “forward-looking statements,” within the meaning of Section 27A of the Securities Act of 1933, as amended. All statements, other than statements of historical facts, included in this presentation regarding our strategy, future operations, future financial position, future revenue, projected costs, prospects, plans and objectives of management are forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “may,” “might,” “will,” “objective,” “intend,” “should,” “could,” “can,” “would,” “expect,” “believe,” “anticipate,” “project,” “target,” “design,” “estimate,” “predict,” “opportunity,” “proposition,” “strategy,” “potential,” “plan” or the negative of these terms and similar expressions intended to identify forward-looking statements.

You should not place undue reliance on these forward-looking statements. Forward-looking statements include, but are not limited to, statements about: the timing and success of preclinical studies and clinical trials; the ability to obtain and maintain regulatory approval of our product candidates; the scope, progress, expansion and costs of developing and commercializing our product candidates; our expectations regarding the amount and timing of our expenses and revenue; the sufficiency of our cash resources, plans for the use of our cash resources and needs for additional financing; our ability to adequately manufacture our product candidates; our ability to obtain and maintain intellectual property protection for our product candidates; our expectations regarding competition; the size and growth of the potential markets for our product candidates and the ability to serve those markets; the rate and degree of market acceptance of any of our product candidates; our anticipated growth strategies; the anticipated trends and challenges in our business and the market in which we operate; our ability to establish and maintain development partnerships; our ability to attract or retain key personnel; our expectations regarding federal, state and foreign regulatory requirements; regulatory developments in the United States and foreign countries and other factors that are described in the “Risk Factors” and “Management's Discussion and Analysis of Financial Condition and Results of Operations” sections of our Annual Report on Form 10-K for the year ended December 31, 2024, which has been filed with the Securities and Exchange Commission (SEC) and are available on the SEC's website at www.sec.gov.

In addition, the forward-looking statements included in this presentation represent INOVIO's views as of the date hereof. INOVIO anticipates that subsequent events and developments may cause its views to change. However, while INOVIO may elect to update these forward-looking statements at some point in the future, the company specifically disclaims any obligation to do so, except as may be required by law. These forward-looking statements should not be relied upon as representing INOVIO's views as of any date subsequent to the date of this presentation.

Third-party industry and market information included herein has been obtained from sources believed to be reliable, but the accuracy or completeness of such information has not been independently verified by, and should not be construed as a representation by, INOVIO. The information contained in this presentation is accurate only as of the date hereof. “INOVIO” and the INOVIO logo are trademarks and service marks of INOVIO. All other trademarks, service marks, trade names, logos and brand names identified in this presentation are the property of their respective owners.

2025 Strategic Priorities

- Submit BLA for INO-3107
- Advance Commercialization Preparations
- Progress Pipeline

Progressing Strategy to Unlock the Promise of DNA Medicine

Working to Deliver INO-3107 to Patients

- Top priority - BLA submission
  - Completed all non-device modules & resolved array issue
  - Strong year 2 & 3 clinical data
- Potential to be preferred product
  - Efficacy
  - Tolerability
  - Simple & patient-centric treatment regimen
- 1st DNA Medicine in U.S., if approved

NEAR TERM

Advancing Diversified Clinical Pipeline

- 8 additional clinical-stage candidates*
  - INO-3112: targeting HPV-related throat cancer
  - INO-5401: targeting glioblastoma
  - DMAb: 1st proof-of-concept clinical data announced

*Wholly-owned & in collaboration with 3rd parties

MID TERM

Innovating NextGen DNA Medicines

- DMAbs:
  - Applicable to diseases that can be targeted with mAbs & other proteins
  - Potential to overcome mAb limitations
- DPROTs: targeting protein replacement diseases
- DLNPs: vaccines targeting COVID-19 and other diseases such as HIV
- Cancer therapeutics

LONG TERM

Lead Candidate:
INO-3107 for Recurrent Respiratory Papillomatosis (RRP)

Potentially transformational therapy
under accelerated approval pathway

INOVIO

Significant Progress Achieved Toward BLA Goal

Regulatory & Device Progress	Completed drafting all non-device modules to submit to FDA and resolved manufacturing issue with single-use array
Immunology & Clinical Data Published & Presented	Data presented at scientific conferences & published in peer-reviewed journal • 81% OCR; 72% ORR; patient-centric dosing regimen; well tolerated • Demonstrated similar efficacy against HPV-6 and HPV-11 • T cell MOA confirmed by comprehensive immunology
Durability Data Announced	Clinical outcomes improved over time providing potential therapeutic advantage and informing our strategy for optimizing continued treatment • For year 2: 86% ORR and 50% complete response in second 12-month period • Average number of surgeries continues to decrease in years 2 and 3
Confirmatory Trial Preparations	Targeting 20+ sites at major US medical centers • Randomized, placebo-controlled; 100 patients; suitable for global registration

Phase 1/2 Multi-Center Clinical Trial at 8 Clinical Sites

RRP-001 PHASE 1/2 OPEN-LABEL STUDY | **RRP-002 DURABILITY EXTENSION / FOLLOW-UP**

Baseline: DAY 0 ····· **52 WEEKS** ····· **104 WEEKS** ····· **156 WEEKS**

Patients Enrolled

N=32

4 Doses of INO-3107



Day 0. Weeks 3, 6, 9

Completed Study

N=32

Consented to Follow Up

N=28

N=4 Lost to Follow Up

Median Follow Up



Completed Follow Up

Enrollment criteria: Patients who required at least two surgical interventions in the past year for the removal of HPV-6/11-related papilloma(s)

Study Design

- Surgeries: Up to 14 days before Day 0, patients had RRP tissue surgically removed and any surgery performed after Day 0 during the dosing window was counted against the efficacy endpoint

Efficacy endpoint: Change in number of surgical interventions pre- vs. post-treatment

- Primary Endpoint: Safety of INO-3107
- Limited symptom assessment

Patient Population: Intent-to-treat (ITT): all patients (32)

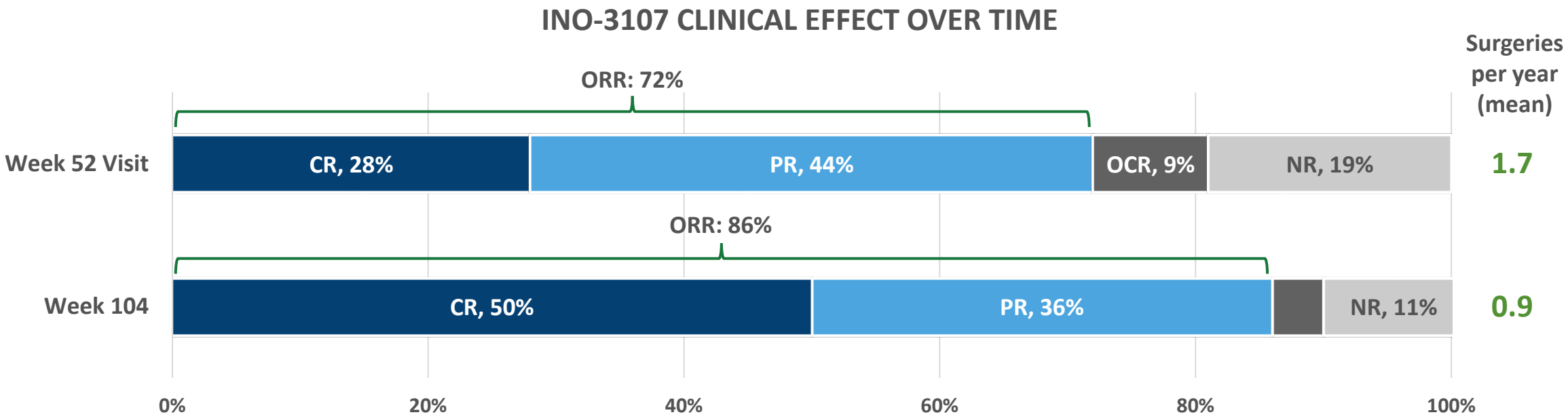
Extension Study: Retrospective assessment of treatment effect up to 3-years after initial dose of INO-3107

- Four patients were lost to follow-up (n=28)
  - Two refused consent, two not able to be contacted
- Median follow up ~1025 days, or 2.8 years

Reduction in Surgeries Continued to Improve After Year 1

ORR was 72% at Week 52, improving to 86% by Week 104 for second twelve-month period

- The pre-treatment mean for surgeries in the year prior to start of INO-3107 was 4.1 (range 2-8)



PARAMETERS

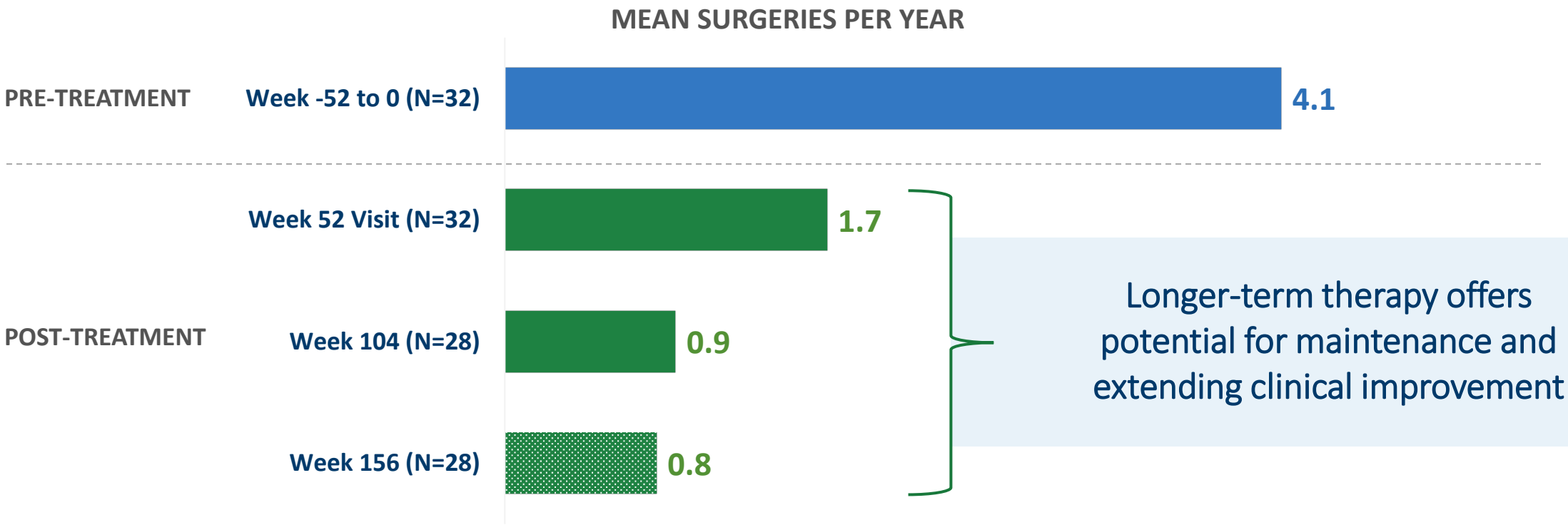
CR **Complete Response:** no surgeries during a 52-week treatment phase

PR **Partial Response:** a ≥ 50% reduction and less than 100% in surgeries compared to previous year

OCR **Overall Clinical Response:** reduction of ≥ 1 surgery compared to previous year

NR **Non-Responders:** No reduction in surgeries vs. baseline

Patients Saw a Greater Than 75% Reduction in the Number of Surgeries in Year 2 Following the Initial Treatment Regimen



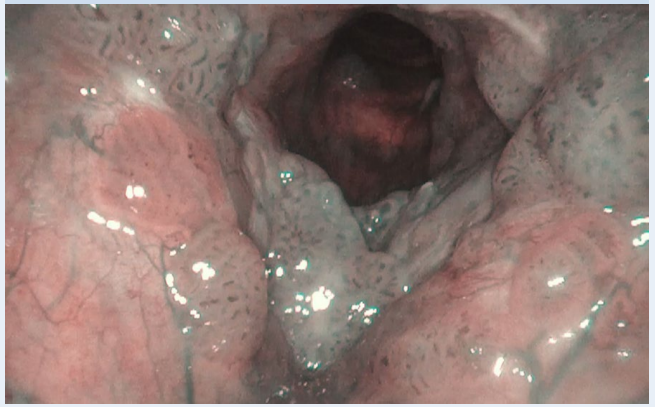
Longer-term therapy offers potential for maintenance and extending clinical improvement

Median follow up ~1025 days, or 2.8 years

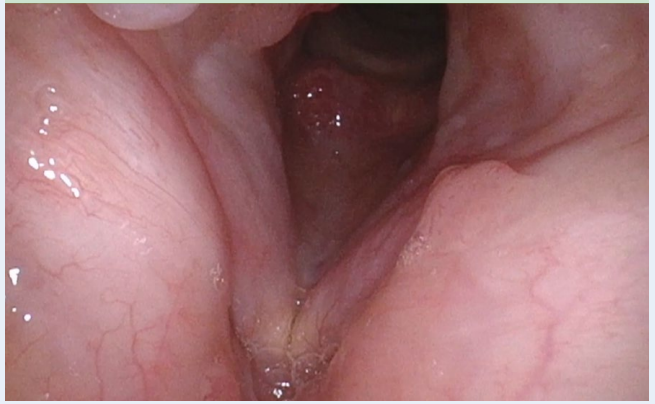
Key Takeaways: Immunological Evaluation

- Right kind of immune responses generated to fight HPV in all 32 patients (antigen specific cytotoxic T cell response)
- T cells got where they needed to go — into the papilloma/airway tissue
- Created an anti-viral immune response in papilloma/ airway tissue that reduced or eliminated the need for surgery
- Papilloma microenvironment did not appear to restrict clinical benefit
- Immune responses in clinical responders were different than for non-responders

PRIOR TO INO-3107



ONE YEAR FOLLOWING INO-3107



Images courtesy of A Friedman. RRP is a highly individualized disease and results of treatment with INO-3107 may vary

Morrow, M.P., Gillespie, E., Sylvester, A. et al. DNA immunotherapy for recurrent respiratory papillomatosis (RRP): phase 1/2 study assessing efficacy, safety, and immunogenicity of INO-3107. Nat Commun. 2025;16(1):1518.

Next Steps

Regulatory

- Repeat Device Verification (DV) testing - anticipate completion first half of 2025
- Begin rolling submission of BLA mid-2025 and to request priority review with goal of completing the submission in 2H25 and receiving FDA acceptance for filing of submission by end of year
- Submit revised IND for confirmatory trial (device update)
- Longer-term therapy: study design to FDA after BLA submission is complete for potential supplemental BLA

Medical Affairs

- Deployment of MSLs to begin in 2Q25
- Efficacy, tolerability, durability and immunology data to be presented at Spring conferences:
  - Eurogin - National HPV Conference - World Vaccine Congress
  - Festival of Biologics - European Laryngological Society Annual Congress
  - Combined Otolaryngology Society Meeting

For RRP Patients, Every Surgery Matters

> RRP patients will tell you that even one reduction in the number of disruptive, invasive surgeries they face would be life-changing. – *Kim McClellan, RRP Foundation*

RRP affects ~14,000 People in U.S., 1.8 per 100,000 new cases annually

- Repeated surgery is standard of care
- Average of 4 surgeries per year per patient; severe RRP may require hundreds of surgeries over a lifetime

Every surgery entails:

- Risk - potential of irreversible damage to vocal cords
- Cost - impact to quality of life, financial

Patients and their physicians want a therapeutic alternative that addresses underlying cause of RRP/eliminates need for surgery

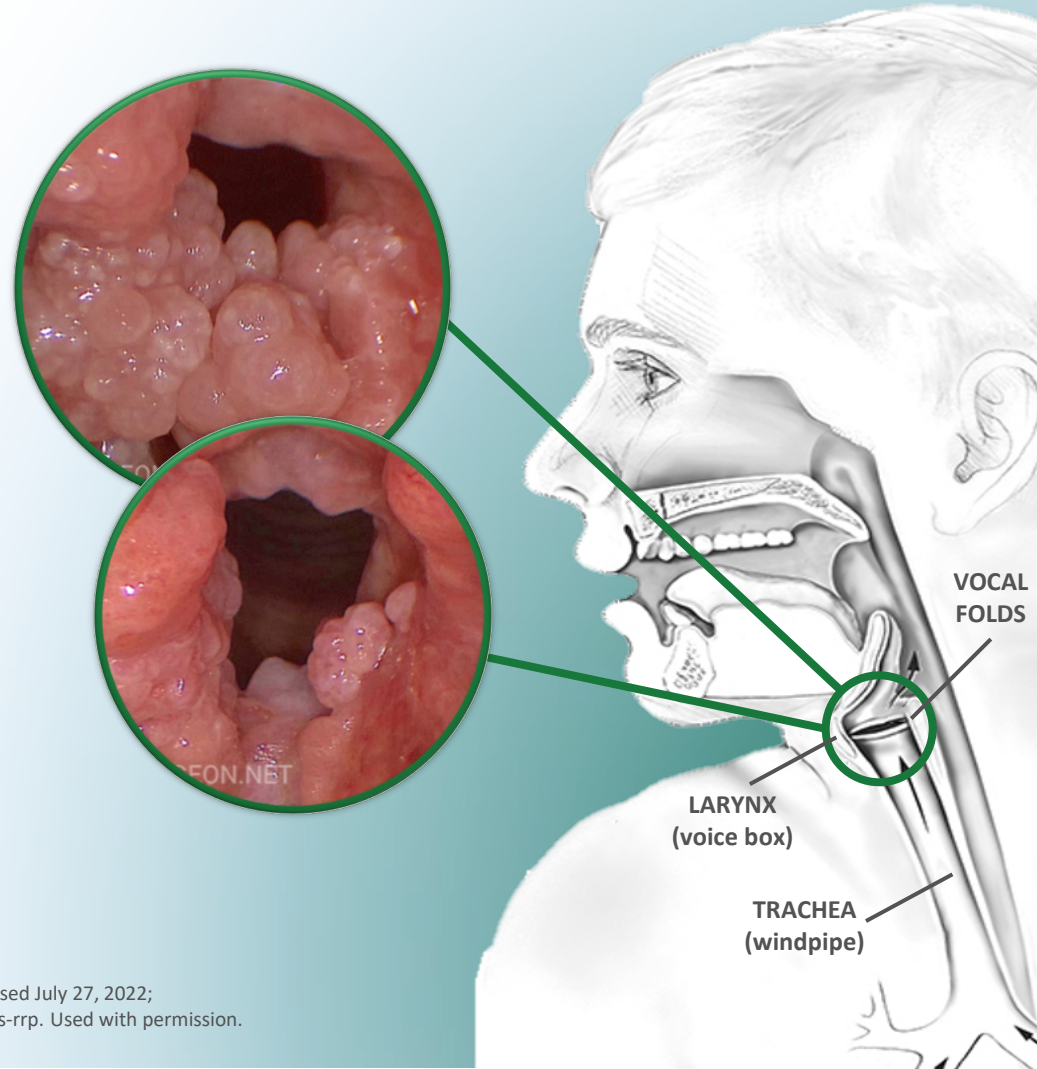


Image Source: National Institute on Deafness and Other Communication Disorders; Available at www.nidcd.nih.gov/health/recurrent-respiratory-papillomatosis; accessed July 27, 2022;
Photographs courtesy Aaron Friedman MD, University of Cincinnati College of Medicine https://voicesurgeon.net/voice-disorders/ recurrent-respiratory-papillomatosis-rrp. Used with permission.

Recent Market Research Supports Preferred Product Profile

HCP PERSPECTIVE

Efficacy

Improving response over time

- Patients that achieved a 50% to 100% reduction in surgeries (ORR): 72% in year 1; 86% in year 2*
- Complete response: 28% in year 1; 50% in year 2

"The complete response rate of 50% is good… but a 50-100% reduction in surgeries in ~8 out if 10 patients, that's the most compelling. The vast majority see significant benefit from treatment."

– Laryngologist, manages ~50 RRP patients

Tolerability

Well tolerated

- 41% (13/32) reported treatment-related AEs grade 2 or lower
- Most common AE's: transient injection site pain (31%) and fatigue (9%)
- No discontinuations

"The tolerability profile looks good- 31% with pain, fatigue 9%. This suggests patients can go back to work… this is important, especially when patients receive multiple doses over a relatively short timeframe"

– Laryngologist, manages ~15 RRP patients

Simplicity

Patient-centric treatment

- Office-based administration that leaves doctor in control
- CELLECTRA device easy to use by HCPs
- No requirement for scoping/surgeries during dosing window

"Sending off my patients on a referral is not always the best thing. You're defeating yourself by handing off care. I prefer to treat patients in my clinic, so I can maintain control."

– Laryngologist, manages ~30 RRP patients

*YR 1 = first 12-month treatment period, YR 2 = second twelve-month treatment period

Advancing Launch Preparations

- Developed distribution/channel strategy and identified channel partners
- Developed initial pricing strategy
- Completed targeting, segmentation and product positioning work - supporting positive differentiation
- Currently developing GTM model and planning further build-out of commercial organization
  - Small/efficient field force footprint



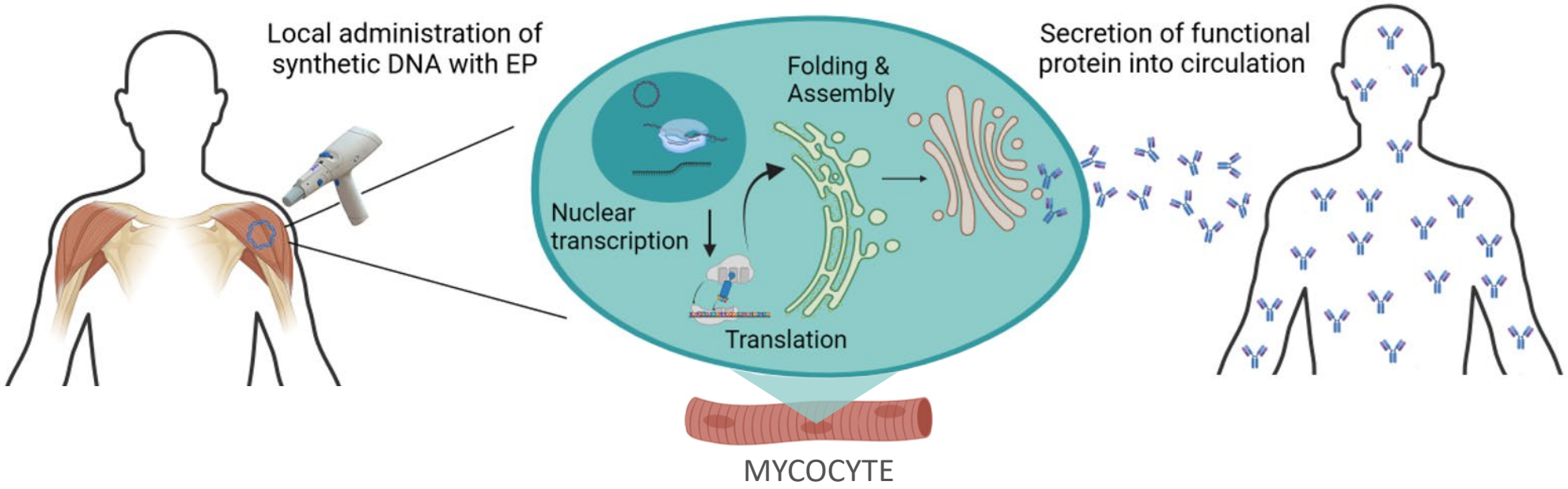
300-400

laryngologists treat the majority of RRP patients

Advancing a Diversified Clinical Pipeline

INOVIO

The Next Generation of DNA Medicine

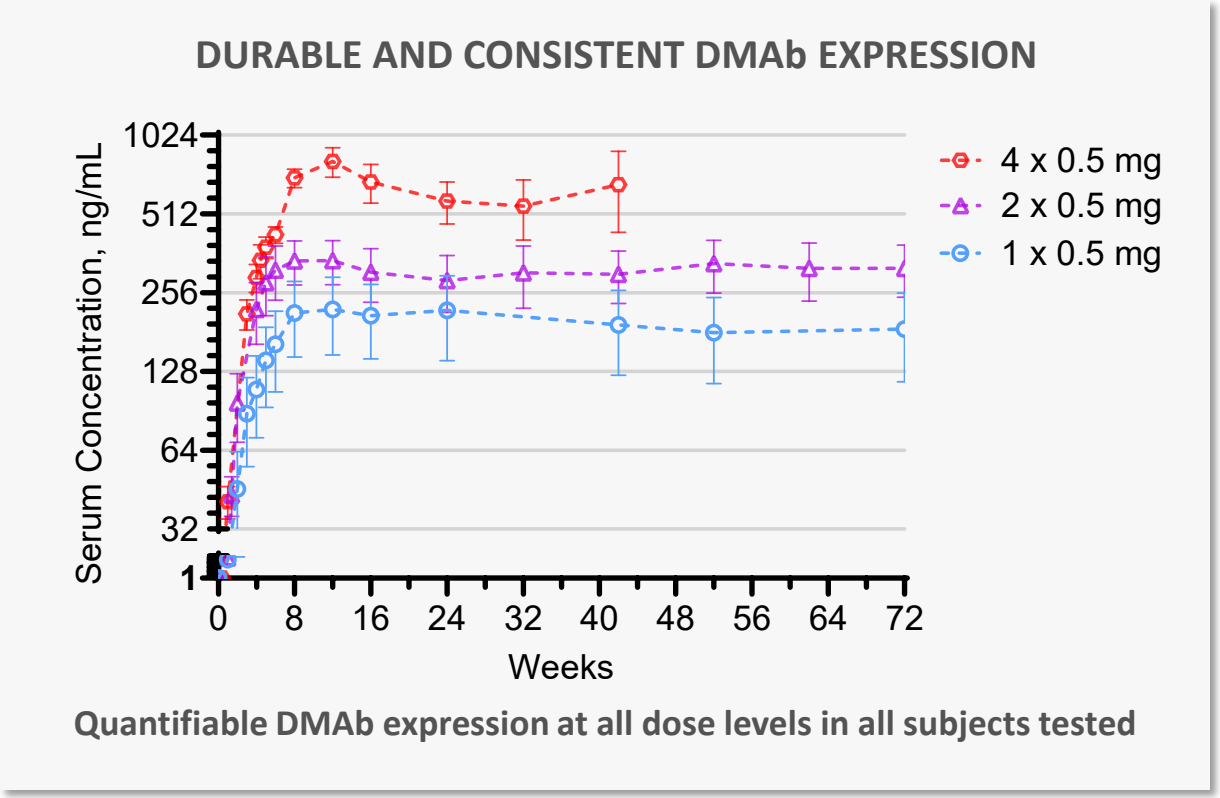


DMAb technology enables in vivo production of monoclonal antibodies (mAbs)

- DNA is administered via CELLECTRA device to enable local expression of the genes coding for the antibodies in the deltoid muscle.
- DMAbs are expressed and assembled in myocytes and secreted into the blood where they can circulate in the body.

Ongoing Phase 1 Trial: Key Takeaways From Interim Data

- **Long-lasting in vivo antibody production:** DMAb levels remained stable for 72 weeks in all participants reaching that timepoint
- **No anti-drug antibodies (ADA):** no immune rejection of the DMAbs detected across ~1,000 blood samples
- **Well-tolerated:** most common side effects were mild, temporary injection site reactions; no SAEs related to study drug
- **Effective target binding:** expressed DMAbs successfully bound to SARS-CoV-2 Spike protein receptor-binding domain, confirming functional activity through week 72



THE WISTAR INSTITUTE Penn University of Pennsylvania AstraZeneca

Potential to Address Challenges of Conventional mAbs

Challenges with mAbs[1]

- Stability: susceptible to a variety of chemically- and temperature-induced structural changes
- Limited prophylactic use due to biologic half-life and complexities if mAb is not administered SC
- Even with half-life extension, repeated administration is required
- Production of recombinant mAbs in bioreactors is time intensive and costly
- Limited use in low resource settings

VS

INOVIO's DMAb technology

- Rapid manufacturing, low cost of production, and temperature-stable storage and distribution
- DNA is a non-live, non-integrating, non-replicating platform, with ability to be redosed
- Have exhibited prolonged expression in preclinical models with maintenance of serum levels >15µg/ml for over a year[2]
- Shortened development time compared to classic mAbs and re-administration due to lack of serological interference

Source: (1). Development issues: antibody stability, developability, immunogenicity, and comparability. In Woodhead Publishing Series in Biomedicine, Therapeutic Antibody Engineering, Woodhead Publishing, 2012, Pages 377-595, ISBN 9781907568374, https://doi.org/10.1533/9781908818096.377. (2). Duperret EK, Trautz A, Stoltz R, Patel A, Wise MC, Perales-Puchalt A, Smith T, Broderick KE, Masteller E, Kim JJ, Humeau L, Muthumani K, Weiner DB. Synthetic DNA-Encoded Monoclonal Antibody Delivery of Anti-CTLA-4 Antibodies Induces Tumor Shrinkage In Vivo. Cancer Res. 2018 Nov 15;78(22):6363-6370. doi: 10.1158/0008-5472.CAN-18-1429. Epub 2018 Oct 4. PMID: 30287678; PMCID: PMC6239932.

Feasibility Shown in Multiple Disease Models

PCSK-9

- **Delivery of anti PCSK-9 in mice lowers LDL cholesterol** (*Khoshnejad et al Mol Ther 2018*)

Influenza A & B viruses

- **Broadly neutralizing pan-influenza A & B approach**
- **Delivery of multiple antibodies** (*Elliott et al NJV 2017*)
- **Demonstrated disease protection in pig model** (*McNee et al. JI 2020*)

Cancer Antigens

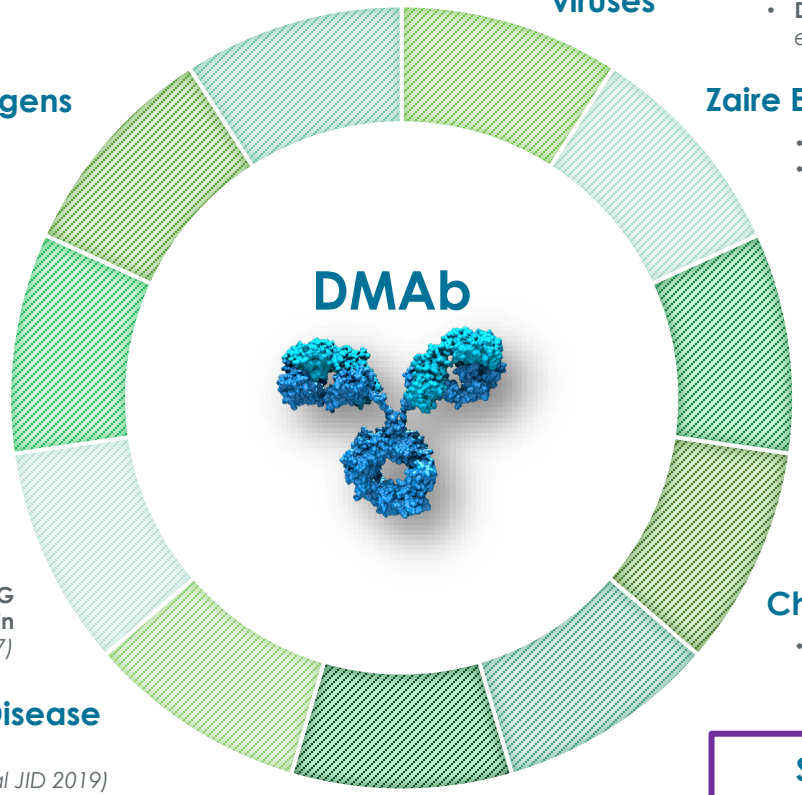
- **Demonstrated HER2/CD3 dBTEs can reduce tumor burden in mice** (Perales-Puchalt et al. JCI Insight. 2019)
- **Delivery of anti PSMA in mice impacted tumor challenge** (*Muthumani et al Cancer Immuno 2017*)

Zaire Ebolavirus

- **DMAb modifications and mouse model development**
- **Pre-exposure protection against highly lethal challenge in mice** (*Patel et al Cell Reports 2018*)

Checkpoint Inhibitors

- **Delivery of CPI in mice impacted and protected against tumor challenge** (Perales-Puchalt et al. *Oncotarget. 2019, Duperret et al. Cancer Res 2018*)



Dengue virus (DENV)

- **Protection against ADE** (*Flingai et al. Sci Rep 2015*)

Multi-drug resistant Pseudomonas aeruginosa

- **Multiple forms of DMAbs: monospecific, bispecific IgG**
- **Lowering pathogen burden and complementation in antibiotic resistant model** (*Patel et al Nat Comm. 2017*)

Zika virus

- **scFV approach**
- **Protection from disease in NHPs** (*Esquivel et al. Mol Ther. 2019*)

Chikungunya virus (CHIKV)

- **Rapid protection & complementarity with a vaccine** (*Muthumani et al., JID 2016*)

Lyme Disease

- **DMAb modifications** (*Yang et al JID 2019*)

SARS-CoV-2 – In P1 clinical trial

- **Highly potent DMAbs expressed in vivo** (candidates under clinical evaluation)

HIV

- **Delivery of multiple DMAbs to**
- **a single animal**
- **>10ug/ml in NHPs** (*Wise et al JCI 2020*)
- **DNA encoded post translational modifications** (*Xu, Wise et al EbioMed 2018*)

THE WISTAR INSTITUTE

INOVIO Pipeline

PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	REGISTRATION
DMAbs Various Targets	**INO-5401** BRCA 1/2 Mutation	**VGX-3100** Anal Dysplasia		**INO-3107** * RRP
DPROTs Various targets	**INO-4201** Ebola Booster	**INO-3112** Head & Neck Cancer		
DLNPs Various targets	**INO-6172** HIV	**INO-5401** Glioblastoma		
	INO-6160 HIV			
	DMAbs COVID-19			

OUT-LICENSED

			VGX-3100 ** Cervical Dysplasia (HSIL)	
			INO-4800 *** COVID-19	

HPV-RELATED DISEASES IMMUNO-ONCOLOGY INFECTIOUS DISEASES VARIOUS DISEASE TARGETS

* Preparing BLA submission under accelerated approval program ** VGX-3100 to ApolloBio for China *** INO-4800 to Advaccine for China

4Q24 Financial Update

Ongoing Commitment to Financial Discipline

	THREE MONTHS ENDED DECEMBER 31, 2024			YEAR ENDED DECEMBER 31, 2023		
	2024 (unaudited)	2023 (unaudited)	% CHANGE	2024	2023	% CHANGE
Operating expenses	$20.5	$27.5	(25%)	$112.6	$144.8	(22%)
Net loss	($19.4)	($25.0)	(22%)	($107.3)	($135.1)	(21%)
Net loss per share	($0.65)	($1.10)	(41%)	($3.95)	($6.09)	(35%)

- $94.1M in cash, cash equivalents and short-term investments at December 31, 2024
- No debt
- Cash runway projected into 1Q 2026

Select Financial Results. Amounts presented in millions ($US) except per share amounts.

Q&A

2025 Strategic Priorities & Key Catalysts

Submit BLA for INO-3017

- Complete DV testing 1H25
- Request rolling review and begin submitting modules mid-2025, with goal to receive acceptance of file by FDA by YE25
- Submit revised IND for confirmatory trial
- Submit longer-term therapy trial design for sBLA to FDA after BLA submission
- Present/publish clinical, immunology, and durability data

Commercialization Preparations

Be ready to launch quickly and efficiently after approval

- Finalize planning for go-to-market strategy
- Complete plans for commercial organization

Progress Pipeline

INO-3112 for OPSCC

- Finalize protocol for Phase 3
- Complete manufacture of drug supply for trial

INO-5401 for GBM

- Finalize protocol for Phase 2
- Complete manufacture of drug supply for trial

DMAb

- Complete Phase 1 trial
- Present/publish data

INOVIO



Contact:
Investor.relations@inovio.com