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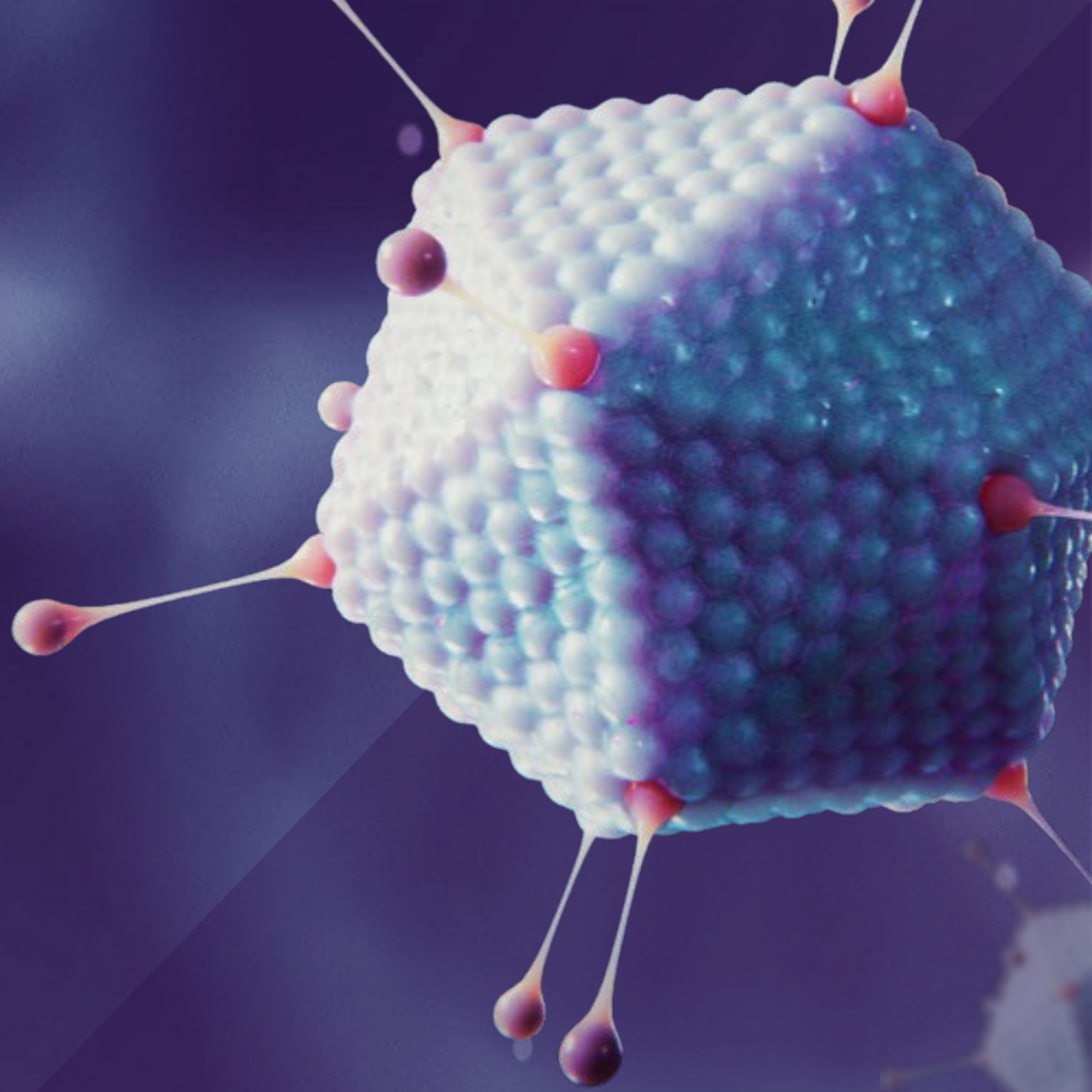
ADVANCING MEDICINE WITH PRECISION™



Precigen

43rd JP Morgan Healthcare Conference

16 January 2025

Nasdaq: PGEN

Forward-looking Statements

Some of the statements made in this presentation are forward-looking statements. These forward-looking statements are based upon the Company's current expectations and projections about future events and generally relate to plans, objectives, and expectations for the development of the Company's business, including the timing and progress of preclinical studies, clinical trials, discovery programs, product candidate approval and commercialization, and related milestones, the promise of the Company's portfolio of therapies, and in particular its CAR-T and AdenoVerse therapies. Although management believes that the plans and objectives reflected in or suggested by these forward-looking statements are reasonable, all forward-looking statements involve risks and uncertainties, including the possibility that the timeline for the Company's clinical trials, product candidate approvals or plans for commercial launch of might be impacted by economic conditions, the COVID-19 pandemic or other factors, and actual future results may be materially different from the plans, objectives and expectations expressed in this presentation. The Company has no obligation to provide any updates to these forward-looking statements even if its expectations change. All forward-looking statements are expressly qualified in their entirety by this cautionary statement. For further information on potential risks and uncertainties, and other important factors, any of which could cause the Company's actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in the Company's most recent Annual Report on Form 10-K and subsequent reports filed with the Securities and Exchange Commission.

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All information in this presentation is as of the date of its cover page, and Precigen undertakes no duty to update this information unless required by law.

Management Team

CEO

Helen Sabzevari, PhD

Prior Experience

COMPASS THERAPEUTICS · MERCK · NIH NATIONAL CANCER INSTITUTE

CFO

Harry Thomasian Jr.

Prior Experience

EY

CCO

Phil Tennant

Prior Experience

astellas · Bristol Myers Squibb · AstraZeneca · MERCK

COO

Rutul R. Shah

Prior Experience

Zyngenía · teva · COGENESYS · HUMAN GENOME SCIENCES

Research

Douglas E. Brough, PhD

Prior Experience

GENVEC

CMC

Bryan T. Butman, PhD

Prior Experience

GENVEC

Reg & Clin Ops

Amy R. Lankford, PhD

Prior Experience

UVAHealth · CLINICAL DATA

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Company Highlights

- De-risked, wholly owned, near commercial gene therapy program with multi billion $ global blockbuster potential in PRGN-2012 for RRP
- Pipeline in product potential for PRGN-2012 to unlock the full spectrum of HPV 6/11 driven diseases beyond RRP
- HPV franchise opportunity with PRGN-2009 focused on HPV 16/18 to address a major driver of solid tumors with IO combination potential
- In-house gene therapy GMP facility to support commercial drug substance manufacturing
- Revolutionary UltraCAR-T platform addresses safety and manufacturing shortcomings of conventional CAR-T therapies at a lower cost driven by overnight manufacturing and next day infusion at the hospital, well suited for both oncology and autoimmune applications
- Cash on hand of approximately $100M* with runway well into 2026, beyond the anticipated commercial launch of PRGN-2012

*Cash on-hand is preliminary and unaudited and reflects preliminary financial information as of December 31, 2024. In preparing this information, the Company's actual financial position as of December 31, 2024 has not yet been finalized by management or reviewed or audited by the Company's independent registered public accounting firm. This information is also not a comprehensive statement of financial position or results of operations as of or for the year-ended December 31, 2024. Subsequent information or events may lead to material differences between the foregoing preliminary financial information and those reported in the Company's subsequent SEC filings. Accordingly, investors should not place undue reliance on this preliminary financial information.

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AdenoVerse®: Game Changing Platform with a Near-Term Commercial Asset Underpinned by Elegant Platform

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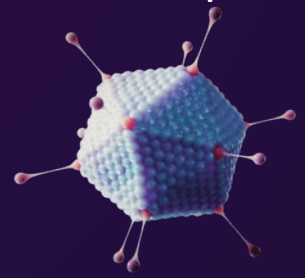
HPV franchise

Product	Target	Indication	Addressable Patient Population	Phase 1	Phase 1B	Phase 2	Phase 3
PRGN-2012	HPV 6/11	RRP (1)	~27K US(2) >125K ex-US	Breakthrough Therapy Designation Orphan Drug Designation			
PRGN-2009 (+pembrolizumab)	HPV 16/18	OPSCC/ Head & Neck Cancer	~45K US ~645K ex-US				
PRGN-2009 (+pembrolizumab)	HPV 16/18	R/M Cervical Cancer					

(1) Phase 1/2 study is pivotal
(2) Updated addressable adult patient population based on review of EHR and claims data

Underpinned by elegant AdenoVerse platform



Novel platform to train and amplify the immune system *in vivo* (from WITHIN the body)

Large payload capacity
Low seroprevalence in humans
Ability for repeat administration
Durable antigen-specific immune response
Highly productive manufacturing process
Conventional pharma-like manufacturing and margins

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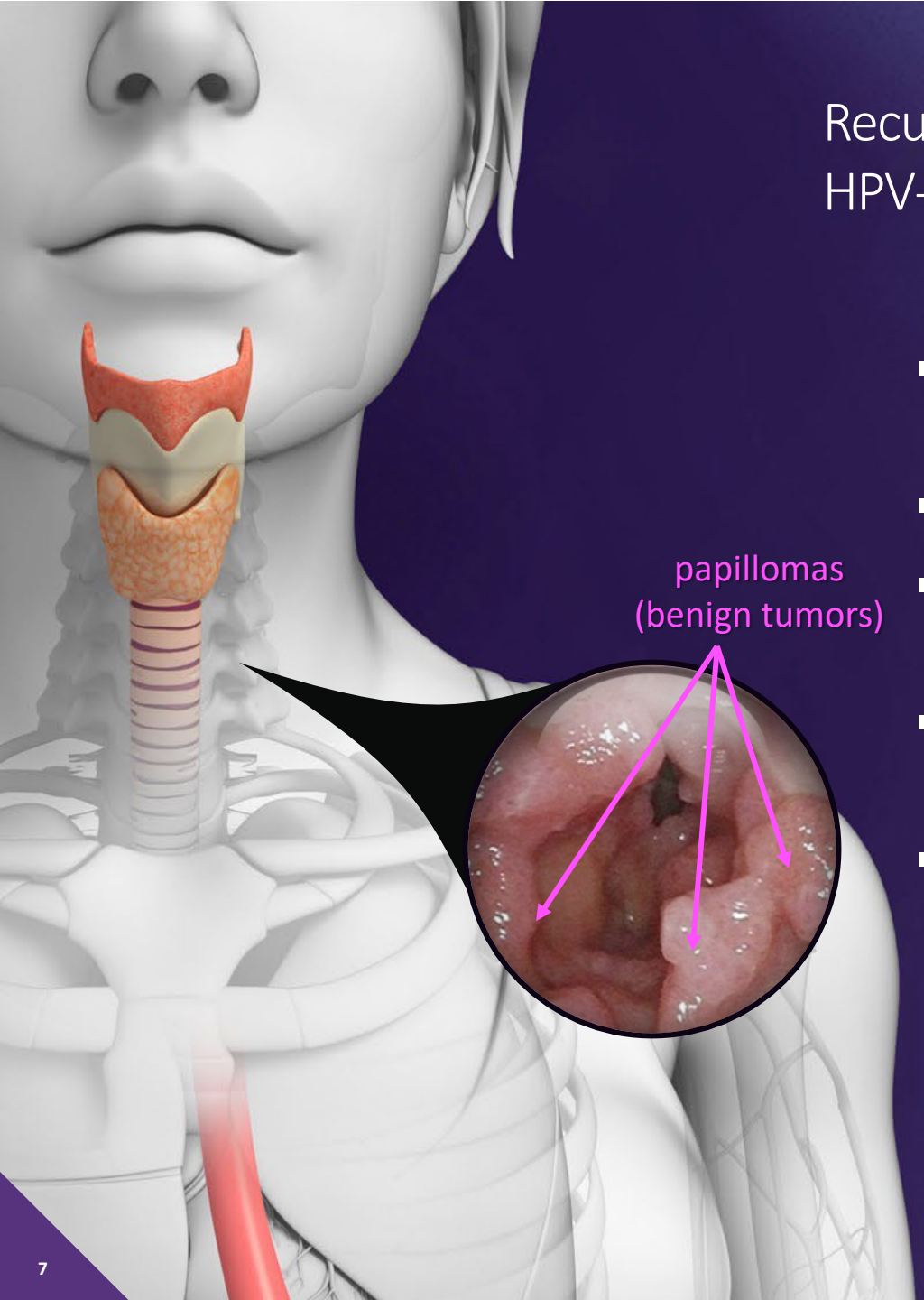
PRGN-2012
for the Treatment of RRP

Recurrent Respiratory Papillomatosis (RRP) is an HPV-driven Disease with No FDA-approved Therapeutic



- RRP is a recurring benign HPV-mediated tumor on the larynx that is mainly treated surgically
- HPV6 and HPV11 infections are the drivers of the disease
- RRP is potentially life-threatening especially if pulmonary or malignant transformation occurs
- RRP can cause severe voice disturbance, airway compromise, fatal pulmonary lesions, and invasive cancers
- Current standard-of-care treatment is repeat surgical debulking of papilloma with hundreds of lifetime surgeries needed for many patients

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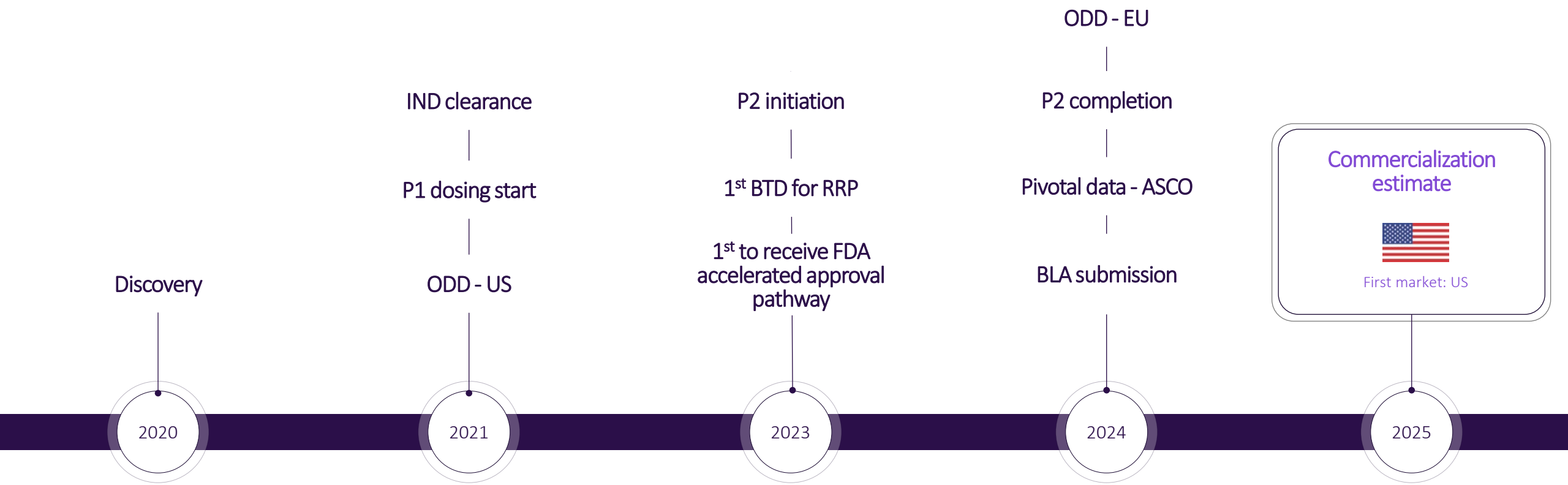
Precigen Spearheaded Breakthrough Innovation of the First RRP Therapeutics



Note: IND=investigational new drug application; ODD=orphan drug designation; BTD=Breakthrough Therapy Designation; FDA=Food and Drug Administration; P1=Phase 1; P2=Phase 2; RRP=recurrent respiratory papillomatosis; BLA=biologics license application; ASCO=2024 American Society of Clinical Oncology Meeting; EU=European Union.

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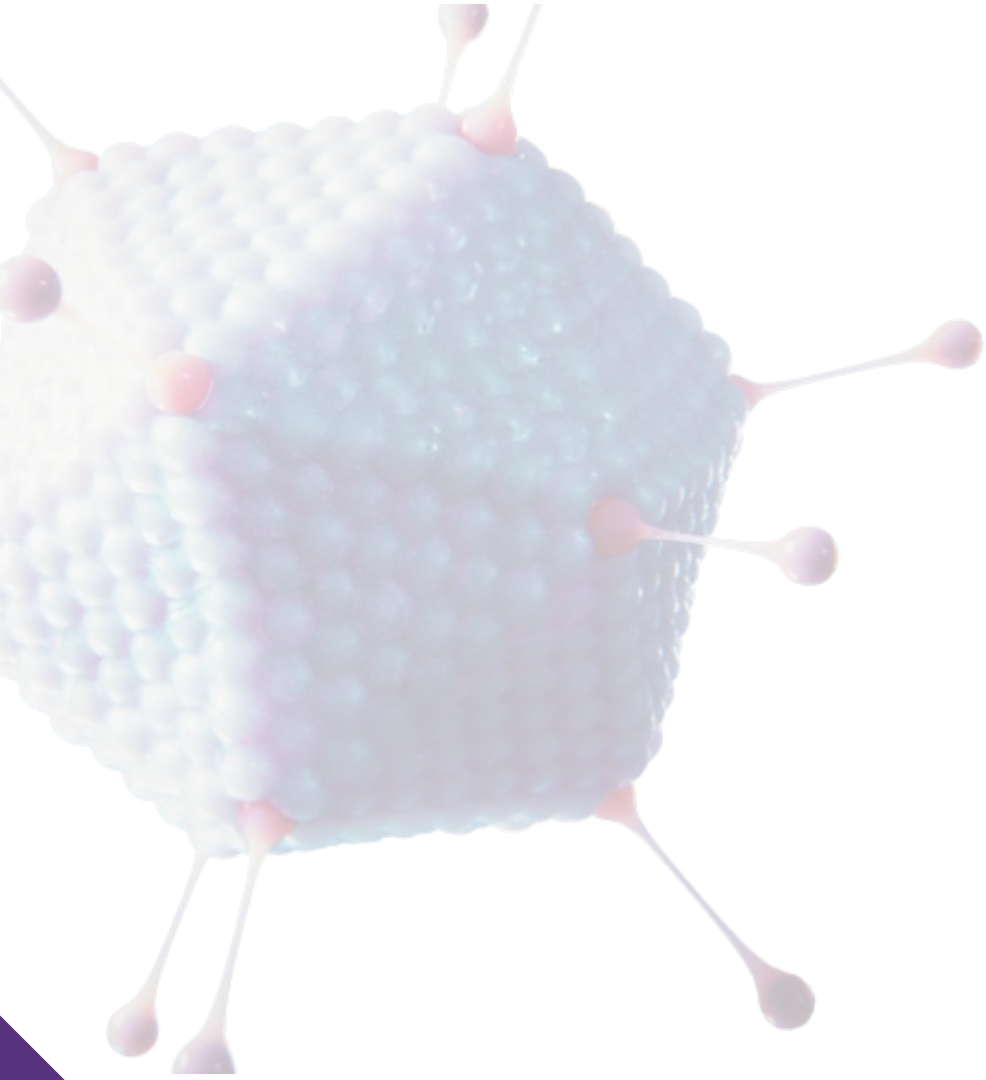
Positive Pivotal Data and Alignment with FDA Support PRGN-2012 as a Potential First- and Best-in-Class Therapeutic for RRP



Pivotal data presented as late-breaking presentation at 2024 ASCO

- Significant efficacy and favorable safety demonstrated in recurrent respiratory papillomatosis

BLA Submitted with request for priority review

- Alignment with FDA on accelerated approval pathway
- Breakthrough Therapy Designation in US
- Orphan Drug Designation in US and EU

Significant potential market opportunity in RRP

- No FDA-approved therapies
- *According to recently updated internal analysis derived from review of claims data, the market opportunity for PRGN-2012 in RRP is estimated to be approximately 27,000 adult patients in the US and >125,000 ex-US*

Established cGMP capabilities

- In-house commercial drug substance facility to control timelines and meet demand

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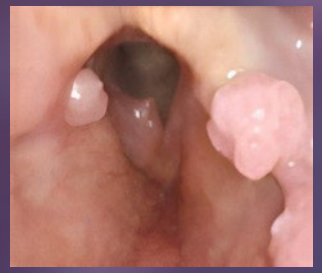
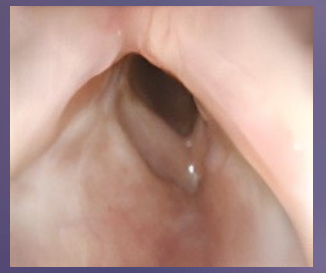
PRGN-2012 Targets HPV6/11 Infected Cells

- Gorilla adenoviral vector with the ability for repeat injections
- Designed to elicit T cell mediated immune responses against papilloma cells infected with HPV6 or HPV11

Actual patient before treatment



Same patient after treatment



PRGN-2012 AdenoVerse

1 PRGN-2012 administered to patient via subcutaneous injection

2 Vector delivers payload to host cell

3 Antigen response elicits therapeutic T cell activation

4 Influx of activated T cells are directed into the papillomas

host cell

antigen presentation

T cell

activated T cells

papilloma

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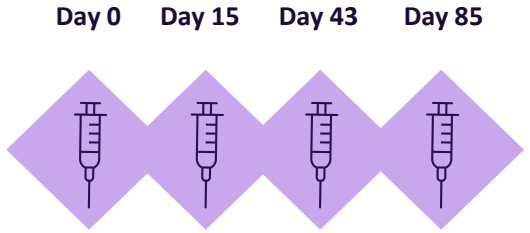
PRGN-2012 Pivotal Study Design & Patient Demographics

PRGN-2012
Subcutaneous Injection
5 x 10^{11} PU/injection



Enrollment	Dose Per Injection
N=35	DL2: 5x10^{11} PU

DL: Dose Level; PU: Particle Units

Pre-treatment Disease History (12-months) | **Treatment Phase** | **Follow-Up Phase (12-months)**

PRIMARY ENDPOINTS

- **Safety**
- **Complete Response Rate:** Percentage of patients with no surgeries required to control RRP in the 12 months following completion of treatment

KEY SECONDARY ENDPOINTS

- HPV 6/11–specific immune responses
- Extent of papilloma growth (Derkay scores) and quality of life (Vocal Handicap Index: VHI-10)

	5x10^{11} PU / injection (N=35)
Mean age (range), years	49.3 (20-88)
Male/Female	20 (57%) / 15 (43%)
Patient Characteristics	
Age at diagnosis (years)	1-68
Juvenile onset	12 (34%)
Adult onset	23 (66%)
Mean age at diagnosis	29 (1-68)
Mean years since diagnosis	20 (1-65)
Baseline Disease	
Surgeries in last 12 months	Mean 4.5 (range 3-10)
Derkay score	Mean 10.6 (range 3-31)
VHI-10	Mean 23.5 (range 6-40)

Note: Results from patients treated at recommended Phase 2 dose (Dose Level 2; 5x10^{11} per injection) from Phase 1/2 study are included in this presentation. Results from the Phase 1 portion were published in Norberg SM et al., Sci Transl Med (2023).

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PRGN-2012 Treatment was Well-tolerated with No DLTs

TREATMENT RELATED TREATMENT EMERGENT ADVERSE EVENTS OCCURRING IN MORE THAN 1 PATIENT

Event	$5x10^{11}$ PU / injection (N=35)	
	Grade 1	Grade 2
	(N, %)	(N, %)
Chills	25 (71%)	-
Fatigue	28 (80%)	2 (6%)
Fever	24 (69%)	-
Headache	2 (6%)	
Hyperhidrosis	2 (6%)	-
Injection site reaction	34 (97%)	-
Myalgia	9 (26%)	2 (6%)
Nausea	8 (23%)	-
Vomiting	2 (6%)	-

SAFETY SUMMARY

- TRAEs were Grade 1-2, no Grade > 2 TRAEs
- The most common TRAEs were injection site reactions, chills, fatigue and fever
- TRAEs were mostly mild, with no DLTs or treatment related serious adverse events
- No treatment discontinuations; all patients received four doses of PRGN-2012

DLT: Dose Limiting Toxicity
TRAE: Treatment Related Adverse Event

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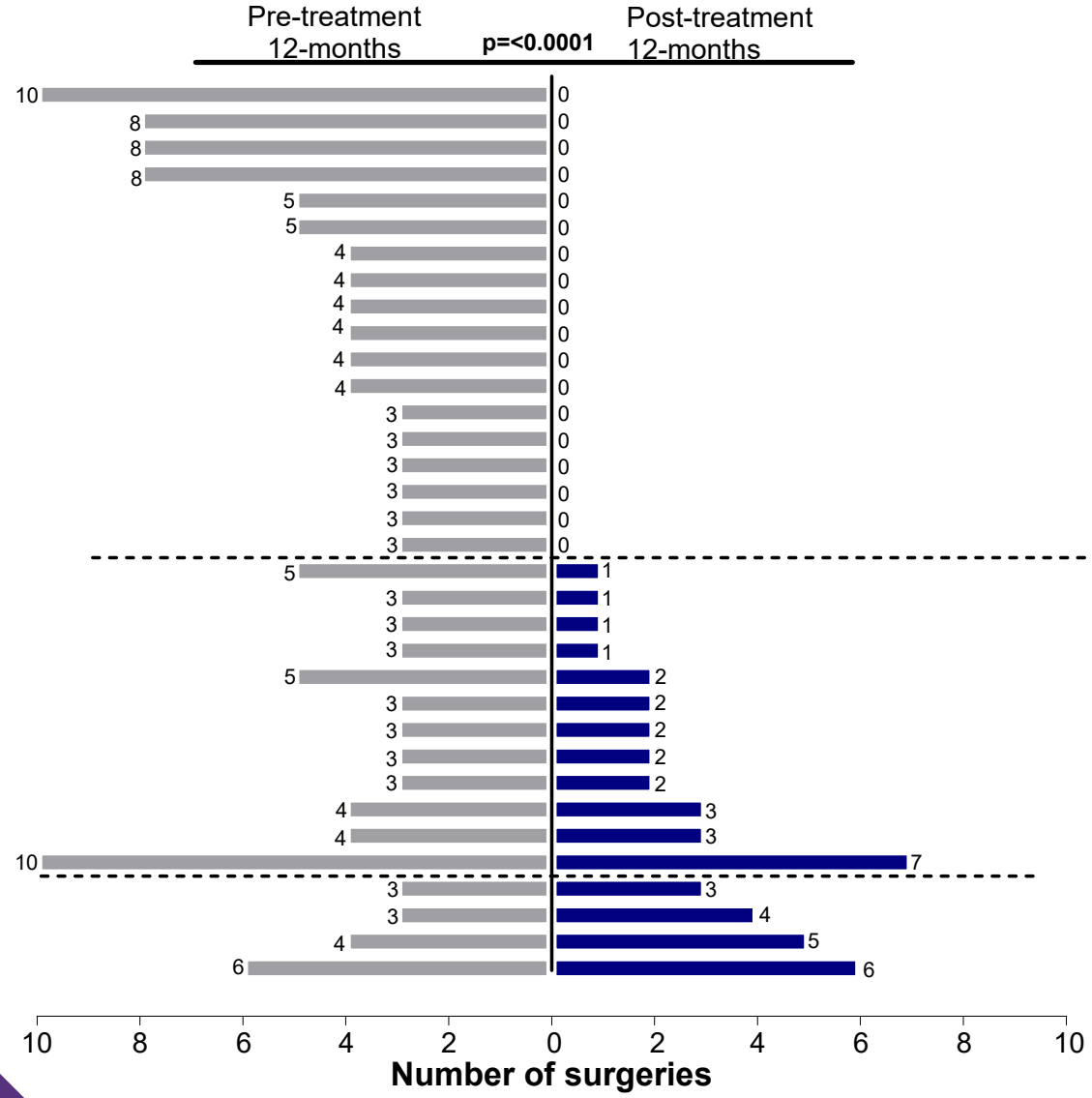
Pivotal Study Met Primary Efficacy Endpoint

51% Complete Response Rate | 86% Patients had a Reduction in Number of Surgeries



Clinical Efficacy Summary	Phase 1 (N=12)	Phase 2 (N=23)	Phase 1/2 Total (N=35)
Complete Response Rate No surgeries needed during 12-months post-treatment	**50% (6/12)**	**52% (12/23)**	**51% (18/35)**
Decrease in number of surgery 12-months post-treatment compared to 12-months pre-treatment	**83% (10/12)**	**87% (20/23)**	**86% (30/35)**

- **51% Complete Response (CR) Rate (95% CI [34-69%])**

  Complete Response = No need for surgery for 12 months after PRGN-2012 treatment completion

- **86% of patients demonstrated a reduction in need for surgeries (95% CI [70-95%])**

  Number of surgeries required during the 12 months after PRGN-2012 treatment completion was reduced compared to 12 months prior to treatment

Note: One subject was excluded as they did not complete 12 months of follow-up.

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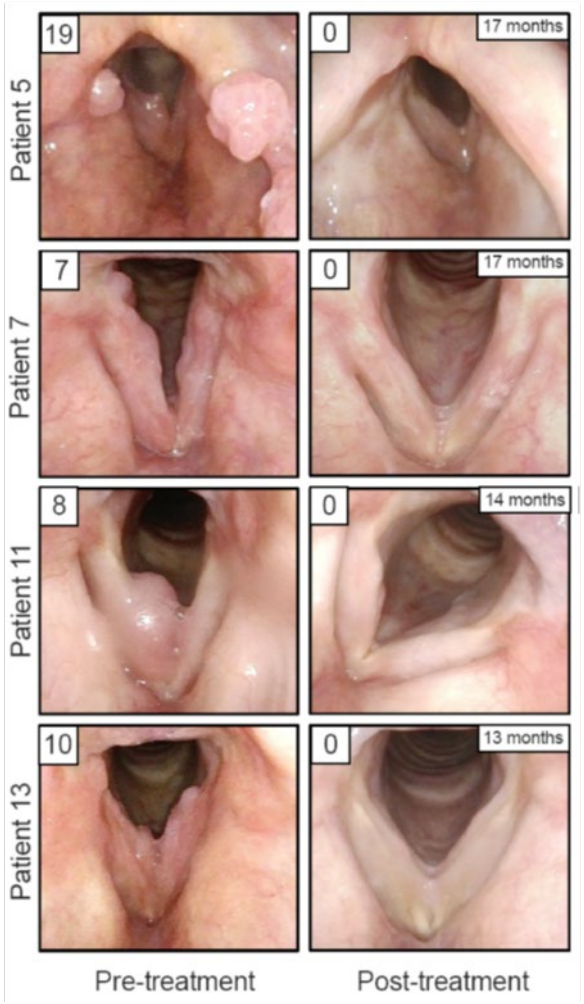
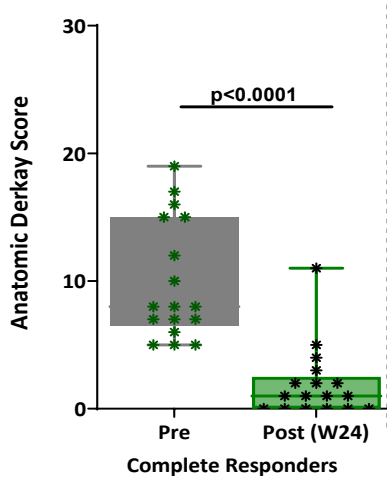
Significant Improvement in Derkay Anatomic Score, Vocal Function (VHI-10), and HPV-Specific T Cell Response in Complete Responders

REPRESENTATIVE IMAGES OF COMPLETE RESPONDERS

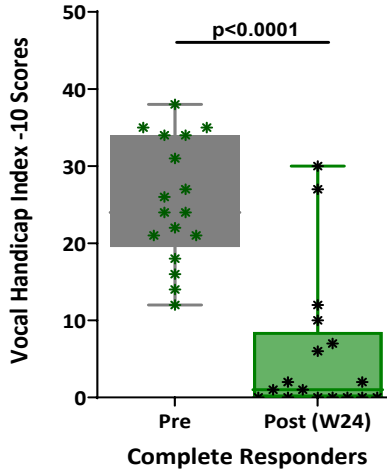


Numbers on top left of images represent Derkay Score

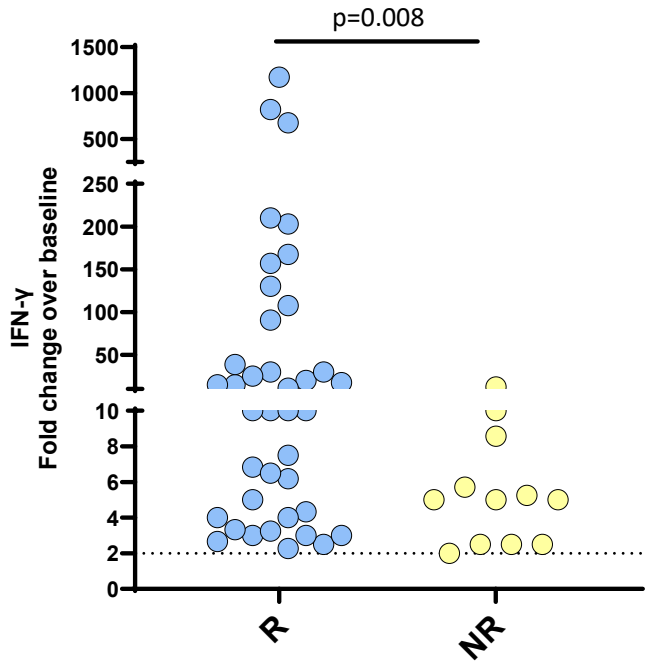
DERKAY SCORE: REDUCTION IN PAPILLOMA SEVERITY



VHI-10 INDEX: IMPROVED VOICE QUALITY



HPV 6/11-SPECIFIC T CELL IMMUNE RESPONSE



R: Responder; ≥50% reduction in surgeries post treatment
NR: Non-responder <50% reduction in surgeries post treatment

Peripheral blood samples of patients were analyzed in IFN-γ ELISpot Assay
Each dot represents T cell response against specific HPV6/11 epitopes that were at least two-fold higher than baseline

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We Expect PRGN-2012 to be the First- and the Best-in-Class RRP Treatment

- Significant efficacy and favorable safety profile demonstrated in RRP
- Ease of SQ administration is preferred by HCPs
- Established mechanism of action with strong HPV 6/11-specific T cell immune response
- Lack of meaningful anti-drug neutralizing antibodies enabling repeat dosing
- Breakthrough Therapy Designation & Orphan Drug Designation from the FDA
- Confirmatory clinical study ongoing
- BLA submission completed under accelerated approval pathway; Anticipated US launch in 2H ‘25

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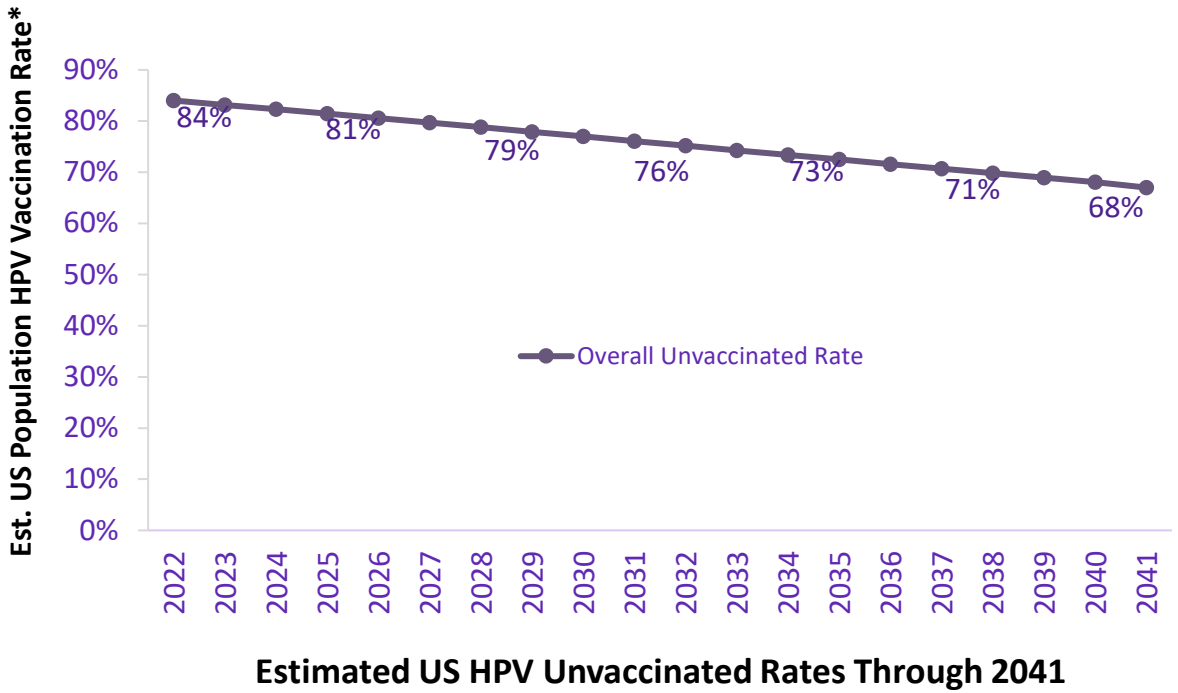
PRGN-2012
Commercial Opportunity

Prevalence of RRP is not Expected to be Impacted by Gardasil® Vaccination for Next Two Decades

Estimated Impact of Vaccination on RRP Growth



Estimated US HPV Unvaccinated Rates Through 2041

HPV vaccination is unlikely to have a substantial impact on the RRP patient population through 2040

- Despite Gardasil introduction in 2006, HPV rates only declined by ~4% overall through 2013 (from ~44% to ~40%)
- Projecting vaccination rates forward, an estimated ~70% of individuals are expected to remain unvaccinated by 2040 and approximately 85% in those aged 40 and older as compared to 90% today

Sources: Satterwhite et al. Sexually transmitted infections among US women and men prevalence and incidence estimates. 2008; Fueta et al. Prevalence of HPV infection in the US: A comparison of HPV infection trends pre and post-HPV vaccine implementation. 2020; Lewis et al. Estimated prevalence and incidence of disease-associated HPV types among 15-59 year olds in the US. 2021; CDC Morbidity and Mortality Weekly Report. National vaccination coverage among adolescents aged 13-17. 2022; CDC NCHS Data Brief. HPV vaccination among adults aged 18-26 from 2013-2018. 2020, accessed October 2023; Vaccination rates refer to individuals who have not been fully-dosed with Gardasil

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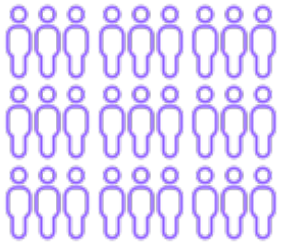
PRGN-2012 Offers Blockbuster Potential in RRP

Significant Potential in Other HPV 6/11-driven Indications

Currently there is no FDA-approved therapeutic for RRP

Prevalence of RRP in US[1]

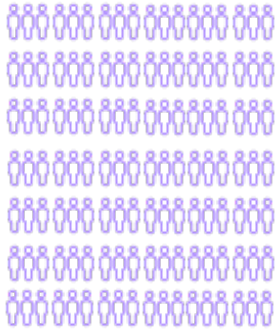


~ 27,000

Adult patients

Recently updated internal analysis derived from claims data

Prevalence of RRP ex-US[2]



> 125,000

patients

[1,2] Precigen Commissioned Research

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Significant Unmet Need in RRP

What **Patients** are Seeking

- Reduction in number of surgeries and improvement in voice quality
- Return to ‘normal’ life/ productivity

“I think about what it would be like if there's a therapeutic option...I could go to my laryngologist and get an injection...even if I had to do that every single month, I would do that a thousand times over rather than have surgery”

– Kim McClellan, President, RRPF

What **Providers** are Seeking

- Disease modifying therapy
- Avoidance of potential surgical complications
- Preservation of voice quality in patients

“Nobody wants to operate on these patients over and over again because that leads to further scarring and complications and risks”

– Laryngologist[1]

1) Source: TIG Primary Research conducted December 2024

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PRGN-2012 Product Profile Aligns with what KOLs are Seeking in RRP Treatment

Safety Profile

- No treatment discontinuations
- All patients in study received all 4 doses of drug
- No TRAE > grade 2

"Looking for side effect risks, most of these side effects show as an initial immune reaction, so I am not concerned"

- Laryngologist with ~100 RRP pts

Efficacy / Clinical Outcomes

- 51% CR rate
- 86% patients with a reduction in surgeries
- Significant improvement in voice quality (VHI-10)

"The fact that 51% achieved a complete response…that is pretty significant"

- Laryngologist with ~100 RRP pts

Dosing

- Simple SQ administration
- No accompanying device needed

"The are subcutaneous doses, so there's really no problem with administration "

- Laryngologist with ~100 RRP pts

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GMP Readiness

Precigen's cGMP Manufacturing Facility in Germantown, MD

Commercial Supply of Drug Substance

Germantown cGMP facility

- In-house GMP facility allows Precigen to control drug substance (DS) manufacturing
  - Precigen team with >20 yrs of technical expertise in AdenoVerse process development and GMP manufacturing
  - Control over timelines and independence from CDMOs to meet supply
- All clinical trial lots produced at this facility
- Facility upgraded to support commercial launch
- Facility operational and manufacturing commercial-scale drug substance lots

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UltraCAR-T

Best-In-Class CAR-T Platform Solving Present Day Challenges

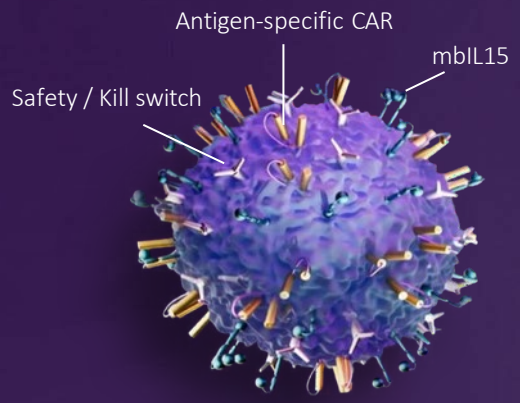
UltraPorator®

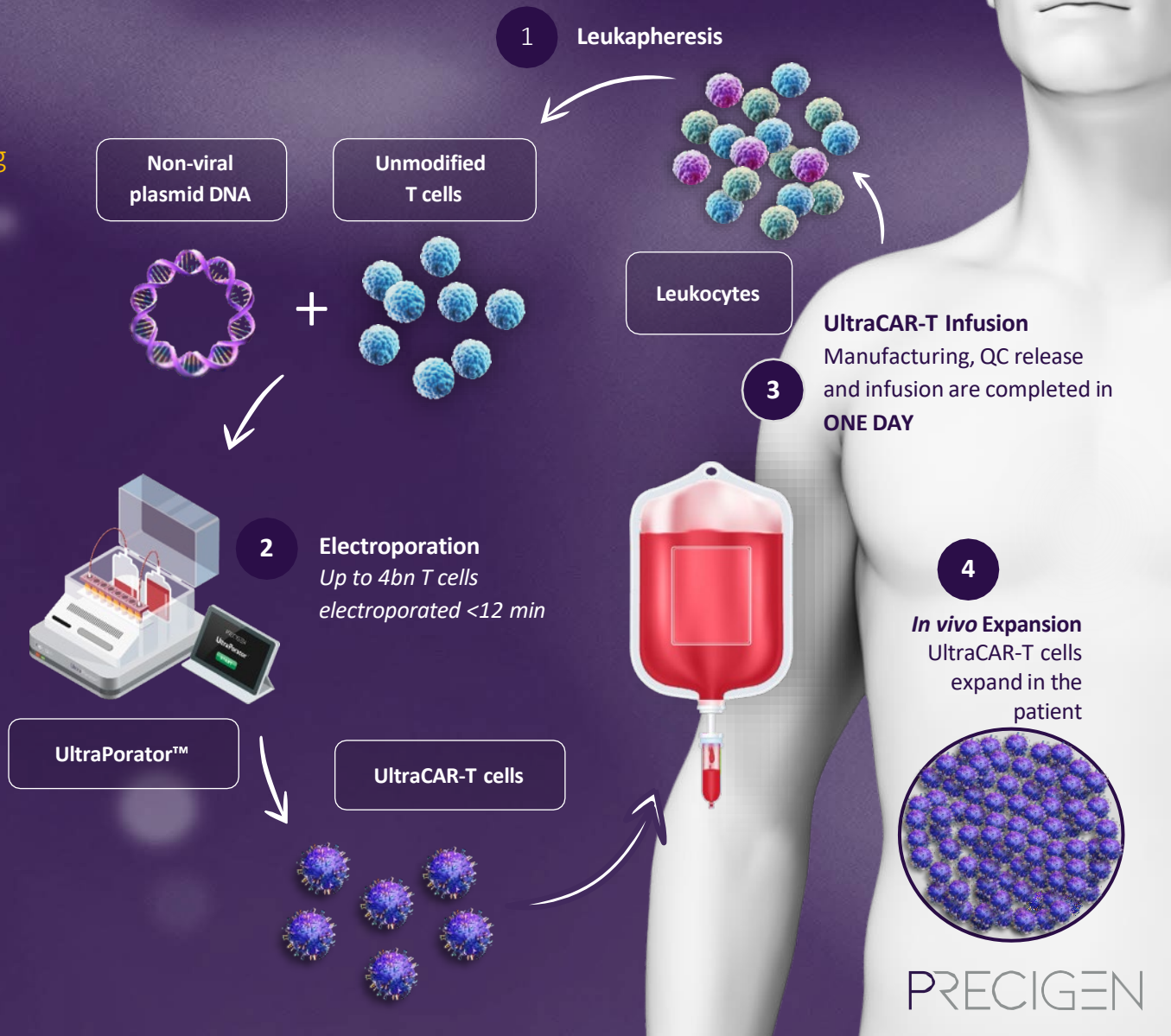
- Precigen's proprietary system
- Electroporation optimized for UltraCAR-T
- Semi-closed system minimizes manual handling and reduces processing time
- Rapid, high efficiency gene transfer protocol
- High throughput system handles a large number of T cells per batch
- Streamlines tech transfer & implementation at medical centers
- Potential application in various gene and cell therapies

UltraCAR-T Platform

Overnight, decentralized manufacturing process and next-day infusion significantly reduces wait time for autologous CAR-T treatment

Proprietary UltraPorator system optimized for rapid UltraCAR-T manufacturing





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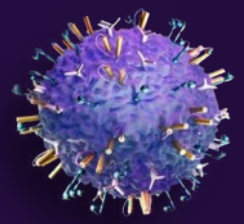
UltraCAR-T Pipeline



UltraCAR-T®

Novel cell therapy platform to engineer the immune system *ex vivo* (from OUTSIDE the body) rapidly with overnight manufacturing

Non-viral multi-gene delivery
Non-exhausted, stem-like T cell phenotype
Higher antigen-specific expansion
Enhanced *in vivo* persistence
Ability to deplete with kill switch
Overnight manufacturing process at the hospital and next day infusion to the patient

Product	Target	Indication	Discovery	Preclinical	Phase 1	Phase 1B	Phase 2	Phase 3
PRGN-3005	Unshed MUC16	Ovarian Cancer						
PRGN-3006	CD33	AML, MDS				Fast Track Designation; Orphan Drug Designation		
Next-Gen UltraCAR-T PRGN-3007	ROR1	ROR1+ Hematological & Solid Tumors						
Next-Gen UltraCAR-T PRGN-3008	CD19	CD19+ B-cell Cancers / Autoimmune						

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PRGN-3006: Autologous CAR-T Cell Therapy for AML and MDS

AML and MDS

HIGH UNMET NEED

5-year survival as low as 5% for **AML patients** over 65[3]

>11K estimated deaths from AML in 2024[1]

>20K US

Newly diagnosed **AML patients** per year [1]

>10K US

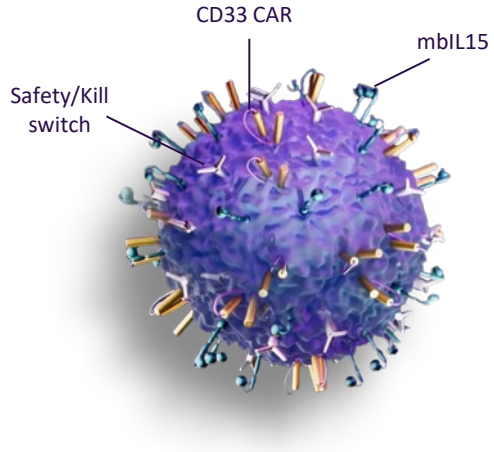
Newly diagnosed **MDS patients** per year [2]

CD33 is overexpressed on myeloid leukemia cells and leukemic stem cells

Current Treatment Paradigm

- Approximately 50% of AML patients relapse[4,5]
- Prognosis is very poor for relapsed or refractory (r/r) AML patients

PRGN-3006 UltraCAR-T



- Multigenic, autologous CAR-T
- Overnight, decentralized manufacturing
- Same day QC testing and release
- FDA Fast Track and Orphan Drug Designation

Phase 1b trial enrollment complete

Trial close-out activities ongoing

Preparing for end of Phase meeting with the FDA

[1]American Cancer Society. Key Statistics for Acute Myeloid Leukemia (AML).
[2]American Cancer Society. Key Statistics for Myelodysplastic Syndromes.
[3]Thein, M., et al., Outcome of older patients with acute myeloid leukemia: an analysis of SEER data over 3 decades. Cancer, 2013. 119(15): p.2720-7.
[4]Dohner H, et al., Blood (2010);115:453–474.
[5]Burnett A, et al., J Clin Oncol (2011);29:487–494

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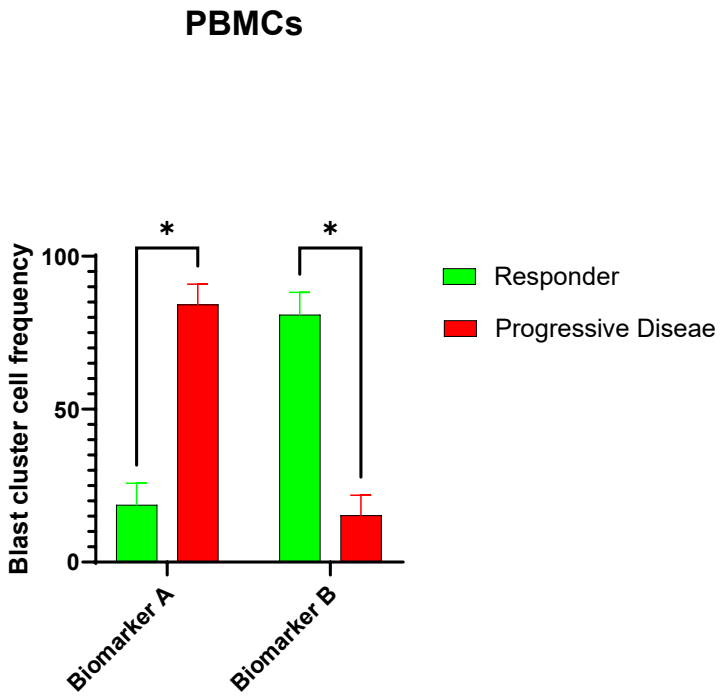
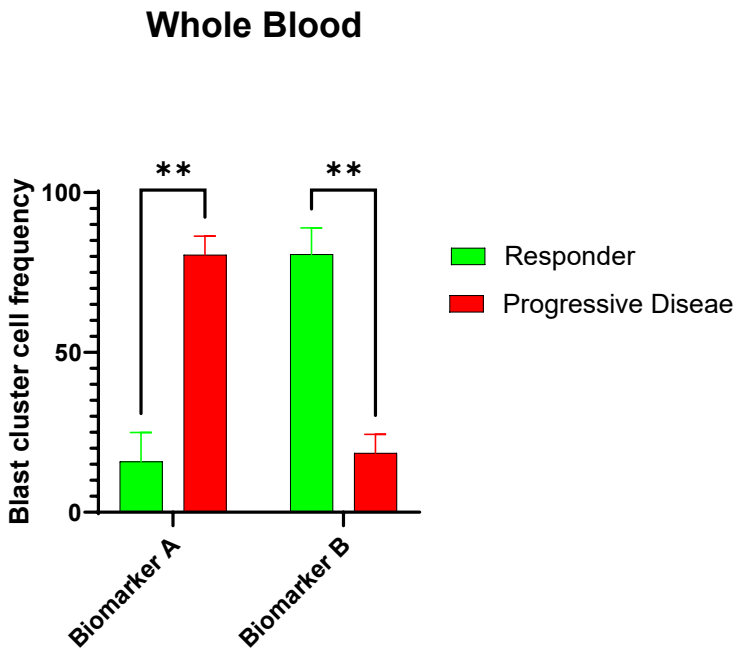
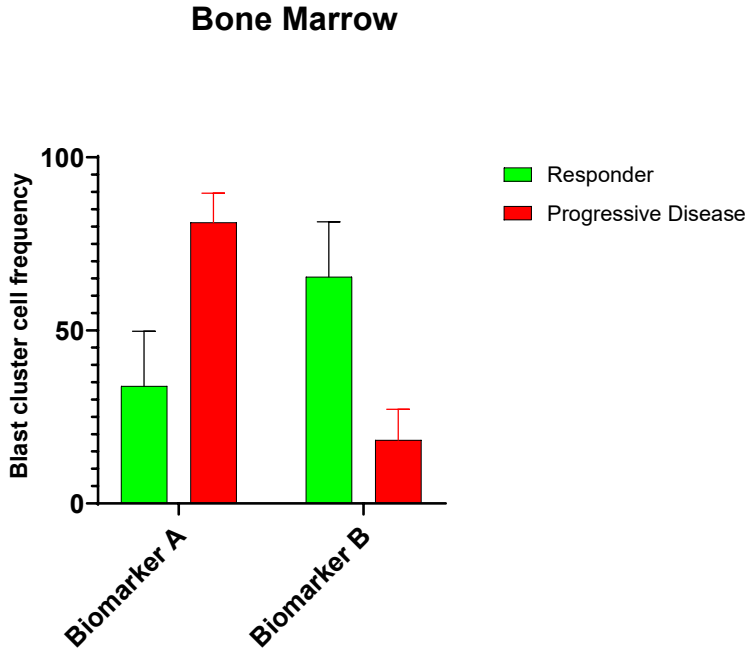
Identification of Clinical Biomarkers Correlates to Objective Responses in AML Patients







* 2 -way Anova <0.01

** 2 -way Anova <0.001

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UltraCAR-T Lead Asset: PRGN-3006

Summary

- Favorable safety profile
- Significant efficacy shown in Phase 1 study
- Completed enrollment in Phase 1b dose expansion study
  - Successful expansion to multiple sites
- Identified novel biomarkers to potentially enable patient stratification and positively impact efficacy

Next Step

- Conduct End of Phase meeting with FDA to address the pivotal trial strategy

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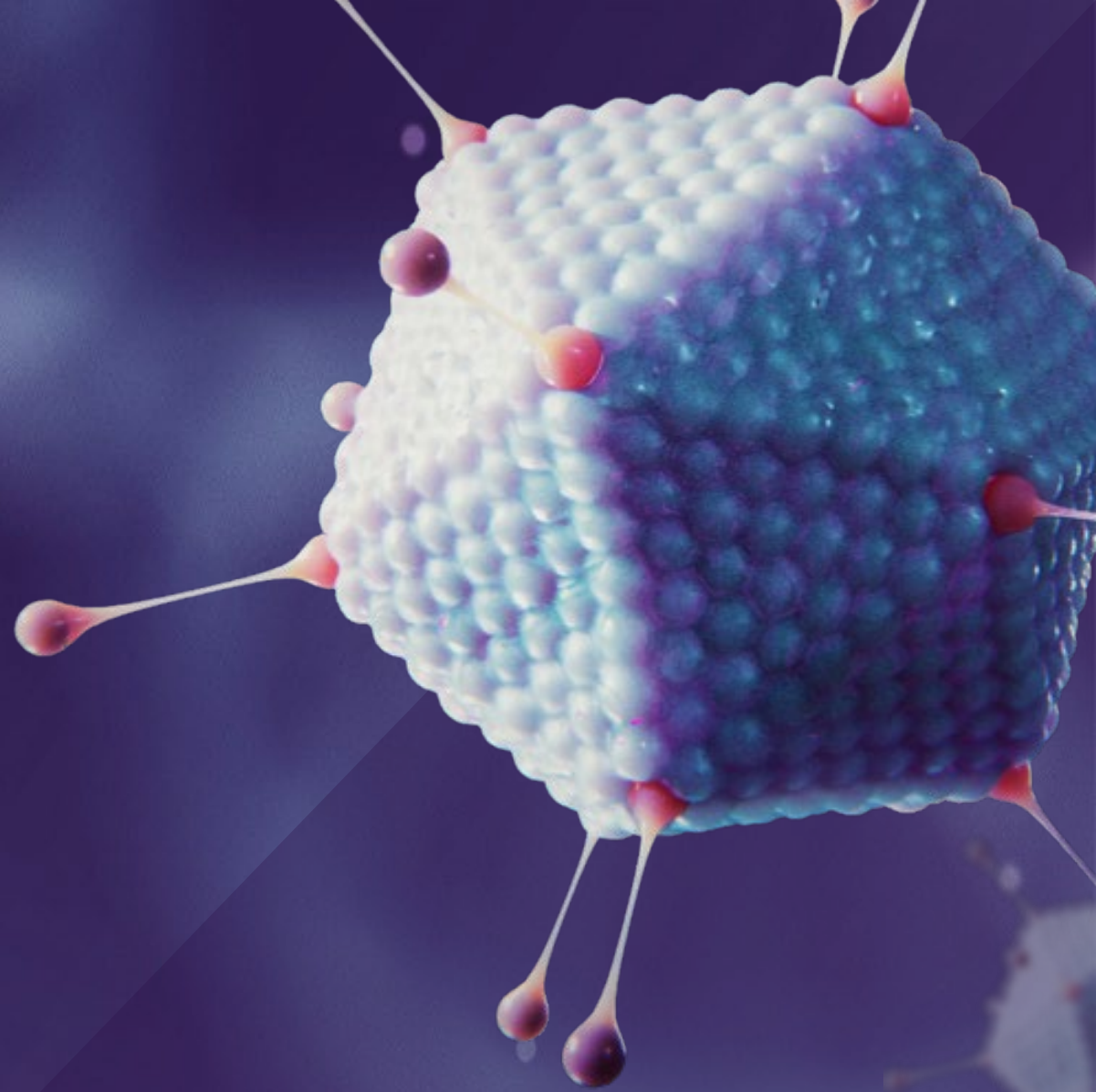

Nasdaq: PGEN