# Corporate Presentation

April 2023

Nasdaq: IMNN

# Safe Harbor Statement

This presentation and any statements made during any presentation or meeting contain forward-looking statements related to Imunon, Inc. (“Imunon”) under the safe harbor provisions of Section 21E of the Private Securities Litigation Reform Act of 1995 and are subject to risks and uncertainties that could cause actual results to differ materially from those projected. These statements may be identified by the use of forward-looking words such as "anticipate," "planned," "believe," "forecast,” "expected," and "intend," among others. There are many factors that could cause actual events to differ materially from those indicated by such forward-looking statements. Such factors include, among other things, unforeseen changes in the course of research and development activities and in clinical trials; possible changes in cost, timing and progress of development, preclinical studies, regulatory submissions; Imunon’s ability to obtain and maintain regulatory approval of any of its product candidates; possible changes in capital structure, future working capital needs and other financial items; changes in approaches to medical treatment; introduction of new products by others; success or failure of our current or future collaboration arrangements, possible acquisitions of other technologies, assets, or businesses; the ability to obtain additional funds for operations; the ability to obtain and maintain intellectual property protection for technologies and product candidates and the ability to operate the business without infringing the intellectual property rights of others; the reliance on third parties to conduct preclinical studies or clinical trials; the rate and degree of market acceptance of any approved product candidates; possible actions by customers, suppliers, potential strategic partners, competitors, and regulatory authorities; compliance with listing standards of The Nasdaq Capital Market; and those risks listed under “Risk Factors” as set forth in Imunon’s most recent periodic reports filed with the Securities and Exchange Commission, including Imunon’s Form 10-K for the year ended December 31, 2022.

While the list of factors presented here is considered representative, no such list should be considered to be a complete statement of all potential risks and uncertainties. Unlisted factors may present significant additional obstacles to the realization of forward-looking statements. Forward-looking statements included herein are made as of the date hereof, and Imunon does not undertake any obligation to update publicly such statements to reflect subsequent events or circumstances except as required by law.

**Developing new medicines that harness the building blocks of life to work in harmony with the body's immune system**

- Leveraging **innovative non-viral DNA platform** with proprietary synthetic delivery systems and multiple potential indications
- Initial clinical focus is on **immuno-oncology** and **infectious diseases**
- Development of the PlaCCine modality in prophylactic vaccines, with **strong evidence of immunogenicity and durability of protection in a SARS-CoV-2 proof-of-concept model**
- Two Phase II trials underway with IMNN-001 (formerly GEN-1) (**IL-12 immunotherapy) for the localized treatment of advanced ovarian cancer;** Fast Track and Orphan designations received; to address a multibillion-dollar market
- Focus on development of **new modalities in cancer vaccines**
- **Strong balance sheet** supports strategy into 2025 and robust news flow of value-creating activities in pursuit of building a **fully integrated** biotech company

# Experienced Management Team

**Corinne Le Goff, PharmD MBA**
President, CEO and Director

**Khursheed Anwer, PhD MBA**
Executive Vice President and
Chief Science Officer

**Jeffrey W. Church**
Executive Vice President, CFO &
Corporate Secretary

**Anthony Recupero, PhD**
Vice President
Business Development

# IMUNON Strategic Priorities

*Thoughtful five-pronged business strategy, capitalizing on the platform synergies across modalities*

| | | |
|---|---|---|
| 1 | IMMUNO-ONCOLOGY | **An asset development opportunity,** in high disease burden cancers where an immunological approach through cytokine expression or cancer vaccines can improve outcomes. |
| 2 | PROPHYLACTIC VACCINES | **A partnership opportunity,** with pharmaceutical companies, institutions and government agencies to develop vaccines for pathogens of interest. |
| 3 | VERTICAL INTEGRATION | **Of the core elements of our business,** to control costs, deliverables and IP, realized through in-house early development scale of plasmids, synthetic delivery systems and investments in key partners. |
| 4 | COLLABORATIONS | **The bedrock of our business model,** to get access to new technologies or expertise, to enhance and de-risk our R&D efforts and generate new IP, to obtain non-dilutive funding. |
| 5 | NEW ASSET ACQUISITION | **To balance the risk profile of our pipeline,** in areas adjacent to our domain of expertise in immuno-oncology, gene therapy, nucleic acids…, and synergistic with our capabilities. |

# Our Disruptive Non-Viral DNA Technology Toolkit in Infectious Diseases and Immuno-Oncology

*Proprietary Synthetic Delivery and Facilitating System, that promotes DNA Protection, Uptake, Bioavailability and Enhanced Antigen Expression*

## Gene Therapy Modality: TheraPlas

- Delivers DNA Plasmids Coding for Therapeutic Proteins
- Multiple development programs on-going

## Prophylactic Vaccine Modality: PlaCCine

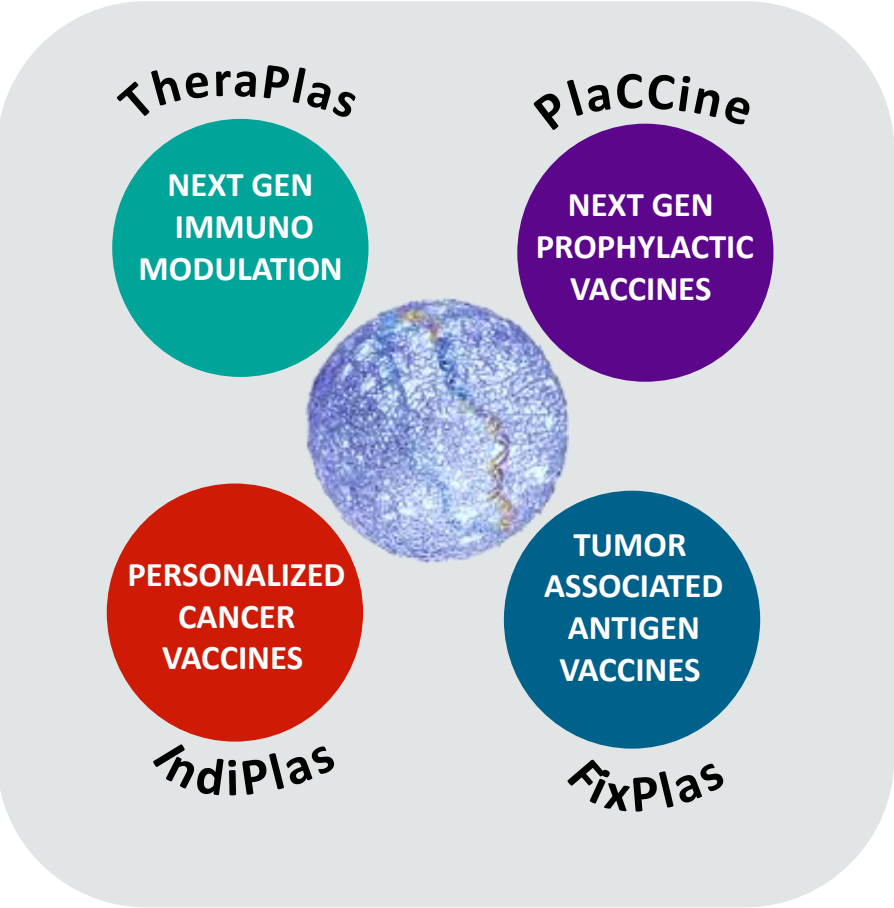
- DNA Plasmid vectors engineered for next generation vaccine technology
- Designed for multiple antigens with co-expression of immunomodulators

## Tumor Associated Antigen Vaccine Modality: FixPlas

- Non-viral DNA vector encoding tumor associated antigens
- Designed for multiple antigens with co-expression of immunomodulators

## Neoepitope Personalized Cancer Vaccine Modality: IndiPlas

- Neoantigen Cancer Vaccine Approach: Revitalizing the Immune System
- Targeting multiple epitopes selected for each individual patient

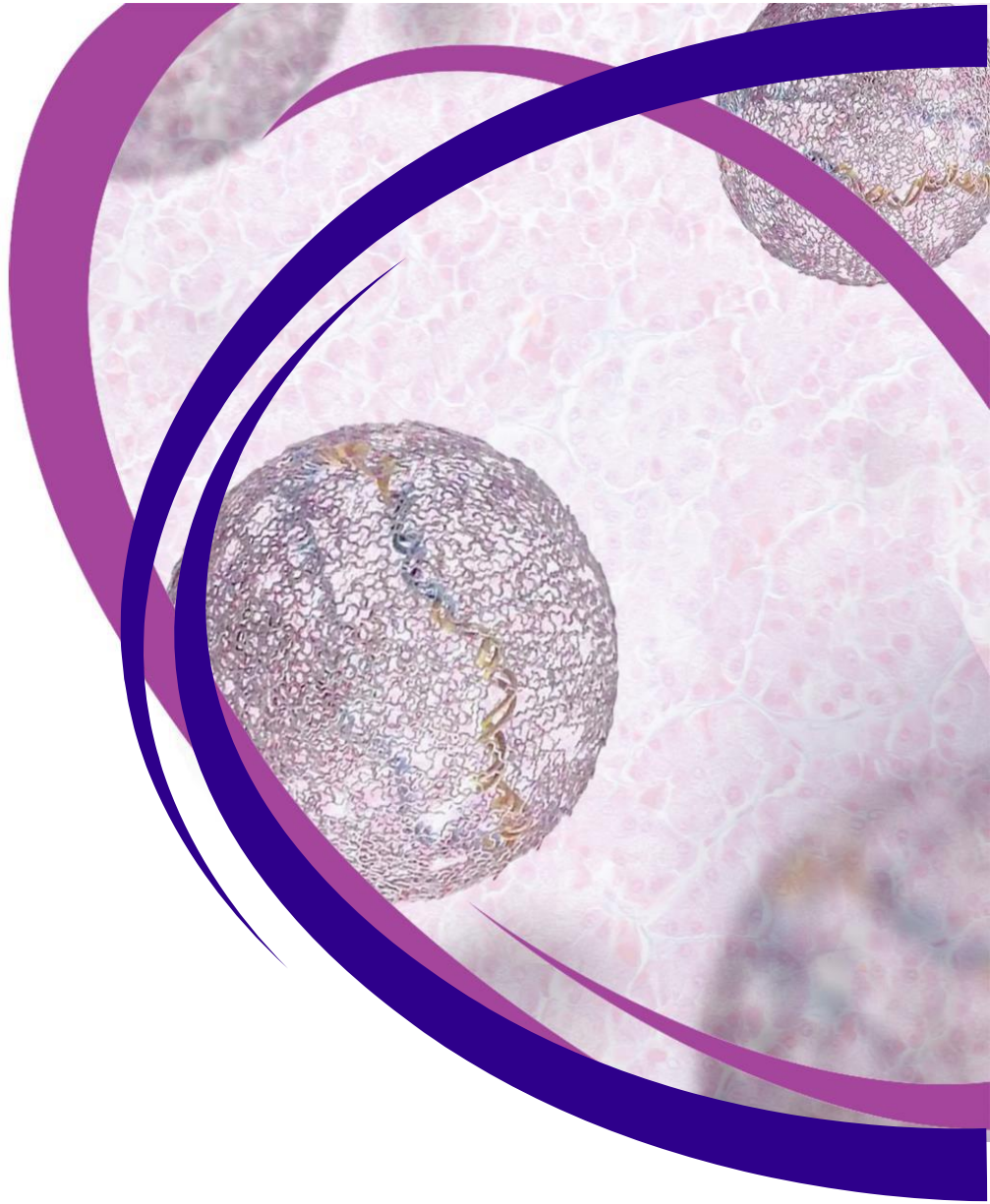


# IMUNON's Pipeline of DNA-based Transformative Medicines

| Modality | Program | Indication(s) | Discovery | IND enabling | Phase 1 | Phase 2 | Partnerships |
|---|---|---|---|---|---|---|---|
| TheraPlas | **IL-12 (OVATION)** Intraperitoneal (IP) | Advanced Ovarian, Fallopian Tube or Primary Peritoneal Cancer | IMNN-001 (formerly GEN-1) | | | | |
| TheraPlas | **IL-12** IP in combination with **bevacizumab** | Advanced Ovarian, Fallopian Tube or Primary Peritoneal Cancer | IMNN-001 + bevacizumab | | | | BREAK THROUGH CANCER #RadicalCollaboration |
| PlaCCine | **Multicistronic SARS-CoV-2.** Clinical Proof-of-Concept | COVID-19 Seasonal Vaccine | IMNN-101 | | | | |
| PlaCCine | **Prophylactic Vaccine** | Infectious Disease target | PL-X | | | | THE WISTAR INSTITUTE |
| FixPlas | **Cancer Therapeutic Vaccine** | Trp2 Tumor Associated Antigen in Melanoma | IMNN-201 | | | | |
| IndiPlas | **Individualized Neoantigen Cancer Vaccines** | | IP-Y | | | | |

# PlaCCine : IMNN-101

## PROPHYLACTIC VACCINES PROGRAM IN INFECTIOUS DISEASES



# More than 80 Pathogenic Viruses Discovered since 1980

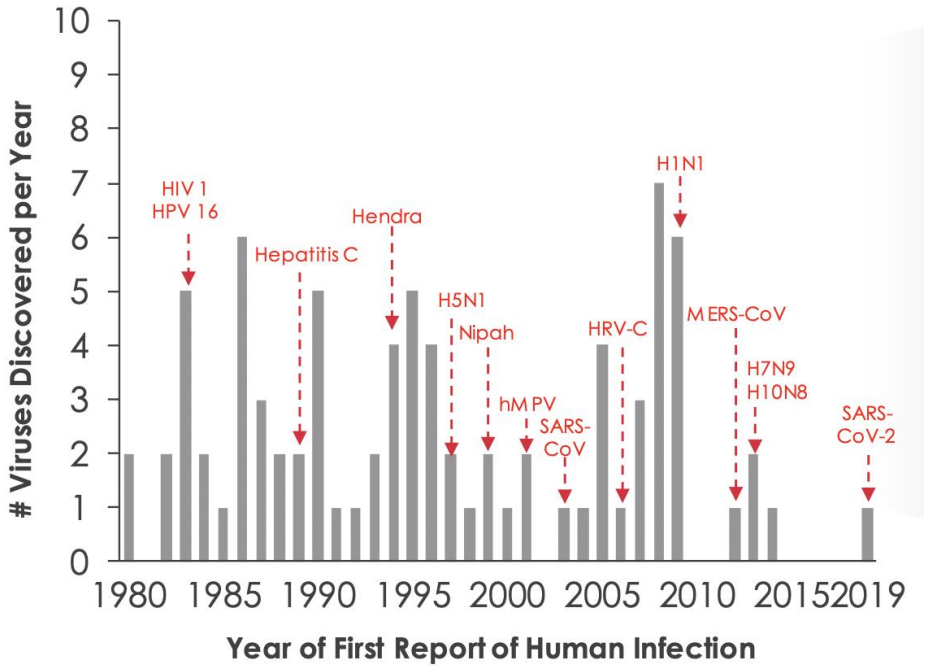
*Less than 4% have a vaccine commercially available*

## Before 1980

Select viruses:

- Yellow fever (1901)
- Rubella (1941)
- Dengue (1943)
- PIV3 (1950s)
- Chikungunya (1952)
- Hepatitis B (1965)
- Marburg (1967)
- Lassa (1969)
- Ebola (1976)
- Zika (1952)
- VZV (1954)
- RSV (1956)
- CMV (1956-1957)
- EBV (1964)

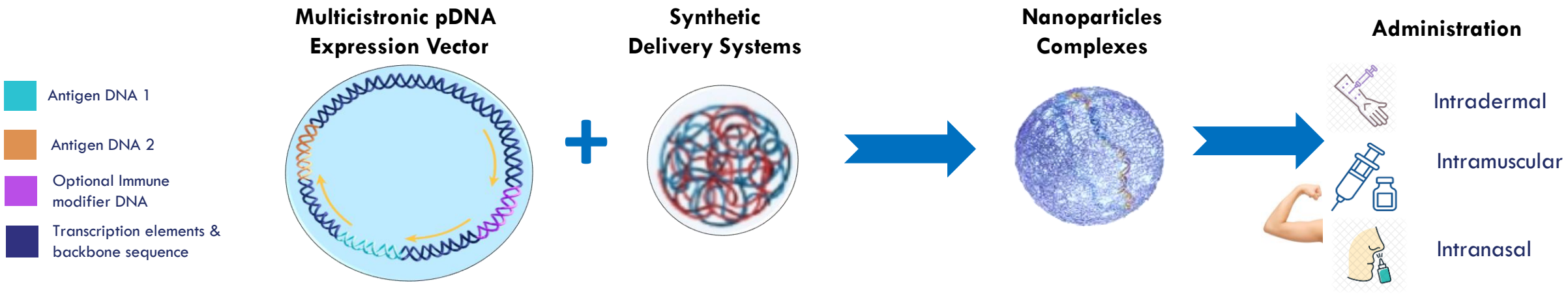
## 1980 - 2019




*Sources:* Institute of Medicine (US) Forum on Microbial Threats(2009);Medscape Medical News(2008);Lederburg,J. *Emerging Infectious Diseases from the Global to the Local Perspective:A Summary of a Workshop of the Forum on Emerging Infections*(2001); National Institute of Health(US)Biological Sciences Curriculum Study(2007);Holshue,M. *et al NEJM* (2020);Bush,L. *Emerging...andRe-emerging Infectious Diseases*(2015);Gibbs,A.J.*Virology*(2009); CDC Zika Overview;CDC Ebola About;Plotkin,S.A. *Clinical Infectious Diseases*(2006);Woolhouse,M.*et al.PhilTransRSoc*(2012);WHO H7N9 China Update(2018);Tapparel,C. *et al. Virology*(2013); Hepatitis B Foundation.History Page;Ho,M.*MedMicrobiolImmunol.*(2008);Nature.Dengue Viruses Page;Brauberger, K. *et al. Viruses*(2012);FDA approved vaccine list; CDC RSV Overview; Hendrickson,K.J. *Clinical Microbiology Reviews*(2003); Andersson,J.*Herpes*(2000);WHO Chikungunya Overview;CDC Varicella Overview;Xu,Y.*et al. Infect Genet Evol.*(2015);CDC Lassa Fever Overview

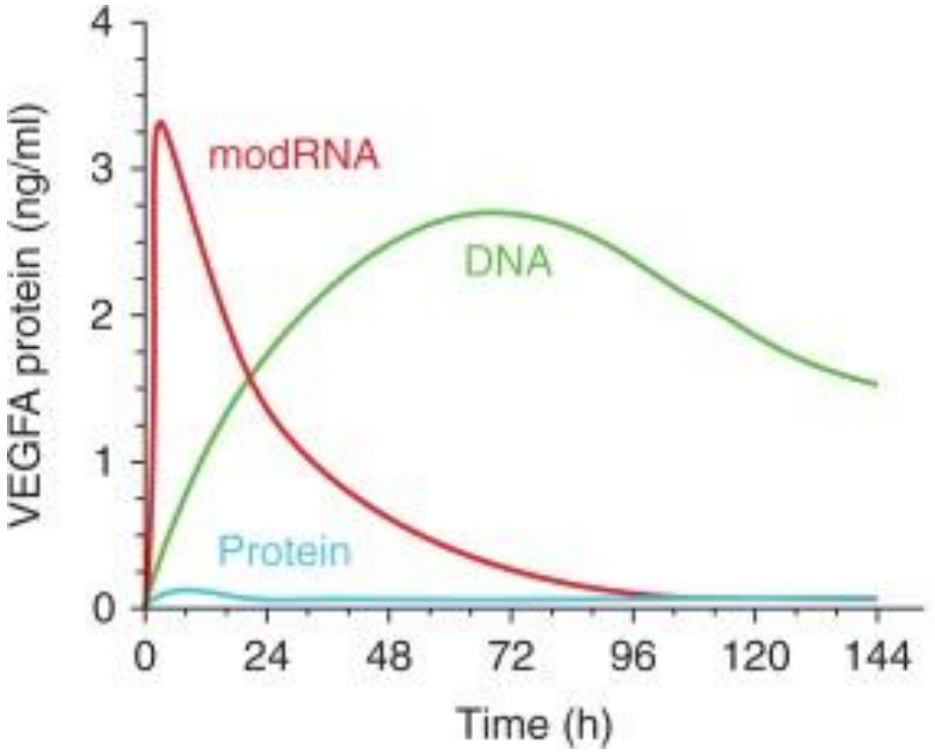
# PlaCCine Modality: Powering the Next Generation of Vaccines

*By addressing the shortcomings of current nucleic acid, viral vector and protein subunit vaccines*

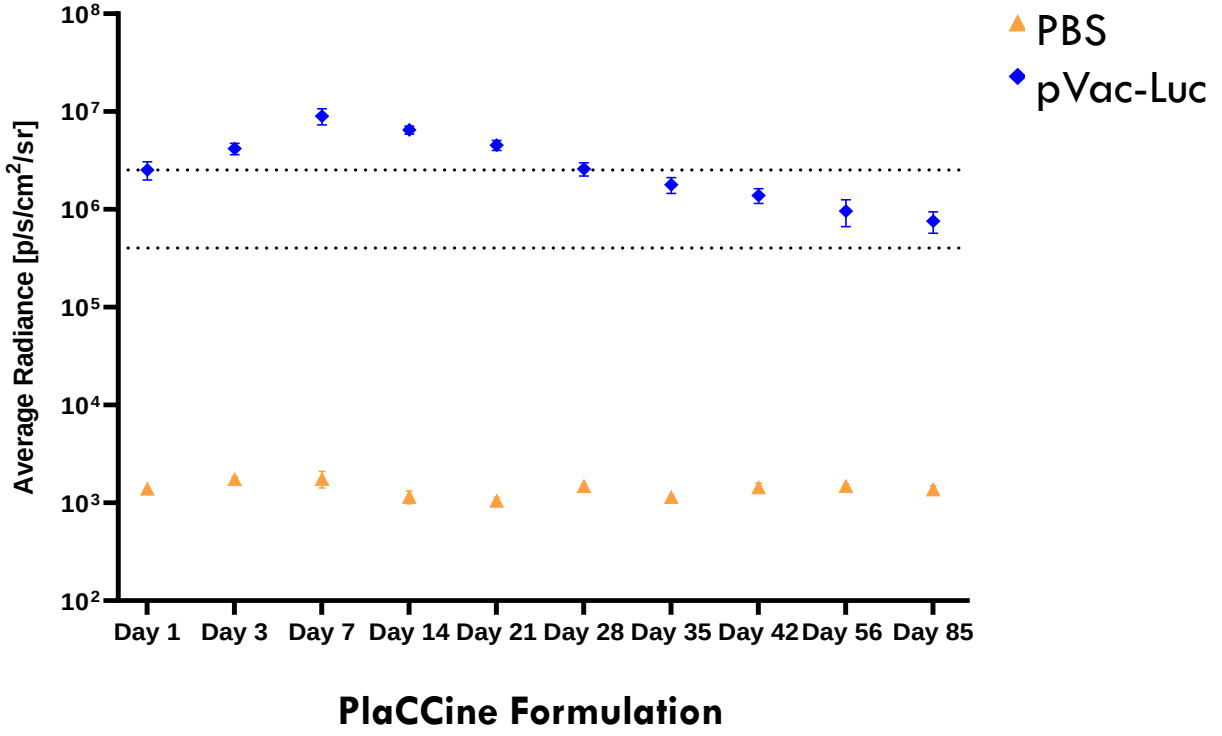



- **Durability of Protection** — Durable antigen expression induces robust immunological response. Broad spectrum immunity: nAb + T cells
- **Breadth of Protection** — Multicistronic vectors increase the breadth of immune response and allows for single vector combination vaccines
- **Transmission Advantage** — Strong T-cell activity. Option for co-expression of potent immune modifiers increases the cytolytic T-cell response and lowers the risk of viral shedding
- **Safe and Convenient** — Synthetic delivery systems present no risk of genotoxicity - no virus, or cytotoxicity - no device. Better safety compliance and convenient handling for pandemic control
- **Flexible Manufacturing** — Truly versatile platform enables rapid design for speedy response to changing pathogens. Stability and long shelf-life at workable temperatures simplifies handling and distribution

# DNA Yields More Durable Antigen Expression than Protein or modified mRNA




Chien KR Cold Spring Harb Perspect Med 2015;5:a014035

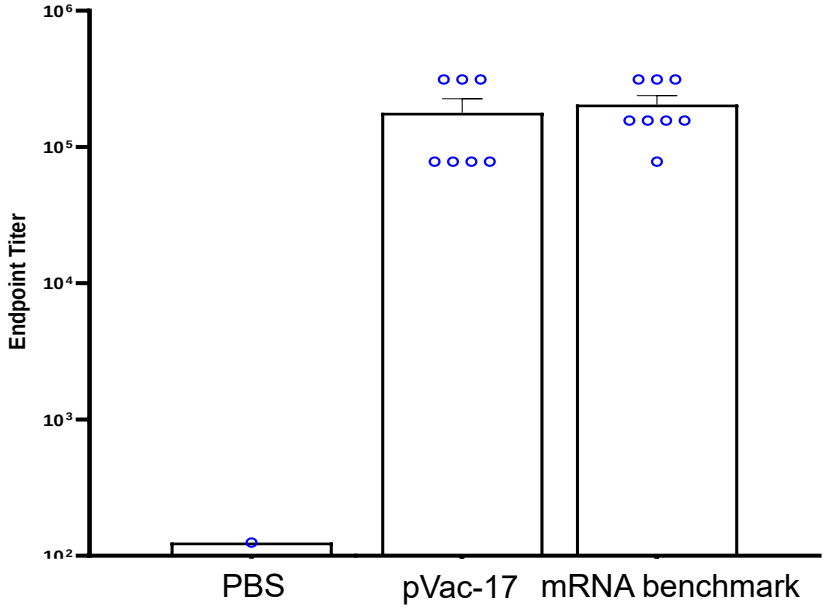


# Bivalent PlaCCine Vaccine Produces Stronger Neutralizing Immune Response than mRNA Benchmark against an Evolving Pathogen

Multi-cistronic vector: **pVac-17**

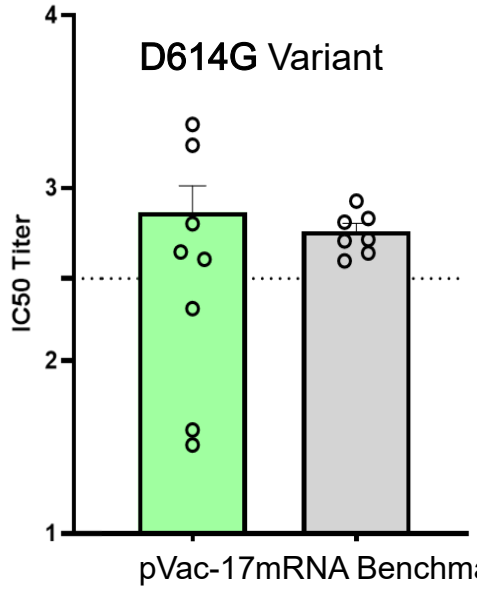
- Spike antigen: **D614G, Delta**
- Formulation: **PlaCCine**
- 125 µg DNA
- IgG & nAB titer (day 35)

**IgG Titer**

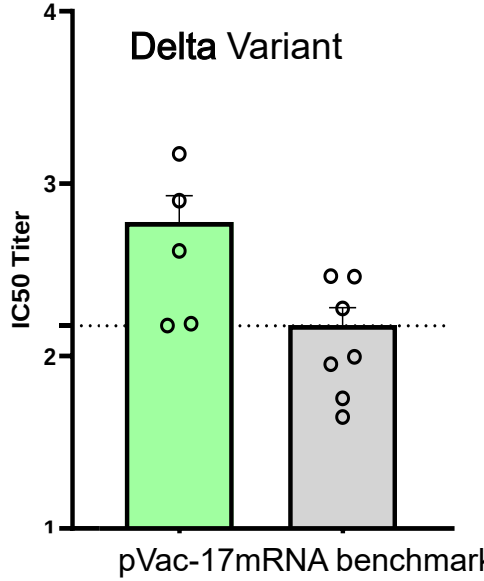



Variant Antigen → D614G-Delta D614

**Neutralizing Antibody Titer**
(pseudovirus competition assay)




Variant Antigen → D614G-Delta Wuhan

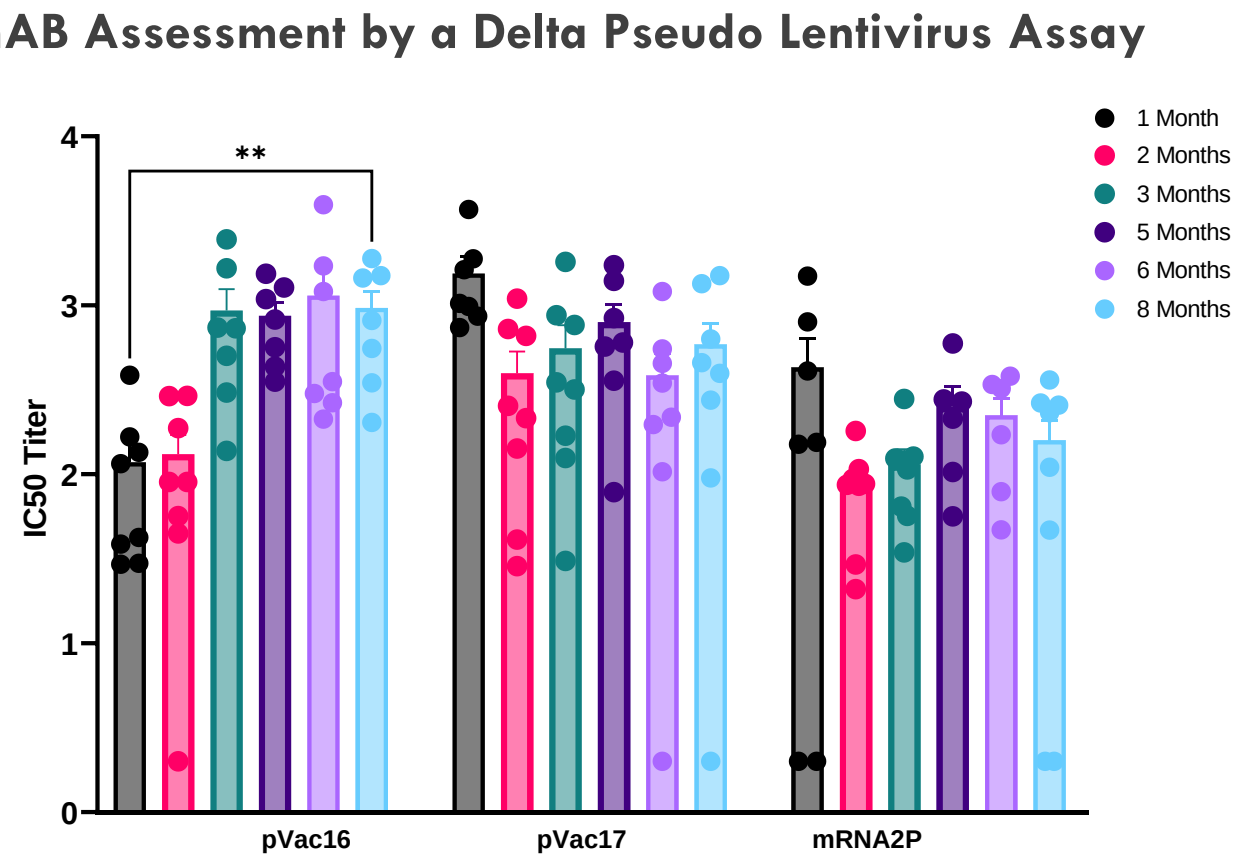



Variant Antigen → D614G-Delta Wuhan

# Durable Neutralizing Antibody Response to PlaCCine-SARS-CoV-2 Vaccines

*Evidence of Durability For 8 Months (Ongoing Study)*

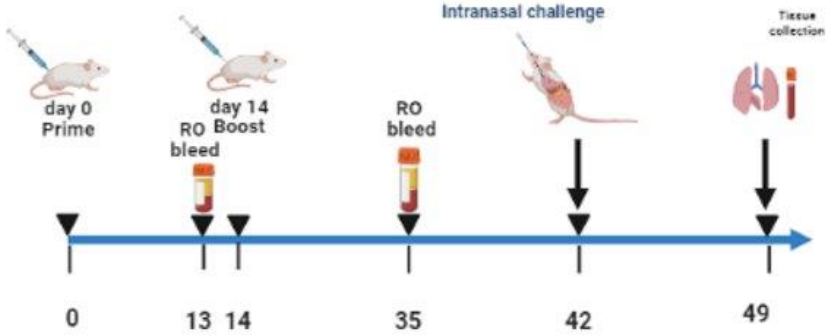
- Vectors: **pVac-16** (Delta), **pVac-17** (D614G - Delta)
- Formulation 125 µg DNA
- IgG titer (2, 3, 5 months)



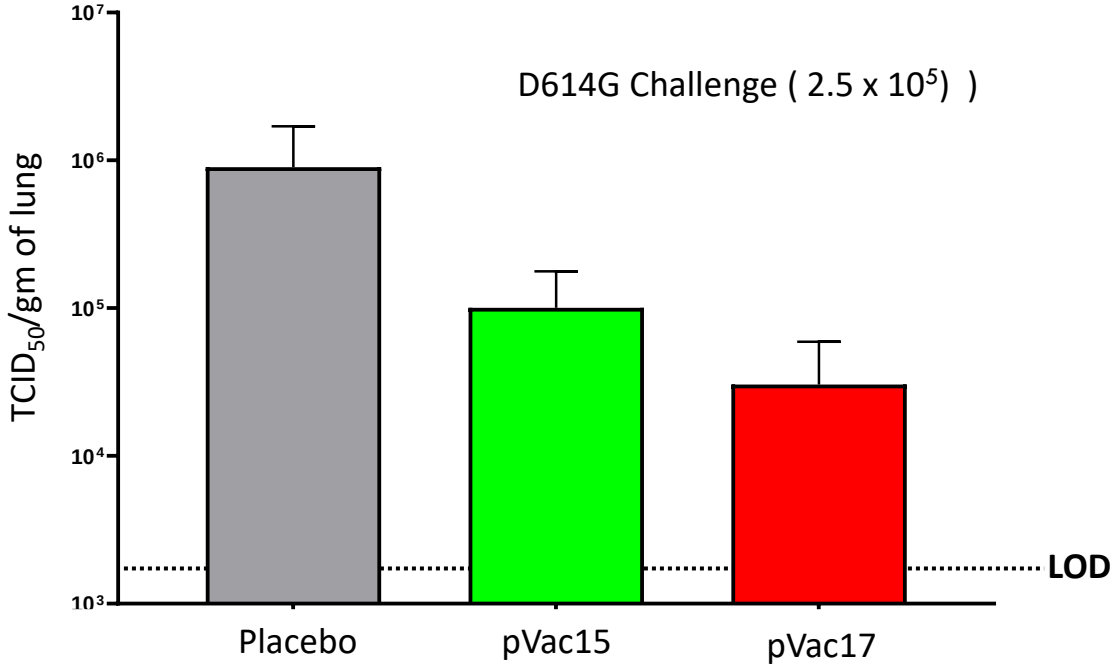
# Over 90% Protection From Live Viral Challenge

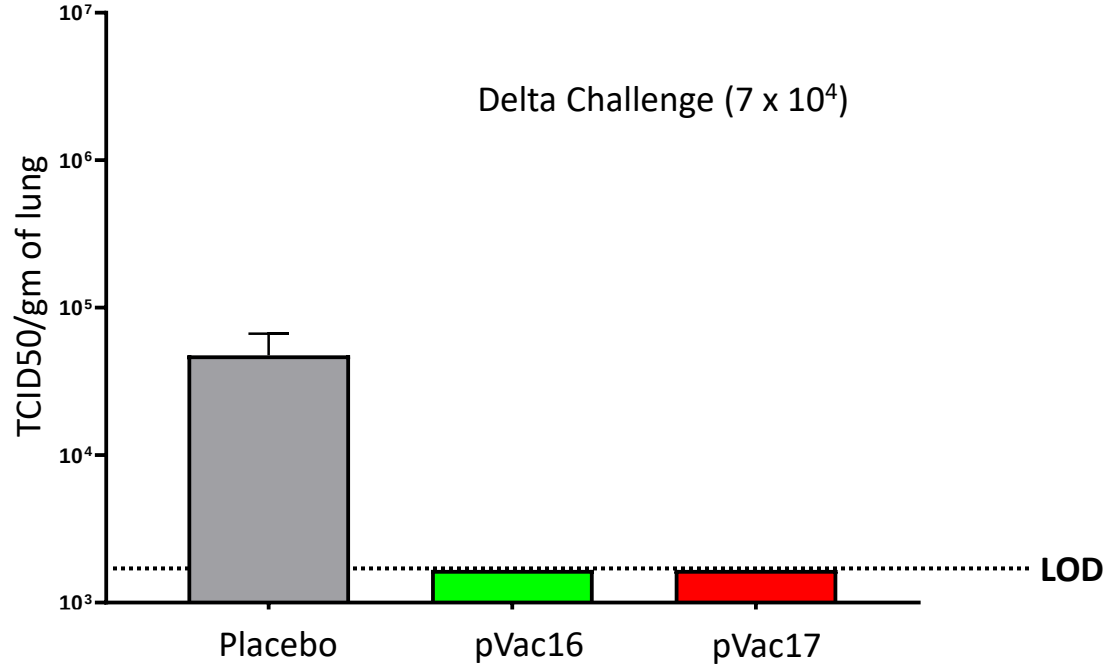
*Activity of PlaCCine-SARS-CoV-2 Vaccines in hACE2:K18 SARS-CoV-2 Model*

- pVac-15- D614G
- pVac-16- Delta
- pVac-17- D614G - Delta
- Formulation: PlaCCine
- Dose- 125 µg DNA



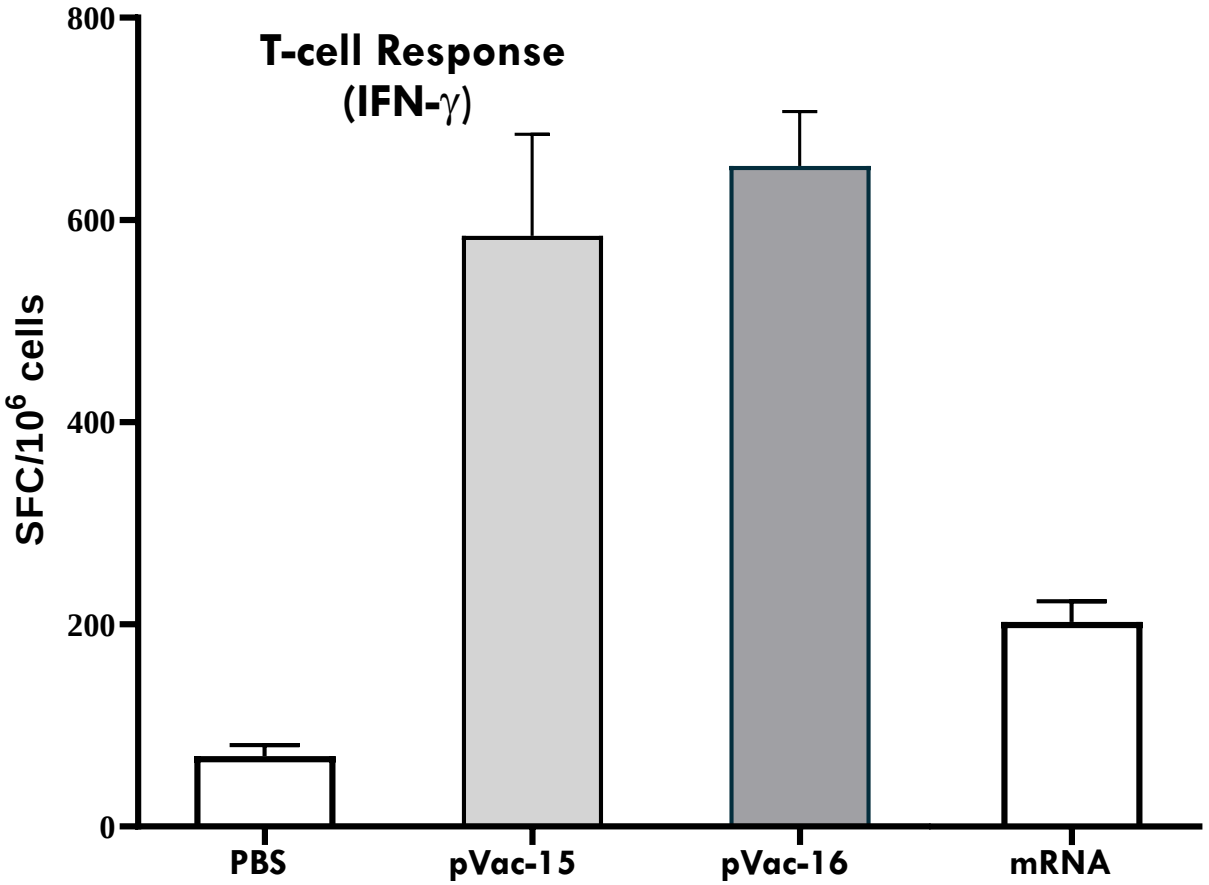

TCID50 Tissue Culture Infection Dose



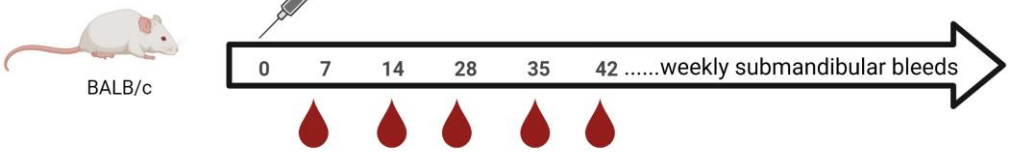
# PlaCCine Vaccines Provide Durable Cellular Response vs. mRNA Vaccine

>12-months Durability in Mice in a two-dose vaccination design

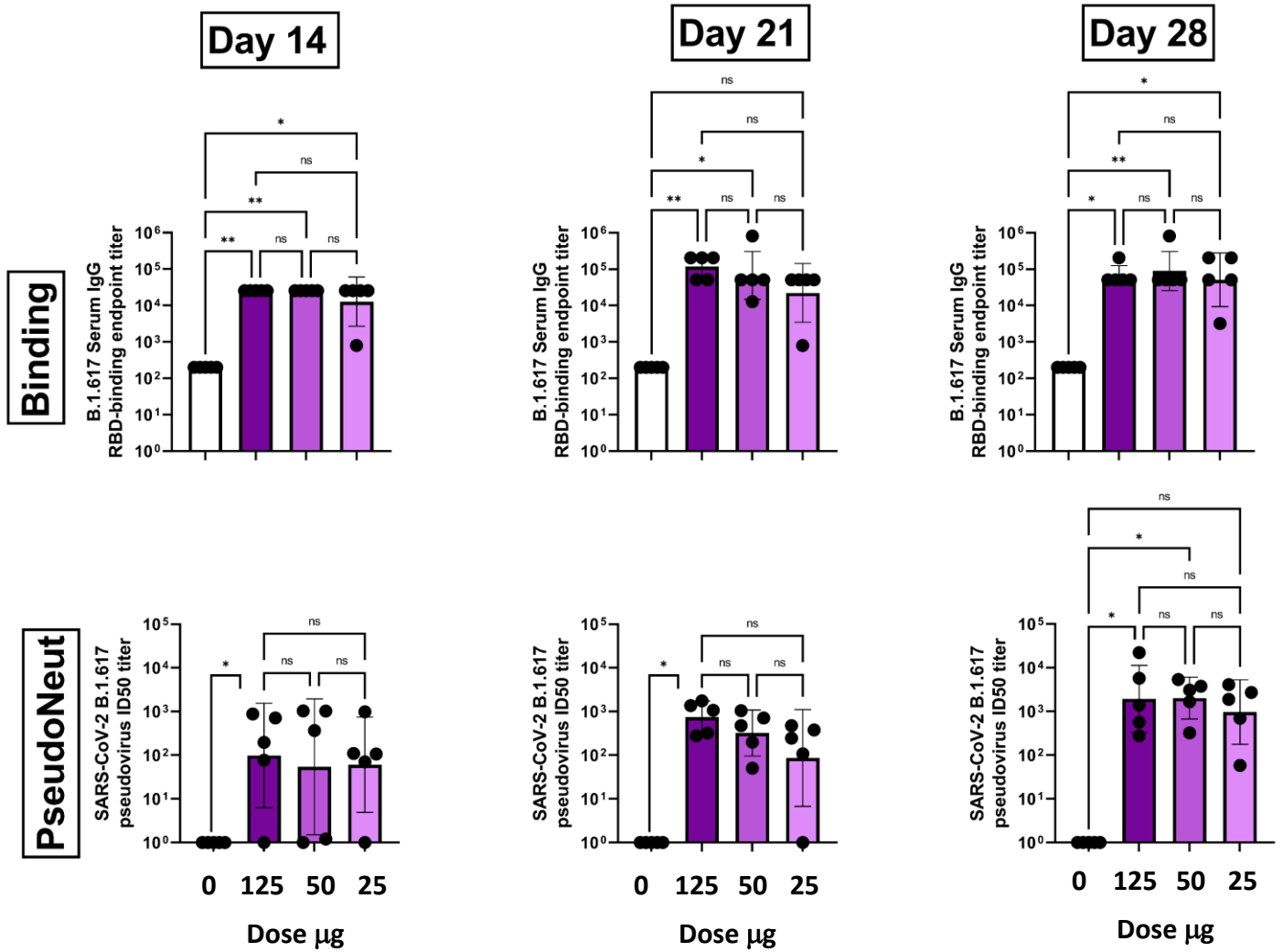


# PlaCCine Induces Robust Immune Response after a Single Injection

*Wistar Institute Collaboration*



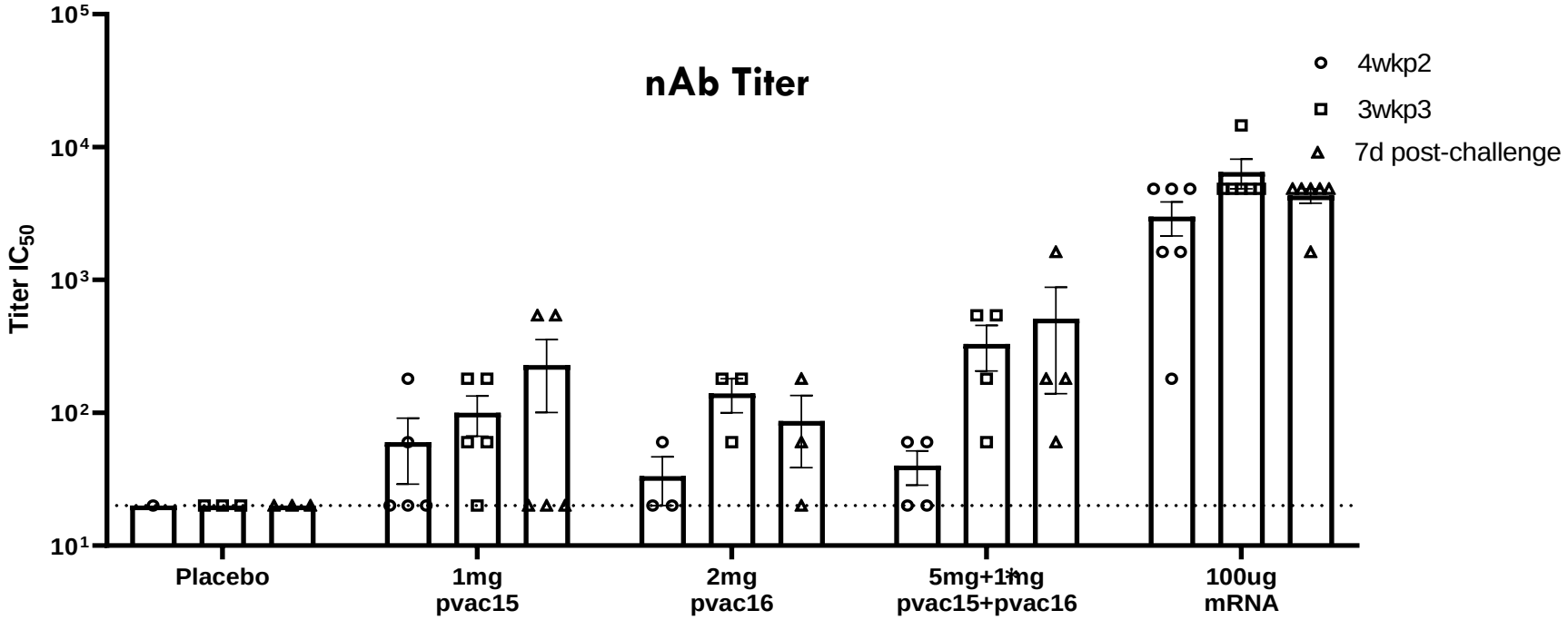

| Group | Antigen |
|---|---|
| pVax | N/A |
| pVAC50 (125ug) | Delta spike-Imunon |
| pVAC50 (50ug) | Delta spike-Imunon |
| pVAC50 (25ug) | Delta spike-Imunon |



# Monovalent PlaCCine Vaccine is Immunogenic in Cynomolgus Monkeys

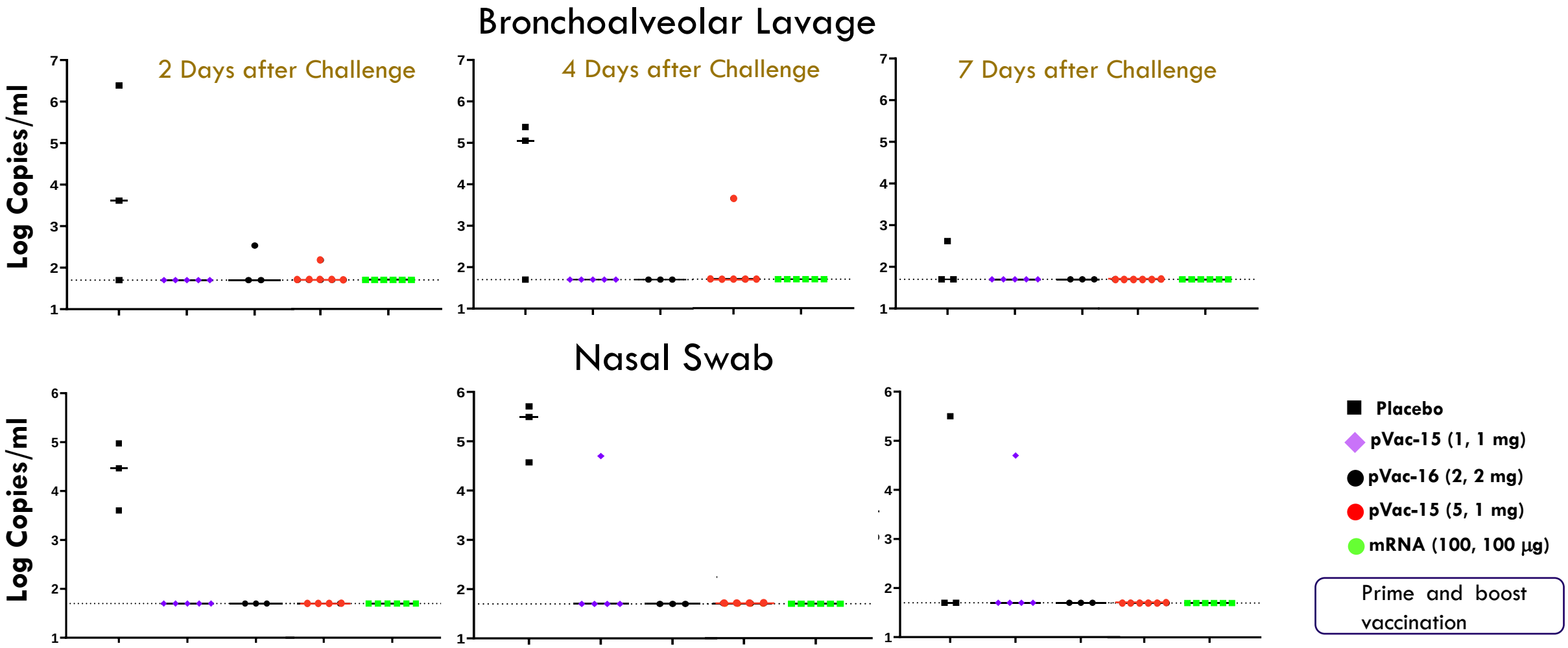
*PlaCCine Subjects Showed IgG and Neutralizing Antibody Response*

- Single antigen vector — **pVac-15** (D614G) in PlaCCine
- Comparator mRNA — Commercial mRNA Vaccine (LNP)
- Dosing schedule — Day 1, 28, 84
- nAB titer — Day 105 (21 days after 3rd dose)



# Viral Clearance by PlaCCine is Comparable to mRNA Vaccine

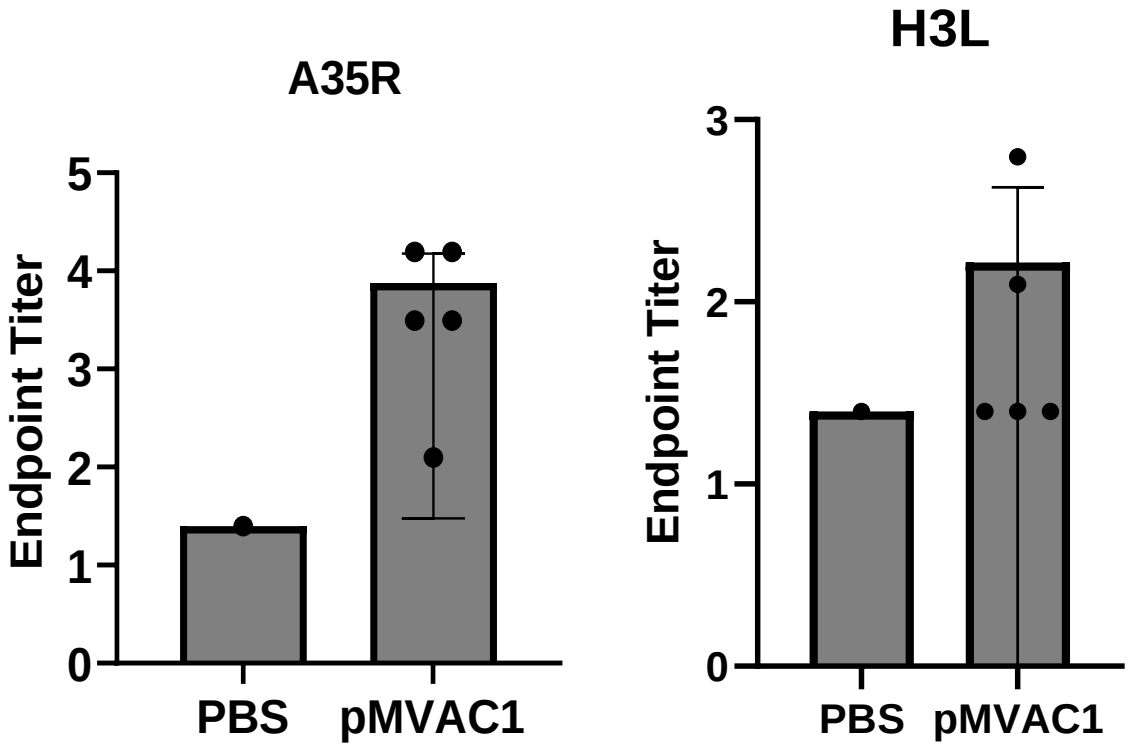
*Clearance is Sustainable with Efficiency >99% by PCR assay*

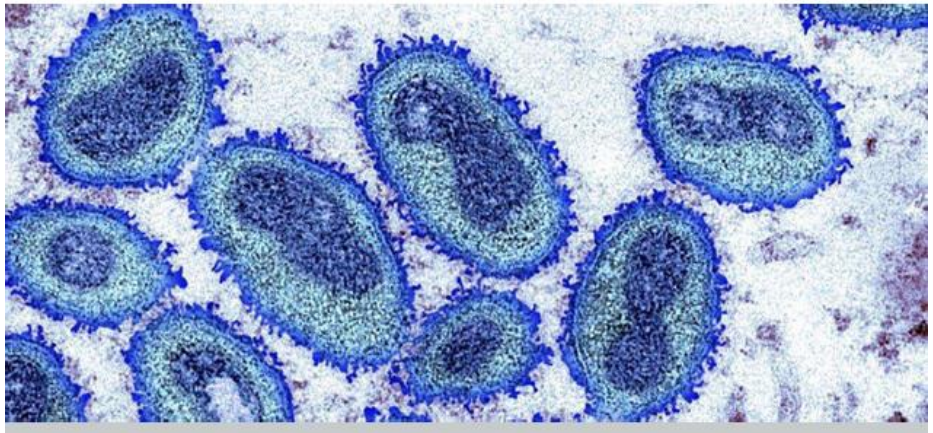


# Novel PlaCCine DNA Monkeypox Vaccine Induces Humoral Immune Responses

*Initial Monkey Pox Data Confirms Validity of PlaCCine as a Platform with Broad Applicability*

- Mice immunized at days 0 and 14 with pMVAC-1
- Vaccine expressing M1R, H3L and A35R



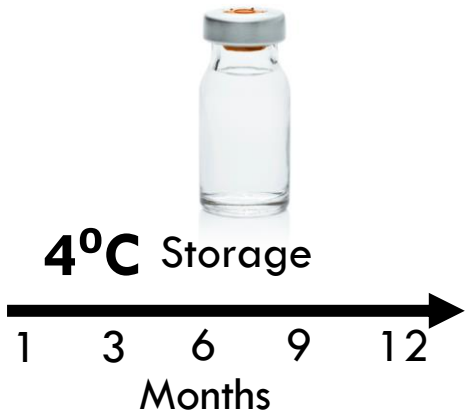



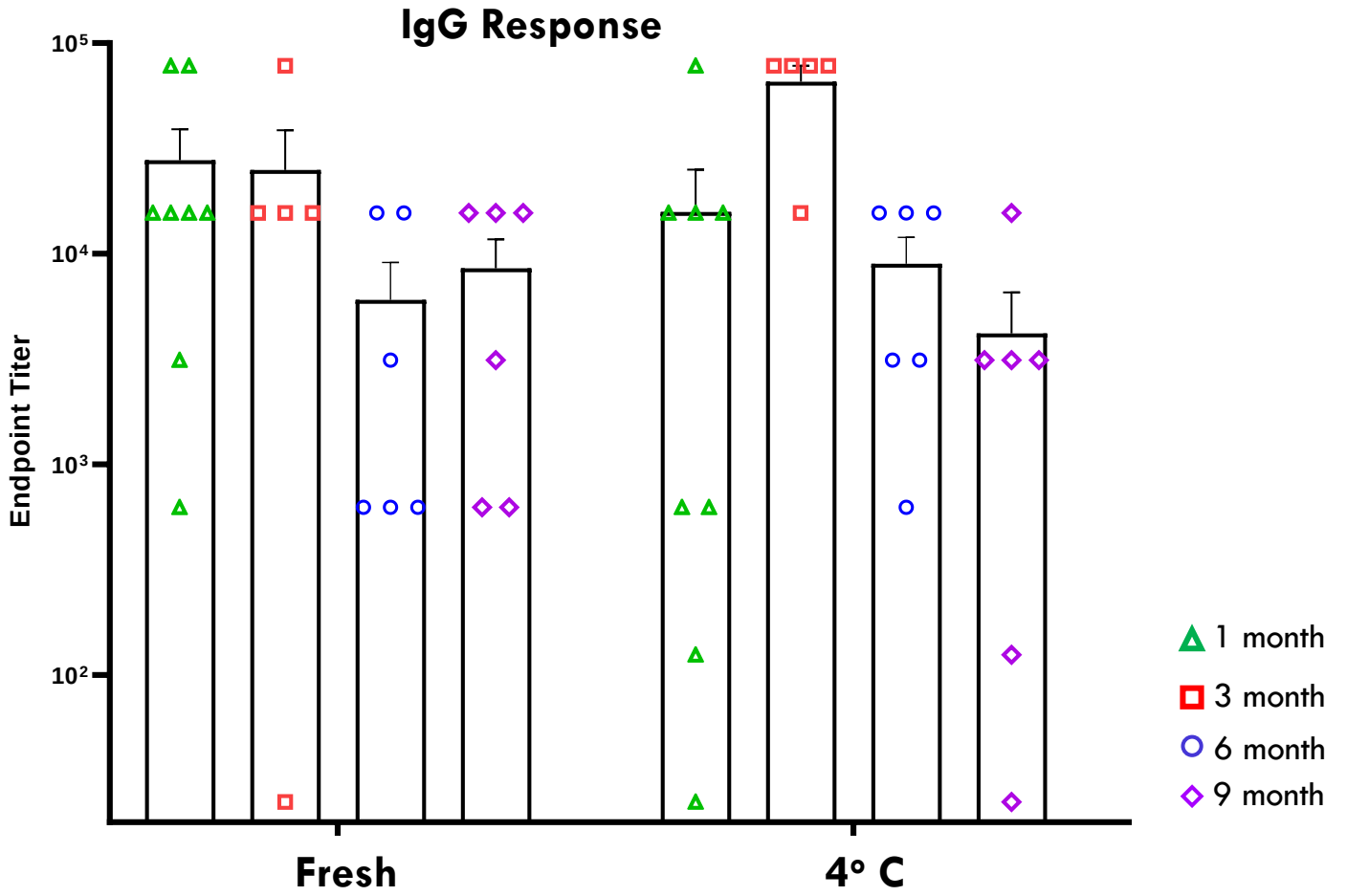
- Our DNA plasmid modality is uniquely adaptable to address viral outbreaks and tackle pathogens that threaten global health
- The flexibility of our platform allows for rapid antigen design and pre-clinical testing

# PlaCCine is Stable at 4°C for at Least 9 Months

*Immunogenicity Studies in Mice*

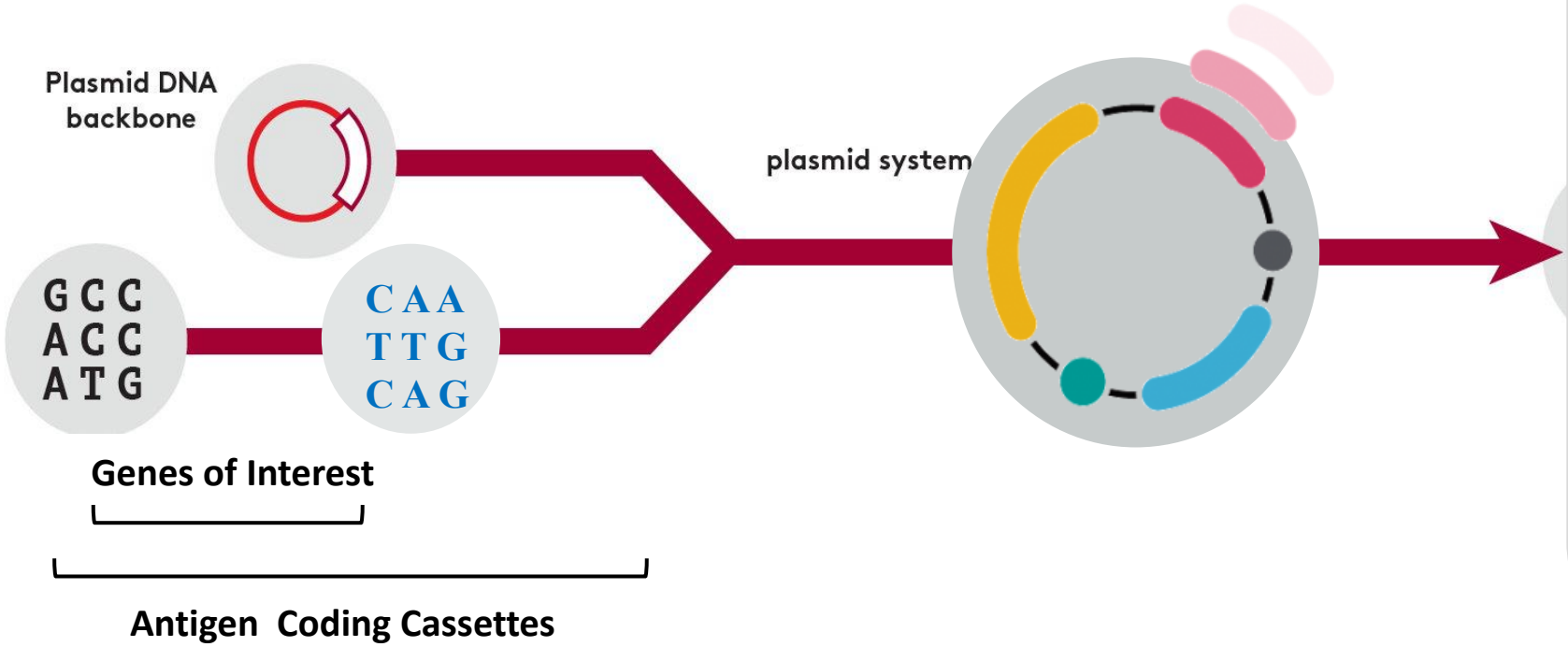
- Vector: pVac-17 (D614G-Delta)
- Formulation: PlaCCine



# IMNN-101: "Plug & Play" Design Allows for a Rapid Response to Changing Pathogen

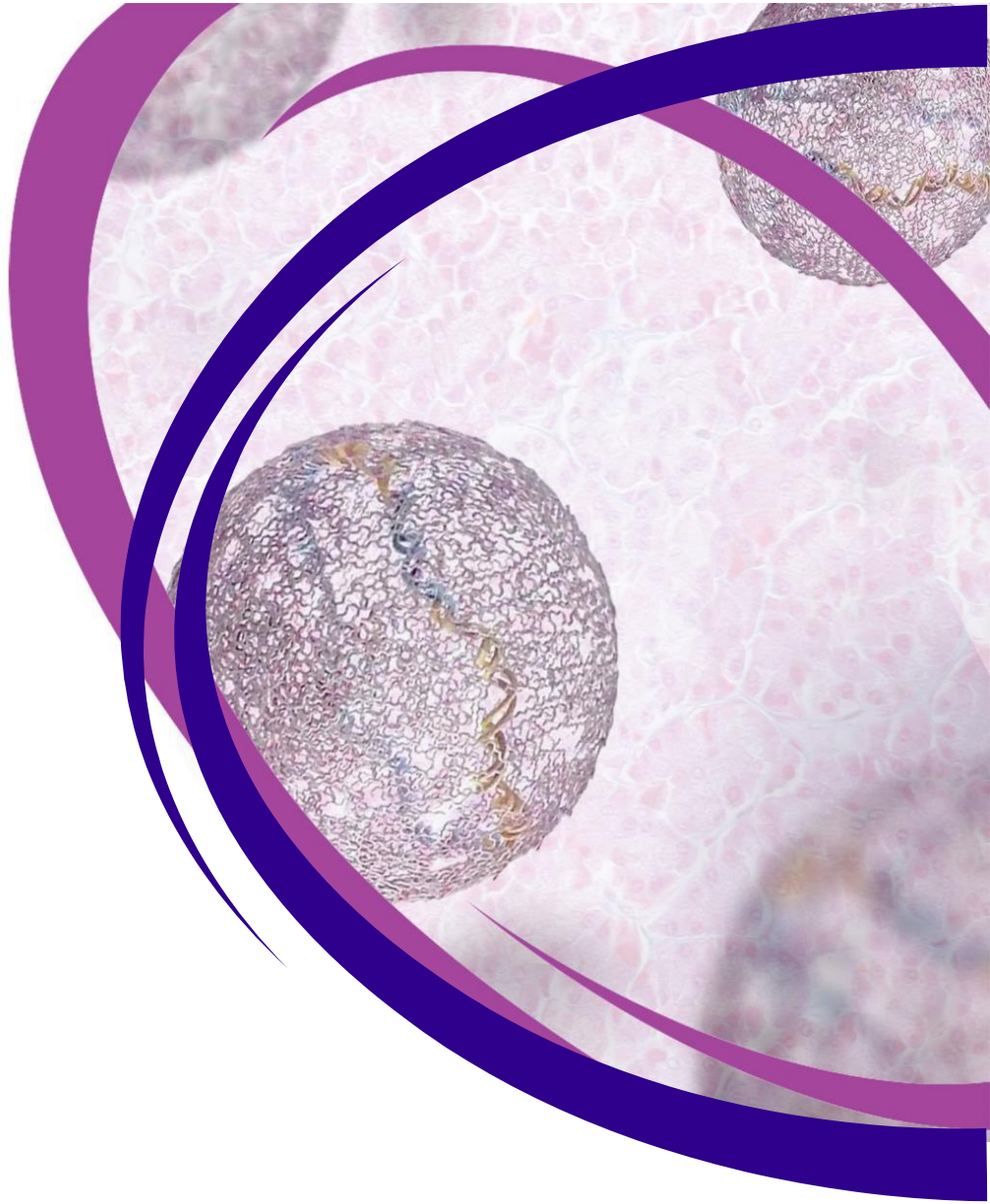
*Seasonal COVID-19 Booster, adapted for the latest strain (Omicron XBB1.5) plus a highly conserved antigen*




- January 2023 FDA VRBPAC (Vaccines and Related Biological Products Advisory Committee) agreed that an annual COVID shot is optimal.
- The FDA is proposing to select the strain in June.
- Our technology offers flexible design and rapid production.

# TheraPlas: IMNN-001

## IL-12 IMMUNO-ONCOLOGY PROGRAM



# IL-12: A Powerful Immune-Modulating Agent

*Interleukin-12 Can Induce Anti-cancer Immunity Through Multiple Mechanisms*

**Activation/Proliferation**

Stimulates the proliferation of CD-8 positive T-cells and natural killer (NK) cells and their cytotoxic activity against the tumor

**Maturation/Proliferation**

Shifts the differentiation of naive CD-4 positive T-cells toward a TH-1 phenotype, further enhancing the immune response – Turns "cold" tumors into "hot" tumors

**Anti-Angiogenesis**

Promotes cellular production of the potent immune mediator IFN-γ and TNF-α. IFN-γ promotes the expression of anti-angiogenic molecules, halting the growth of new blood vessels that supply oxygen to the tumor

**Inhibition of Immune Suppression**

IL-12 inhibits regulatory T-cells that suppress immune responses by "hiding" the tumor from the body's immune system

# First Target: Ovarian Cancer

Epithelial ovarian cancer (EOC) is insidious and usually diagnosed late at an advanced stage. Though EOC initially responds to treatment, the recurrence rate is high. Recent treatments delay progression but overall survival has not improved. Hence there is a need for effective therapy for patients with EOC.

**20,000** cases
diagnosed each year in U.S.
**13,000** deaths

Standard of care has remained
**stagnant for decades**

**80%**
diagnosed in late stage (III/IV)

**50%**
will die within 5 years of diagnosis

**225,000**
cases per year Globally
**> 100,000**
Patients in the U.S. alone

**5th**
leading cause of cancer mortality in women

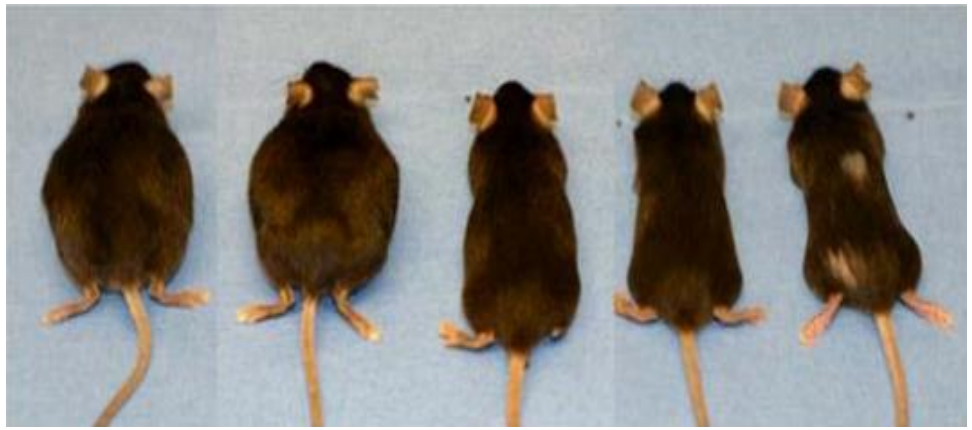
**IMNN-001 has the potential to revolutionize today's standard of care**

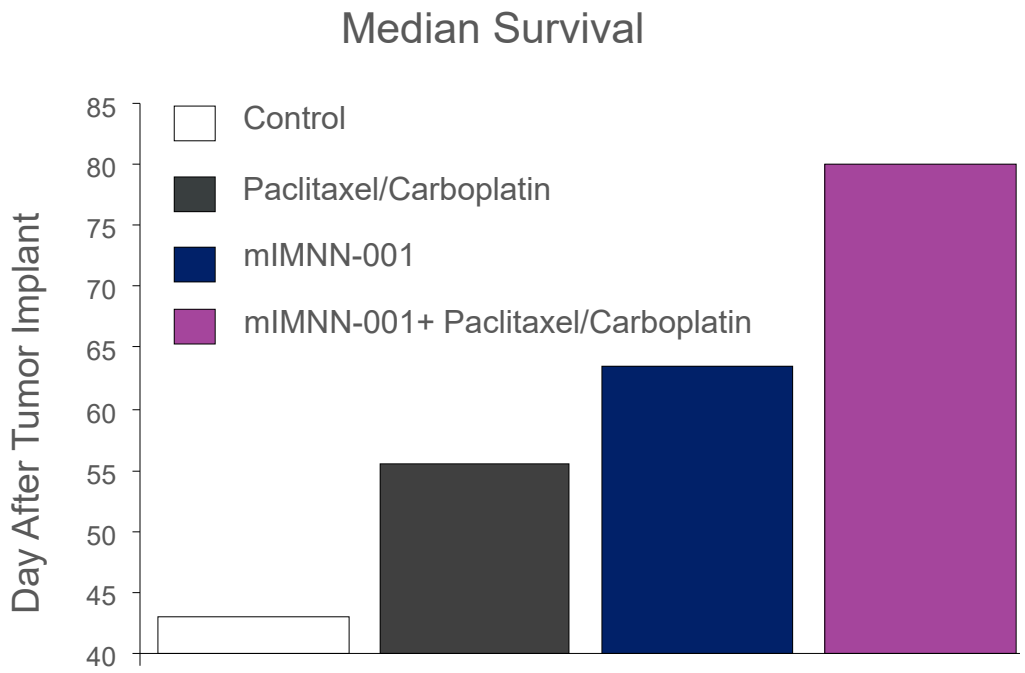
Sources: Cancer Statistics, American Cancer Society; Globocan; SEER database. CDC

# Survival Benefit of IMNN-001 in an ID-8 Mouse Ovarian Cancer Model

Dose dependent effects of intraperitoneal mIMNN-001:

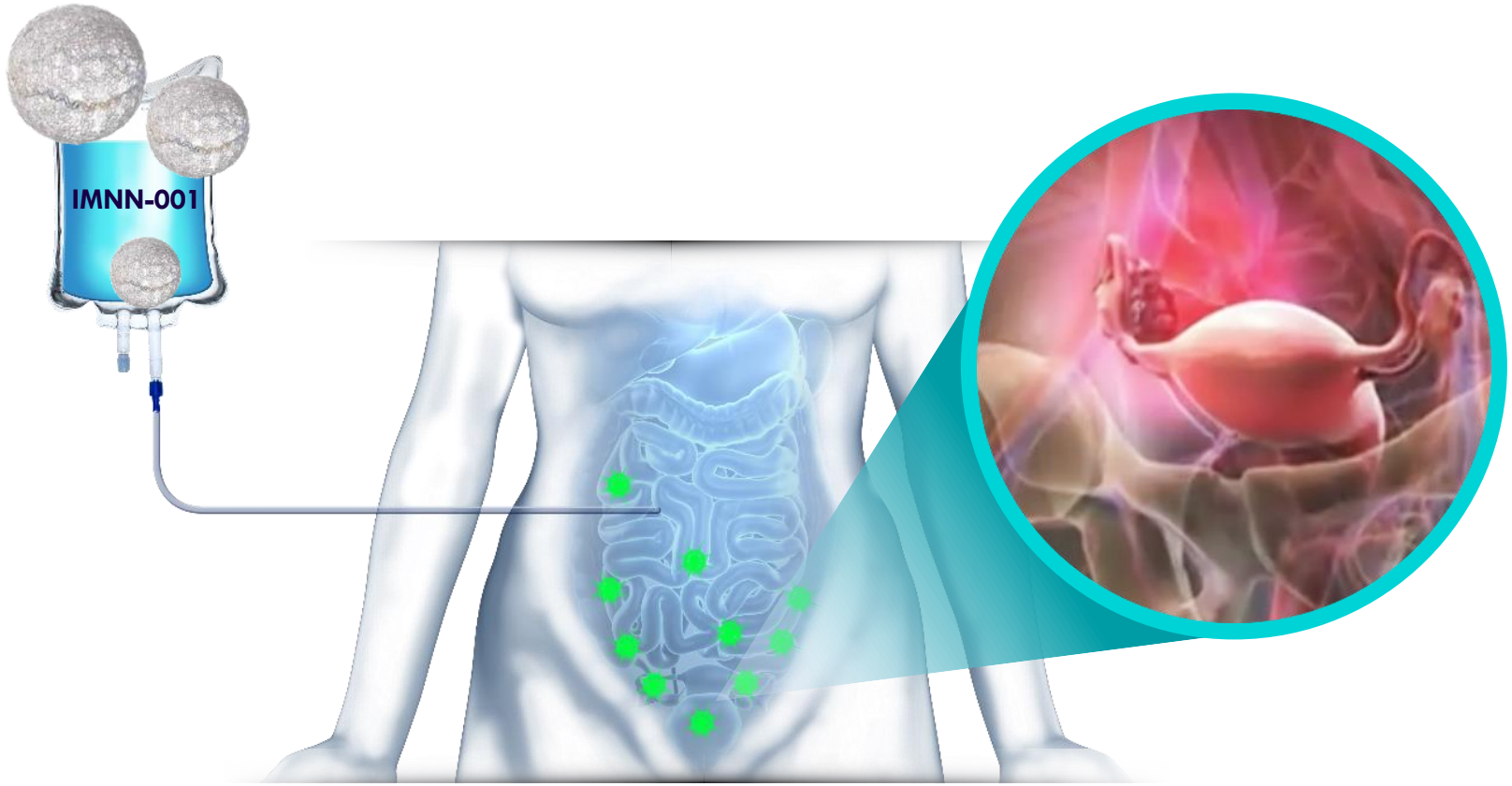
- Reduction in tumor ascites
- Reduction in tumor weight
- Improvement in survival



# IMNN-001 Targets the Micro-Environment of Ovarian Cancer

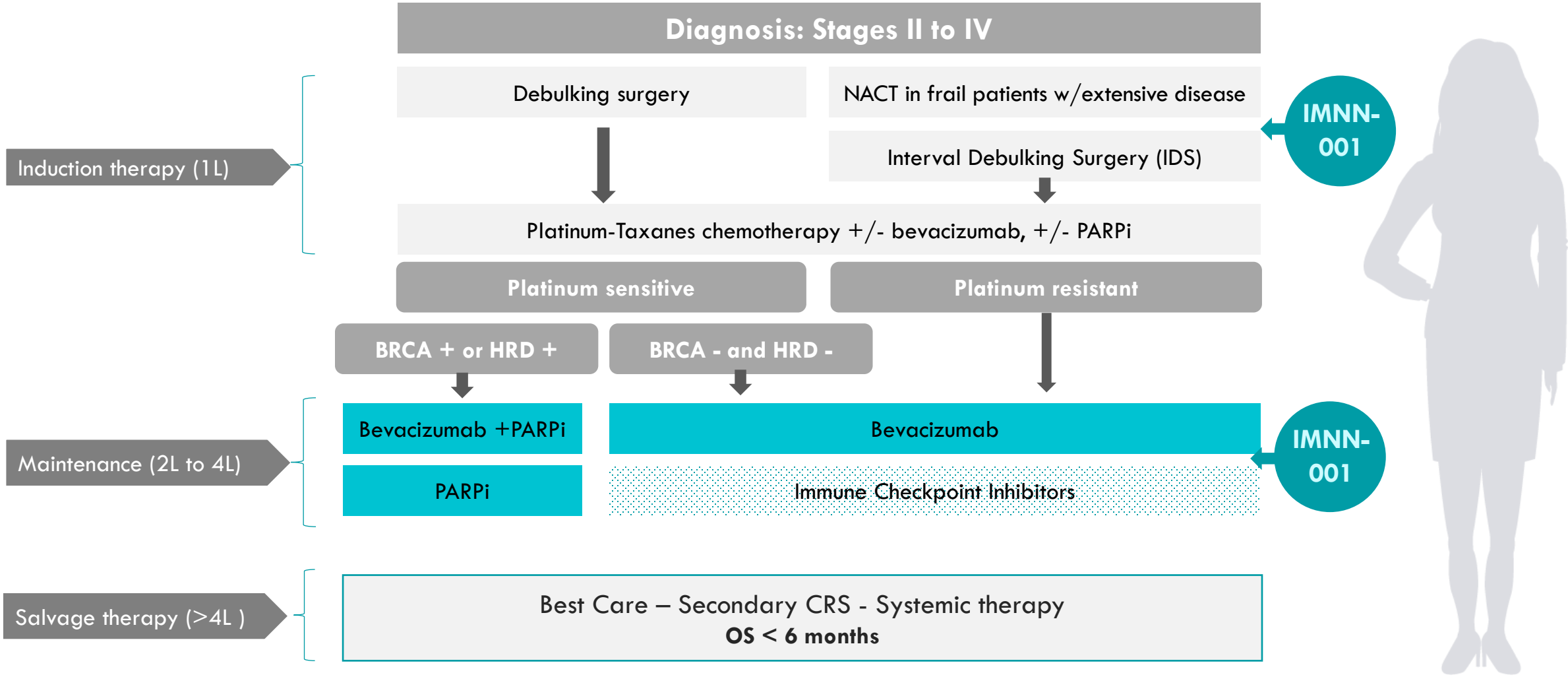
*Local production of safe and durable levels of a powerful anti-cancer immune agent, IL-12*




Local Expression of IL-12 Favors
Immune Modulation in Tumor Microenvironment

- Intracavity infusion of IMNN-001 has demonstrated durable and local expression of IL-12 in the peritoneum
- No supraphysiological increases in IL-12 commonly associated with the bolus rIL-12 minimizes excessive systemic exposure of IL-12, thereby giving a favorable safety profile to IMNN-001

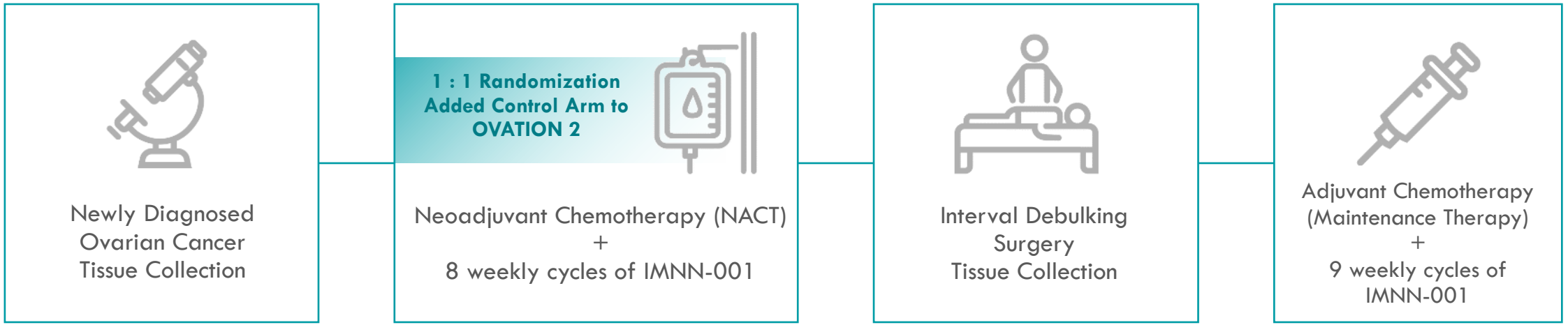
# As an Immuno-oncology Agent, IMNN-001 has the potential to play a key role in new combination strategies




*Sources*: NCCN Clinical Practice guidelines – Ovarian Cancer, Version 2.2020. JNCCN.org, Vol.19 Issue 2, Feb. 2021Annals of Oncology doi:10.1093/mdz104

# IMNN-001 OVATION 2 Ovarian Cancer Study

*To Determine Efficacy and Biological Activity With NAC in Stage III/IV Patients*




**Ovarian Cancer Patients**
(FIGO IIIC & IV)

- 110 patients. **Enrollment completed**
- 50% of expected primary endpoint data collected
- ITT population contains mix group of BRCA +/- subjects (BRCA+ have much longer time to PFS due to PARPi)

**Primary Endpoint**

- Progression Free Survival (PFS). After 80 PFS events or at least 16 months, whichever is longer

**Secondary Endpoints**

- Clinical Response (ORR), Pathological Response, Surgical Resection Scores (R0, R1, R2), Biological Response, Safety

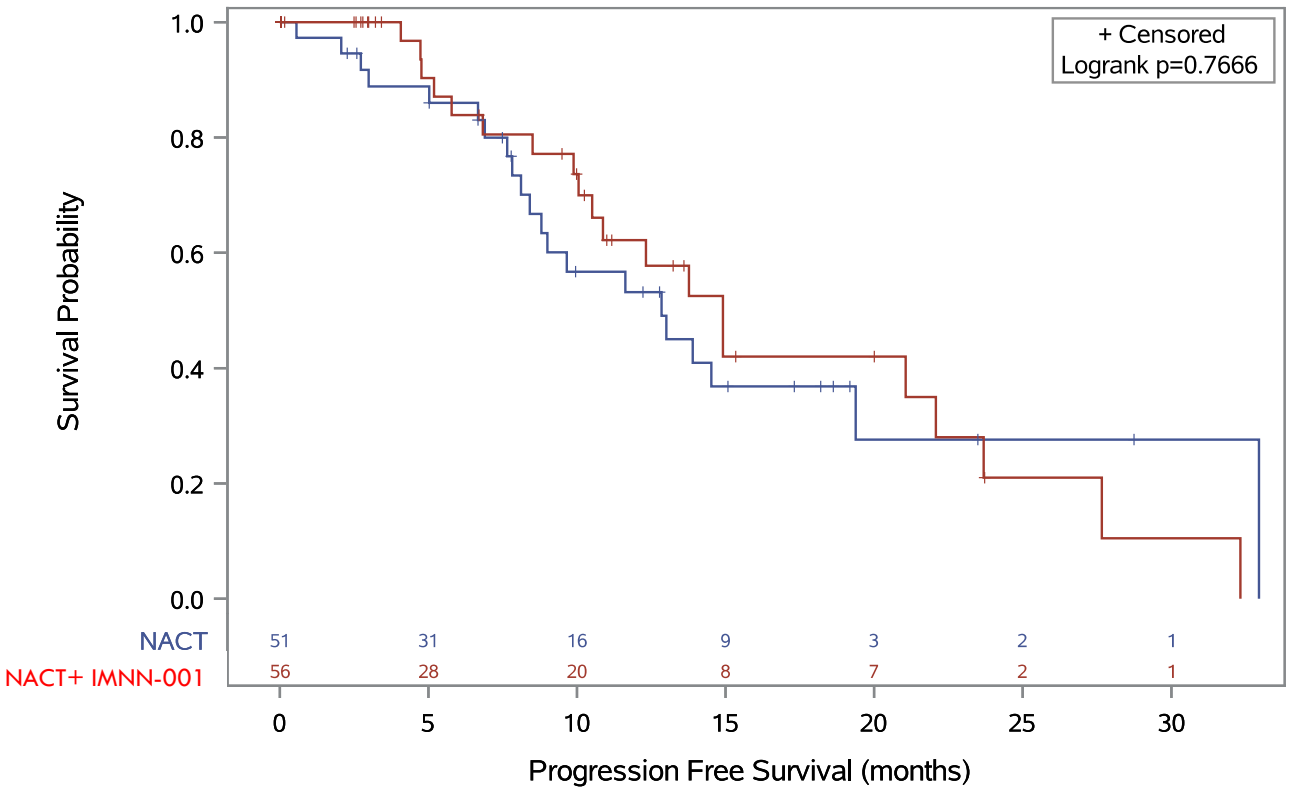
# Interim OVATION 2 Data suggest that IMNN-001 is Safe and Active

*ITT population: PFS benefit likely confounded by PARPi positive impact (50% of events)*

| ITT population | NACT ONLY | NACT + IMNN-001 |
|---|---|---|
| Interval Debulking Surgery (n=70) R0 Resection Rate | 56% | 68% |
| Median Time to Progression (mos.) 50% of events | 12.8 | 15.0 |
| Chemotherapy Response Score of CRS3 | 17% | 31% |

- HR 0.91 (95% CL, 0.49-1.70) *P*=0.767

**Celsion Study 201-17-201: Analysis of Progression Free Survival Time (Cutoff Date: 06SEP2022)**
**Kaplan-Meier Survival Plot and Log-rank Test**
**All subjects are included**




| | Subjects | Event | Censord | Median Survival | 95% | CL |
|---|---|---|---|---|---|---|
| NACT | 51 | 21 | 30 | 12.84 | 8.41 | 19.38 |
| NACT+ IMNN-001 | 56 | 20 | 36 | 14.91 | 10.51 | 22.08 |

# Interim OVATION 2 Data Indicates Subjects on IMNN-001 who are BRCA-/HRP may have Improved PFS

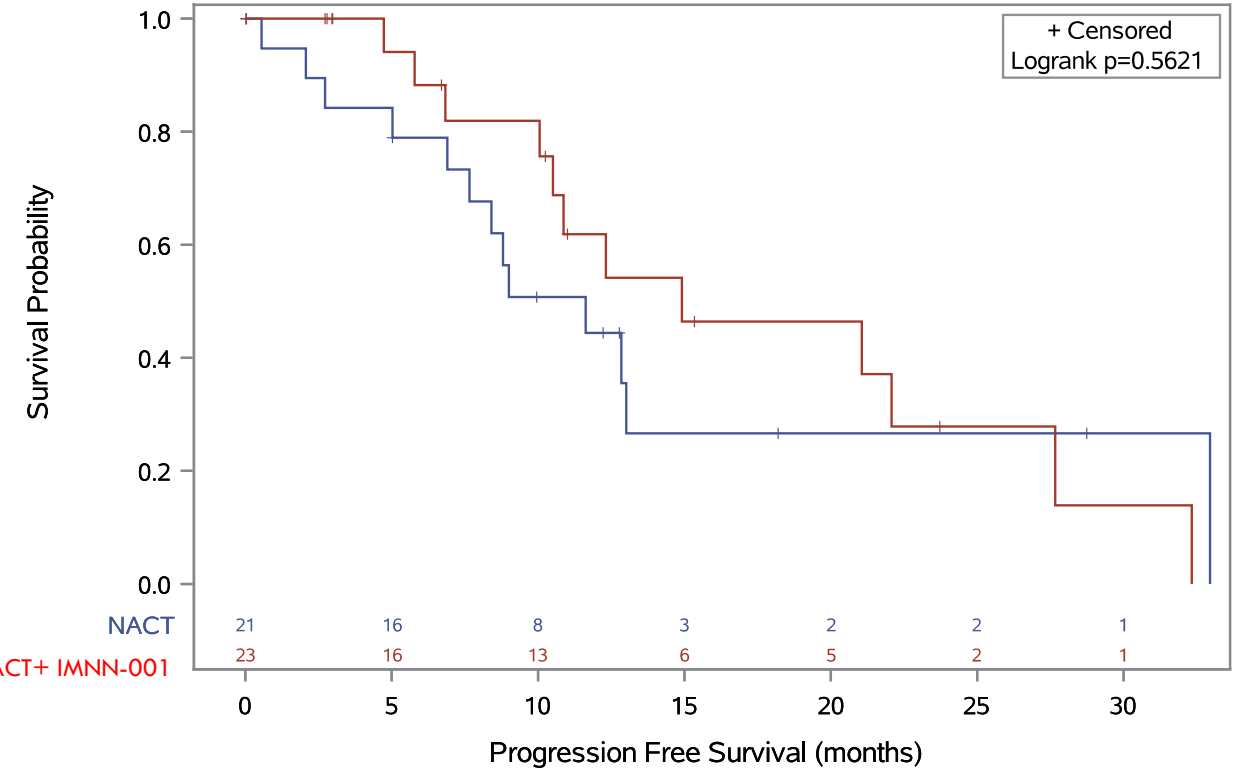
*Sub-population of patients with the greatest medical need*

## Targeted Therapy Approach

HRP (homologous recombination proficient with no BRCA 1/2 mutations)

- Early data suggests 3-month improvement in this identified subgroup of interest
- About **45% of ovarian cancer patients** are not getting a clinical benefit from PARP inhibitors
- HR 0.79 (95% CI, 0.35-1.77) *P*=0.563

**Celsion Study 201-17-201: Analysis of Progression Free Survival Time (Cutoff Date: 06SEP2022)**
**Kaplan-Meier Survival Plot and Log-rank Test for BRAC "Negative" Subjects**
**Only Subjects with known BRAC status are included**

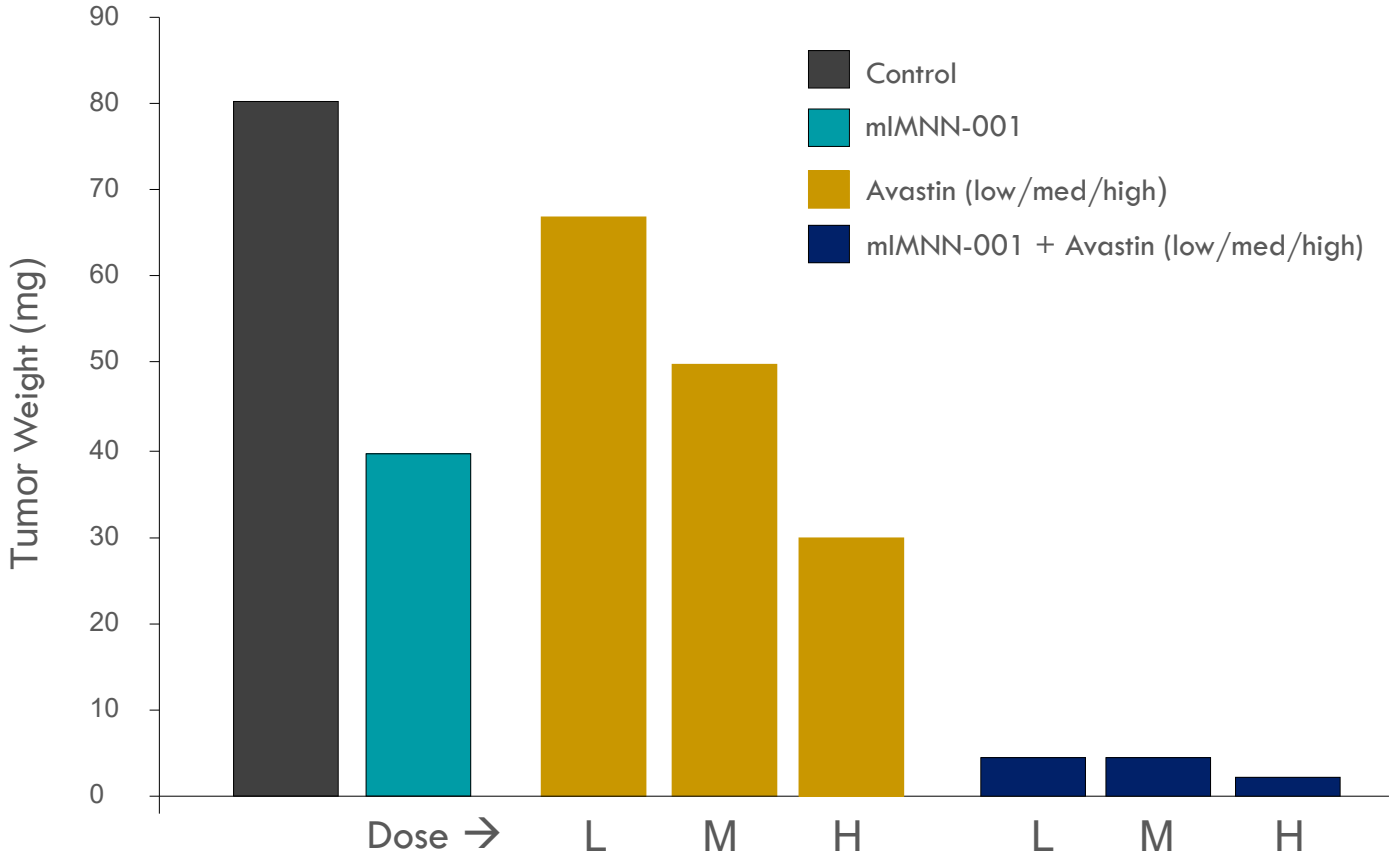



| | Subjects | Event | Censored | Median Survival | 95% | CL |
|---|---|---|---|---|---|---|
| NACT | 21 | 13 | 8 | 11.63 | 6.899 | |
| NACT+ IMNN-001 | 23 | 12 | 11 | 14.91 | 10.05 | 27.66 |

HR 0.79 (95% CI, 0.35-1.77) *P*=0.56

# Synergistic Antiangiogenic Effect of IMNN-001 + Avastin® in Ovarian Cancer

## SKOV-3 Ovarian Cancer in Nude Mice

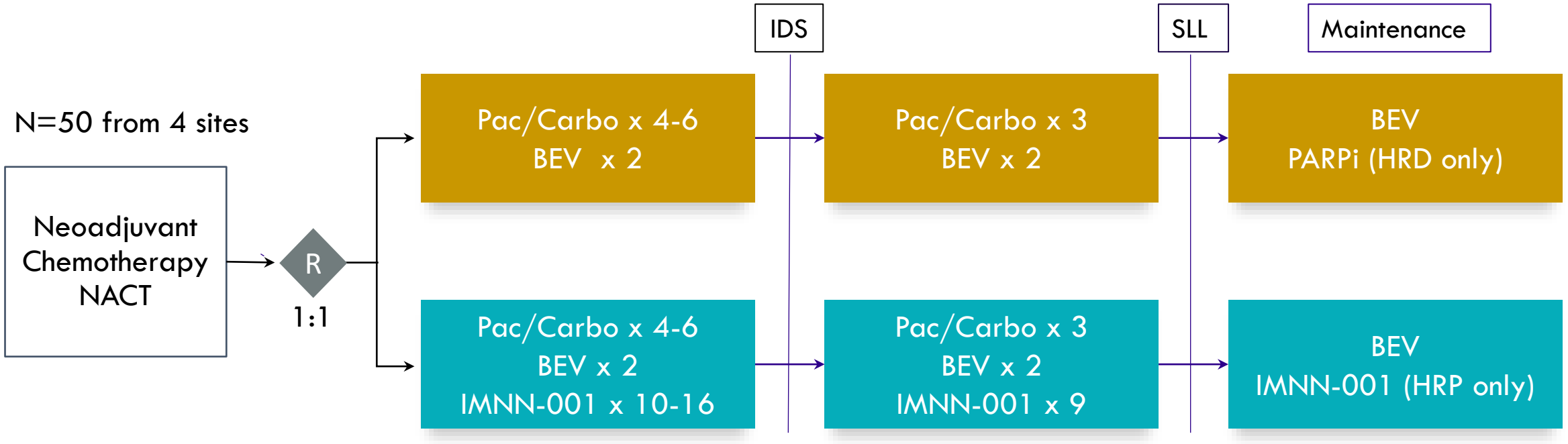



## Key Rationale for Combination of IMNN-001 with Avastin®

- Synergistic efficacy potential of VEGF level reduction by Avastin and VEGF production inhibition by IMNN-001
- Efficacy improvement of low dose Avastin by IMNN-001 combination improves its therapeutic index and cost

# New Phase 2 Study in Combination with bevacizumab

*Avastin® (BEV) + IMNN-001 Study Design in Advanced Epithelial Ovarian Cancer*



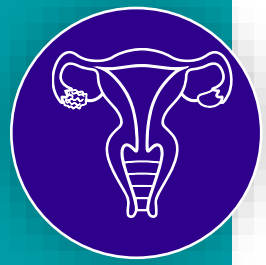

**Primary Endpoint** = Second Look Laparotomy (SLL)

**Secondary** = Progression-Free Survival (PFS)

Interval Debulking Surgery (IDS)

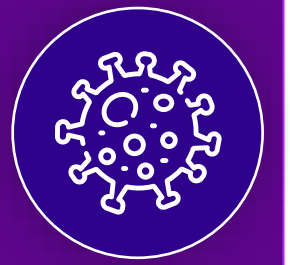
# Summary of Development Programs

**IMNN-001** offers a novel way to harness the powerful immunological properties of IL-12: the "Master Switch" to the body's immune system.



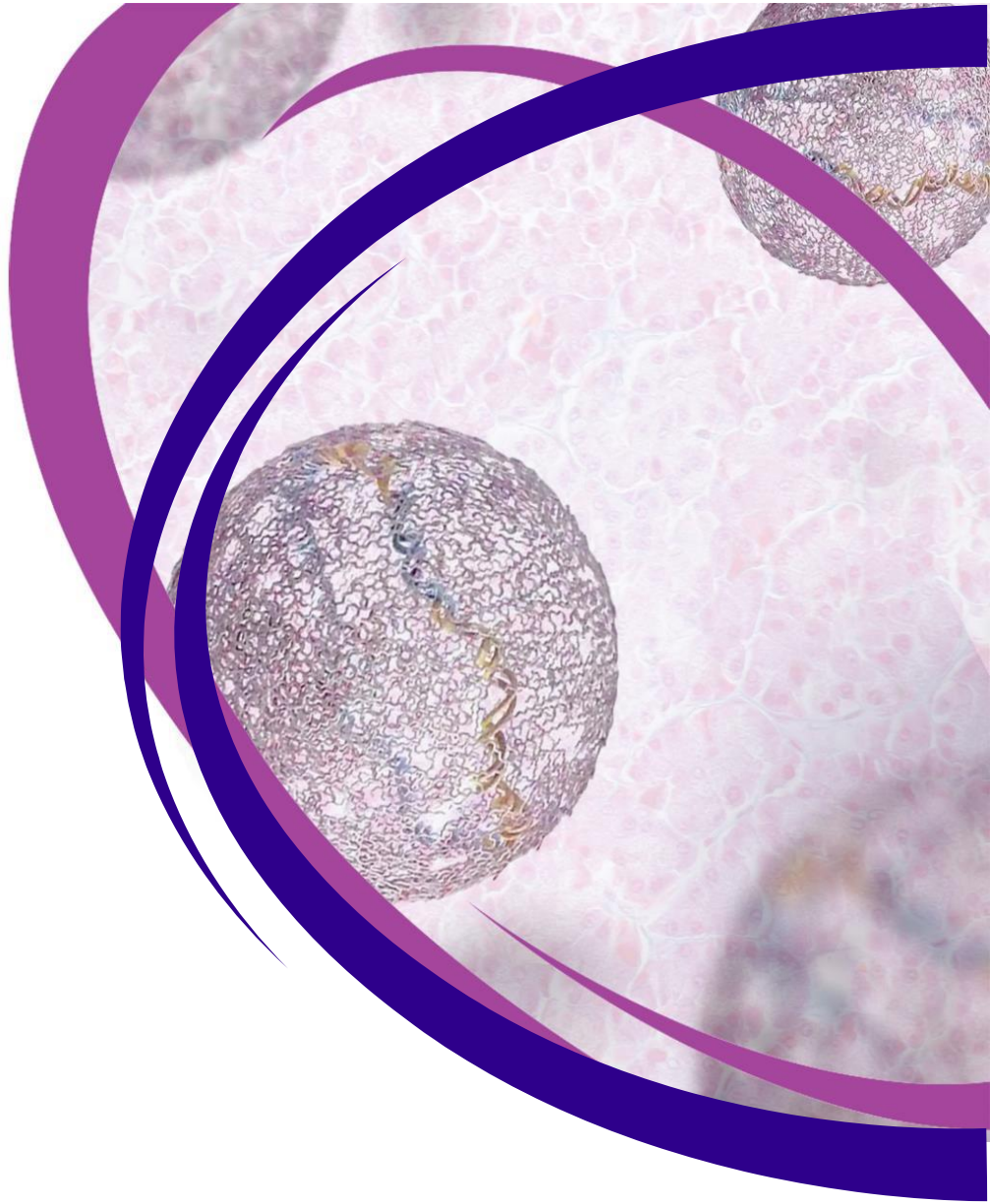
- Five completed ovarian cancer trials demonstrate **biologic and clinical activity**
- Safety and activity signals in Phase I; Mechanism of action confirmed
- **OVATION 2 offers new hope for ovarian cancer patients.** Interim data are promising, with potential of a targeted therapy approach in BRCA negative sub-group
- One new phase 2 trial will explore **combination strategy with VEGF inhibitors**

PlaCCine SARS-CoV-2 Proof Concept has demonstrated that our multicistronic formulated plasmid DNA platform can produce a robust immune response.



- **Evidence of IgG, neutralizing antibody and T-cell responses and protection against live virus challenge**
- Activity demonstrated with both single & bicistronic vectors
- **Immune quality is superior to commercial mRNA vaccine benchmark** (CD8 T cells)
- Evidence of **8-month durability** (ongoing study)
- Evidence of **9-month stability at 4°C** (ongoing study)
- Non-Human Primate study demonstrates initial POC
- **IMNN-101**: Seasonal Booster – One shot approach

# Milestones & Financials



# Upcoming Key Milestones:

*Robust Flow of Value Creating Activities*

**1H 2023**

- Initiation of IMNN-001 Combo trial with bevacizumab
- IMNN-101 SARS-CoV-2 Pre-IND Meeting
- PlaCCine Next Pathogen Target

**2H 2023**

- IMNN-001 OVATION 2 Interim Data
- PL-X Pre-clinical Challenge Data
- IMNN-101 SARS-CoV-2 IND
- IMNN-201 POC Data

**1H 2024**

- IMNN-101 SARS-CoV-2 Phase 1 Results
- IMNN-001 OVATION 2 Topline Results
- Interim Results IMNN-001 + bevacizumab
- PL-X IND filing

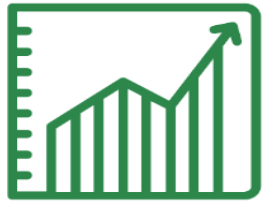
**2H 2024**

- IMNN-101 SARS-CoV-2 Phase 1/2, 1 year follow up data
- Interim Results IMNN-001 + bevacizumab
- IMNN-201 IND
- PL-X Phase 1 Results

# Strong Balance Sheet Supports Upcoming Milestones

*Cash Runway into 2025*

| | |
|---|---|
| Cash + Investments @ 12/31/2022 | $38.9 million |
| Projected NOL sales – 2022-2024 | + $3.5 million |
| Total | **$42.4 million** |
| Estimated cash usage/quarter (2023) | **~$5 million** |
| Cash Runway at current spending | **Into 2025** |



| | |
|---|---|
| Common shares outstanding @ 3/31/2023 | 9.0 million |
| + Stock Options | 0.9 million |
| + Warrants | 0.2 million |
| Fully diluted shares outstanding | **10.1 million** |
| Market Capitalization | **~ $10 million** |
| Avg Daily Trading Volume | **~ 75,000** |

# Corporate Information

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