INOVIO

Corporate Presentation

December 2024

Nasdaq:INO

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, 2023 and our Form 10-Q for the quarter ended September 30, 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.

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Company Highlights

Nasdaq: INO

- Clinical-stage biotech focused on developing and commercializing DNA medicines to treat and protect people from HPV-related diseases, cancer, and infectious diseases
- Platform technology that allows the design and delivery of therapeutics and vaccines that enable the patient's body to produce their own disease fighting tools
- BLA submission targeted for mid-2025 under FDA accelerated approval program for lead program INO-3107 to treat recurrent respiratory papillomatosis (RRP) (Breakthrough Therapy/Orphan Drug)
- Deep clinical pipeline of therapeutic and vaccine candidates providing multiple near- and mid-term catalysts
- Established commercial-scale manufacturing for plasmids; device manufacturing in-house
- $84.8M in cash, cash equivalents, and short-term investments as of 9/30/24; no debt
  - $30M public offering completed in December

3-Step Strategy to Unlock the Promise of DNA Medicine

Lead Program	Diversified Clinical Pipeline	NextGen DNA Medicines
INO-3107 for RRP • Targeting mid-2025 BLA submission - Accelerated Approval Pathway - Request Rolling Submission & Priority Review • If approved, could be 1st DNA medicine available in U.S.	• 8 additional clinical-stage candidates(1) - Planning new PD-1 combination Ph3 for INO-3112 to target HPV-related throat cancer - Targeting areas of unmet needs across HPV-related diseases, oncology and infectious diseases	• DMAbs: targeting infectious disease • dLNPs: next-gen vaccines targeting COVID-19 and other diseases including HIV • Cancer Vaccines
NEAR TERM	**MID TERM**	**LONG TERM**

(1) Wholly-owned and in collaboration with third parties

INOVIO Pipeline

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

OUT-LICENSED

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

HPV-RELATED DISEASES IMMUNO-ONCOLOGY INFECTIOUS DISEASES

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

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Lead Candidates Target Significant Unmet Needs

INO-3107	INO-3112	INO-5401
Recurrent Respiratory Papillomatosis	**HPV-Related Throat Cancer**	**Glioblastoma**
• ~14k prevalent cases in U.S. • Incidence: ~1.8 per 100,000 adults • Surgery standard of care • Chronic disease caused by HPV-6 & HPV-11	• ~20k new cases a year in U.S. • Rapid increase in incidence • ~5 times more common in men • Caused by HPV-16 & HPV-18 • Surpassed cervical as most common HPV-related cancer	• ~15k new cases annually in U.S. • >10k deaths annually • 50% of all primary malignant brain tumors • 5 yr survival: 6.9% • One of the most complex, deadly & treatment-resistant cancers

Sources: RRP Foundation; Delaware Journal of Public Health; National Brain Tumor Society; Centers for Disease Control; World Health Organization; Gribb JP, Wheelock JH, Park ES. Human Papilloma Virus (HPV) and the Current State of Oropharyngeal Cancer Prevention and Treatment. Dela J Public Health. 2023 Apr 22;9(1):26-28. doi: 10.32481/djph.2023.04.008. PMID: 37122346; PMCID: PMC10132363.

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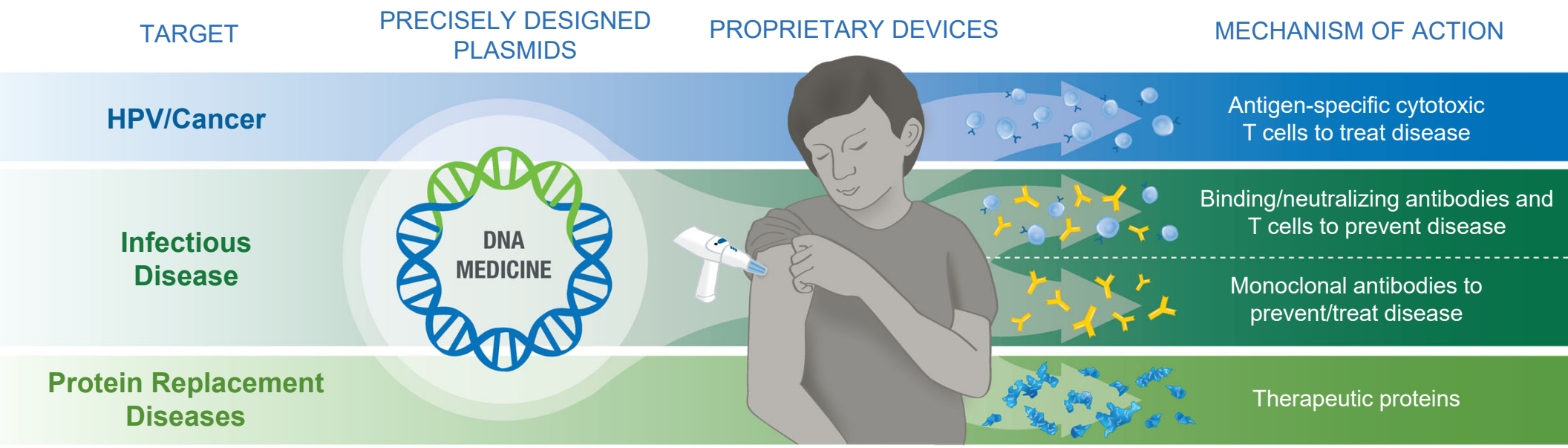
INOVIO'S
DNA Medicines

INOVIO's DNA Medicines Platform



In Vivo Protein Production:

Teaching the body to make its own disease-fighting tools

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Key Features of our DNA Medicines Platform

Strengths include versatility & immunogenicity

Induces antigen/protein-specific immune responses offering therapeutic and prophylactic protection

Ability to be re-dosed and sustain immune responses

Ability to drive antibody and CD8+ T cell responses against multiple indications

No frozen storage or shipping required

Well tolerated in nearly 19,000 administrations (~6k clinical trial participants)

Allows **rapid plasmid construct design** and manufacture

CELLECTRA® Delivery Device Enhances Uptake of DNA Medicine

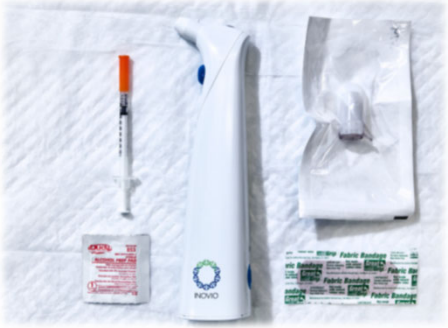
Track record of success in the clinic:

- Nearly 6,000 subjects & 19,000 doses given by both investigational/commercial-ready CELLECTRA devices
- 2 generations: CELLECTRA 2000, followed by CELLECTRA 5PSP & 3PSP developed to support commercial launch
- 2000 & 5PSP are CE Marked in the EU
- Clinical trials conducted in 36 countries across 6 continents (N.S. America, Europe, Africa, Asia, Australia)

CELLECTRA 5PSP

- Intramuscular (IM) injection
- Utilizes synthetic plasmid via cartridge
- Utilized in INOVIO's therapeutic programs

CELLECTRA 3PSP

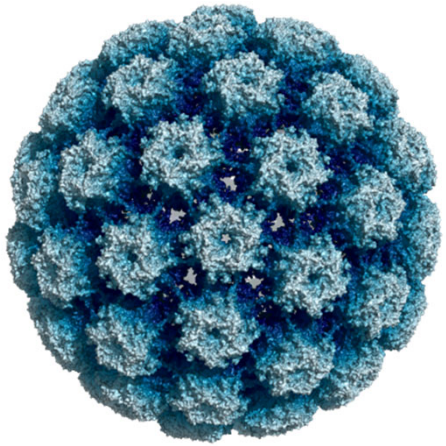


- Intradermal (ID) injection
- Primarily used for prophylactic programs with potential to broaden use in pediatrics and other indications

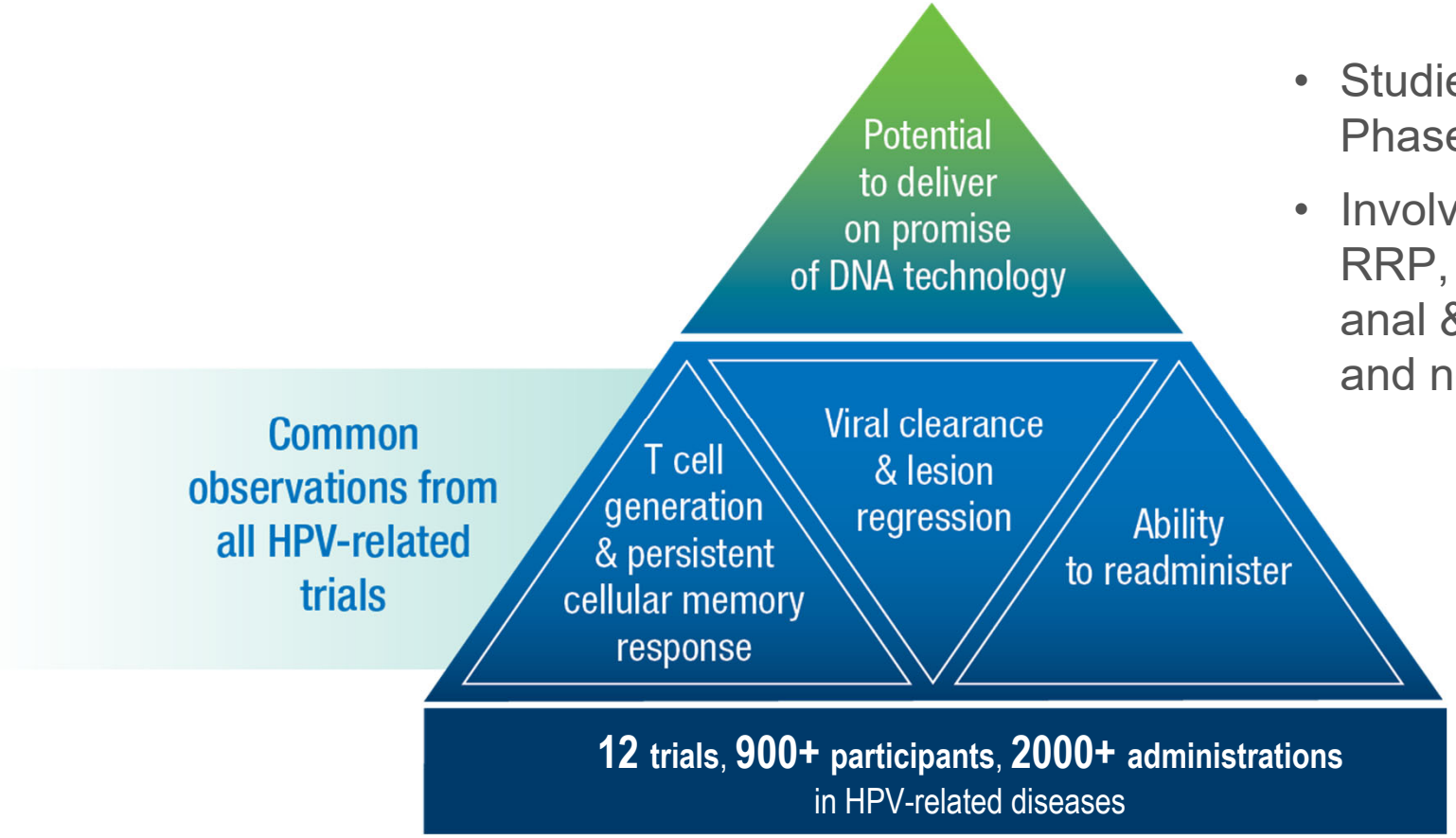
Focus on HPV-Related Diseases

Human Papillomavirus (HPV): A Global Concern

- HPV is a group of viruses with approximately 200 types
- Nearly everyone will become infected with some HPV type in their lifetime
  - The good news: ~90% of all infections clear naturally and don't result in disease
  - The bad news: persistent infection can lead to cancer and other debilitating, life-threatening diseases affecting quality of life
- HPV types fall into 2 groups:
  - Low-risk HPV (e.g., HPV-6 and HPV-11) often lead to benign growths (warts or papillomas) that can develop into conditions such as RRP
  - High-risk HPV (e.g., HPV-16 and HPV-18) often lead to cell changes and lesions (precancerous dysplasia) that can become malignant, such as cervical HSIL, which can lead to cervical cancer
- Preventative HPV vaccines have reduced the prevalence of HPV infections, but have not eliminated them – nor can they clear or treat established infections.
- Some HPV related diseases such as HPV related OPSCC are rapidly increasing in high income countries.



INOVIO's Development Experience Across HPV Spectrum



- Studies ranging from Phase 1 to Phase 3
- Involving patients with RRP, HSIL (cervical, anal & vulvar), head and neck cancers

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

Potentially transformational therapy under accelerated approval pathway

Current Status & Development Timeline for INO-3107

Targeting BLA Submission Mid-2025

2020

February
Authorization to begin Ph 1/2 clinical trial (US; RRP-001)

July
Orphan Drug Designation (US)

2022

October
Positive results from 1st cohort of Ph 1/2 trial announced (RRP-001)

2023

February
Positive results from 2nd cohort of Ph 1/2 trial announced (RRP-001)

May
Orphan Drug Designation (EU)

August
Breakthrough Therapy Designation (US)

October
\INOVIO informed can submit BLA under FDA Accelerated Approval Pathway

2024

July
Innovation Passport Designation (UK)

July
ATMP Certification (EU)

August
Pre-BLA Meeting (US)

August
Testing as part of BLA req's found low-level breakage of plastic molded part of disposable single-use array

Oct & Nov 2024
Immunology data from RRP-001 presented

December 2024
Durability data from retrospective study (RRP-002) announced

2025 Targets

Complete mfg adjustments for device array and retesting process

Submit IND to initiate confirmatory trial

Submit BLA (will request rolling submission & priority review)

Prepare for commercial launch

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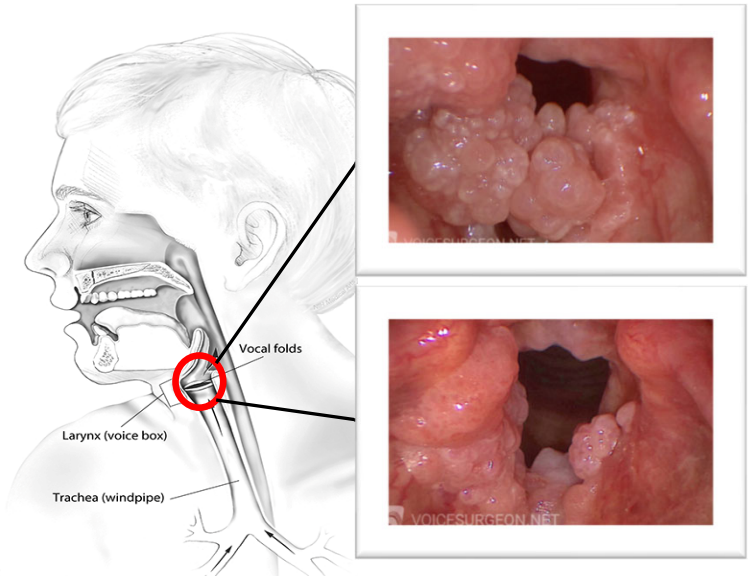
Recurrent Respiratory Papillomatosis (RRP)



- **Rare disease characterized by small, wart-like growths (papillomas) in the respiratory tract**
  - Can form anywhere but primarily affect larynx & vocal cords
  - Can cause difficulty speaking or complete voice loss, difficulty swallowing, shortness of breath and choking episodes
  - In rare cases, can spread to lungs or become malignant
- **Insufficient immune response that fails to prevent and clear HPV-6 and -11 infection leads to RRP**
  - Affects adults & children
- **Annual estimated U.S. prevalence/incidence**
  - ~14k active cases (juveniles and adults)
  - ~1.8 per 100,000 adults
- **Surgery is current standard of care**
  - Papillomas grow back since underlying infection remains
  - Average 4 surgeries per year
  - Severe RRP may require 100s of surgeries over a lifetime
  - Surgery can irreversibly damage vocal cords

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.

Why every surgery matters to RRP patients:

> **“The cumulative risk for injury increases with every surgery, but ultimately it only takes 1 surgical misadventure to permanently damage the larynx.”**

Factors Associated with Iatrogenic Laryngeal Injury in RRP
Otolaryngology, 2024 Apr;170(4):1091-1098. doi: 10.1002/ohn.629. Epub 2023 Dec 20

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RRP-001: INO-3107 Phase 1/2 Trial Design

Focused on What Matters Most to Patients: Reduction in Surgery

Phase 1/2 open-label, multi-center clinical trial

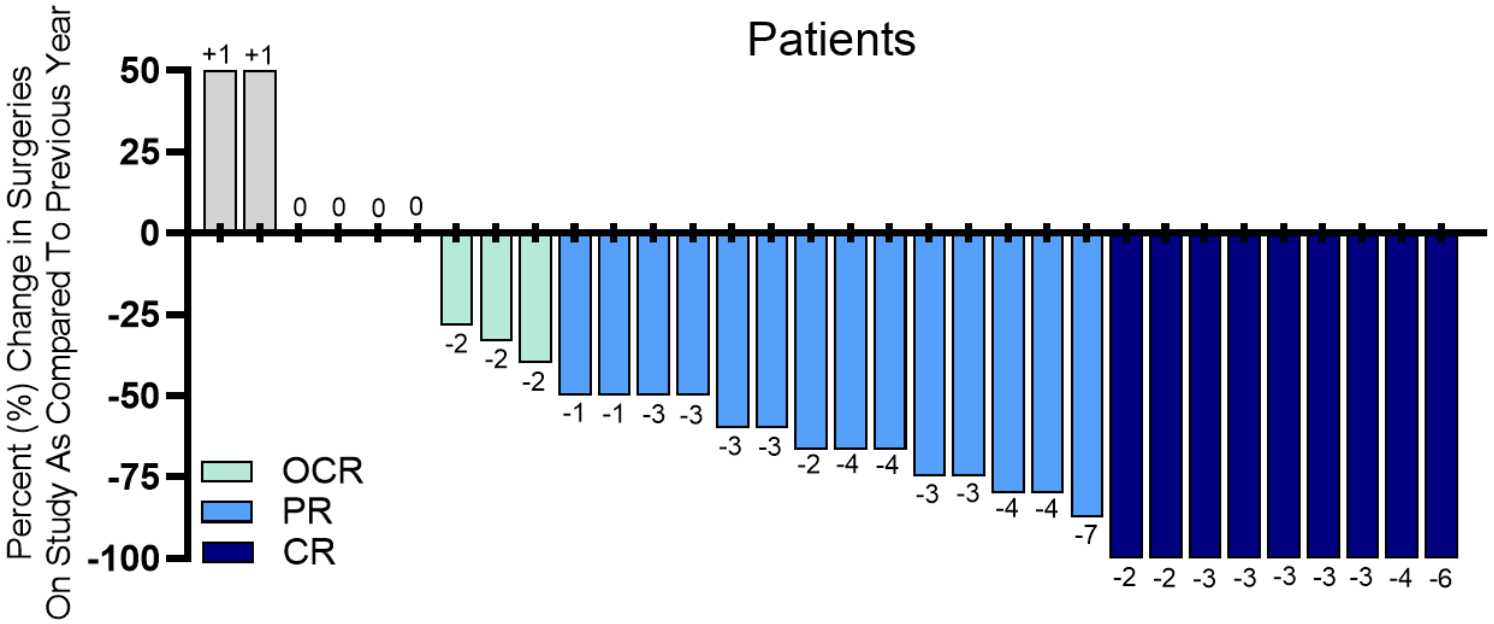
N=32

32 patients enrolled; two cohorts

4 doses of INO-3107 on Day 0, Weeks 3, 6, 9

- **INO-3107:** Composed of plasmids encoding for E6 and E7 antigens from HPV-6, HPV-11, & a plasmid encoding for IL-12
- **Enrollment criteria:** Patients requiring 2 or more surgeries in past year to remove HPV-6/11-related papilloma(s)
- **Efficacy endpoint:** Change in number of surgeries in year prior to Day 0 when compared with year following Day 0
- **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 efficacy endpoint
- **Immunology assessment:**
  - **Peripheral blood** taken at Day 0, Weeks 6, 9, 11, 26 and 52
  - **Airway tissue/papilloma** obtained at Screening and Week 52 (based on ability to obtain while maintaining patient airway safety). Samples taken from same anatomical site whenever possible.

Promising Clinical Benefit Observed in RRP Patients



INO-3107 Efficacy Results

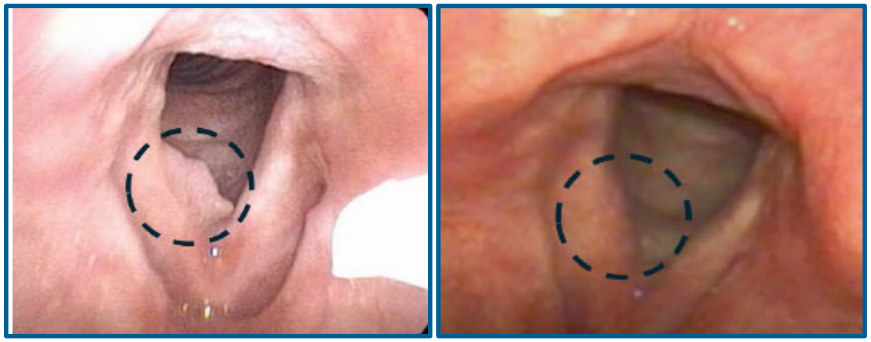
Complete Response	Partial Response	Overall Response	Overall Clinical Response
28% (9/32)	44% (14/32)	72% (23/32)	81% (26/32)

Parameter
Complete Response (CR): no surgeries during a 52-week treatment phase
Partial Response (PR): a ≥ 50% reduction and less than 100% in surgeries compared to previous year
Overall Response Rate (ORR)=CR+PR: Patients with complete or partial response to treatment
Overall Clinical Response (OCR): reduction of ≥ 1 surgery compared to previous year

Phase 1/2 Trial Results

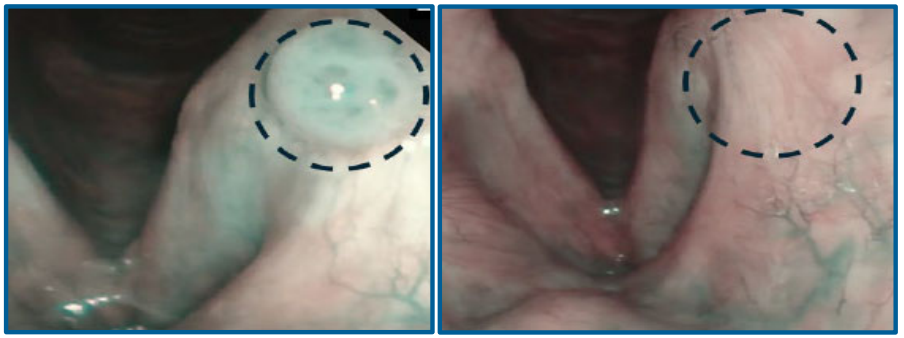
Reduced Number of Surgeries for Patients with Varying Disease Burden

Before INO-3107 → After INO-3107



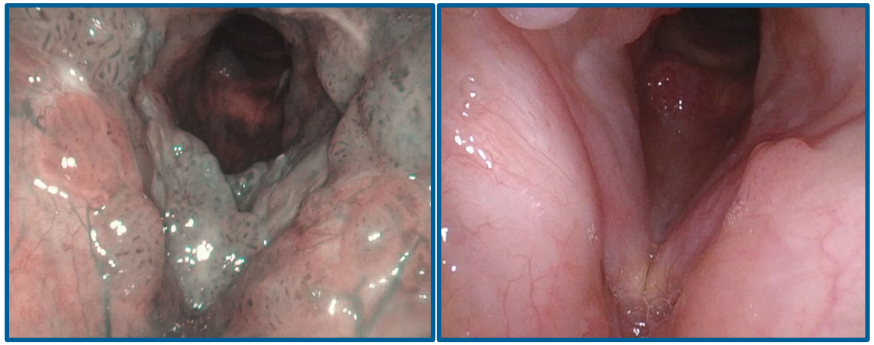
HPV-6 - Reduction of 3 surgeries - CR

Before INO-3107 → After INO-3107



HPV-6 - Reduction of 3 surgeries - PR

Before INO-3107 → After INO-3107



HPV-11 - Reduction of 6 surgeries - CR

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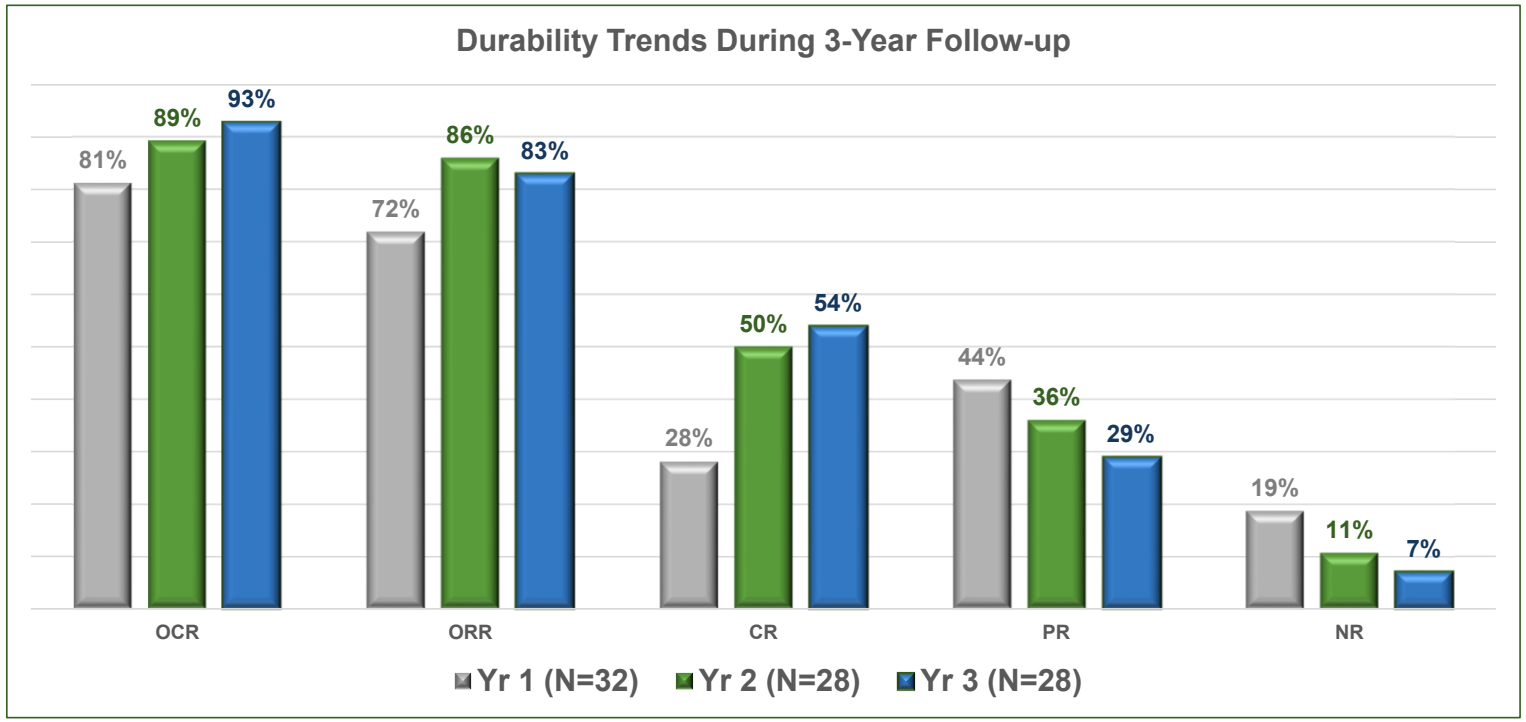
New Durability of Response Data

Retrospective Study – RRP-002

- Collected data on patients who participated in RRP-001, primarily focusing on number of surgeries that have occurred up to 3 years following initial dosing
  - All patients were still under the same surgeon's care
  - Four patients did not consent or could not be contacted, so N is reduced to 28 vs 32
  - Data presented is modified intent to treat population (mITT)
  - Median follow up ~1025 days, or 2.8 years
- Following data is presented:
  - Population as a whole post 001 with respect to outcome classification
  - Longitudinal outcome of patients who achieved clinical response in 001
- No treatment related SAEs were identified

Increase in Complete Responses Observed Over 3-Year Follow-up

mITT Dataset Analysis



Parameter
Overall Clinical Response (OCR): reduction of ≥ 1 surgery compared to previous year
Overall Response Rate (ORR)=CR+PR: Patients with complete or partial response to treatment
Complete Response (CR): no surgeries during a 52-week treatment phase
Partial Response (PR): a ≥ 50% reduction and less than 100% in surgeries compared to previous year
No Response (NR)

Analysis of patients meeting the criteria for each efficacy parameter/definition at the end of each post-treatment year (i.e., efficacy parameters assessed independently at the end of years 1, 2, and 3, respectively)

Per Protocol Analysis of CR Year 2 & 3: 55% & 52% respectively

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Maintenance of Clinical Response

- INO-3107 had an **overall response rate (ORR=CR+PR) of 72%** without the requirement for additional surgeries during the administration phase & treatment was well-tolerated with minimal systemic AEs
  - The treatment response observed with INO-3107 was durable with 95% of these patients meeting ORR criteria two years after the initial dose.

Key Response Parameter	Components	Response rate at end of year 1	% of Patients who maintained response at end of year 2	% of Patients who maintained response in year 3
Overall Response Rate (ORR) = CR + PR: Patients who had either a complete or partial response to treatment		**72%** (23/32)	**95%** (20/21)*	**86%** (18/21)
	Complete Response (CR): no surgeries during a 52-week treatment phase	**28%** (9/32)	**88%** (7/8)	**63%** (5/8)
	Partial Response (PR): a ≥ 50% and < 100% reduction in surgeries compared to previous year	**44%** (14/32)	**92%** (12/13)	**92%** (12/13)
Overall Clinical Response (OCR): reduction of ≥ 1 surgery during 52-week treatment phase compared to previous year		**81%** (26/32)	**91%** (21/23)	**96%** (22/23)

mITT Dataset Analysis

* One CR patient in year 1 moved to PR by end of year 2

Patients Treated with INO-3107 Demonstrated Durable Response

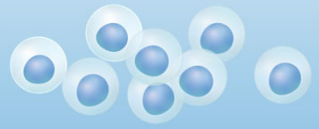
- Overall response rate (ORR=CR+PR ≥ 50%) of 72% without requirement for additional surgeries during administration phase; treatment well-tolerated with minimal systemic adverse events
  - Treatment response was durable with 95% of these patients meeting ORR criteria two years after the initial dose
- During 3-year assessment period, number of patients who required no surgeries each year increased over time
  - Average number of surgeries required continued to decrease during 3-year follow-up period
- **Latest durability data, along with ability of DNA Medicine platform to boost immune responses, supports rationale for redosing patients with goal to maintain or improve clinical benefit**

New Immunology Data
Presented at AACR (October 19) & IPVC (November 14)

- **INOVIO conducted an immunology assessment of INO-3107**
  - 32 patients in Phase 1/2 trial (RRP-001)
  - Blood samples taken throughout trial. Paired airway tissue biopsies taken prior to treatment and at trial end assessed for immune activity
- **Goal:** evaluate whether INO-3107 can induce HPV antigen specific T cell responses in blood that travel to/infiltrate papilloma, eradicate HPV 6/11 infected cells to reduce or eliminate need for surgery
- **Immunological testing conducted:**
  - Evaluation of peripheral blood samples to confirm induction, activation and expansion of cytotoxic T cells with antigen specificity to HPV-6 and HPV-11
  - Evaluation of airway tissues to assess immunological changes, T cell infiltration/profiling and potential impact of papilloma microenvironment

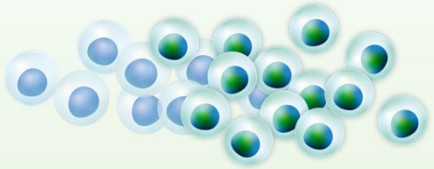
Proposed Mechanism of Action

Induce HPV antigen-specific T cell responses in periphery, track to/infiltrate papilloma/airway tissue, eradicate HPV infected cells to control/eliminate disease



Pre-existing T cells in blood

CIRCULATION



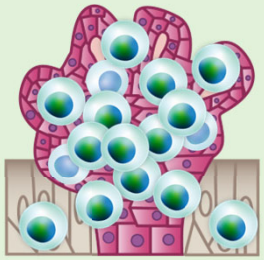
Expansion of pre-existing T cells and Induction of novel T cells in blood

Treatment with INO-3107 Immunotherapy

Low T cell trafficking

PAPILLOMAS

Mass trafficking by INO-3107 induced T Cells



- Poorly infiltrated papillomas
- Low Inflammatory signatures
- Low cytokine and chemokine production
- **Uncontrolled and/or progressive disease**

- Increased Inflammatory signatures
- Increased cytokine and chemokine production
- **Elimination of HPV-infected cells = Controlled disease, reduction/elimination of surgical interventions**

Key Takeaways: Immunological Evaluation of INO-3107

Right kind of immune responses generated to fight HPV in all 32 patients

(antigen specific cytotoxic T cell response)

T cells get where they need to go – into the papilloma/airway tissue

Creates an immune response in papilloma/airway tissue that reduces or eliminates the need for surgery

Immune responses in clinical responders are different than for non-responders

Papilloma microenvironment doesn't appear to restrict clinical benefit

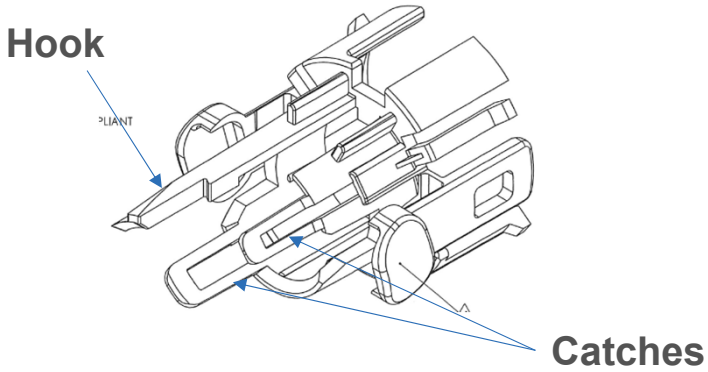
Why is the immunology data important for INO-3107?

- Supports mechanism of action and is an important component of regulatory filings
- Confirms the targeting of HPV-6 and HPV-11, the strains that cause disease
- Confirms the expansion of existing populations of T cells and induction of new T cells that travel to the airway tissues to reduce or eliminate the need for surgery
- Supports clinical benefit across the spectrum of disease severity

We believe these data provide compelling evidence that INO-3107's MOA could be significant for RRP patients by reducing their need for repeat surgeries to treat their disease

Proposed Resolution of Array Issue

- Issue: Low percentage of broken hook and/or catches found in a plastic molded part following extensive conditioning as part of a transportation study required for BLA
- High confidence in implemented resolution:
  - **Revised** design to strengthen the hook and catches and improve fatigue resistance
  - **Reduced** the retraction spring force to decrease stress on areas of breakage
  - **Refined** the molding process to improve heating and flow and added automated part ejection
- Next Steps:
  - Finalize testing of the resolutions applied
  - Conduct OQ/PQ* & Metrology** on 800-1000 array – provides final confirmation of resolution due February 2025
  - Repeat required testing prior to IND/BLA submission



*Operational Qualification/Performance Qualification
**Scientific study of measurement

INO-3107 Offers Compelling Product Profile

Significant Clinical Benefit

- 81% of patients saw a reduction in surgeries; including 28% with CR after one year
  - CR increased to 50% in year 2
  - 95% of patients maintained or enhanced their original ORR by end of year 2
- Favorable tolerability profile
- Clinical benefit observed across disease severity spectrum
- Data consistent across 8 US clinical study sites
- Immunology data supports MoA and clinical outcomes

Potential Commercial Advantages

- Targets/demonstrated similar efficacy against both HPV-6 and HPV-11
- DNA medicine platform with targeted localized delivery (no viral vector)
  - No concern of pre-existing immunity
  - Potential for re-dosing
- Simple treatment delivered at point of care
  - Administration well tolerated by patients & CELLECTRA easy to use by HCPs
  - No scoping/surgeries as part of treatment regimen
  - Refrigerator stable for up to 3 years
- Confirmatory study design (placebo-controlled) suitable for global registration

INO-3107: Advancing Plans to be Launch Ready by YE2025*

- Refining go-to-market strategy: focused on patient needs
- Conducting additional market research to develop thorough market understanding
- Driving key strategic choices:
  - Pricing and access (rare disease)
  - Channel strategy
  - Targeting and segmentation
  - Product positioning to ensure strong differentiation
- Planning further build-out of commercial organization in 2025
  - Highly concentrated rare disease market; can be served by small/efficient field force footprint

*If regulatory approval received

Late-Stage Pipeline Candidates

Designed to address high unmet needs, multiple near- and mid-term catalysts

INO-3112: Building on Experience in HPV-Related Diseases with Novel Combination Therapy

Clinical Collaboration & Supply Agreement with Coherus BioSciences

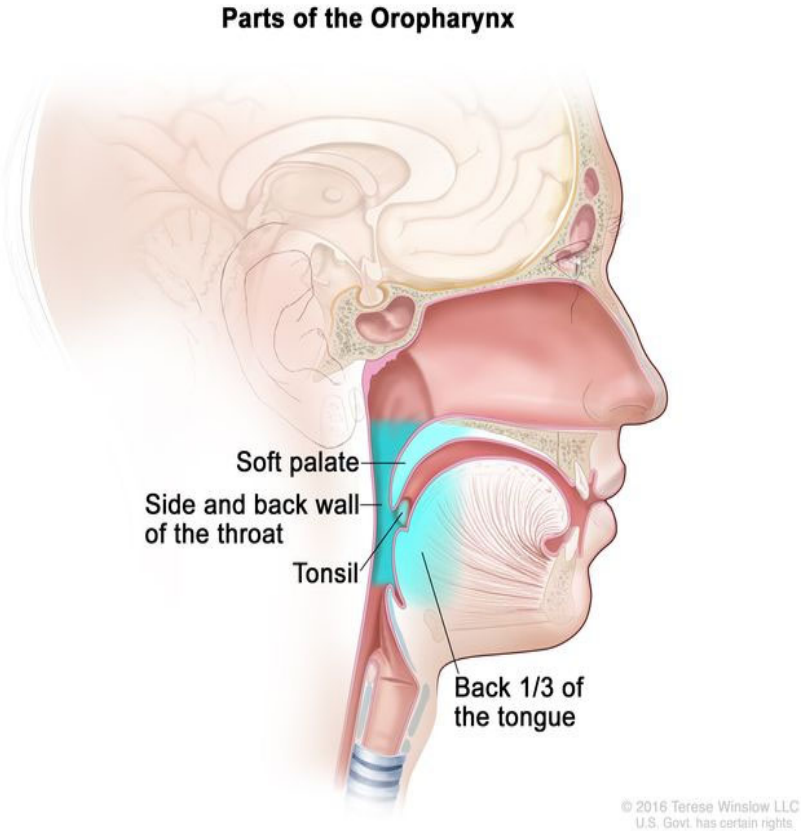
INO-3112: DNA medicine candidate targeting HPV-16/18, combined with interleukin-12 (immune activator)

LOQTORZI: Proven anti-PD-1 monoclonal antibody

Plan to evaluate combination therapy as treatment for locoregionally advanced, high-risk, HPV-16/18+ oropharyngeal squamous cell carcinoma (OPSCC/throat cancer)

What is Oropharyngeal Squamous Cell Carcinoma?

- Type of head and neck cancer commonly known as throat cancer
- Occurs in the base of the tongue, tonsils and/or soft palate
- Usually related to high-risk subtypes of HPV; some cases are carcinogen-driven
- HPV+ throat cancer rapidly increasing in incidence among patients in high-income countries
  - Surpassed cervical cancer as most common HPV-related cancer diagnosed in the U.S. (~ 20,000 new cases/yr)
- HPV estimated to cause 70%-80% of all oropharyngeal cancers diagnosed in the U.S.



https://www.cancer.gov/types/head-and-neck/patient/adult/oropharyngeal-treatment-pdq

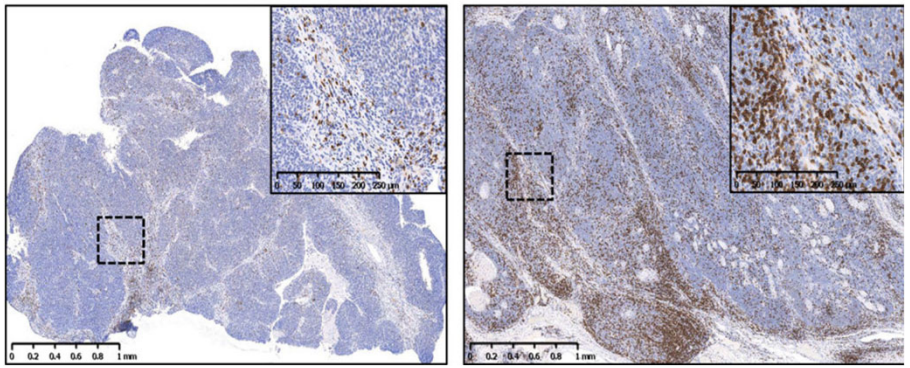
Opportunity to Impact HPV-Related Locoregionally Advanced Throat Cancer

- Most throat cancer patients diagnosed with locoregionally advanced (LA) disease
- Current treatment is with curative intent through use of multi-modal therapy, including surgery & CRT
- Outcomes:
  - 3-year progression-survival (PFS) is good (70-75%)
    - When patients progress, clinical outcomes are poor, even with addition of immune-checkpoint blockade therapy, with overall survival under one year on average
- Proposed Trial target: high-risk patients with HPV-related LA throat cancer
  - Estimate 3k - 4k new patients per year in US

INO-3112: Strong Case for Combination Therapy Based on Previously Completed Trials

Monotherapy: Phase 1/2a in pre-surgery or post CRT patient

Published in Clinical Cancer Research, 2019



CD8 staining prior to dosing

CD8 staining after dosing

Combination Therapy: Phase 1b/2a in recurrent/metastatic patients

- Combined with AstraZeneca's PD-L1 checkpoint inhibitor, durvalumab
- ORR: 27.6% (4 CR, 4 PR) in 29 evaluable patients
  - Median OS was 29.2 months (confidence interval: 15.2–not calculable)
  - Peripheral HPV-specific T cells and intratumoral CD8+ cells increased after treatment
- Updated results and published in *Clinical Cancer Research,* 2023

Existing trial data highlights strong rationale & potential benefit of combining INO-3112 to generate T cells targeting the HPV E6 & E7 oncogenes with a PD-1 inhibitor in HPV-16/18 related OPSCC

Opportunity for the PD-1 Collaboration & Next Steps

- Novel combination of INO-3112 plus LOQTORZI™ could significantly reduce rate of disease recurrence compared to standard of care in high-risk, HPV-positive, locoregionally advanced OPSCC patients
  - Provides further support for INOVIO as a leader in addressing HPV-related diseases through generation of antigen-specific T cells
- Moving forward with plans for Phase 3 trial based on FDA feedback
  - Trial designed to show improvement in event-free survival
  - Targeting multi-center trial in North America and Europe
- Submitted Phase 3 trial design to European regulatory authorities

VGX-3100: Anal HSIL

Completed Phase 2 Trial in HIV-Negative Participants

Trial initiated in May 2018; Results announced in December 2020

Precancerous Anal Dysplasia:

Phase 2
open-label trial

N=24

3 or 4 dose regimen
at Months 0, 1, 3
and Week 36 (optional)

Final findings
(6 months after start of treatment)

Clearance of HPV-16/18+ lesions:
50% of patients

The Spontaneous Rate
is estimated to be less than 27%

- VGX-3100: composed of plasmids encoding for HPV-16 and HPV-18 subtypes; E6 and E7 oncogenes
- Open-label trial of VGX-3100 in 24 HIV-negative participants with HPV-16 and/or -18-positive anal HSIL
- 50% (11/22 evaluable) of participants showed no evidence of HPV-16/18-positive HSIL at Week 36
- 46% (10/22) of participants showed no evidence of HPV-16/18 virus at Week 36
- Adverse events were predominantly mild or moderate, and were in general associated with injection site reactions

VGX-3100 Ongoing Phase 2 Trial

Anal HSIL in HIV-Positive Participants

- Trial initiated in September 2018
- 80-participant, open-label Phase 2 trial
- 4 doses at week 0, 4, 12, and 24
- Primary endpoint: overall response rate at 48 weeks – defined as regression of anal HSIL to LSIL or normal
- Sponsored by AIDS Malignancy Consortium

INO-5401 + INO-9012 and LIBTAYO® for Newly Diagnosed GBM

Partnered with Regeneron

- **INO-5401** is a DNA medicine composed of plasmids that encode for 3 tumor-associated antigens: human telomerase (hTERT), Wilms tumor-1 (WT-1), and prostate-specific membrane antigen (PSMA)
  - **INO-9012** is a DNA plasmid that encodes for human IL-12
  - **LIBTAYO®** is a high-affinity, highly potent, human, hinge-stabilized IgG4 mAB to the PD-1 receptor
- **Phase 1/2 trial results:**

Median OS; unmethylated (A)	17.9 mo. (14.5 – 19.8)	*Historical 14.6-16 mo.*
Median OS; methylated (B)	32.5 (18.4 – NR)	*Historical 23.2-25 mo.*
Median OS; combined (A+B)	19.5 (16.9 – 23.3)	-

NR: not reached.

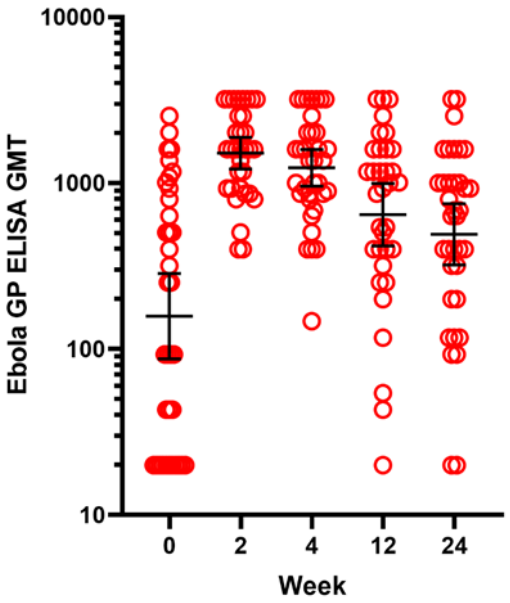
- **INO-5401 + INO-9012 with LIBTAYO® and 40 Gy radiation/TMZ** were observed to have favorable tolerability and immunogenicity
- **Next steps**: In discussions with Regeneron and KOLs regarding clinical path forward

Gilbert et al. J Clin Oncol 2013; Gilbert et al. N Eng J Med 2014; Comparison is limited due to differences in trial population;
Data was presented at 2022 ASCO Annual Meeting; Libtayo® is owned, developed, and marketed globally by Regeneron

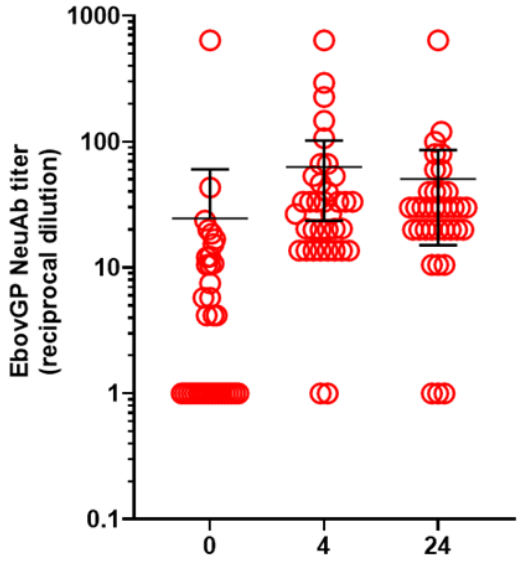
INOVIO

INO-4201: Ebola Booster Vaccine Candidate

INO-4201 Boosts Binding & Neutralizing Antibodies Against Ebola



Binding Antibodies



Neutralizing Antibodies

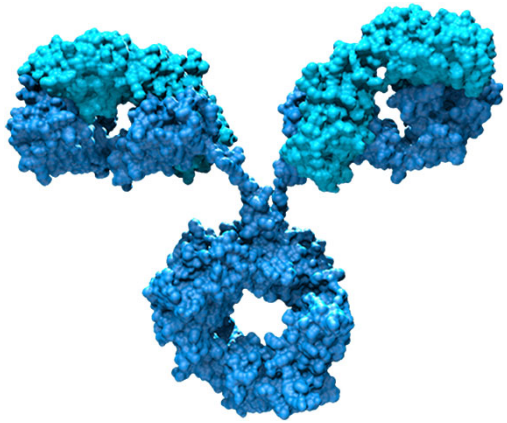
- Recent progress:
  - Re-submitted Ph 2 trial design to FDA
  - Preparing to submit Phase 1b trial data to peer-reviewed journal with collaborators
  - New FANG assay data: indicates 4201 elicits antibody response comparable to Ervebo primary series vaccination
- Phase 1b trial data as booster for Ervebo®
  - Safety & immunological data presented at ECCMID 2023
  - Robust immune response, potential to extend vaccine protection

INOVIO

DNA Encoded Monoclonal Antibody (DMAb™)

The Next Generation of DNA Medicine

- INOVIO developing novel **DMAb technology** that enables in vivo production of monoclonal antibodies
- **DMAbs potentially transformative approach** for the prevention and treatment of infectious diseases, cancer
- **Ongoing Wistar Institute-led Phase 1 clinical trial** in collaboration with AstraZeneca, the University of Pennsylvania, Indiana University and INOVIO to develop anti-SARS-CoV-2-specific DMAbs
  - Funded by DARPA
  - Expect publication of data in 4Q24



THE WISTAR INSTITUTE · AstraZeneca · Penn University of Pennsylvania · INDIANA UNIVERSITY

Power of Partnerships to Advance DNA Medicines

Active Clinical Studies

PRODUCT	INDICATION	PHASE	SPONSOR	FUNDER/COLLABORATOR
VGX-3100	Cervical Dysplasia (HSIL) - China	3	INOVIO	ApolloBio
	Anal Dysplasia (HSIL) - HIV +	2	AMC AIDS Malignancy Consortium	NIH National Cancer Institute; AMC AIDS Malignancy Consortium
INO-5401	Glioblastoma	1/2	INOVIO	REGENERON
	BRCA1/2 Mutation	1	Penn	Penn
INO-4800	COVID-19 (Solidarity)	3	World Health Organization	World Health Organization
INO-6172	HIV	1	NIH National Institute of Allergy and Infectious Diseases	HIV Vaccine Trials Network; The Wistar Institute
INO-6160	HIV	1	NIH National Institute of Allergy and Infectious Diseases	HIV Vaccine Trials Network; The Wistar Institute
dMAbs	COVID-19	1	Penn	DARPA; AstraZeneca; The Wistar Institute

Upcoming Key Catalysts

- **INO-3107**:
  - Submit BLA (mid-2025)
    - Resolve disposable array issue
    - Initiate confirmatory study
  - Submit a re-dosing study to FDA (2H25)
  - Present/publish immunology, durability, full efficacy and tolerability data (2025)

- **INO-3112**: Gain alignment with EU on Phase 3 design (1Q25)
- **INO-4201** (Ebola booster): Submit Phase 2 trial design based on FDA feedback (2H24)
- First clinical data from **Phase 1 DMAb trial** (anti-SARS-CoV-2) (1Q25)

INOVIO: Drivers for Success

Diversified Pipeline	Unique Technology	Power of Partnerships	Experienced Leadership
Advancing candidates with scientific and clinical promise, achievable pathways to market and strong commercial potential.	Growing body of research and late-stage clinical data clarifying competitive advantages of platform: including generation of T cells, clearing virus and lesions, ability for repeat dosing/boosting	History of collaboration in industry, academia & government to help drive innovation and advance promising candidates.	Extensive experience bringing innovative products to market to benefit patients; focused on operational excellence and financial discipline

$84.8M in cash, cash equivalents & short-term investments as of 9/30/24
$30M public offering completed in December

INOVIO

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