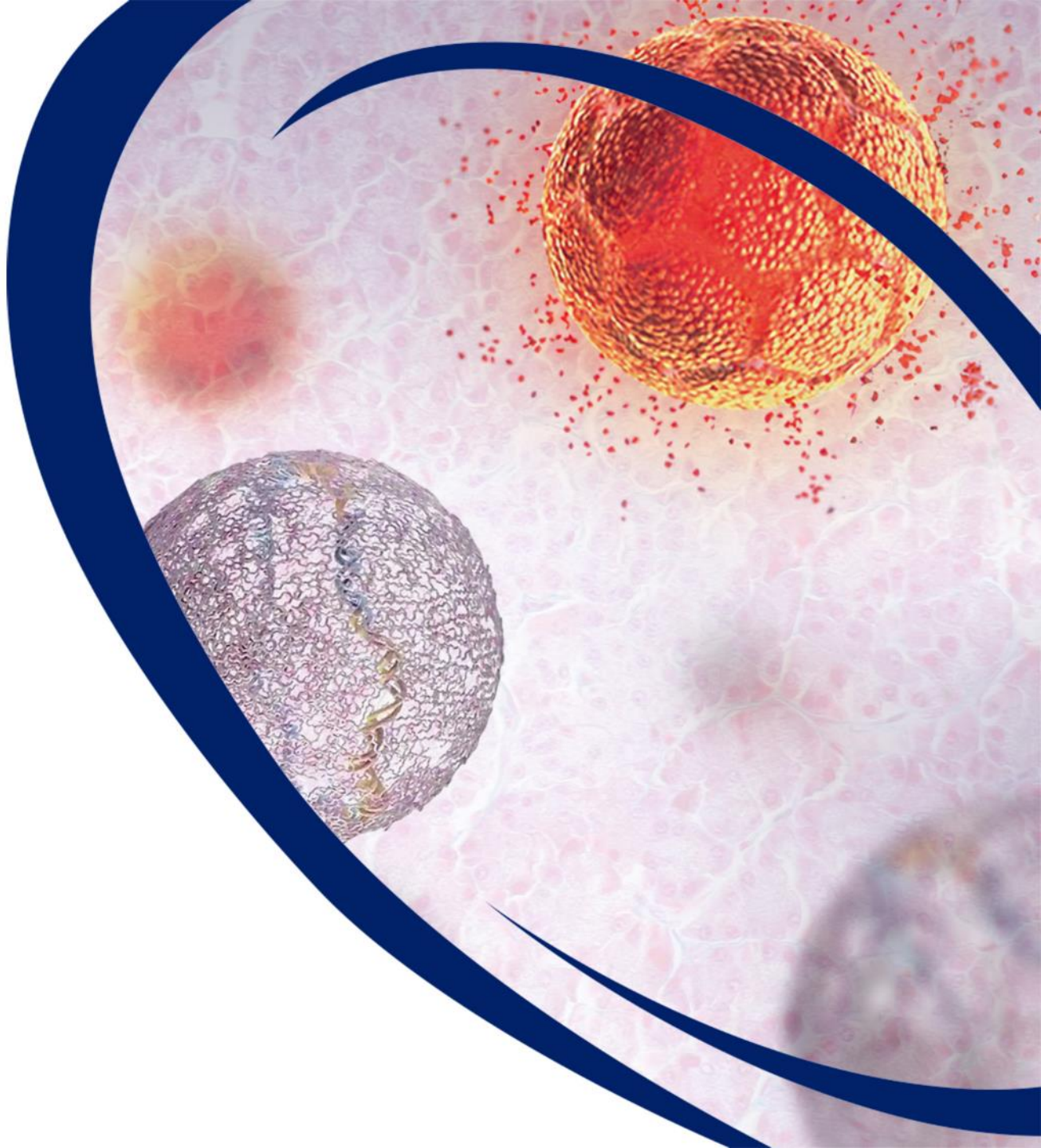
Celsion

Corporate Presentation

July 2021

Nasdaq: CLSN



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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, 2020 and Form 10-Q for the quarter ended March 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.

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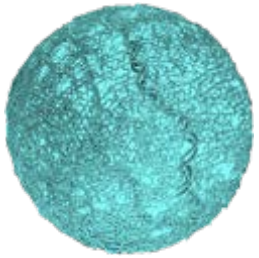
Proprietary DNA Plasmid Technology Platforms

TheraPlas

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

GEN-1 Immunotherapy

Localized Interleukin -12 Immunotherapy



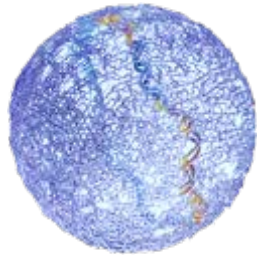
Phase II Evaluation in Advanced Ovarian Caner
Orphan Drug Designation: U.S. and EU
Fast Track Designation

PLACCINE

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

SARS-CoV-2

Multivalent Vaccine for COVID-19



Preclinical Development Stage

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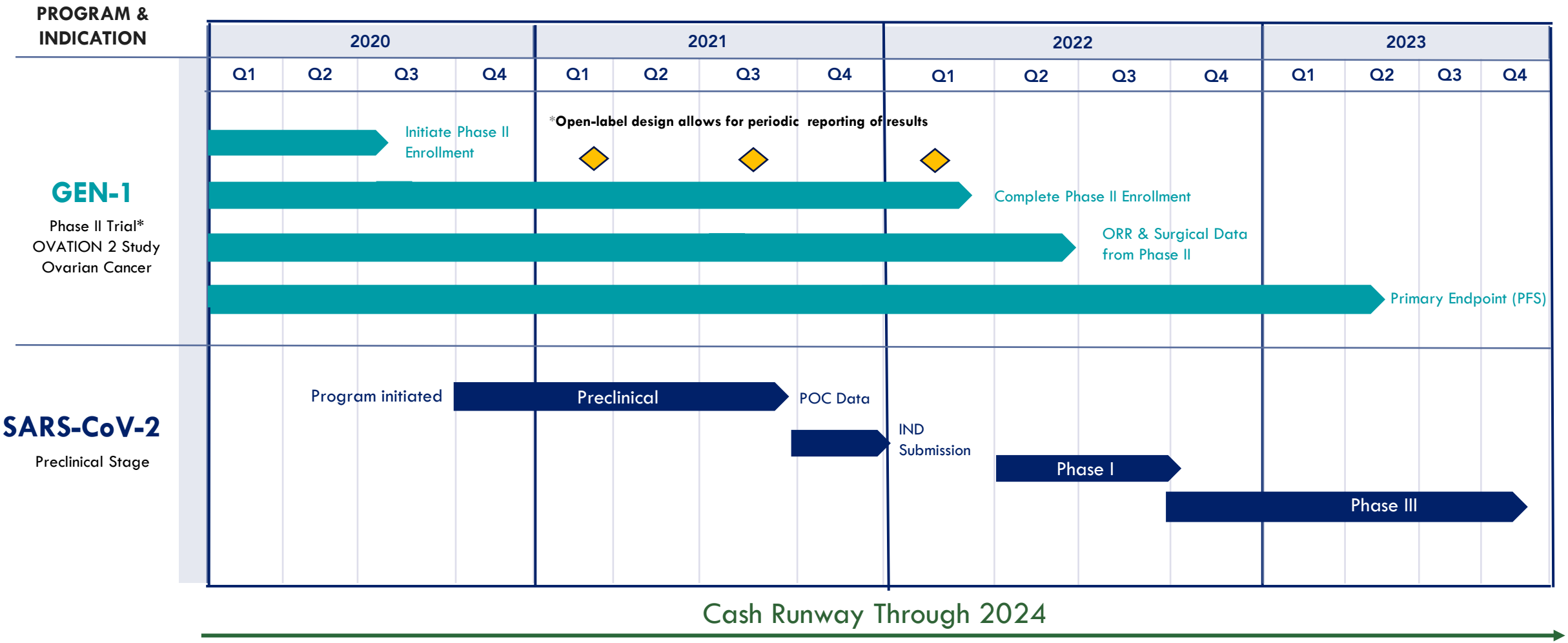
Pipeline Milestone Events

2020 - 2023



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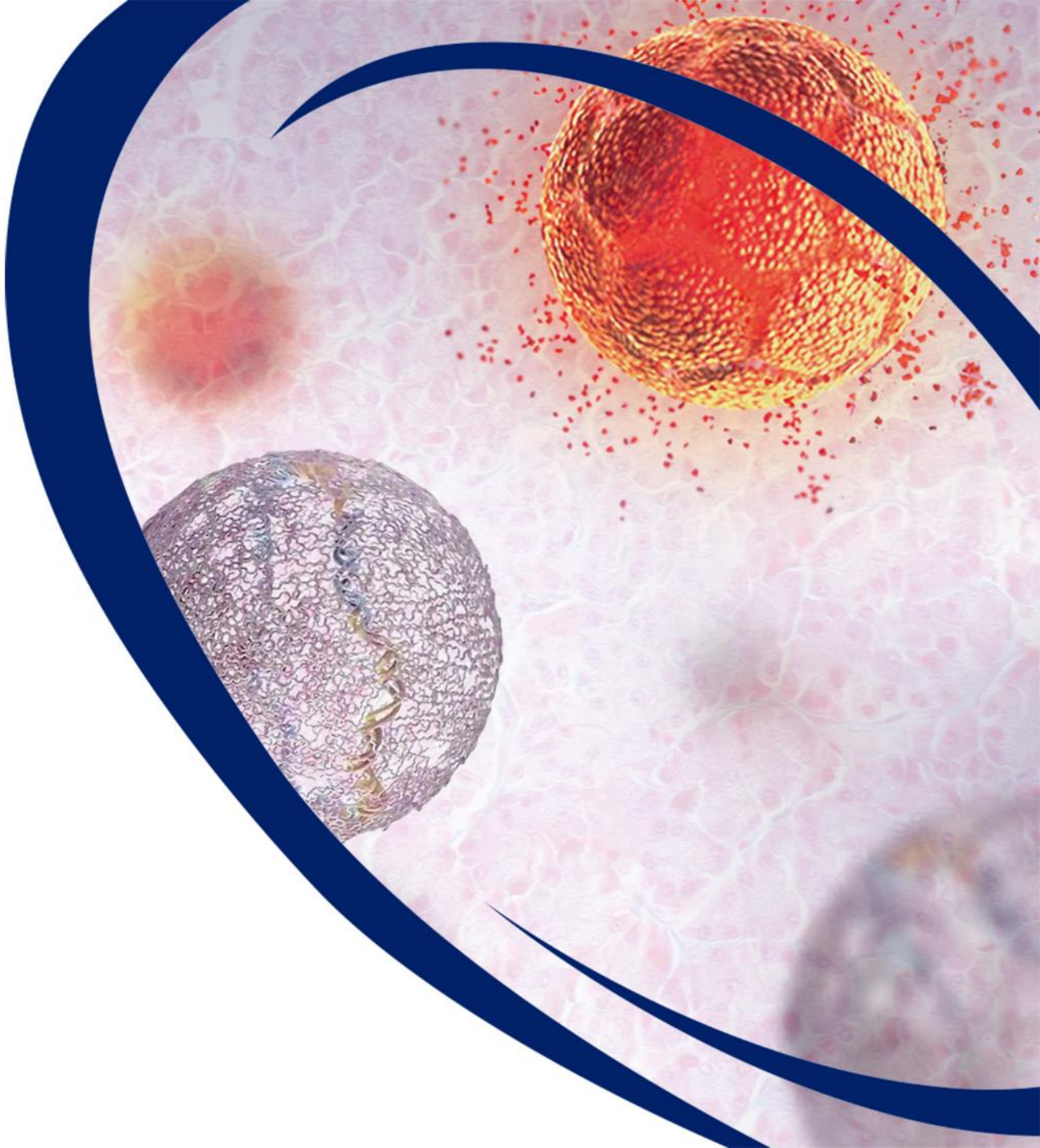
GEN-1 IL-12

IMMUNO-ONCOLOGY PROGRAM



IL-12: A Powerful Immune-Modulating Agent

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

Activation/Proliferation

Maturation/Proliferation

Anti-Angiogenesis

Inhibition of Immune Suppression

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

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

3 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

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

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GEN-1 Composition

Three Component Delivery System of **P**olyethylene Glycol (PEG) **P**olyethyleneimine (PEI) **C**holesterol Combined with IL-12 DNA Plasmid

PEI

Condenses DNA strands into nanoparticles

PEG

Improves stability and protects plasmid from degradation

Cholesterol

Facilitates uptake and trafficking across cell membranes

CMV

CMV

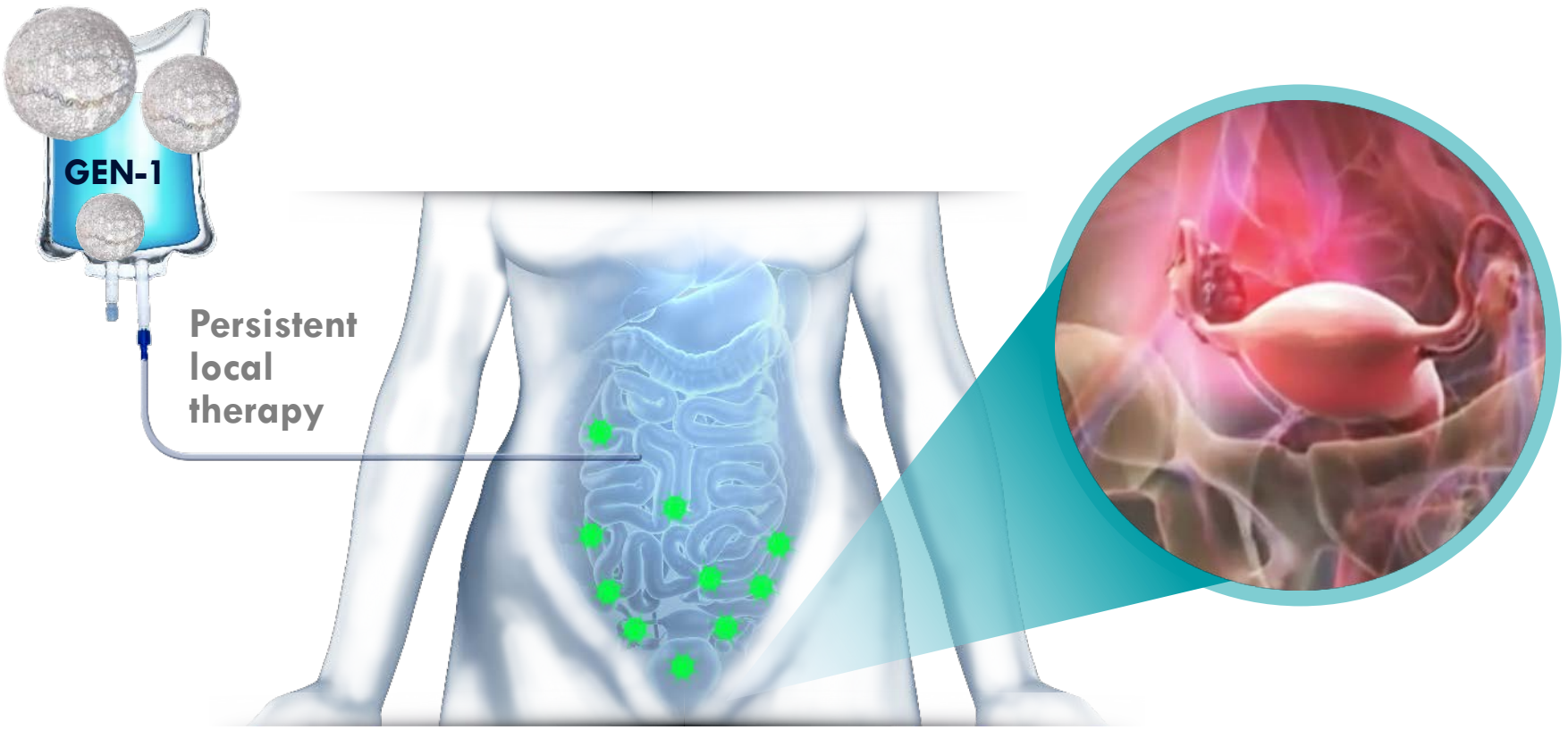
IL-12 plasmid vector

IL-12 plasmid vector carries IL-12 gene and elements for gene expression

GEN-1
Nanoparticles
~150 nm

With intraperitoneal delivery, transfected cells are able to produce sustained concentrations of IL-12 protein in the vicinity of the tumor

GEN-1 Targets Ovarian Cancer Metastases Throughout the Peritoneal Cavity



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

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

Peritoneal-plasma barrier minimizes systemic exposure of IL-12, thereby giving a favorable safety profile to GEN-1

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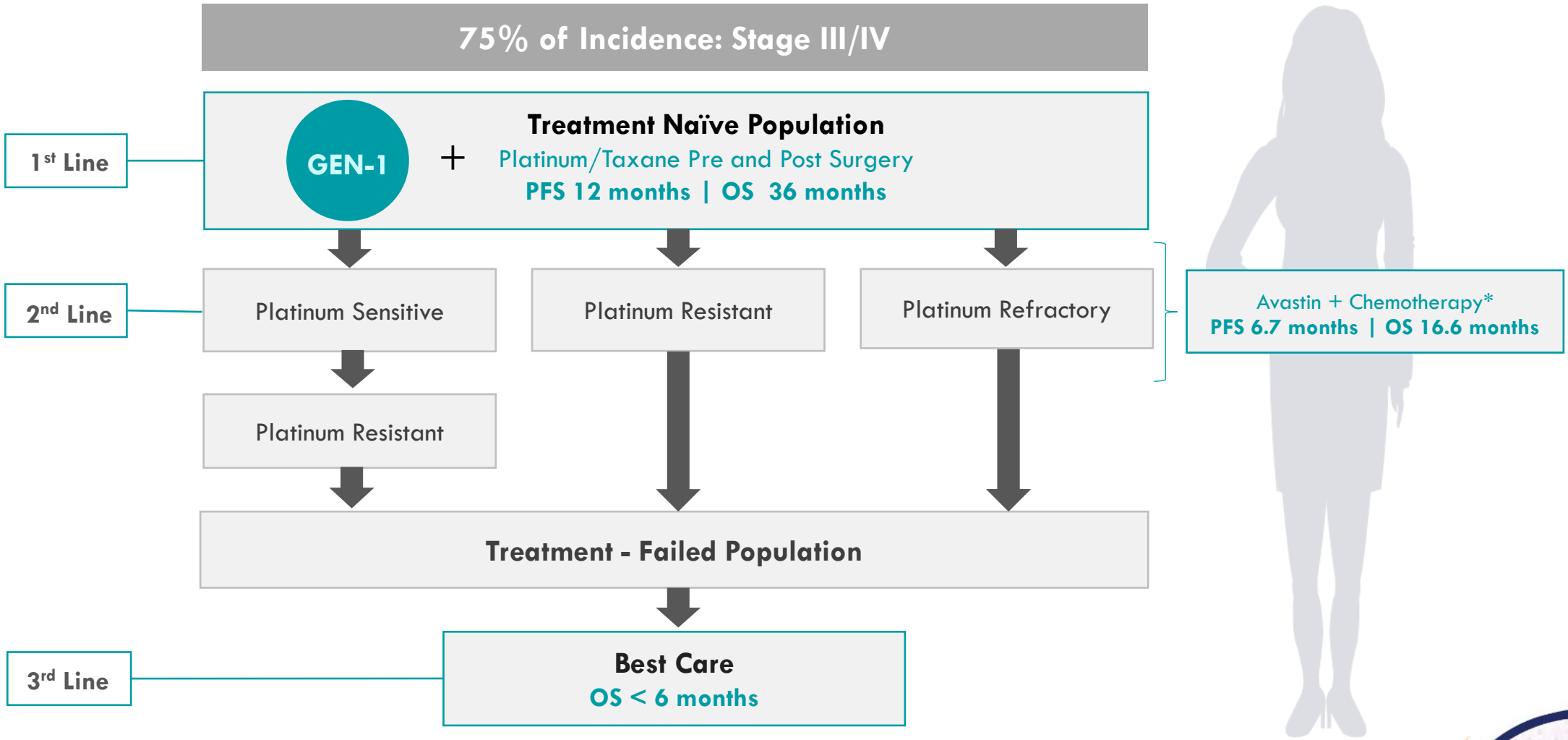
Treatment Options in Advanced Ovarian Cancer Are Limited

Recurrence Rates are High and Survival Rates Low



*Aurelia Trial.

OVATION I Ovarian Cancer Study

Phase I to Determine Dose, Efficacy, and Biological Activity With NAC in Stage III/IV Patients

Newly Diagnosed
Ovarian Cancer
Tissue Collection

Standard Neoadjuvant
Chemotherapy (NAC) +
8 weekly cycles of GEN-1

Interval Debulking
Surgery
Tissue Collection

Ovarian Cancer Patients
(FIGO IIIC & IV)

3 + 3 Dose Escalation
Starting at 36 mg/m²

Final Dose at 79 mg/m²
6 patients

Primary Endpoint

Safety

Optimal Dose

Secondary Endpoints

Clinical Response, PFS
Pathological Response,
Surgical Response,
Biological Response

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OVATION I Study

Clinical and Molecular Dose Dependent Responses Observed

Clinical Responses*

	GEN-1	
	Low-Dose Cohorts 36 mg/mg² & 47 mg/mg²	High-Dose Cohorts 61 mg/mg² & 79 mg/mg²
Objective Tumor Response (CR/PR) RECIST 1.1	60%	100%
Interval Debulking Status R0 Resection Rate	40%	88%

*Chemotherapy dose consistent across all GEN-1 dosing cohorts

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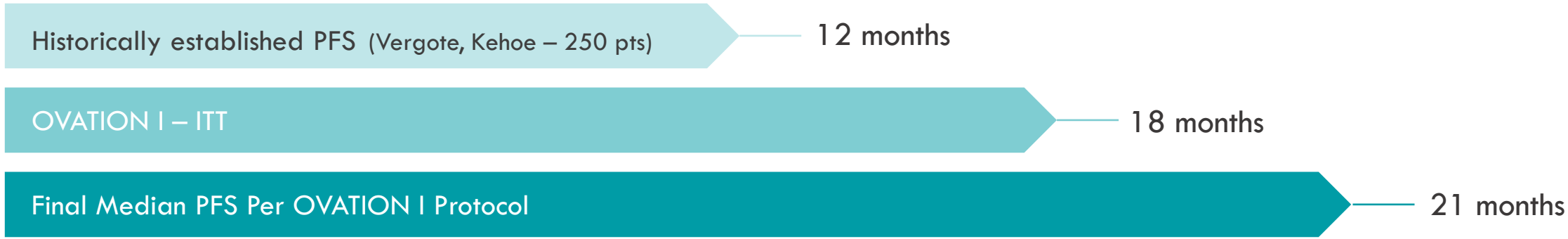
OVATION I: Improved Progression-Free Survival Demonstrated with GEN-1

Improvements vs Medidata Synthetic Control Arm in Comparable Patient Populations



Similar Baseline Patient Characteristics in the OVATION I Study vs Medidata Synthetic Control Arm

GEN-1 Population	# of Patients	PFS Hazard Ratio	95% Confidence Interval	Log-Rank P-Value
Intent-to-Treat	15	0.53	(0.16, 1.73)	P=0.29
Per Protocol	13	0.33	(0.08, 1.37)	P=0.11

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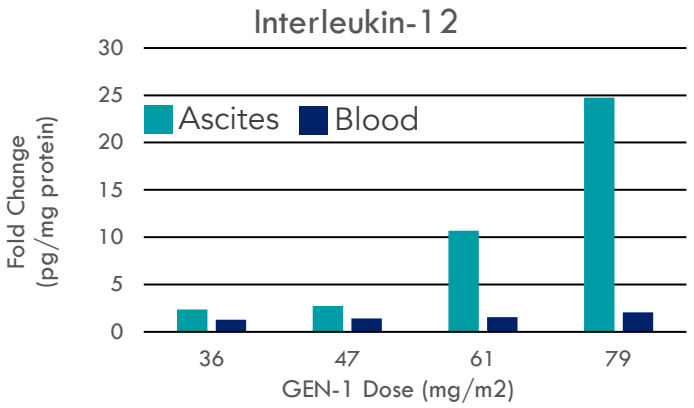
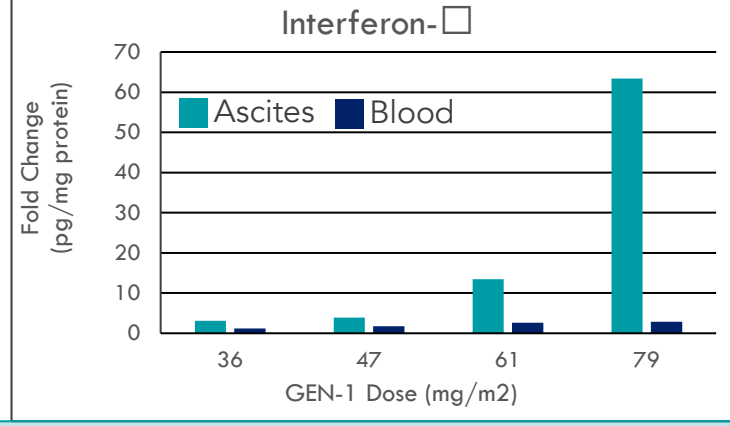
OVATION I Study Translational Data Sampling

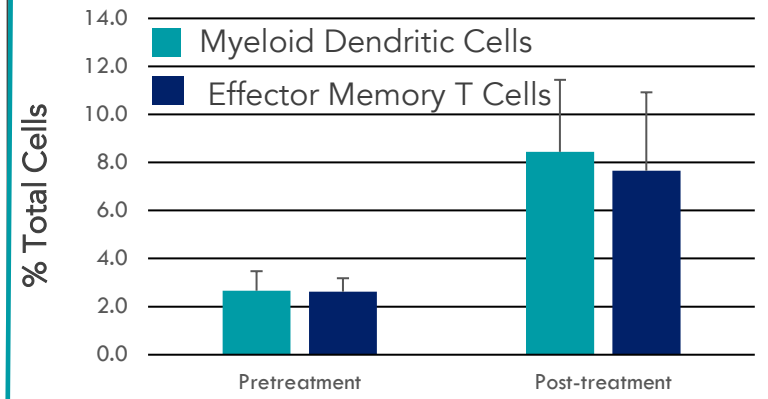
Ascites

Marked Dose-Dependent Increase in Anti-Cancer Cytokine Levels



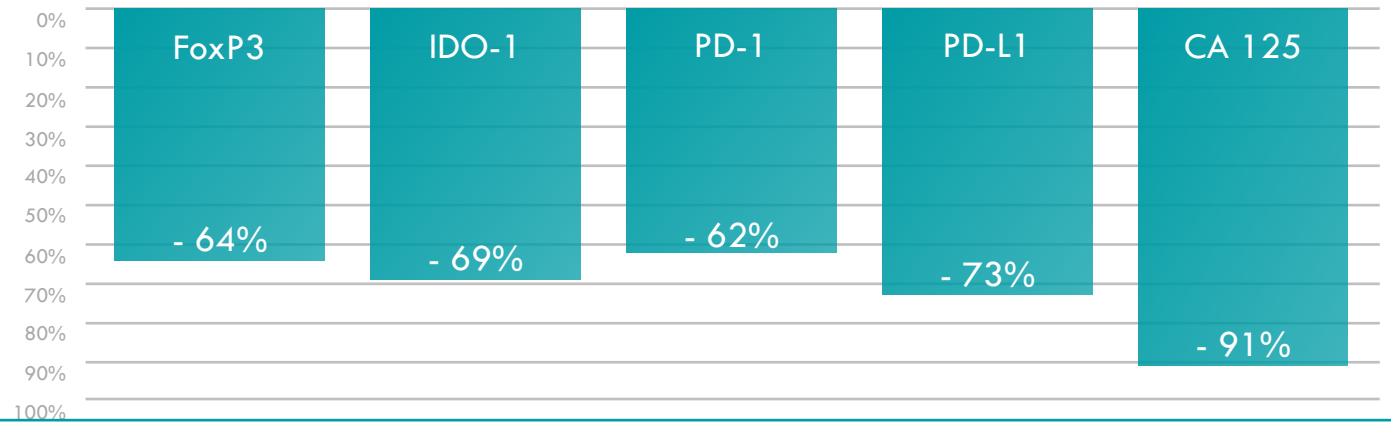


Increase in Dendritic and T_{EM} Cells

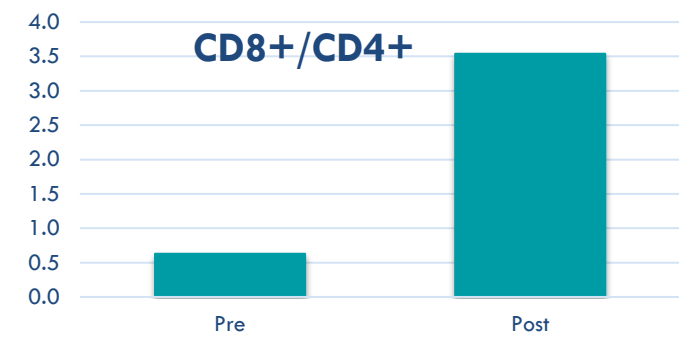


Tumor

Decrease in Immunosuppressive Biomarkers



Increase in CD8+/CD4+ in Tumor



- Increases in cytokine levels shows GEN-1's activity; Low cytokine blood levels underpin the safety profile of GEN-1
- Increase in anti-cancer dendritic cells & effector memory T-cells demonstrate activation of the cellular immune system
- Overall shift in tumor microenvironment to immunostimulatory

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GEN-1 OVATION 2 Ovarian Cancer Study

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

Newly Diagnosed Ovarian Cancer Tissue Collection

1 : 1 Randomization Added Control Arm to OVATION 2

Neoadjuvant Chemotherapy (NAC) + 8 weekly cycles of GEN-1

Interval Debulking Surgery Tissue Collection

Adjuvant Chemotherapy + 9 weekly cycles of GEN-1

Additional Treatment Regimen vs. OVATION I Trial Design

Continue GEN-1 treatment following surgery (Maintenance Therapy)

Ovarian Cancer Patients (FIGO IIIC & IV)

Up to 110 patients

14 patients in Phase I Run-in (100 mg/m²);

Up to 96 patients in Phase II

Randomized 1:1 NAC +/- 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

GEN-1 OVATION 2 Ovarian Cancer Study

Phase I/II Open Label Controlled Trial

- Phase I Portion (N=14) Completed
- 100 mg/m² GEN-1 Dose Confirmed
- 23 Clinical Sites in U.S. and Canada
- Enrollment Expected to be Completed in 1st Quarter - 2022

Interim Data (After 29 IDS)	NACT ONLY	NACT + GEN-1
Interval Debulking Surgery (IDS) R0 Resection Rate	58%	81%

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GEN-1 Summary

GEN-1 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; Strong efficacy signals in Phase I; Mechanism of action confirmed

OVATION 2 offers new hope to a large segment of newly diagnosed advanced ovarian cancer patient population; Phase I portion of OVATION 2 completed in the 2nd quarter of 2020 – Dose for Phase II portion of trial confirmed at 100 mg/m^2

Phase II portion of OVATION 2 initiated enrollment in Q3 - 2020; Full enrollment expected to be completed by 1st Quarter of 2022

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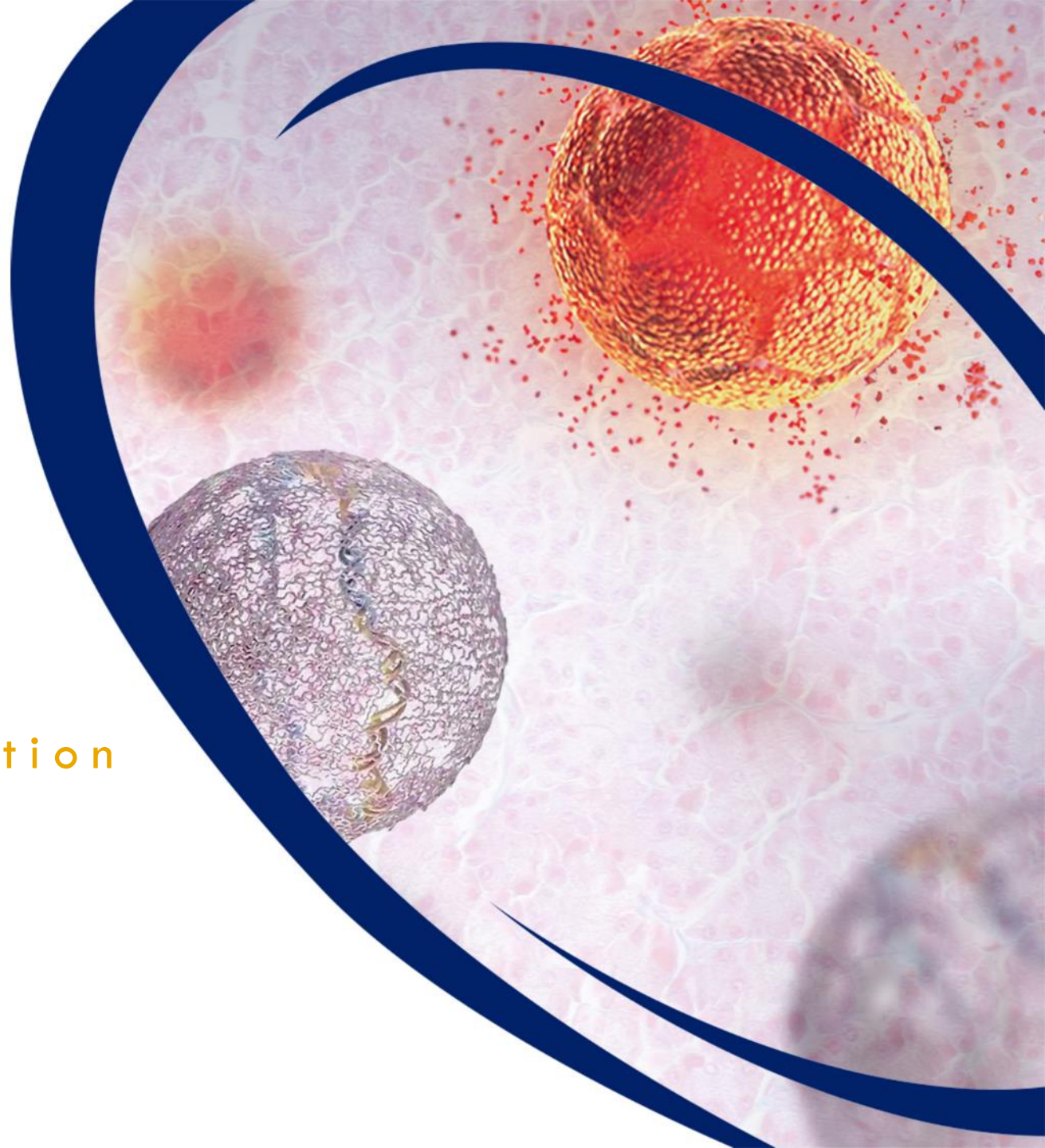
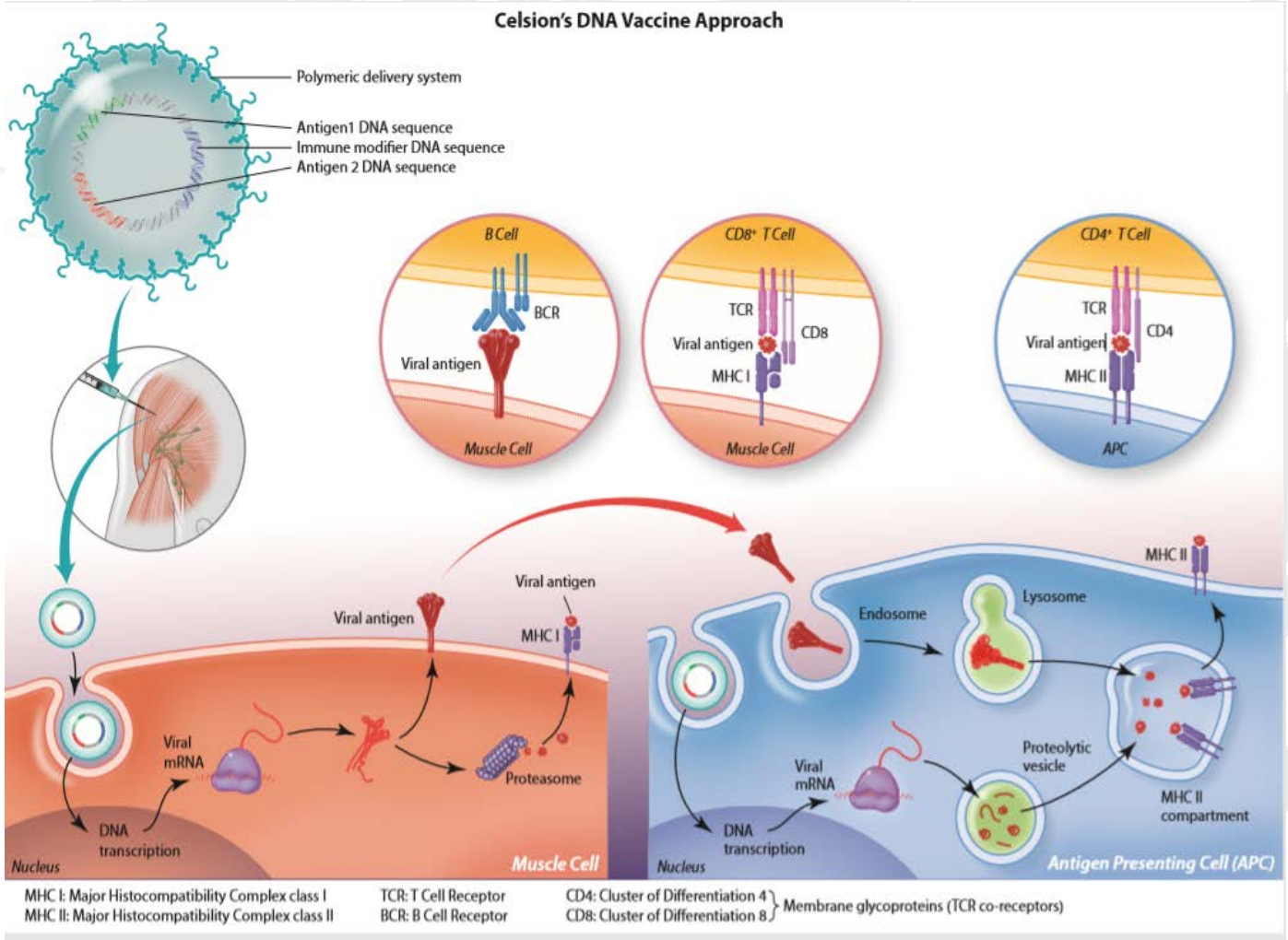
PLACCINE Platform

SARS-CoV-2 Initiative:
Proof of Concept & Validation



Next Generation Immuno-Modulated, Multivalent DNA Vaccines

Based on the Novel PLACCINE Vaccine Platform



PLACCINE Multivalent DNA Vaccine Technology Platform

Single multi-cistronic DNA plasmid vector

- Multiple pathogen antigens
- Potent immune modifier

Delivered with a non-viral, synthetic delivery system

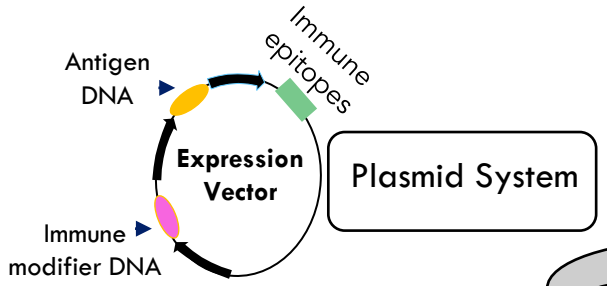
Adaptable for a multitude of pathogens

- Applicable to pandemics
- Infectious diseases that have yet to be effectively addressed

Well supported by an established supply chain

The PLACCINE Platform

Flexible Toolkit to Create Vaccines for a Wide Range of Common Pathogens to Pandemic & Bioterror Pathogens



Plasmid System

Capacity for Multiple Pathogen Antigens and Immune Modifier Gene(s)

Delivery System

Synthetic DNA Delivery System

Molecularly Functionalized for Diverse Tissue Applications

Nanoparticles/ Complexes

PLACCINE Vaccines

Potential for range of administration

Intramuscular	Subcutaneous	Intradermal	Inhalation

Humoral & Cell Mediated Immune Response

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PLACCINE: A Distinguishing Approach to Vaccine Development

Multiple antigen targets

- Breadth of immune response

Co-expression of cytokines, chemokines, B-cell, T-cell epitopes

- Better response quality

Synthetic delivery systems address delivery limitations

- Safe, repeatable, unaffected by the immune system
- Adjuvant properties

Durable activity over the life of transfected cells

- Durable antigen exposure from DNA delivery

Storage

- 4°C or higher

Manufacturing

- Independent of antigen type
- Scalable and Economical

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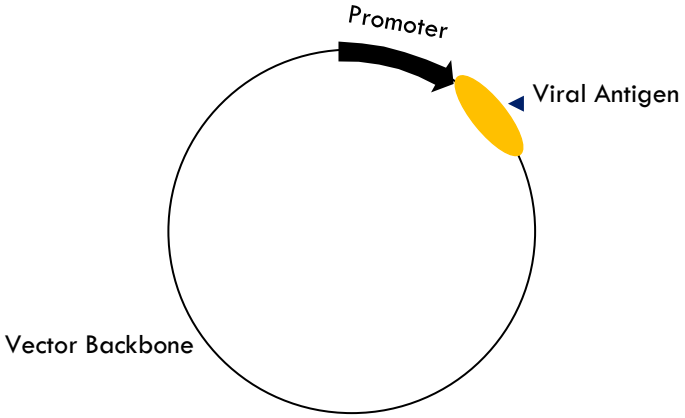
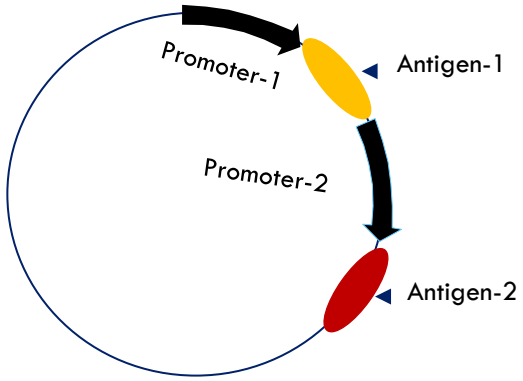
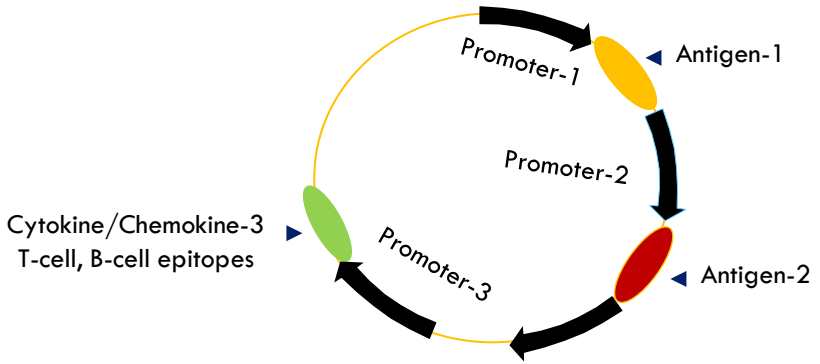
A Library of Single Antigen & Multi-Antigen Vectors



Single Antigen Vector



Multiple Antigen Vector



"Super" Vaccine Vector

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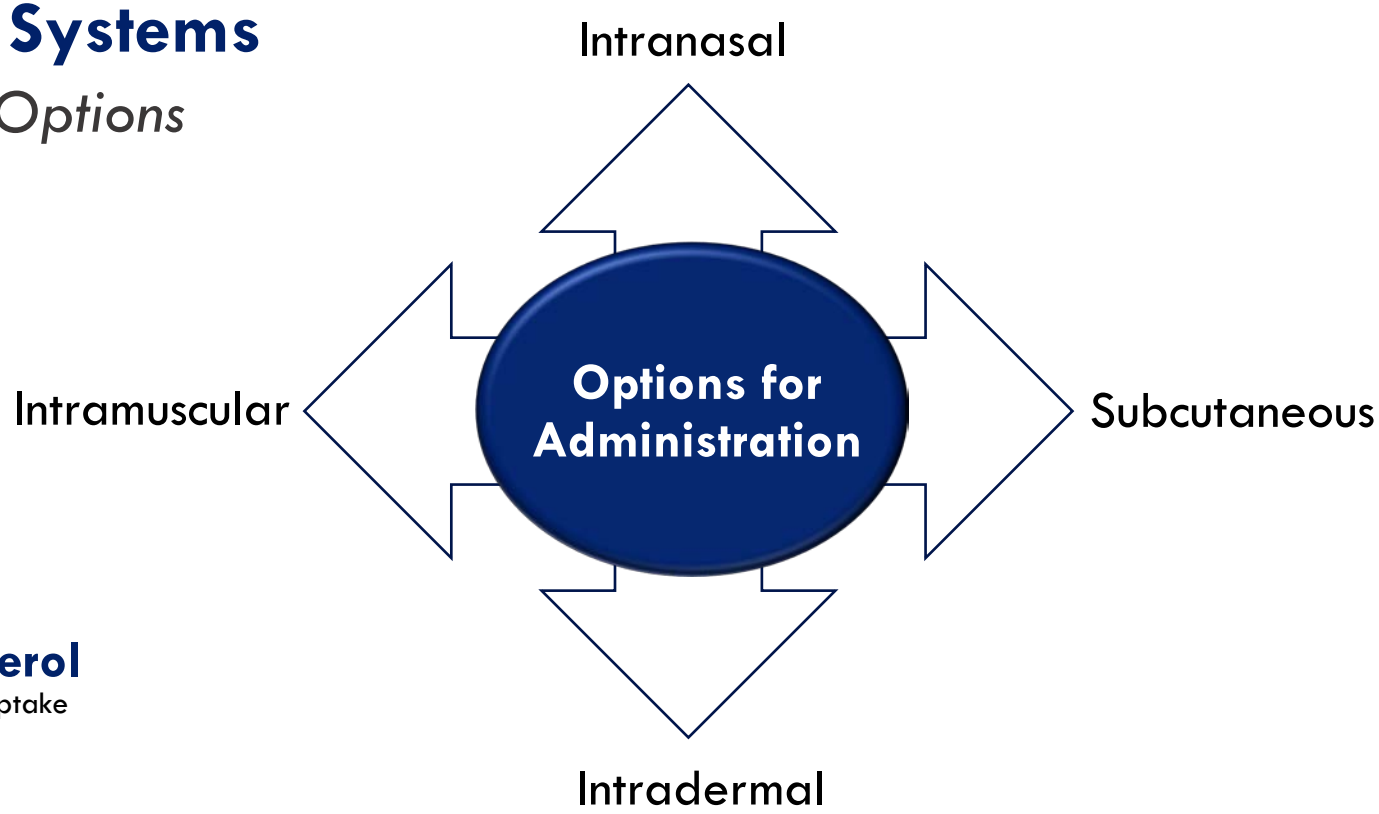
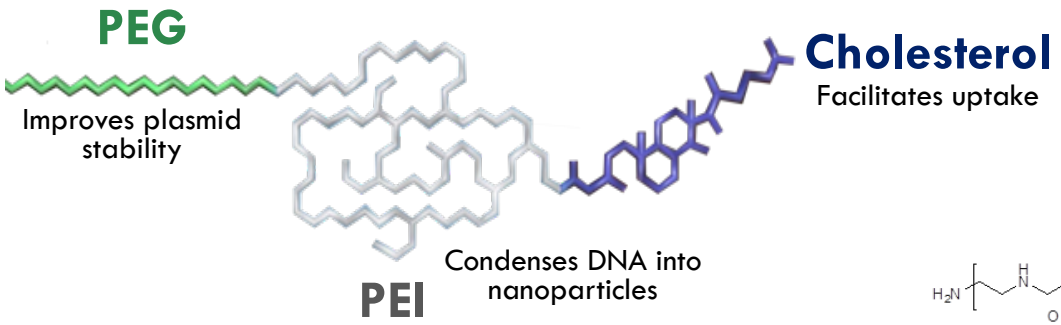
A Broad Portfolio of Delivery Systems

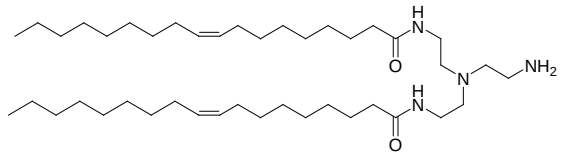
Potential for Multiple Administration Options

Lipopolymer - *PPC (Gen-1 Clinical Stage)*
Cross-linked polymer
Non-ionic systems - *Crown Poloxamer*
Lipopolyamines - *Staramine, Crossamine*

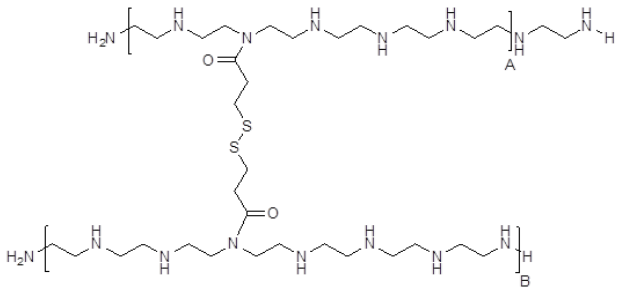




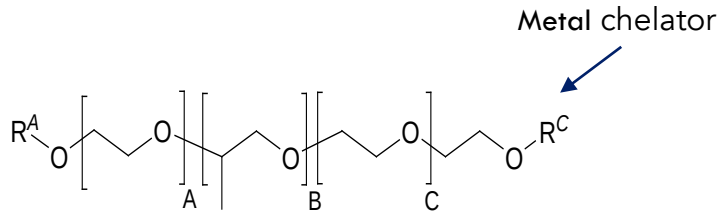
Lipopolymer PPC



Lipopolyamine



Crosslinked polymer



Crown Poloxamer

Rationale for Targeting Multiple Antigen

SARS-CoV-2 comprises 4 major viral proteins

- Spike (S)
- Membrane (M)
- Nucleocapsid (N)
- Envelope (E)

SARS-CoV-2 proteins are essential for:

- Host cell binding & internalization
- Virion assembly
- Enveloping
- Propagation
- Suppression of RNAi to overcome host defense
- Disrupting host immune response to promote viral replication
- Pathogenesis

A majority of current SARS-CoV-2 vaccines are single antigens which:

- Provide protection against disease, but not infection
- Combining spike antigen with other structural antigens could mimic whole virus vaccine

Evidence of IL-12 Enhancement of Vaccine Immunogenicity

IL-12 Enhancement of vaccine has been demonstrated against multiple pathogens

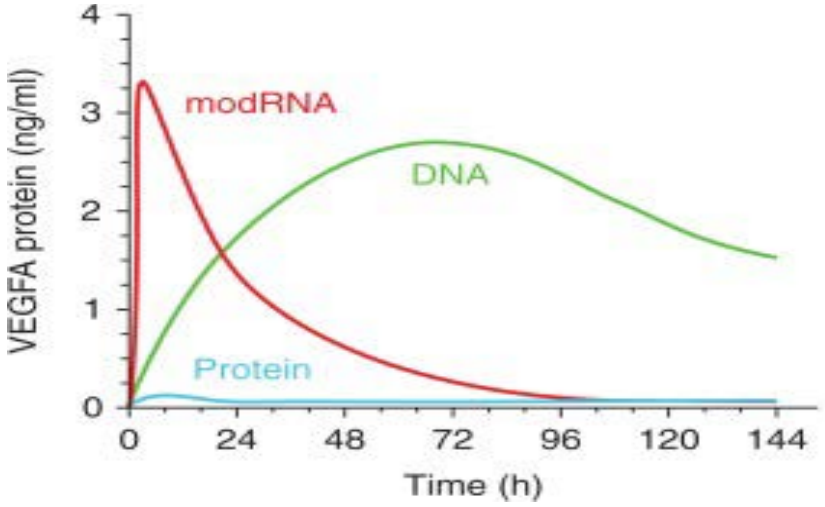
- HIV
- Hepatitis C
- Toxoplasma gondii
- Leishmania major

IL-12 benefits against HIV

- **NHP**: IL-12 plasmid + a mixture of 2 antigen plasmids, EP (im), improved cellular responses vs. the antigen plasmids alone
- **Human**: IL-12 plasmid + a mixture of 3 HIV antigen plasmids & EP (im) in healthy subjects produced:
  - CD4+ and CD8+ T-cell response in 80% of subjects compared to 44% of antigen alone subjects
  - Antibody response in 22.2% and 10% of subjects, respectively
  - IL-12 plasmid did not exacerbate the treatment-related adverse events

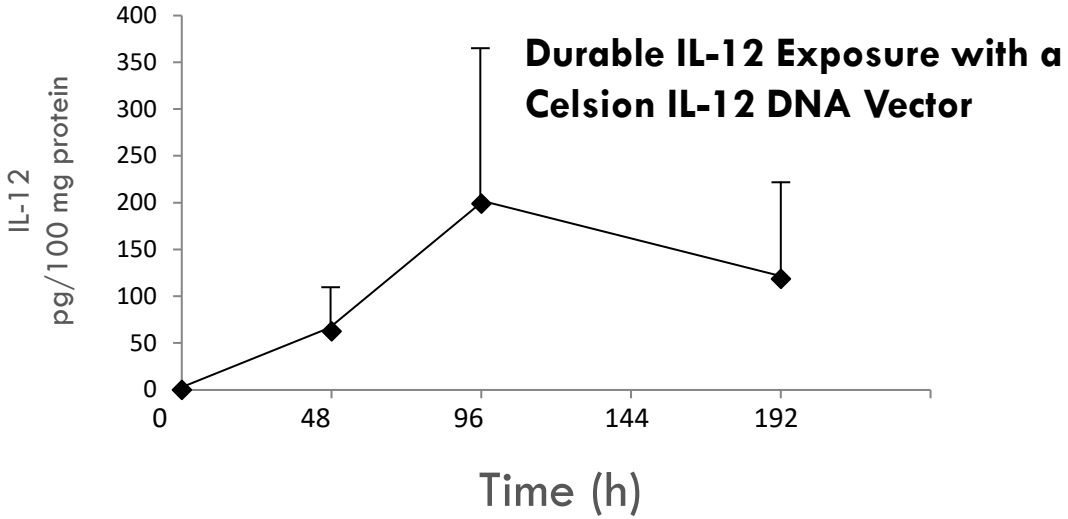
DNA Antigens Yield Durable Antigen Levels vs. mRNA Antigens

Longer Shelf Life at ≥ 5°C



DNA-mediated Delivery in Muscle Persists Longer than modified RNA (modRNA) or Protein Delivery

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



GEN-1-mediated Delivery of IL-12 following IP administration in women with ovarian cancer

Thaker P; et al. Gynecol Oncol 147:283, 2017

DNA-polymer nanoparticles have longer shelf-life at ≥ 5°C			
Product	**- 20 °C**	**5 °C**	**25 °C**
Dry Powder	5 years	8-12 months	14 days
Reconstituted		6-9 months	≥ 6 days

An Established PLACCINE Supply Chain

Enabling a Rapid Development Path

Plasmid DNA Production

- Current cGMP scale at 200 g
- Future capacity at 1000 g

Delivery Polymer

- Comparable scale to meet the plasmid supply

Vaccine Production

- 40,000 doses at current scale
- Flexible process for further scale up

A Broad Vaccine Pipeline Opportunity Following Proof of Concept

Initial POC/Validation Target: SARS-CoV-2

Potential Pathogen Targets

HSV	RSV	Chikungunya	Mycobacterium tuberculosis
HIV	Dengue	Measles	Plasmodium falciparum
Hep C	Ebola	MERS-CoV	Toxoplasma gondii
	Zika	Yersinia pestis	

Future Pipeline Criteria

- Unmet need
- Conventional approaches ineffective
- Suitable for DNA approach

Potential Next Candidates

- CMV
- RSV
- Influenza

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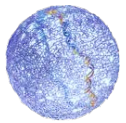
PLACCINE Platform Enables A Next Generation COVID-19 Vaccine

Multimeric broad range: The multimeric design of the candidate COVID-19 vaccine provides for the potential of broad-based protection and higher probability of resistance to mutational changes compared to single antigen vaccines

Sustained antigen exposure: Sustained antigen expression allows for sustained antigen exposure to immune cells in comparison to short-lived peptide or mRNA vaccines, thus enhancing the opportunity for a more robust response



Co-expression of IL-12: Co-expression of a powerful immunostimulatory agent to potentiate maturation and differentiation of T-cells engaged in cell-mediated anti-viral responses may provide distinct advantage over antigen alone vaccines

The adjuvant potential of the synthetic delivery system may enhance infiltration of antigen presenting cells (APCs) at the site of antigen production, an added advantage over other vaccine approaches

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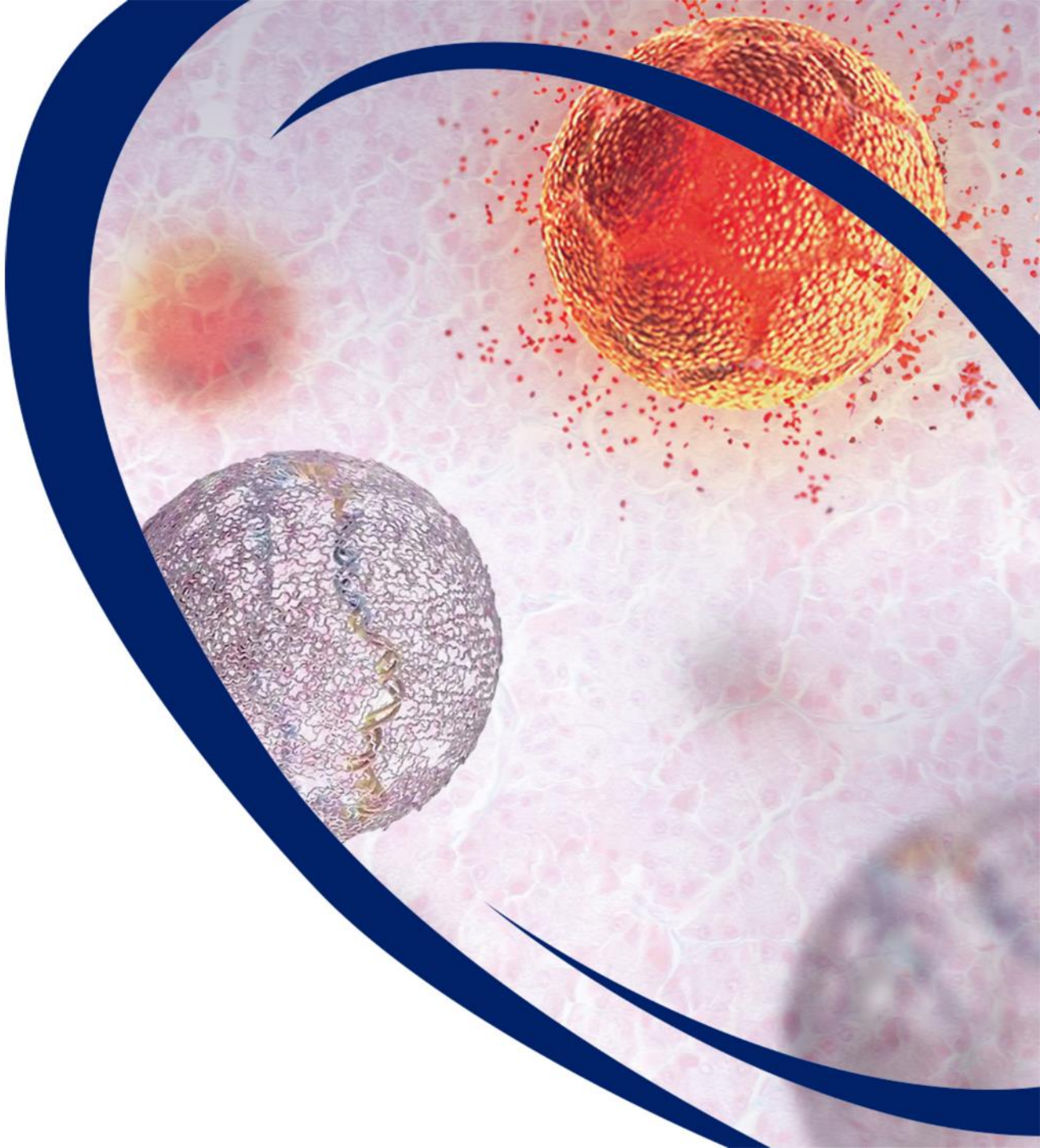
Financials

Management Team



Financial Overview

Cash + Investments at 3/31/2021	$52.8 million
Capital Raise + NOL Sales (Q2-2021)	15.8 million
NOL sales – 2022-2023	4.8 million
Total	**$73.4 million**
Estimated cash usage/quarter (2021)	**$4.5 million**
Cash Runway	**4 years**

Common shares outstanding at	86.6 million
+ Stock Options	6.6 million
+ Warrants	2.6 million
Fully diluted shares outstanding	**95.8 million**
Market Capitalization	**$100 million**
Avg Daily Trading Volume	~ 2 million

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Celsion Leadership Team

Over 150 Years of Management Experience

Michael H. Tardugno

Chairman, President and Chief Executive Officer

Michael Tardugno's career has been focused exclusively in healthcare, with 40 years of experience in the pharmaceutical and medical device industries. Mr. Tardugno was appointed President and Chief Executive Officer of Celsion in January 2007, and was elected to the Chairman of the Board of Directors in October 2012. Prior to joining Celsion, Mr. Tardugno held senior executive positions with Mylan Laboratories, Bristol-Myers Squibb, Bausch & Lomb and Abbott Laboratories.

Nicholas Borys, MD

Executive Vice President and Chief Medical Officer

Nicholas Borys joined Celsion in October 2007 as Vice President and Chief Medical Officer where he manages the clinical development programs for Celsion. Prior to joining Celsion, he held senior positions at Molecular Insight Pharmaceuticals, Cytogen Corporation, Anthra Pharmaceuticals, Amersham Healthcare and Hoffmann La-Roche.

Khursheed Anwer, PhD, MBA

Executive Vice President and Chief Science Officer

Khursheed Anwer joined Celsion in June 2014 upon the acquisition of EGEN, Inc., where he was President and Chief Science Officer, a position he held since 2009. Prior to joining Celsion, Dr. Anwer was Director of Pre-Clinical Development at Valentis, Inc. From 1993 to 1999, he served in several positions at GeneMedicine, where he led several research projects in the area of nonviral gene therapy.

Jeffrey Church

Executive Vice President, CFO & Corporate Secretary

Jeffrey Church joined Celsion in July 2010 as Vice President and Chief Financial Officer. He brings more than 35 years of experience in corporate finance, M&A, investor relations, and SEC reporting. Prior to joining Celsion, Mr. Church held senior financial executive positions with several private and public life science companies, including Alba Therapeutics, Novavax, GenVec and Meridian Medical Technologies.

Anthony Recupero

Vice President Business Development

Anthony Recupero joined Celsion in 2018 and leads all business development activities. Dr. Recupero has nearly 20 years' leadership experience in senior business development and licensing roles at Adare Pharmaceuticals, Aptalis Pharma, Eurand, MaxCyte and Gene Logic with a background in multiple therapeutic areas, platforms and technologies including: cell based therapies, parenteral and oral drug delivery systems and monoclonal antibodies.

Celsion

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