PRECIGEN

Precigen, Inc.

January 12, 2022

Helen Sabzevari, PhD

President & Chief Executive Officer

40th Annual J.P. Morgan Healthcare Conference

Forward-looking Statements

Some of the statements made in this presentation are forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. These forward-looking statements are based upon Precigen's current expectations and projections about future events and generally relate to plans, objectives and expectations for the development of Precigen's business and can be identified by forward-looking words such as “may,” “will,” “potential,” “seek,” “expect,” “believe,” “anticipate,” “intend,” “continue,” “opportunity,” “groundwork,” “poised,” “future,” “update” and similar expressions. Examples of forward-looking statements in this presentation include statements about the timing, pace and progress of preclinical and clinical trials and discovery programs, the potential benefits of platforms and product candidates including in comparison to competitive platforms and products, and the steps necessary to achieve regulatory approvals and commercial sales. Although management believes that the plans, objectives and results reflected in, or suggested by, these forward-looking statements are reasonable, all forward-looking statements involve risks and uncertainties and actual future results may be materially different from the plans, objectives and expectations expressed in this presentation. These risks and uncertainties include, but are not limited to: (i) the impact of the COVID-19 pandemic on Precigen’s businesses; (ii) Precigen’s strategy and overall approach to its business model; (iii) the uncertain timing and results of investigational studies and preclinical and clinical trials, including any delays or potential delays as a result of the COVID-19 pandemic; (iv) the fact that interim and preliminary results may change as more data becomes available and are subject to procedures that could result in changes to the final data, and results in early-stage clinical trials may not be indicative of results in later-stage clinical trials; (v) the lengthy and expensive clinical development process and the potential difficulty in enrolling patients; (vi) the lengthy and unpredictable nature of the regulatory approval process; (vii) Precigen’s limited experience designing and implementing clinical trials; (viii) the ability of Precigen to successfully enter into optimal strategic relationships directly or with its subsidiaries and operating companies; (ix) the ability to generate significant operating capital, including through partnering, asset sales and operating cost reductions; (x) actual or anticipated variations in operating results; (xi) Precigen’s cash position; (xii) market conditions in Precigen’s industry; (xiii) the volatility of Precigen’s stock price; (xiv) Precigen’s ability, and the ability of its collaborators, to protect Precigen’s intellectual property and other proprietary rights and technologies; (xv) Precigen’s ability, and the ability of its collaborators, to adapt to changes in laws or regulations and policies, including federal, state, and local government responses to the COVID-19 pandemic; (xvi) outcomes of pending and future litigation; (xvii) the ability to retain and recruit key personnel; and (xviii) expectations related to the use of proceeds from public offerings and other financing efforts. For a discussion of other risks and uncertainties, and other important factors, any of which could cause actual results to differ from those contained in the forward-looking statements, see the section entitled "Risk Factors" in Precigen’s Annual Report on Form 10-K, as well as discussions of potential risks, uncertainties, and other important factors in Precigen’s subsequent filings with the Securities and Exchange Commission.

This presentation contains market data and industry statistics and forecasts based on studies and clinical trials sponsored by third parties, independent industry publications and other publicly available information. Although Precigen believes these sources are reliable, it does not guarantee the accuracy or completeness of this information and has not verified this data.

All of the pharmaceutical products described in this presentation are investigational new drugs, which are currently undergoing pre-clinical and/or human clinical trial testing. As a result, none of them have had their safety or efficacy established or are approved by the U.S. Food and Drug Administration or any other regulatory agency.

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.

Precigen Clinical Pipeline

PRECIGEN

IMMUNO-ONCOLOGY

PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
PRGN-3005	UltraCAR-T	Ovarian Cancer					
PRGN-3006	UltraCAR-T	AML, MDS					
PRGN-3007	UltraCAR-T	ROR1⁺ Hematological & Solid Tumors					
PRGN-2009	AdenoVerse	HPV⁺ Solid Tumors					

INFECTIOUS DISEASE

PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
PRGN-2012	AdenoVerse	Recurrent Respiratory Papillomatosis (RRP)					

AUTOIMMUNE DISORDERS

PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
AG019	ActoBiotics	Type 1 Diabetes					

EMERGING THERAPEUTICS

PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3
INXN-4001	Non-viral UltraVector	Heart Failure					

Precigen in 2021: Significant Clinical Progress Across Pipeline Programs

PRECIGEN

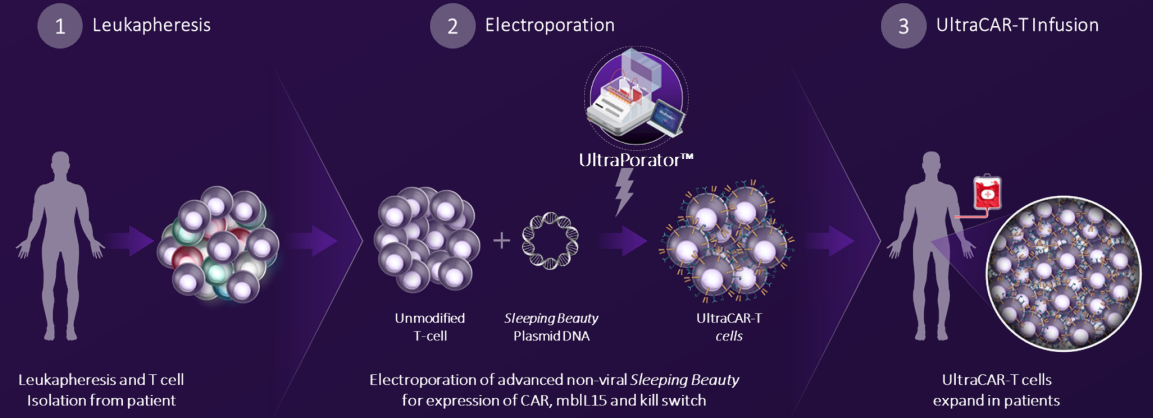
- **PRGN-3006 UltraCAR-T: Completed dose escalation and presented positive interim data from the Phase 1 trial in AML**
- **PRGN-3005 UltraCAR-T: Initiated the IV arm of the Phase 1 trial and completed enrollment for Dose Level 3. Presented encouraging interim data from Phase 1 IP arm**
- **PRGN-3007 next gen UltraCAR-T incorporating intrinsic PD-1 inhibition: Received IND clearance to initiate a Phase 1 trial in ROR1^{+} hematological (CLL, MCL, ALL, DLBCL) and solid (TNBC) tumors**
- **PRGN-2012 AdenoVerse Immunotherapy: Completed enrollment in the dose escalation and dose expansion cohorts of the Phase 1 trial in Recurrent Respiratory Papillomatosis and presented positive preliminary data**
- **PRGN-2009 AdenoVerse Immunotherapy: Initiated Phase 1 checkpoint combination and Phase 2 monotherapy trials. Presented positive data from the Phase 1 monotherapy and checkpoint combination trial in HPV-associated cancers**
- **PRGN-2013 AdenoVerse Immunotherapy (therapeutic HBV vaccine): Initiated IND-enabling studies**
- **AG019 ActoBiotics: Completed the Phase 1b/2a clinical trial and presented positive data from the Phase 1b/2a trial in Type 1 diabetes**

PRGN-3006 UltraCAR-T: Differentiated Design and Overnight Manufacturing

PRECIGEN

PRGN-3006 TARGETS CD33

- Non-viral system to simultaneously express CD33 CAR, mbIL15 and kill switch
- Overnight, decentralized manufacturing process
- CD33 is overexpressed on AML blasts and leukemic stem cells
- 85-90% of AML patients show expression of CD33 on blast cells[1]
- Minimal expression outside of hematopoietic system



[1]Molica M et al., Cancers 2021

DISEASE SNAPSHOT

HIGH UNMET NEED

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

>11K estimated deaths from AML in 2021[1]

>20K US

Newly diagnosed AML patients per year [1]

>10K US

Newly diagnosed MDS patients per year [2]

[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

PRGN-3006 Phase 1/1b Clinical Trial: Interim Data Demonstrate Excellent Safety and Objective Responses in AML Patients

PRGN-3006 PHASE 1/1B CLINICAL TRIAL: CURRENT STATUS

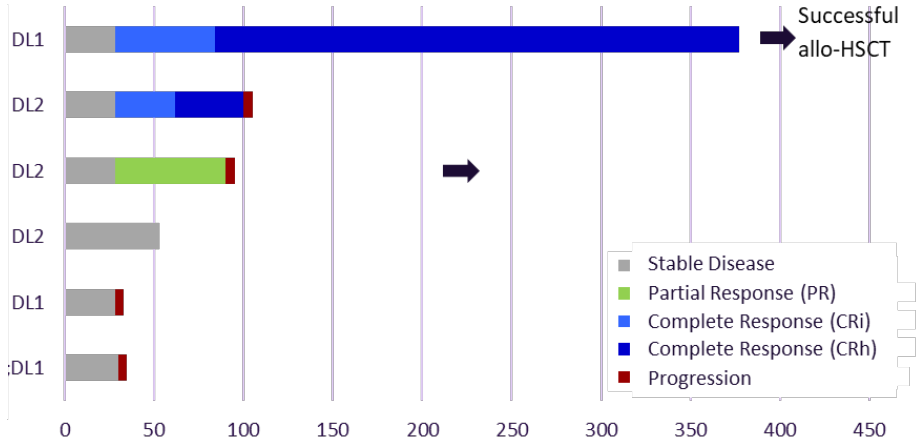
- **Completed enrollment in Dose Level 3 of the lymphodepletion cohort**
  - Follow-up ongoing
- Excellent safety profile with or without lymphodepletion
  - No DLTs and no neurotoxicity
- Excellent dose-dependent expansion and persistence with or without lymphodepletion in patients
- Results demonstrate feasibility of overnight, decentralized UltraCAR-T manufacturing
- Objective Response Rate (ORR) of 50% in patients treated at the two lowest dose levels in the lymphodepletion cohort

ANTICIPATED 2022 MILESTONES

- Initiate a multicenter expansion phase at Dose Level 3 with lymphodepletion (1H 2022)
- Incorporate PRGN-3006-repeat dosing in the clinical trial
- Present additional Phase 1/1b trial data

COHORT 2 (LYMPHODEPLETION)

SUMMARY OF RESPONSES



Dose Level (DL)	DL1 (N=3)	DL2 (N=3)
Dose Range	>$3x10^4$ to ≤$1x10^5$/kg	>$1x10^5$ to ≤ $3x10^5$/kg
Total UltraCAR-T Dose Administered	4.4 – 10 x 10^6	18 - 28 x 10^6
ORR (%)	**33%**	**67%**

Sallman DA et al., Abstract # 825, 63rd American Society of Hematology Annual Meeting and Exposition

PRGN-3005 UltraCAR-T: Differentiated Design and Overnight Manufacturing

PRECIGEN

OVARIAN CANCER

- Ovarian cancer is the most lethal of the gynecologic malignancies[4]

HIGH UNMET NEED
Stage IV survival as low as 20%[3]

300K WW/22K US
Newly diagnosed patients per year[1, 2]

PRGN-3005 TARGETS UNSHED PORTION OF MUC16

- Non-viral system to simultaneously express MUC16 CAR, mbIL15 and kill switch
- Overnight, decentralized manufacturing process
- MUC16 is overexpressed on >80% of ovarian tumors[5]
- Limited expression found on healthy tissues
- Initial target is advanced stage platinum resistant ovarian cancer

MUC16 IS OVEREXPRESSED IN VARIOUS SOLID TUMORS

MUC16 expression (% patients)[6]

Ovarian Cancer
Addressable Patient Population:
24,000

Breast Cancer
Addressable Patient Population:
117,000

Pancreatic Cancer
Addressable Patient Population:
33,000

Endometrial Cancer
Addressable Patient Population:
42,000

Lung Cancer
Addressable Patient Population:
144,000

[1]World Health Organization, International Agency for Research on Cancer, Global Cancer Observatory. Cancer Today, Estimated number of new cases in 2018, worldwide, both sexes, all ages.
[2]American Cancer Society Ovarian Cancer Special Section.
[3]American Cancer Society. Survival Rates for Ovarian Cancer, by Stage.
[4]Giannone G. et al., AnnTransl Med (2019).
[5]Suh H, et al., Chemo Open Access (2017)
[6]Human Protein Atlas MUC16 Protein Expression Summary

PRGN-3005 Phase 1/1b Clinical Trial: Interim Data Demonstrate Excellent Safety and Clinical Activity in Ovarian Cancer Patients

PRGN-3005 PHASE 1/1B CLINICAL TRIAL: CURRENT STATUS

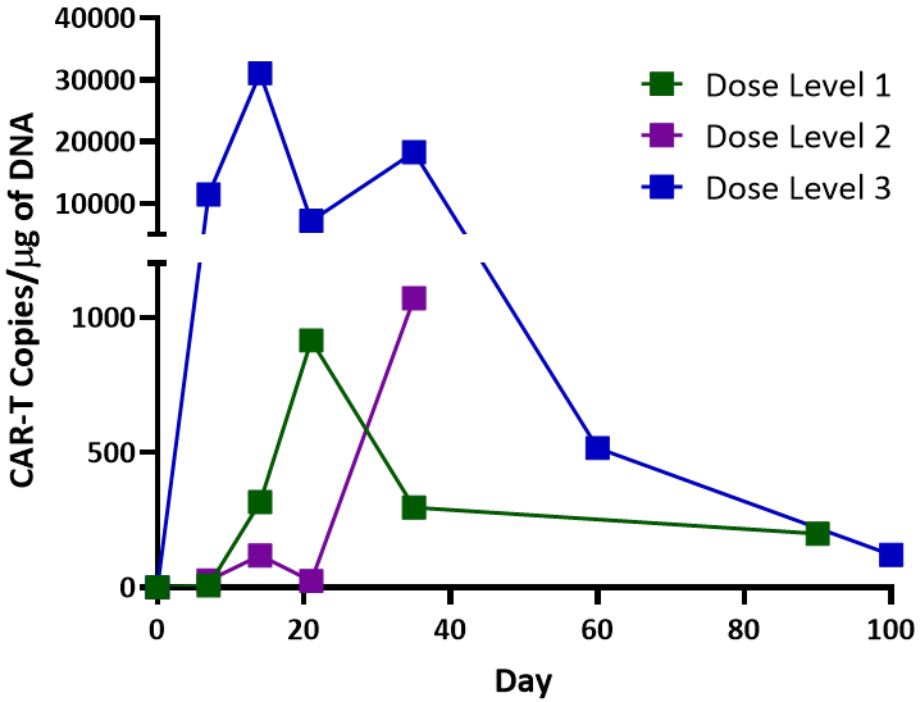
- **Completed enrollment in Dose Level 3 of the intravenous (IV) and IP arm**
  - Follow-up ongoing
- Excellent safety profile in both the IP and IV arms
  - No DLTs or no neurotoxicity
- Excellent dose-dependent expansion and persistence

ANTICIPATED 2022 MILESTONES

- Incorporate lymphodepletion at Dose Level 3 of IV arm. FDA clearance received
- Incorporate redosing and initiate multicenter expansion phase

INTRAPERITONEAL (IP) ARM

PRGN-3005 EXPANSION IN BLOOD



Limit of quantification: 50 CAR-T copies/µg
N=1-4 subjects at each time point

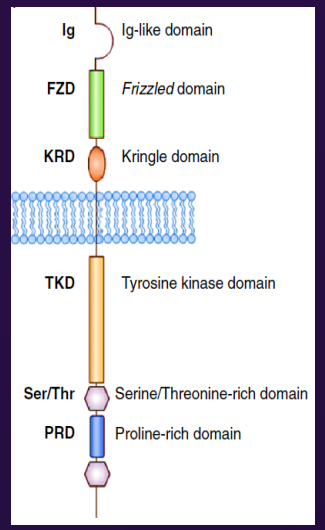
Source: Precigen R&D Day Presentation, November 4, 2021

PRGN-3007 UltraCAR-T: IND Approved to Initiate Phase 1/1b Study in ROR1+ Hematological and Solid Tumors

PRECIGEN

ROR1: AN ATTRACTIVE TARGET FOR HEMATOLOGICAL & SOLID TUMORS

- ROR1 expression contributes to tumor cell growth and survival
- ROR1 is overexpressed in chronic lymphocytic leukemia (CLL), mantle cell lymphoma (MCL), and acute lymphoblastic leukemia (ALL)[1,2]
- ROR1 is overexpressed in triple negative breast cancer (TNBC), pancreatic cancer, ovarian cancer, and lung adenocarcinomas[1,2]
- Minimal expression on normal adult tissues

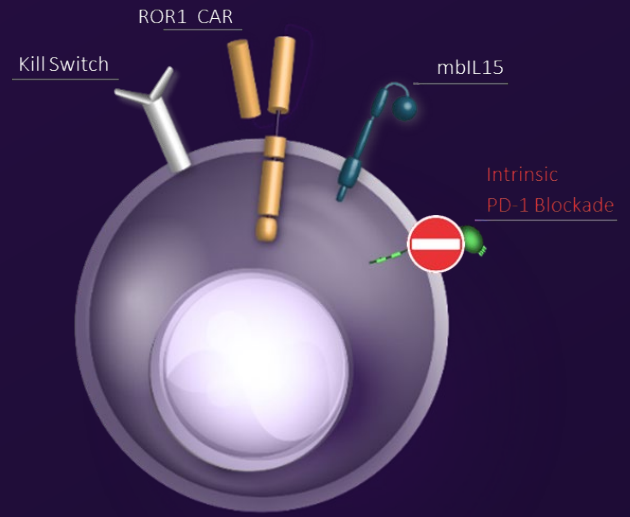


ROR1

Borcherding N, et al, 2014. *Protein & cell* 5:496-502

PRGN-3007: ROR1 CAR-T WITH INTRINSIC PD-1 INHIBITION

- ROR1 CAR to target various hematologic and solid tumors
- mbIL15 to improve *in vivo* expansion and persistence
- Kill switch to improve safety profile
- Intrinsic downregulation of PD-1 on UltraCAR-T cells to avoid systemic PD-1 blockade



PRGN-3007 UltraCAR-T

[1]Balakrishnan et al. Clin Cancer Res 2017;23:3061-3071
[2]Zhang et al, 2012. http://dx.doi.org/10.1016/j.ajpath.2012.08.024

INITIATION OF DOSING IN THE PHASE 1 STUDY ANTICIPATED IN 2022

PRGN-2012: Investigational Off-the-shelf AdenoVerse Immunotherapy for Recurrent Respiratory Papillomatosis (RRP)

PRECIGEN

RRP IS CAUSED BY HPV6 OR HPV11 INFECTION

- A rare disease in which benign tumors called papillomas grow in the respiratory tract
- Symptoms include hoarse voice, difficulty sleeping and swallowing, chronic coughing, or breathing problems
- Affects both children and adults

DISEASE SNAPSHOT

HIGH UNMET NEED

No current therapeutic treatment

20K Active Cases in US[6]

4 PER 100K

Incidence of RRP in children[1-4]

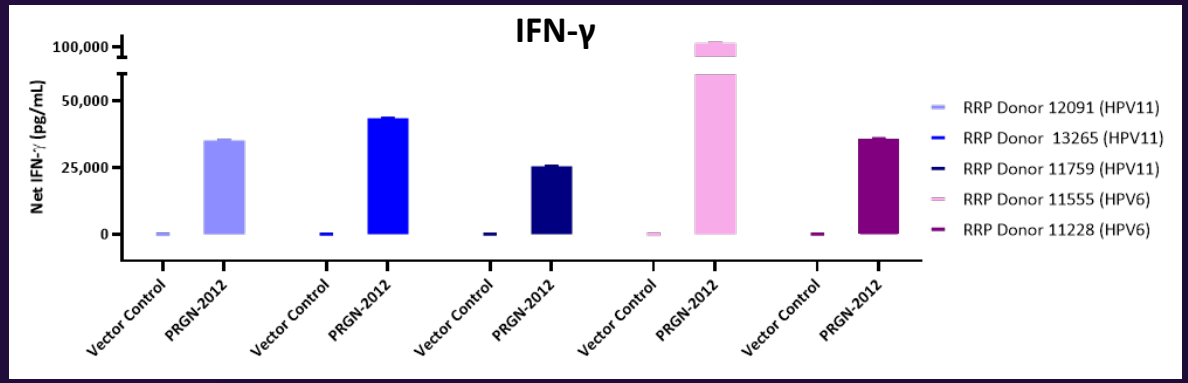
2-3 PER 100K

Incidence of RRP in adults[5]

PRGN-2012 ANTIGEN DESIGN TO TARGET HPV6/11

- Gorilla adenoviral vector with ability for repeat injections
- Antigen designed to induce a robust T cell mediated immune response against HPV6/11
- Orphan Drug Designation (ODD) granted by the FDA

PRGN-2012 INDUCES ROBUST HPV6 AND HPV11-SPECIFIC T CELL RESPONSE IN RRP PATIENT SAMPLES *IN VITRO*



[1]Derkay and Wiatrak 2008, National Organization for Rare Disorders 2019
[2]Armstrong, Derkay et al. 1999
[3]Hermann, Pontes et al. 2012
[4]Seedat 2020
[5]National Organization for Rare Disorders 2019
[6]RRP Foundation: http://www.rrpf.org/whatisRRP.html
[7]Rodriguez-Garcia A. et al., Front. Immunol., 2020

PRGN-2012 Phase 1 Clinical Trial: Initial Data Demonstrate Excellent Safety and Response in RRP Patients

PRGN-2012 PHASE 1 CLINICAL TRIAL: CURRENT STATUS

- **Completed enrollment in the Phase 1 expansion cohort**
  - 15 RRP patients enrolled to date
- Excellent safety profile with repeated administrations of PRGN-2012
  - No DLTs or serious adverse event
- Neutralizing antibody data support repeated administrations of PRGN-2012
- Preliminary data shows very encouraging response in RRP patients, including fewer surgical interventions following PRGN-2012 treatment

ANTICIPATED 2022 MILESTONES

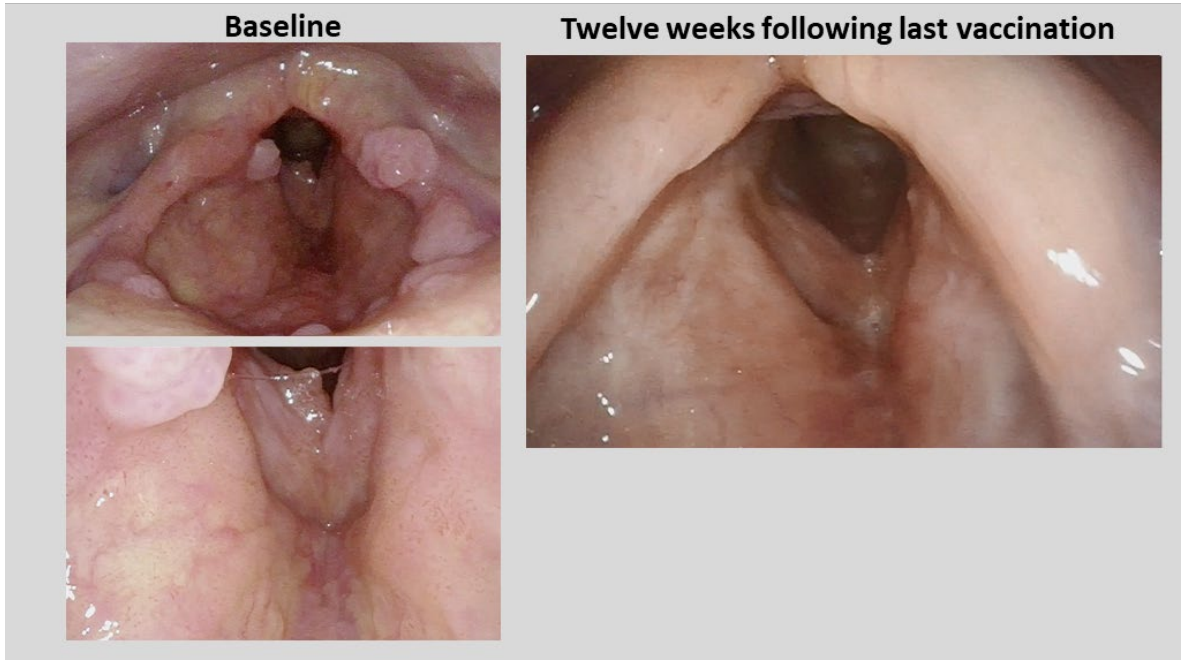
- Seek FDA guidance on rapid regulatory strategy for PRGN-2012 in RRP given significant unmet patient need
- Present additional Phase 1 expansion cohort clinical trial data (2H 2022)

CASE STUDY: SUBJECT 5 (DOSE LEVEL 1)

- **Required surgery once every 6 weeks for 3 years** prior to enrollment
- Patient received 4 vaccinations of PRGN-2012

Post treatment:

- No detectable disease present 18 weeks since the last surgery (12 weeks after treatment completion)



PRGN-2009: First-in-class Investigational Therapy for HPV-associated Cancers

PRECIGEN

PRGN-2009: MULTI-EPITOPE ANTIGEN DESIGN TO TARGET HPV16/18

- Gorilla adenoviral vector with ability for repeat injections
- Multi-epitope antigen design to induce a robust immune response against HPV16/18

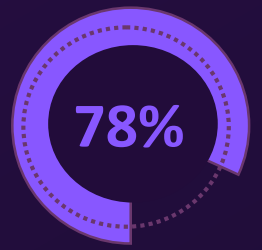
Multi-epitope antigen design

HPV-ASSOCIATED CANCERS

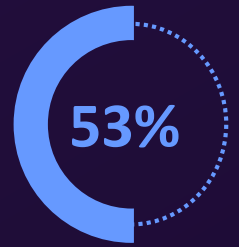
- HPV infections account for 5% of all cancers[1]
- Globally 690,000 new cancer cases attributable to HPV infections per year[2]

Cervical Cancer
Addressable New Cases Per Year:
570,000

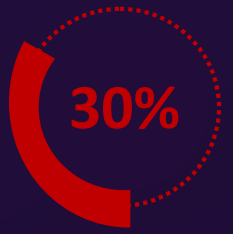
Anal Cancer
Addressable New Cases Per Year:
29,000



Vaginal Cancer
Addressable Patient Population:
14,000



Penile Cancer
Addressable New Cases Per Year:
18,000



Oropharyngeal Cancer
Addressable New Cases Per Year:
42,000

Vulvar Cancer
Addressable New Cases Per Year:
11,000

[1]Miles et al. Gynecologic Oncology Research and Practice (2017) 4:10
[2] de Martel C, et al. Volume 8, ISSUE 2, e180-e190, February 01, 2020

PRGN-2009 Phase 1 Clinical Trial: Interim Data Demonstrate Excellent Safety and Response in HPV-associated Cancer Patients

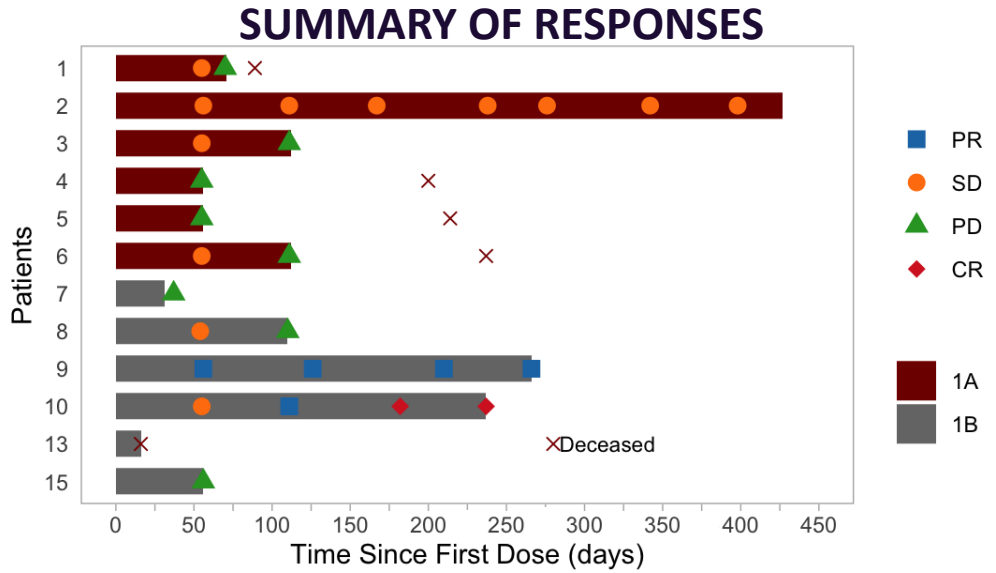
PRGN-2009 PHASE 1/2 CLINICAL TRIAL: CURRENT STATUS

- Completed enrollment in the Phase 1 monotherapy arm
- Enrollment ongoing in the Phase 1 combination (M7824) arm
- Enrollment in the Phase 2 monotherapy arm in newly diagnosed OPSCC patients is ongoing
- Excellent safety profile with repeated administrations of PRGN-2009 with no DLTs
- Neutralizing antibody data support repeated administrations of PRGN-2009
- Increase in HPV16 and/or HPV18 specific immune response with administrations of PRGN-2009
- Objective Response Rate (ORR) of 40% and Disease Control Rate (DCR) of 60% observed in the combination arm

ANTICIPATED 2022 MILESTONES

- Seek FDA guidance on a rapid regulatory strategy for PRGN-2009 given interim results and significant unmet patient need
- Initiate a Phase 2 study in advanced HPV-associated cancer in combination with an approved anti-PD1 checkpoint inhibitor

PHASE 1 CLINICAL TRIAL



	PRGN-2009 Monotherapy (Arm 1A)	PRGN-2009 Combination (Arm 1B)
Disease Control Rate (DCR) at first restaging	50% (3/6)	60% (3/5)
Objective Response Rate (ORR)	0% (0/6)	40% (2/5)

Source: Precigen R&D Day Presentation, November 4, 2021

AG019 Phase 1b/2a Clinical Trial: Encouraging Stabilization of C-peptide and HbA1c/IDAA1c in Type 1 Diabetes Patients

PRECIGEN

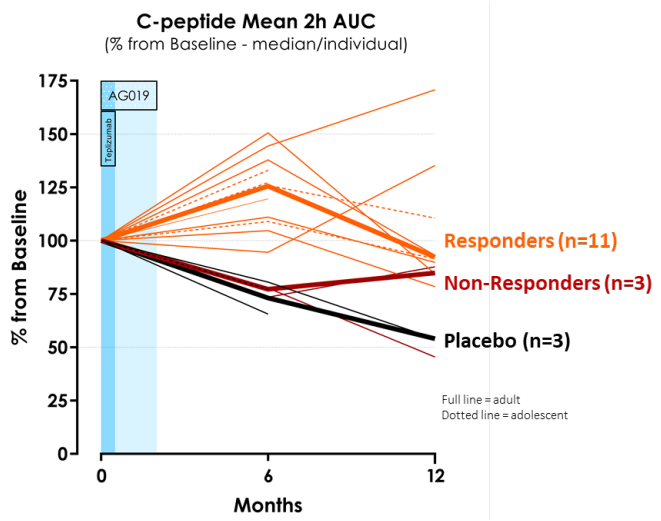
AG019 : CURRENT STATUS AND NEXT STEPS

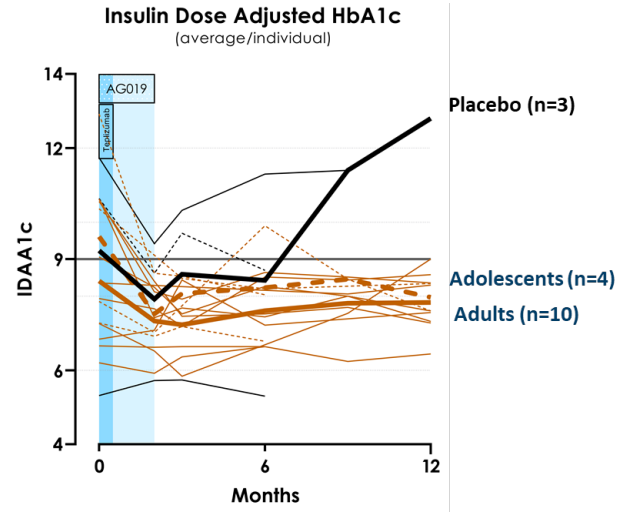
- Completed Phase 1b/2a clinical trial of AG019 monotherapy and in combination with teplizumab
- Primary endpoint assessing safety and tolerability met for both Phase 1b and Phase 2a
- Excellent safety profile as monotherapy or in combination No serious adverse events were reported
- AG019, as monotherapy and in combination showed:
  - Stabilization of C-peptide levels, a biomarker for T1D disease progression
  - Stabilization of HbA1c and IDAA1c levels, important indicators of long-term glycemic control T1D patients
- AG019 induced antigen-specific tolerance in conjunction with the reduction of disease-specific T cell responses

ANTICIPATED 2022 MILESTONES

- Commercial-grade manufacturing scale-up
- Discussions with FDA and EMA for Phase 2/3 clinical trial design

AG019 MONOTHERAPY





Mathieu C. et al., European Association for the Study of Diabetes (EASD) 57th Annual Meeting (2021)


PRECIGEN
Summary

Precigen in 2022: Major Anticipated Clinical Milestones

PRECIGEN

- **PRGN-3006 UltraCAR-T: Initiate multicenter expansion cohort in AML. Present additional Phase 1/1b data**
- **PRGN-3005 UltraCAR-T: Incorporate lymphodepletion and redosing. Initiate expansion cohort in ovarian cancer**
- **PRGN-3007 next gen UltraCAR-T: Initiate dosing in Phase 1 study of ROR1^{+} hematological (CLL, MCL, ALL, DLBCL) and solid (TNBC) tumors**
- **PRGN-2012 AdenoVerse Immunotherapy: Present additional Phase 1 expansion cohort data. Seek FDA guidance on rapid regulatory strategy in RRP given significant unmet patient need**
- **PRGN-2009 AdenoVerse Immunotherapy : Initiate a Phase 2 trial in combination with approved anti-PD1 in advanced HPV-associated cancer. Seek FDA guidance on rapid regulatory strategy**
- **AG019 ActoBiotics: Develop regulatory path for Phase 2/3 clinical trial with FDA and EMA**

Precigen Focus in 2022

PRECIGEN

PORTFOLIO PRIORITIZATION

- Data-driven approach
- Focus on programs with the potential for rapid paths toward licensure
  - PRGN-2009
  - PRGN-2012
  - PRGN-3005
  - PRGN-3006

FINANCIAL STRENGTH

- Continue to maintain a strong balance sheet
- Continued fiscal discipline
- Operational efficiency
- Seek strategic non-dilutive funding opportunities

PRECIGEN