

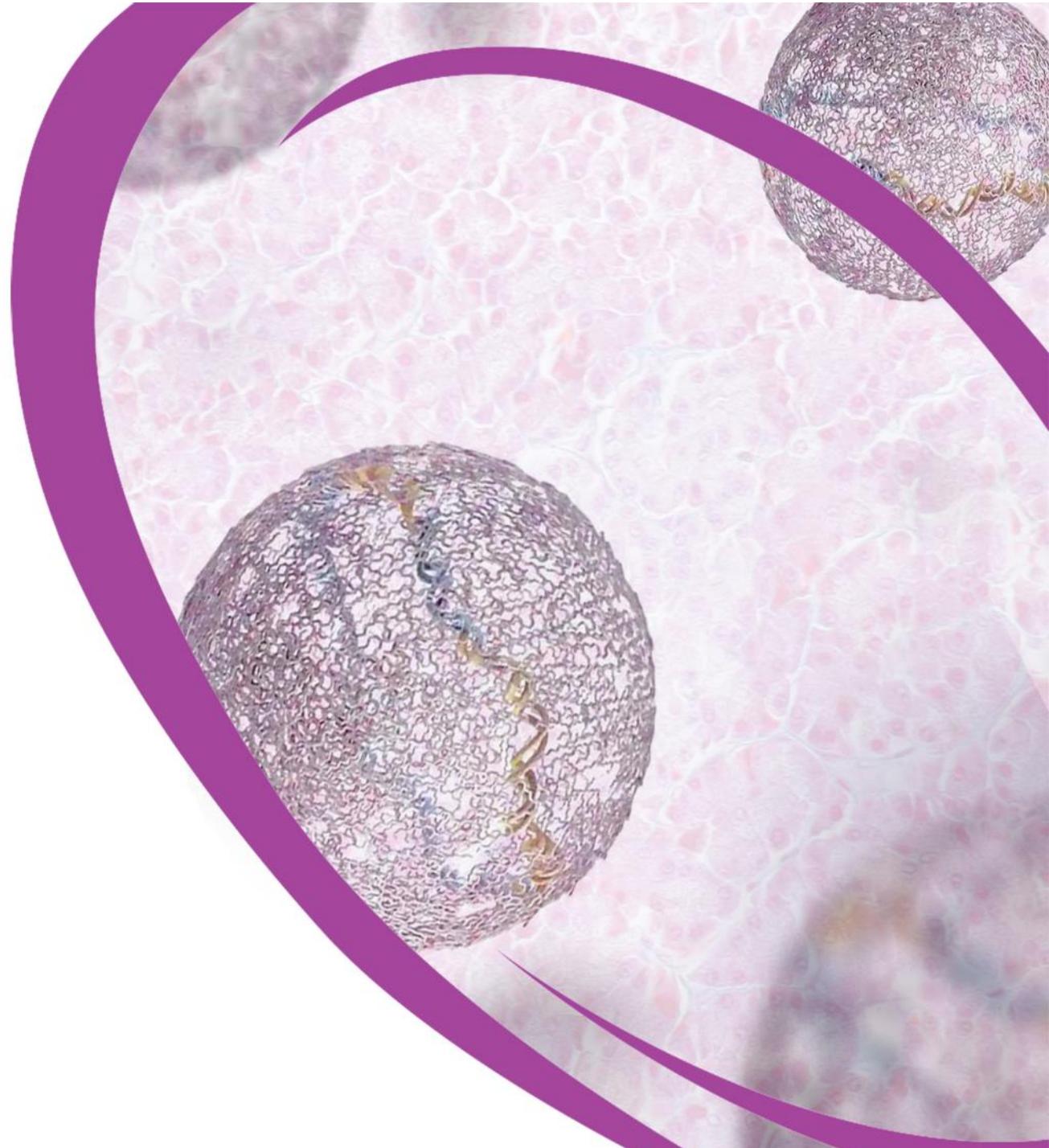


## Corporate Presentation

Nasdaq: CLSN

H.C. Wainwright  
24th Annual Global Investment Conference

September 13, 2022



# Safe Harbor Statement

This presentation and any statements made during any presentation or meeting contain forward-looking statements related to Celsion Corporation (“Celsion”) 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; Celsion’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 Celsion's most recent periodic reports filed with the Securities and Exchange Commission, including Celsion’s Form 10-K for the year ended December 31, 2021.

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 Celsion does not undertake any obligation to update publicly such statements to reflect subsequent events or circumstances except as required by law.

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

- Leveraging **innovative plasmid DNA and proprietary synthetic delivery systems platforms** to create novel therapeutics
- Initial clinical focus is on **immuno-oncology** and **infectious diseases**
- Randomized phase II trial underway with GEN-1 (**IL-12 immunotherapy**) for the **localized treatment of advanced ovarian cancer**; Fast Track and Orphan designations; plans for combination studies to address a multibillion-dollar market
- Development of the PLACCINE platform in prophylactic vaccines, with **strong evidence of immunogenicity and durability of protection in a SARS-CoV-2 proof-of-concept model**. Discovery efforts in **cancer vaccines**
- Focus on **continued platform innovation** and discovery
- **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



Nicholas Borys, MD  
Executive Vice President and  
Chief Medical Officer



Khursheed Anwer, PhD, MBA  
Executive Vice President and  
Chief Scientific Officer



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



Anthony Recupero, PhD  
Vice President  
Business Development



Anthra Pharmaceuticals Inc



Amersham

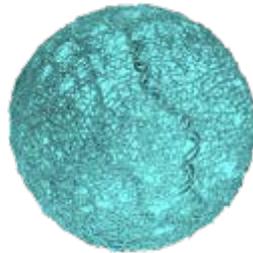


# Proprietary DNA Plasmid Platforms Encoding for a Variety of Proteins: cytokines, enzymes, mAb, antigens...

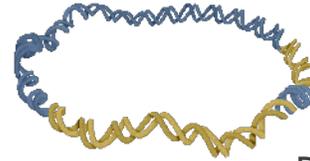
## TheraPlas®

- Polymeric Nanoparticle Delivers DNA Plasmids Coding for Therapeutic Proteins
- Safely Administered to Over 100 Patients To-Date

### Immuno-Oncology



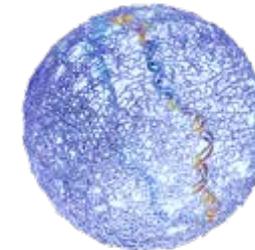
Phase II Localized IL-12 Evaluation in Advanced Ovarian Cancer  
Orphan Drug Designation: U.S. and EU  
Fast Track Designation



## PLACCINE®

- DNA Plasmid vectors engineered for next generation vaccine technology and delivered with a synthetic delivery systems free of a device or viral vector
- Designed for multiple antigens
- Option for the co-expression of immunomodulators

### Prophylactic & Therapeutic Vaccines



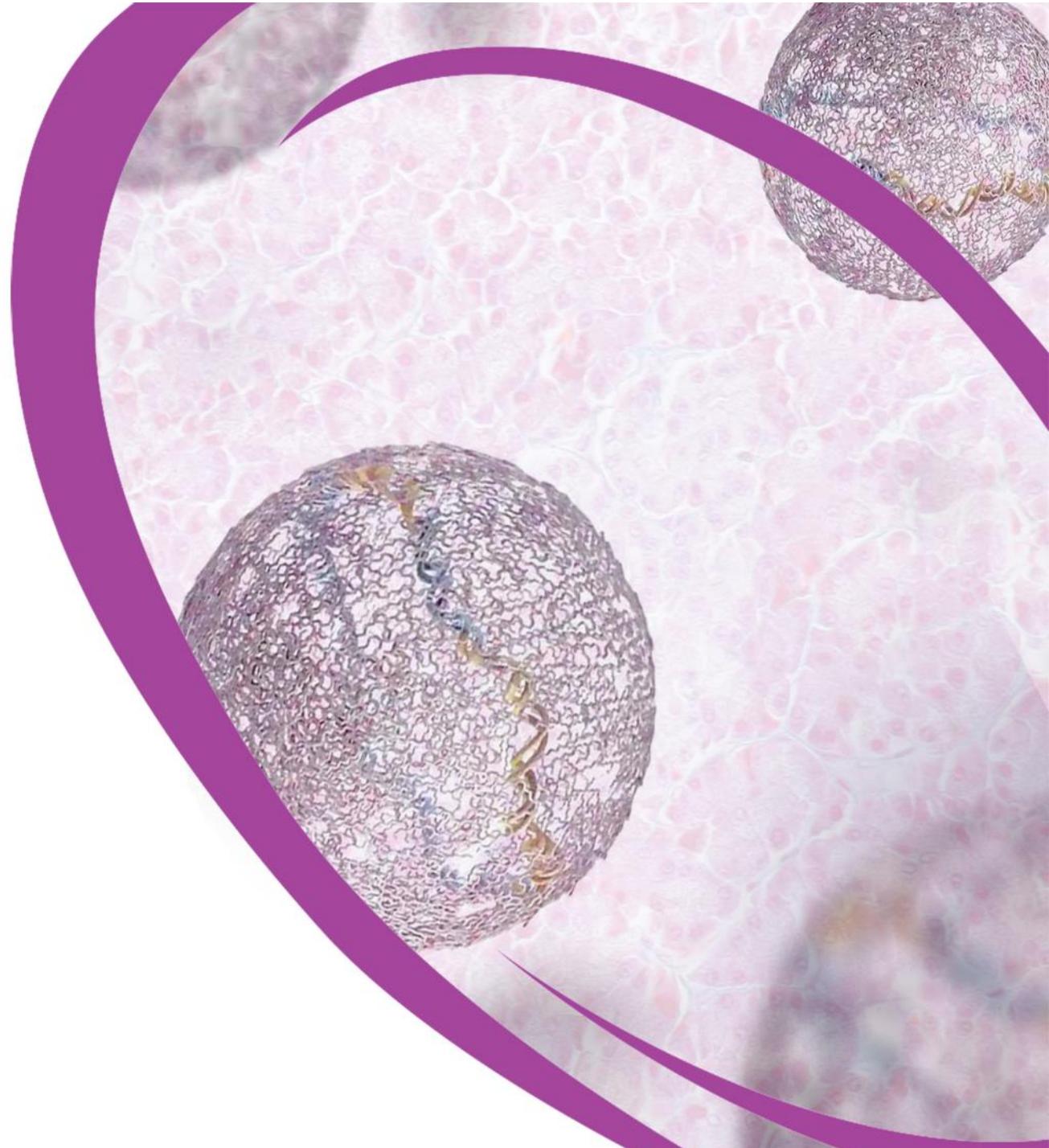
Proof-of-Concept to Demonstrate PLACCINE as Best-in-Class Vaccine Platform Using SARS-CoV-2 as a Benchmark

# Celsion's Pipeline of DNA-based Transformative Medicines

Platform	Program	Indication(s)	Discovery	IND enabling	Phase 1	Phase 2
TheraPlas	<b>IL-12 (OVATION)</b> Intraperitoneal (IP)	Advanced Ovarian, Fallopian Tube or Primary Peritoneal Cancer	GEN-1			
	<b>IL-12</b> IP in combination with <b>bevacizumab</b>	Advanced Ovarian, Fallopian Tube or Primary Peritoneal Cancer	GEN-1			
PLACCINE	<b>Multicistronic SARS-Cov2.</b> Proof-of-Concept	COVID-19	PL-COV			
	<b>Prophylactic Vaccine</b>	Infectious Disease target	PL-X			
	<b>Therapeutic Vaccine</b>	Cancer target	PL-Z			

GEN-1 IL-12

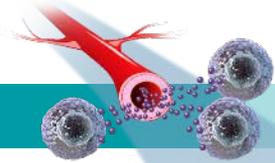
IMMUNO-ONCOLOGY  
PROGRAM



# IL-12: A Powerful Immune-Modulating Agent

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

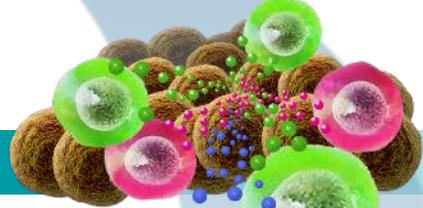
Activation/Proliferation



1

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

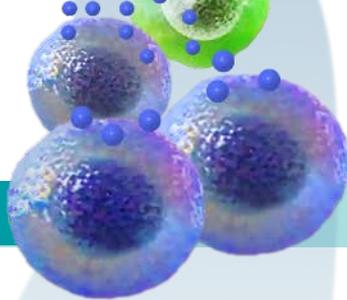
Maturation/Proliferation



2

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

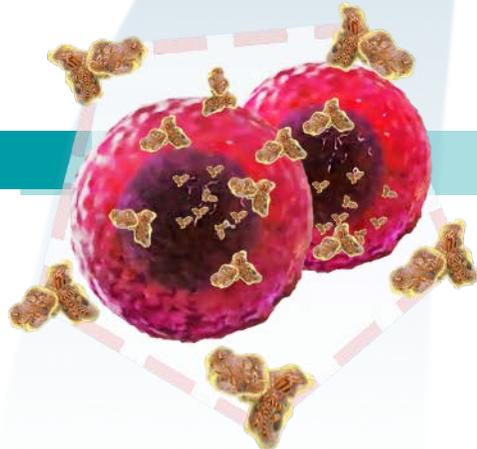
Anti-Angiogenesis



3

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

Inhibition of Immune Suppression

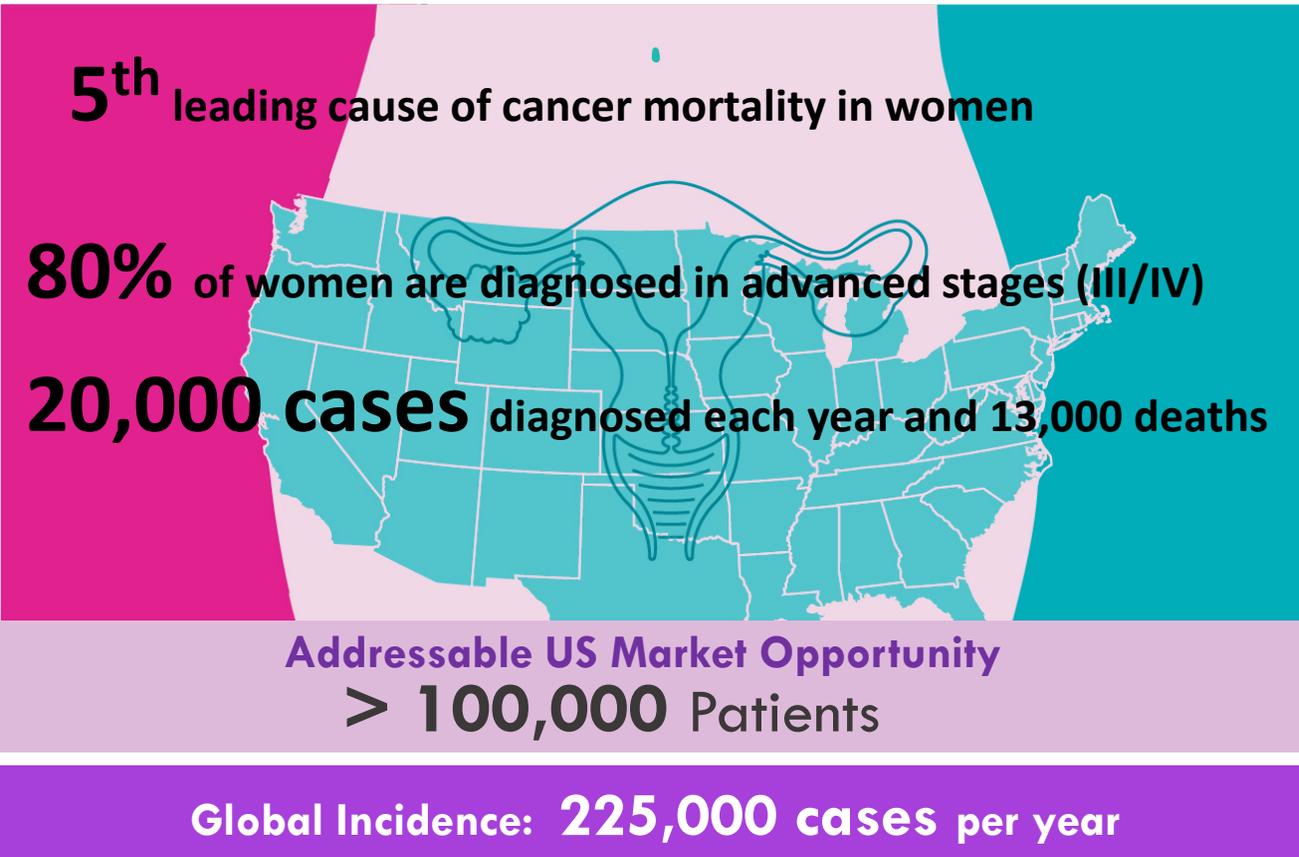


4

IL-12 inhibits regulatory T-cells that suppress immune responses by “hiding” the tumor from the body’s immune system

# First Target: Ovarian Cancer

50% will die within 5 years of diagnosis and the standard of care has remained stagnant for decades.



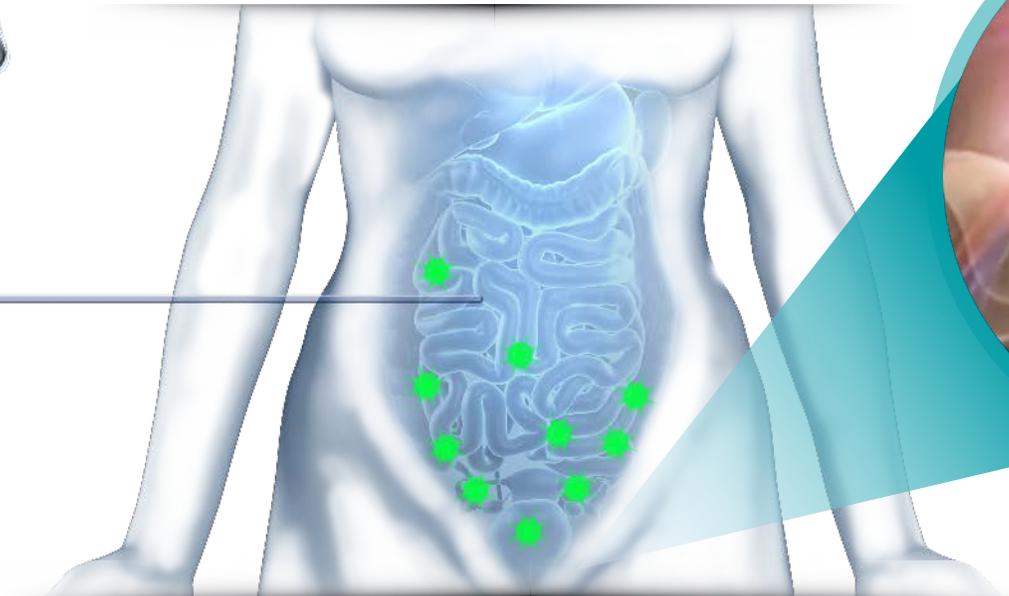
Epithelial ovarian cancer (EOC) is insidious and usually diagnosed late at an advanced stage. Though EOC initially responds to treatment, the recurrence rate is high. Recent treatments delay progression but overall survival has not improved. Hence there is a need for effective therapy for patients with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

**GEN-1 has the potential to revolutionize today's standard of care**



# GEN-1 Targets the Micro-Environment of Ovarian Cancer

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

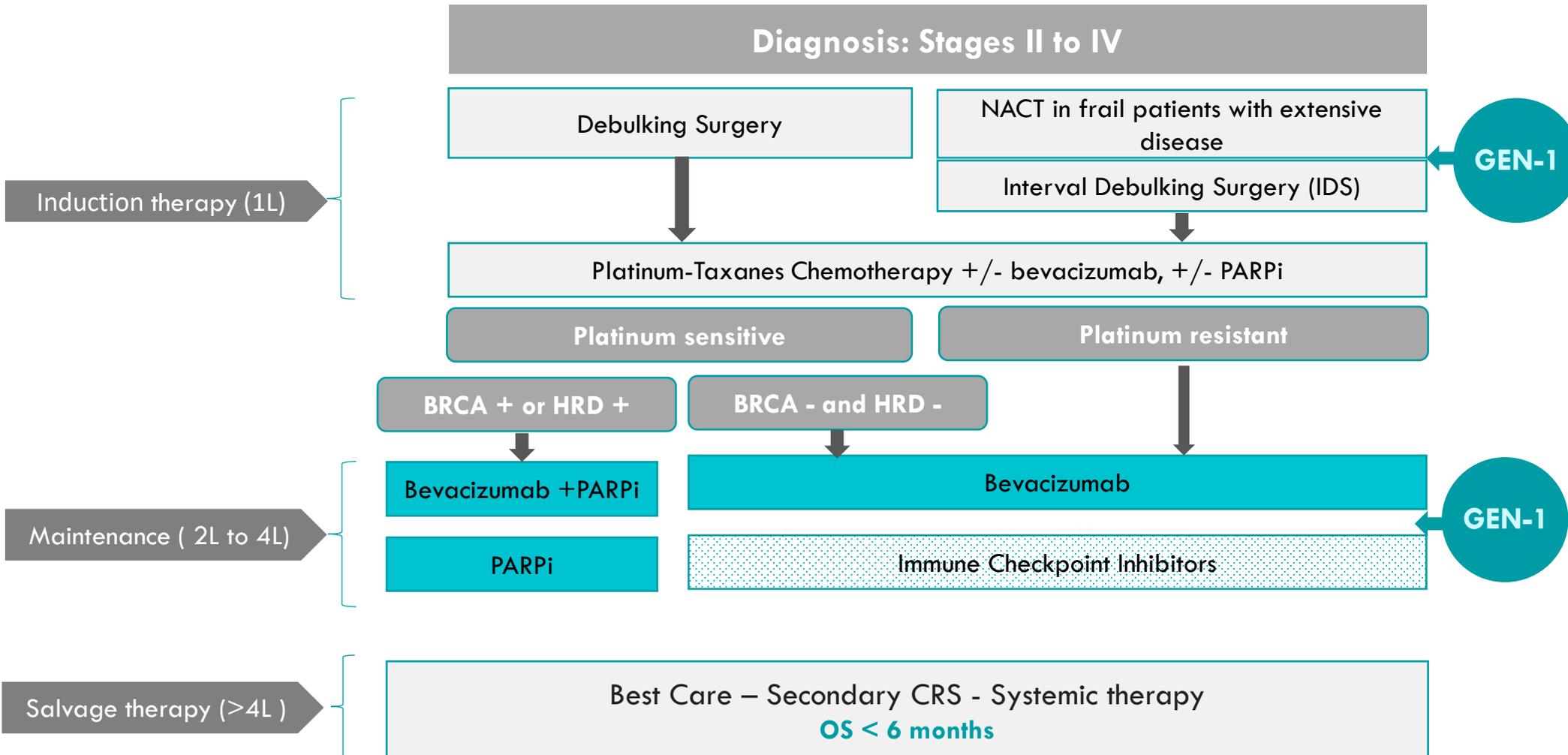


Intracavity infusion of GEN-1 has demonstrated durable and local expression of IL-12 in the peritoneum

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 GEN-1

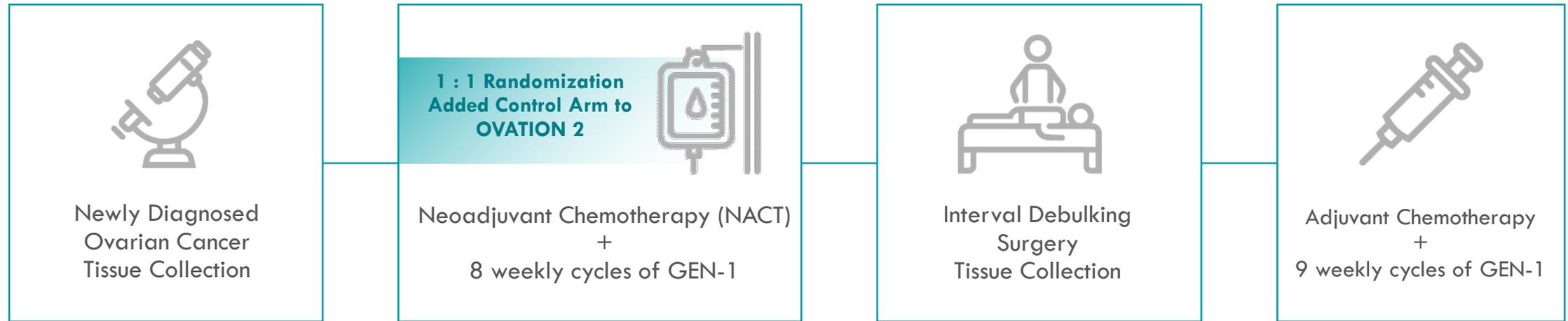
Local Expression of IL-12 Favors Immune Modulation in Tumor Microenvironment

# As an Immuno-oncology Agent, GEN-1 has the potential to play a key role in new combination strategies



# GEN-1 OVATION 2 Ovarian Cancer Study

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



## Ovarian Cancer Patients (FIGO IIIC & IV)

Up to 110 patients

14 patients in Phase I Run-in (100 mg/m<sup>2</sup>);

Up to 96 patients in Phase II

Randomized 1:1 NACT +/- GEN-1

## 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

**Additional Treatment Regimen vs. OVATION I Trial Design**

Continue GEN-1 treatment following surgery (Maintenance Therapy)

# GEN-1 OVATION 2 Ovarian Cancer Study

Interim data suggest that GEN-1 is safe and active

## Phase I/II Open Label Trial

- Phase I Portion (N=14) Completed
- 100 mg/m<sup>2</sup> GEN-1 Dose Confirmed
- 21 Clinical Sites in U.S. and Canada
- **Enrollment to be Completed in Q3 - 2022**

## Interim Data (50% of events)

Interval Debulking Surgery (n=70)  
R0 Resection Rate

Median Time to Progression (mos.)  
50% of events

Chemotherapy Response Score of CRS3

NACT ONLY	NACT + GEN-1
56%	68%
12.8	15.0
17%	31%

# GEN-1 OVATION 2 Ovarian Cancer Study: Interim Data in BRCA-/HRP

Greatest Medical Need

## Targeted Therapy Approach

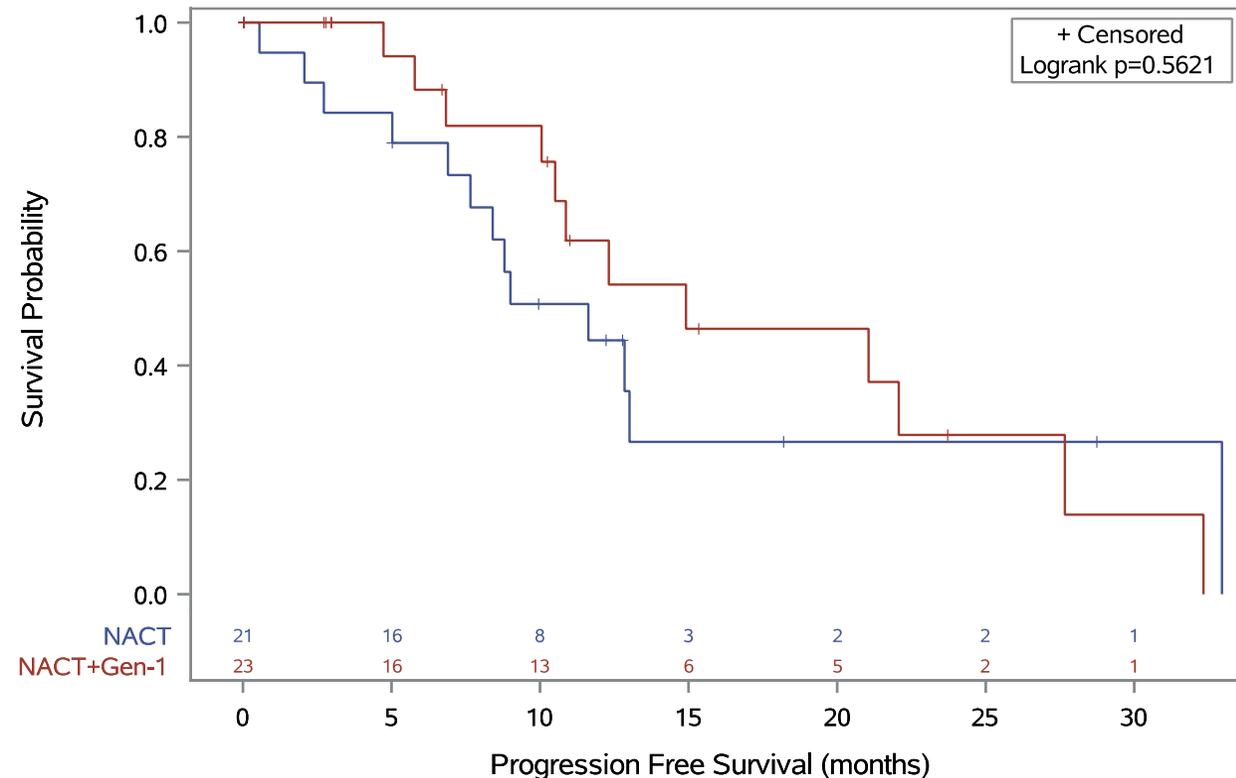
HRP (homologous recombination proficient with no BRCA 1/2 mutations)

- Median time to progression is about 9 months
- About **45% of ovarian cancer patients** are not getting a clinical benefit from PARP inhibitors

Interim OVATION 2 data indicates subjects on GEN-1 who are HRP may have improved PFS

- 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

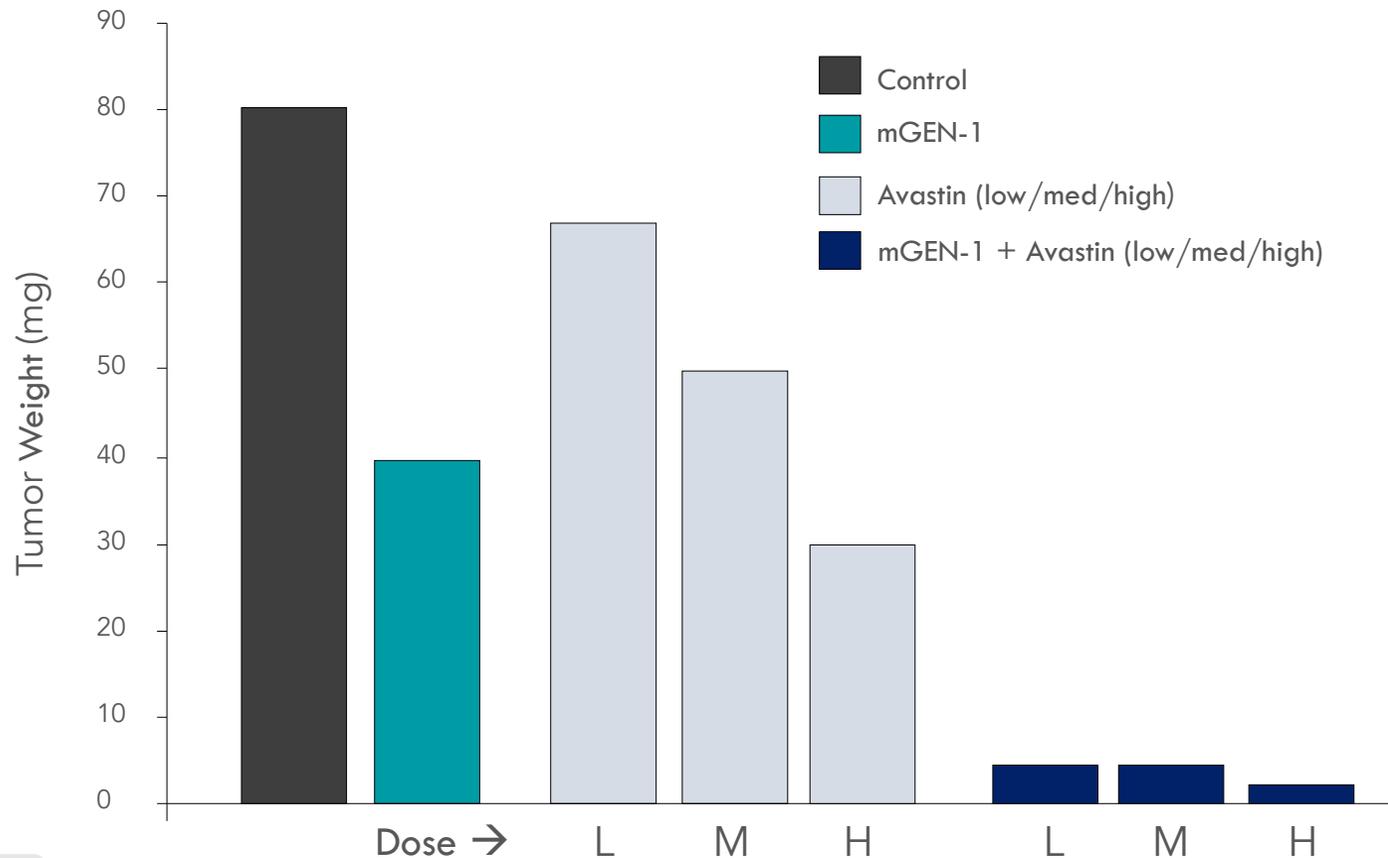


	Subjects	Event	Censored	Median Survival	95%	CL
NACT	21	13	8	11.63	6.899	
NACT + GEN-1	23	12	11	14.91	10.05	27.66

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

# Enhancement of Avastin® Antiangiogenic Agent Activity in Ovarian Cancer by GEN-1

SKOV-3 Ovarian Cancer in Nude Mice



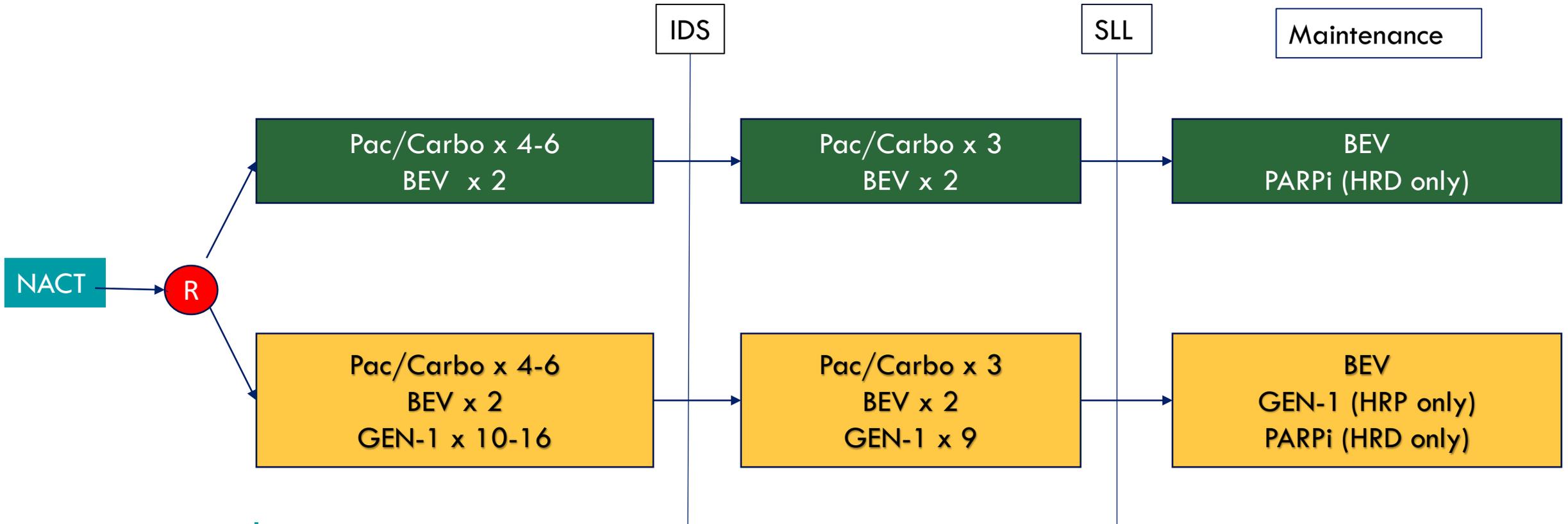
## Key Rationale for Combination of GEN-1 with Avastin®

Synergistic efficacy potential of VEGF level reduction by Avastin and VEGF production inhibition by GEN-1

Efficacy improvement of low dose Avastin by GEN-1 combination improves its therapeutic index and cost

# New Phase 2 Study in Combination with bevacizumab

Avastin (BEV)/GEN-1 Study Design in Advanced Epithelial Ovarian Cancer. Accepted by the FDA.



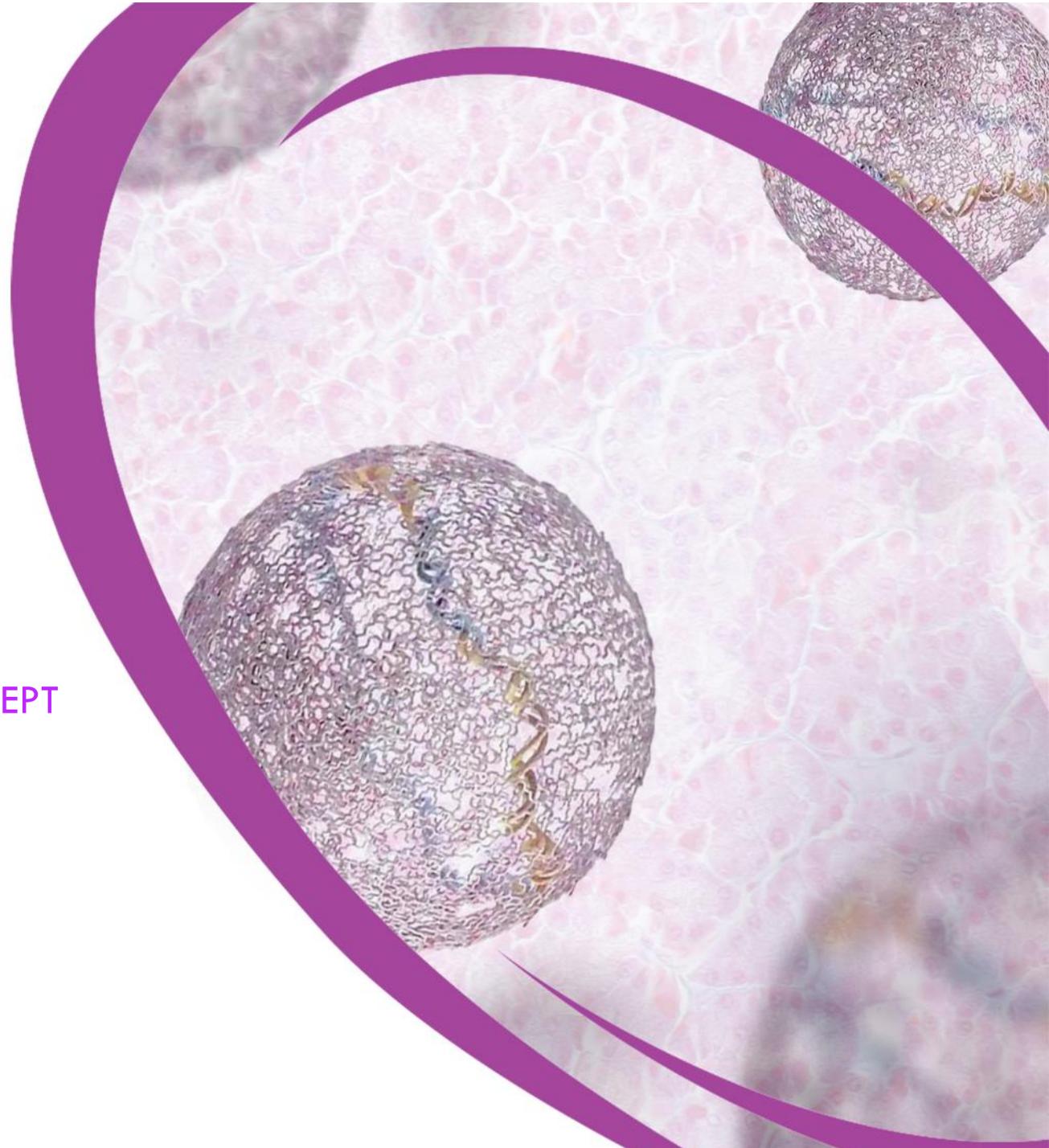
**Primary Endpoint** = Second Look Laparotomy (SLL)

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

Interval Debulking Surgery (IDS)

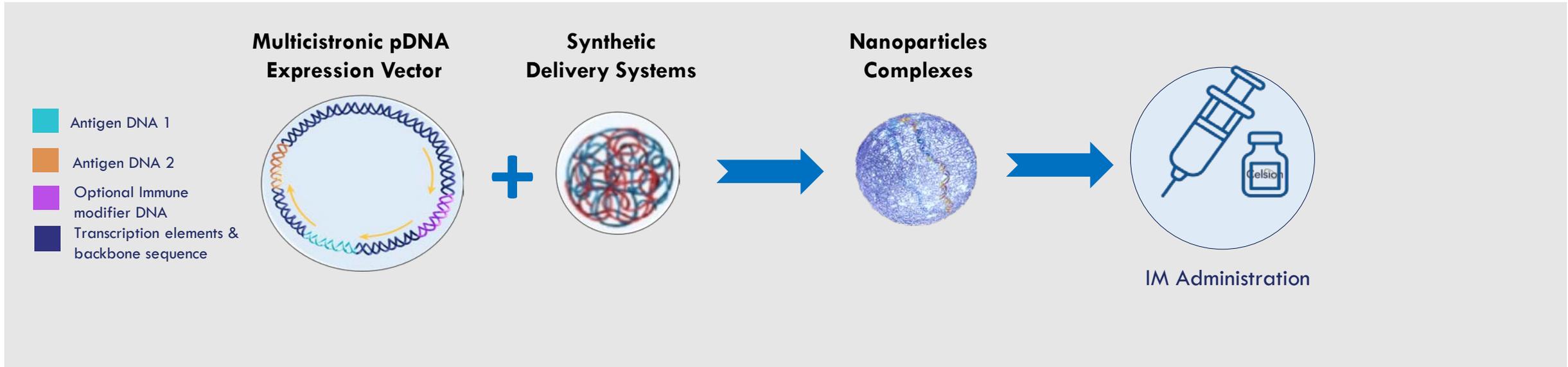
N=50 from 4 sites

**PLACCINE** SARS-CoV-2 PROOF OF CONCEPT  
PROPHYLACTIC VACCINES  
PROGRAM



# PLACCINE Platform: Powering the Next Generation of Vaccines

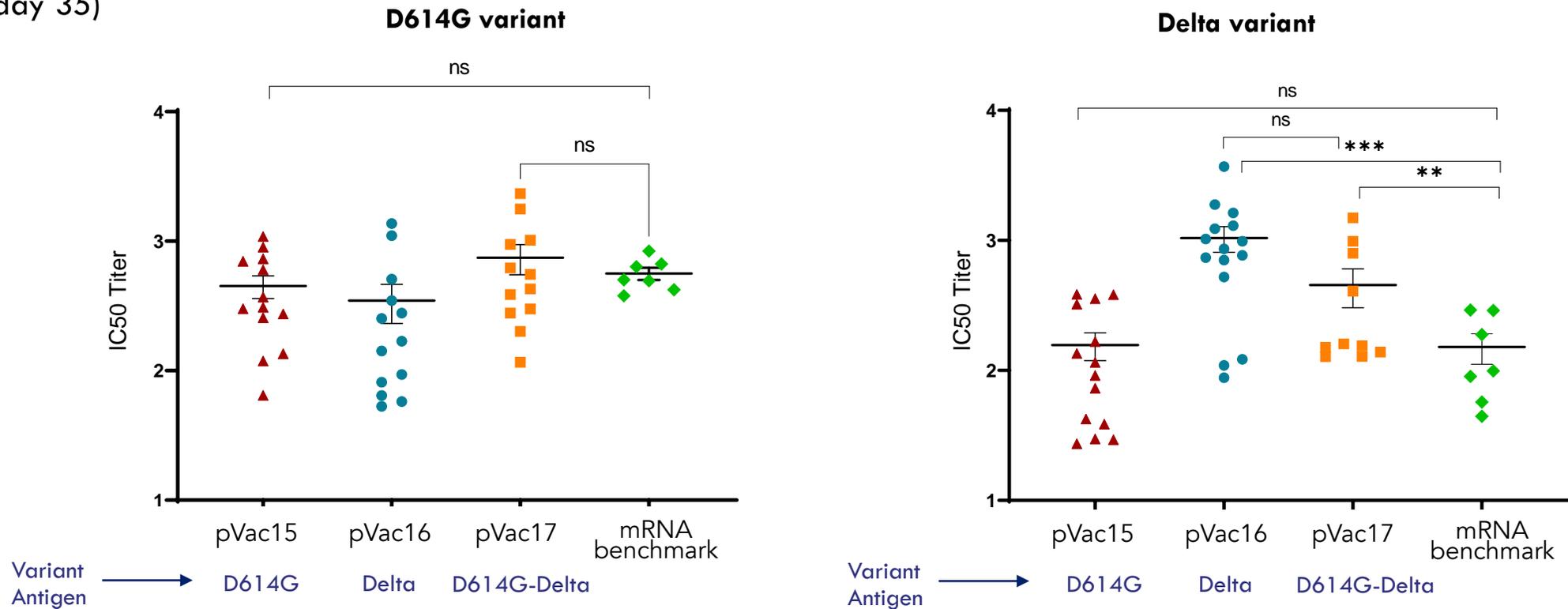
By addressing the shortcomings of current nucleic acid, viral vector and protein subunit vaccines



- Durability of protection** Durable antigen expression induces robust immunological response
- Breadth of protection** Multicistronic vectors increase the breadth of immune response and allows for combination vaccines
- Transmission advantage** Option for co-expression of potent immune modifiers increases the immune response and lowers the risk of viral shedding
- Safe and convenient** Synthetic delivery systems present no risk of genotoxicity or cytotoxicity. No need for a device. Convenient handling for pandemic control.
- Flexible Manufacturing** Truly versatile platform enables rapid response to changing pathogens. Stability at normal refrigerator temperatures simplifies handling and distribution.

# PLACCINE-SARS-CoV-2 Bicistronic Vaccine Produces Stronger Neutralizing Immune Response than mRNA Benchmark

- Vectors: **pVac-15** (D614G); **pVac-16** (Delta); **pVac-17** (D614G-Delta)
- 125 µg DNA
- IgG titer (day 35)



T-test (unpaired, two-tailed)

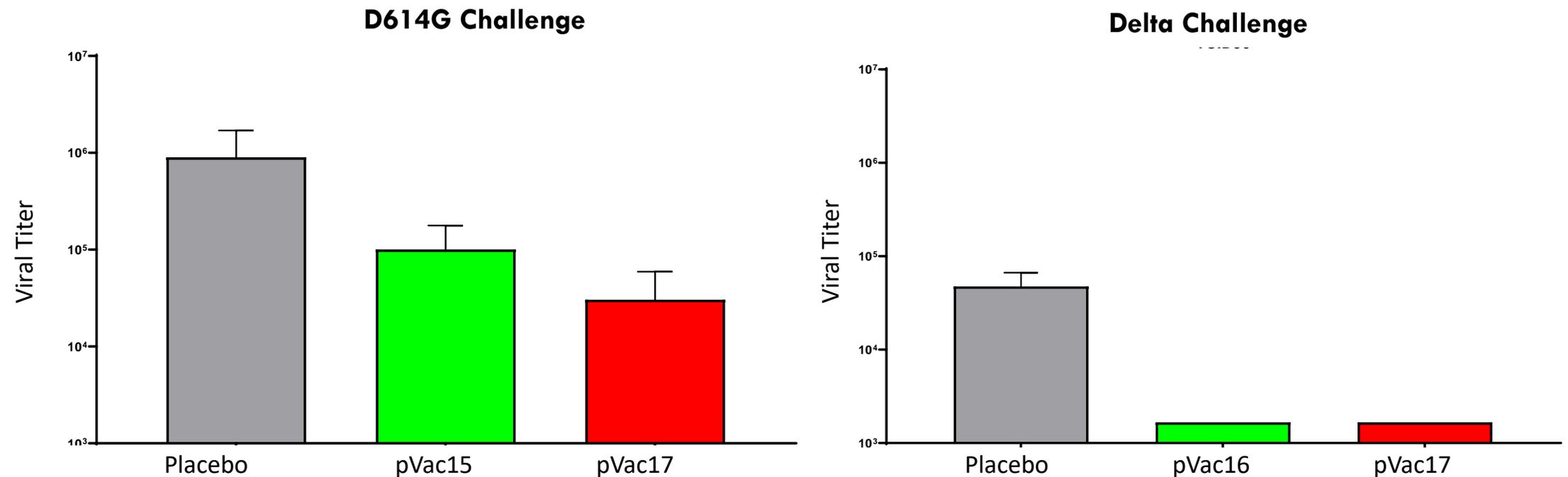
ns – nonstatistical; \* P value < 0.05; \*\* P value < 0.001; \*\*\* P value 0.001

# 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)
- 125  $\mu$ g DNA

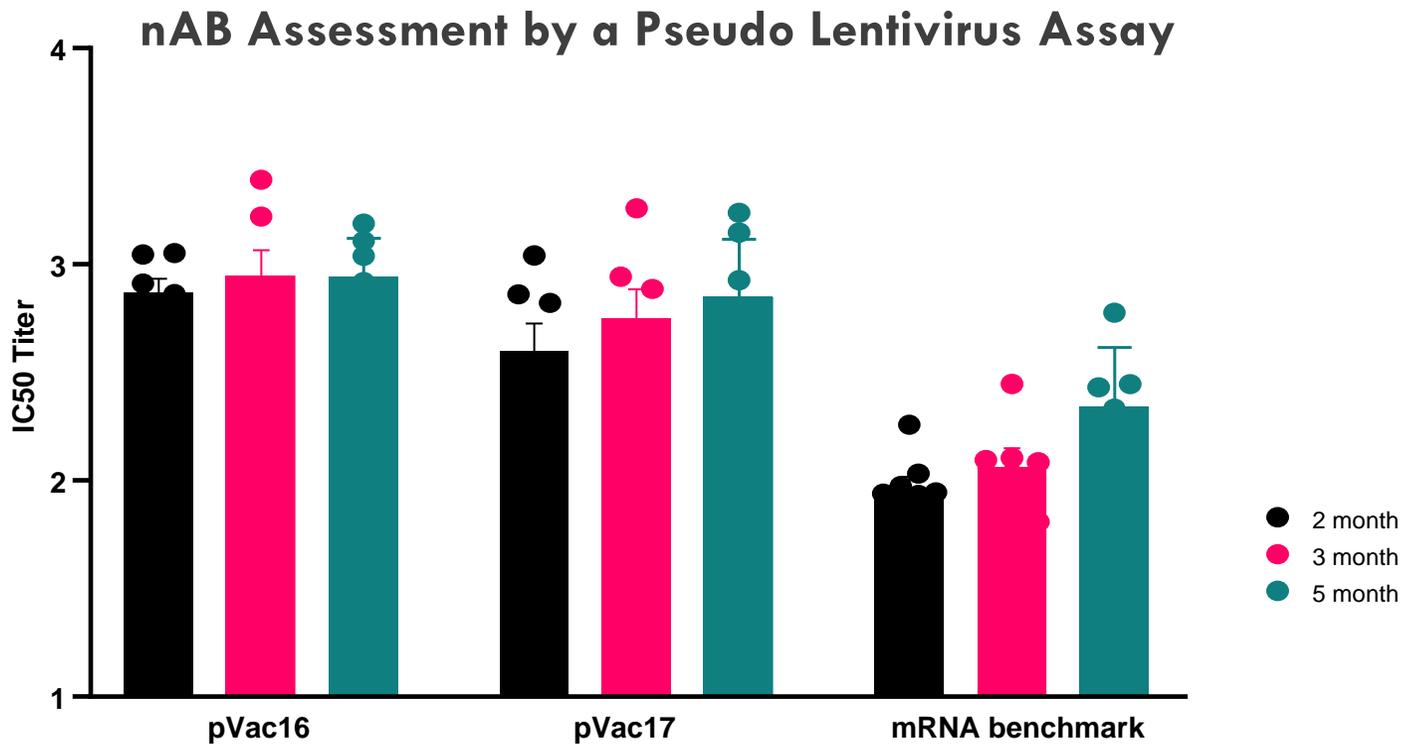
## TCID50 Tissue Culture Infection Dose



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

## Evidence of Durability For Up To 5 Months (Ongoing Study)

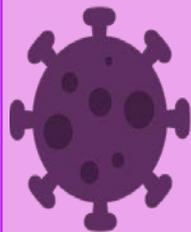
- Vectors: **pVac-16** (Delta), **pVac-17** (D614G -Delta)
- 125 µg DNA
- IgG titer (2, 3, 5 months)
- Study: 22-002



# Summary of Development Programs



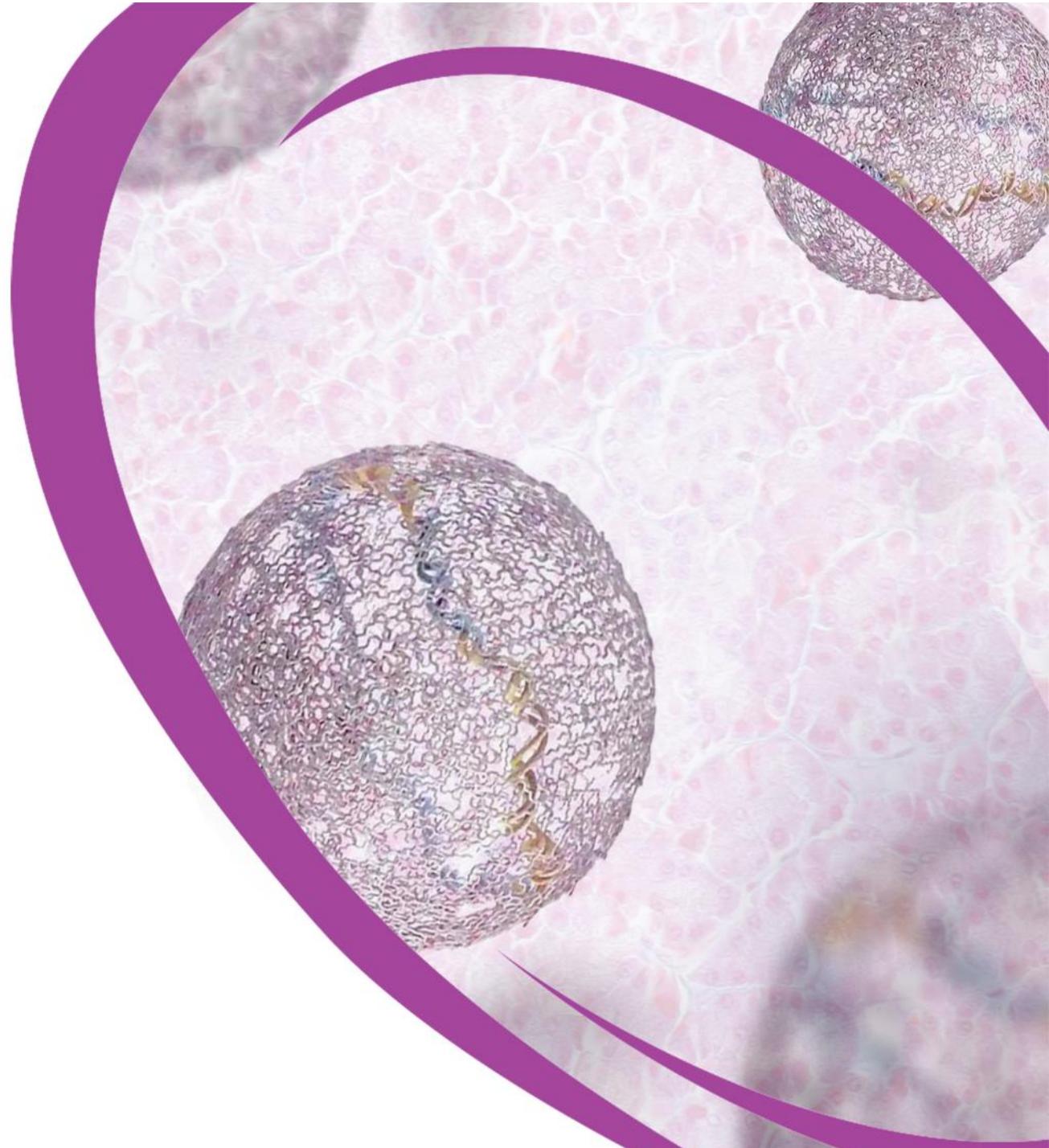
GEN-1 offers a novel way to harness the powerful immunological properties of IL-12: the “Master Switch” to the body’s immune system



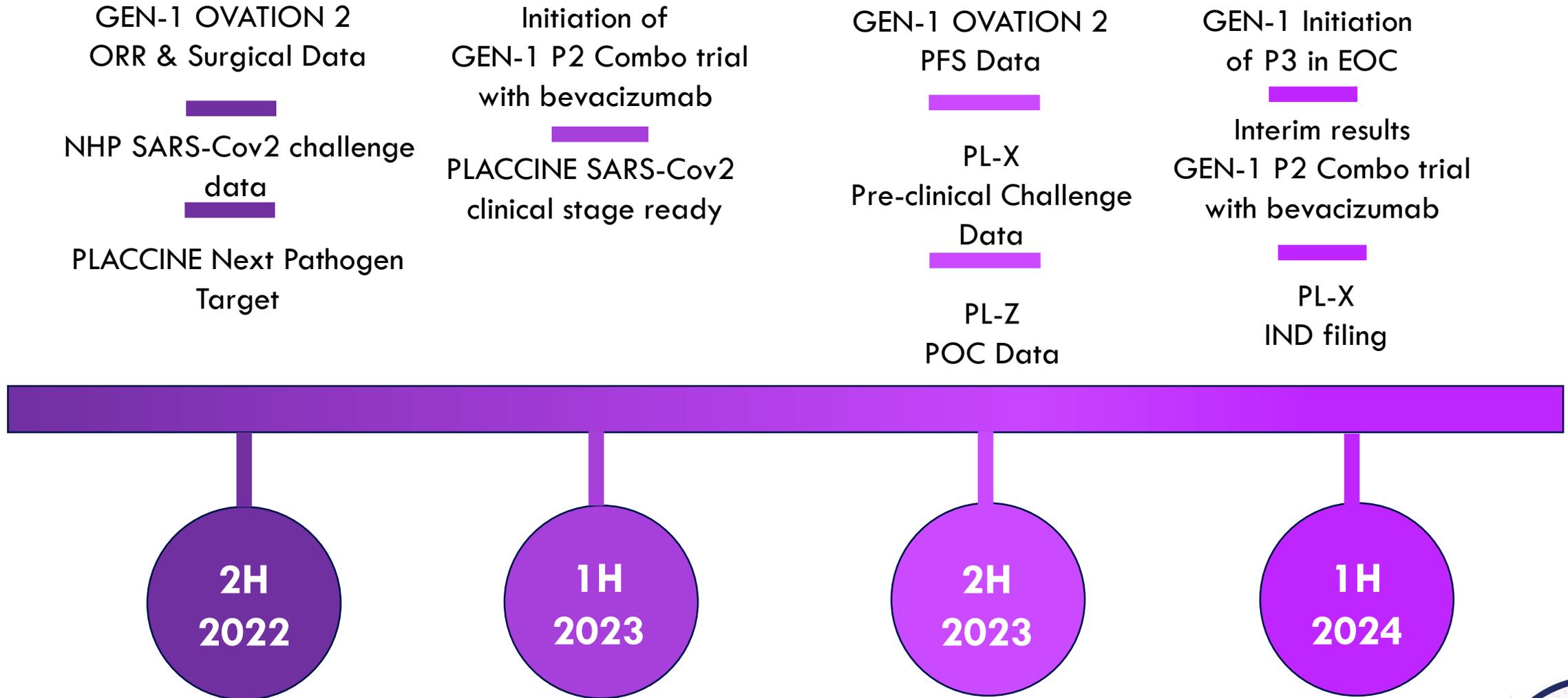
PLACCINE SARS-CoV-2 Proof Concept has demonstrated that our multicistronic formulated plasmid DNA platform can produce a robust immune response

- Demonstrated biologic and clinical activity in 5 ovarian cancer trials
  - Strong efficacy signals in Phase I. Mechanism of action confirmed
  - OVATION 2 offers new hope for newly diagnosed advanced ovarian cancer patients. Interim data are promising, with potential of a targeted therapy approach in BRCA negative or HRP sub-group
  - Two new phase 2 trials to explore new combinations strategies
- 
- Evidence of IgG, nAb and T-cell responses and protection against live virus challenge
  - Activity demonstrated with both single & bicistronic vectors
  - Comparable immune quality to commercial mRNA vaccine benchmark
  - Evidence of five-month durability (ongoing study)
  - Evidence of three-month stability at 4°C (ongoing study)
  - Non-Human Primate study in progress

# Milestones & Financials



# Upcoming Key Milestones: Robust Flow of Value Creating Activities



# Strong Balance Sheet Supports Upcoming Milestones

## Cash Runway into 2025



Cash + Investments @ 6/30/2022	\$48.1 million
Projected NOL sales – 2022-2024	+ \$3.5 million
<b>Total</b>	<b>\$51.6 million</b>
Estimated cash usage/quarter (2022)	<b>\$5 million</b>
Cash Runway at current spending	<b>Into 2025</b>



Common shares outstanding @ 6/30/2022	7.1 million
+ Stock Options	0.9 million
+ Warrants	0.2 million
<b>Fully diluted shares outstanding</b>	<b>8.2 million</b>
Market Capitalization	<b>\$20 million</b>
Avg Daily Trading Volume	<b>~ 75,000</b>



## Corporate Information

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