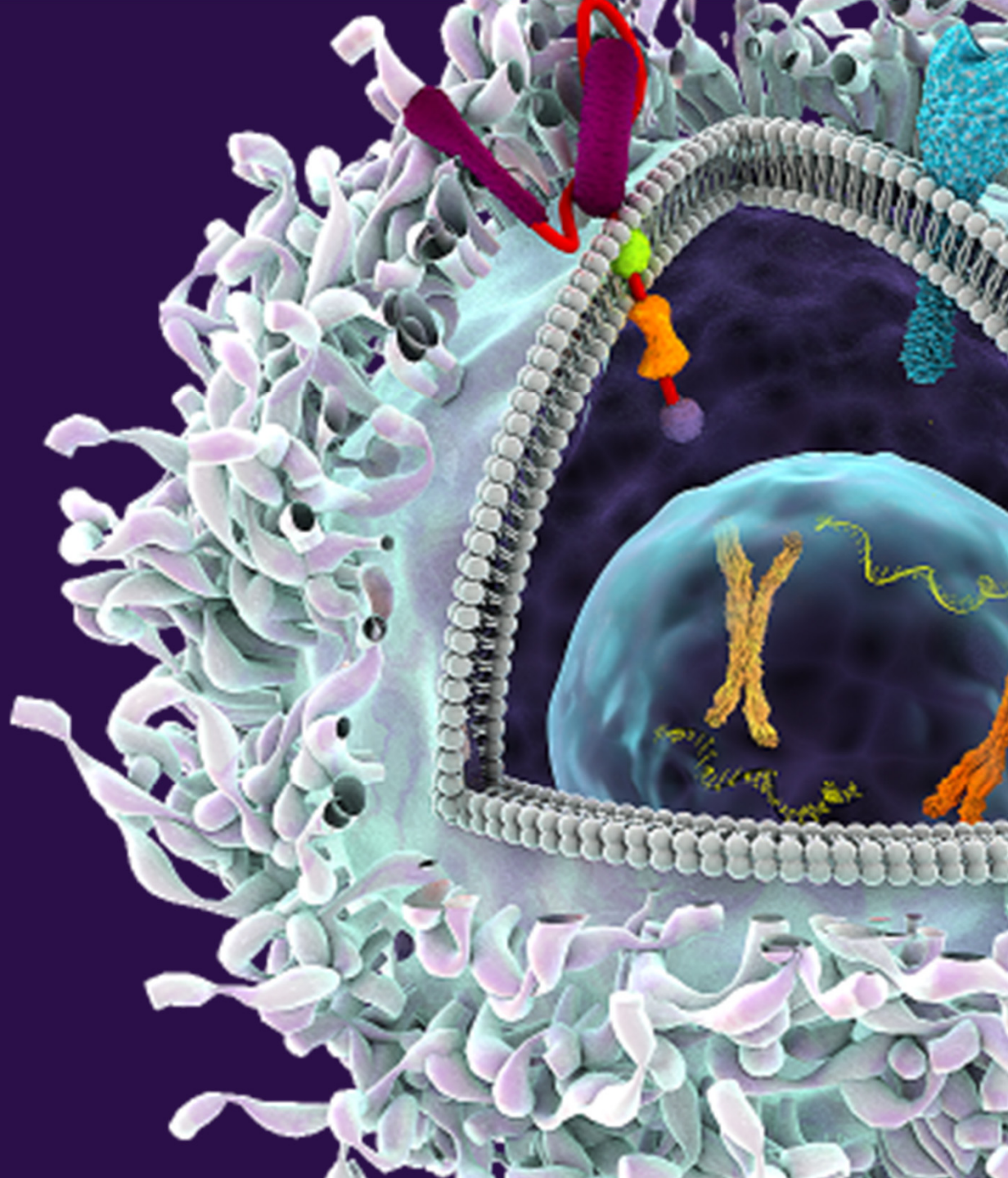
Precigen Business & Pipeline Update

12 November 2019



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Forward-looking statements

Precigen, Inc. is a subsidiary of Intrexon Corporation (Nasdaq: XON). 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 Intrexon's and 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," "expect," "believe," "anticipate," "intend," "continue," "opportunity," "groundwork," "poised," "future," "update" and similar expressions. Examples of forward-looking statements in his presentation, include statements about the timing, pace and progress of preclinical and clinical trials and discovery programs, potential benefits of Precigen's platforms and product candidates including in comparison to competitive platforms and products, and plans to increase public disclosure regarding Precigen's pipeline. 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) Precigen's strategy and overall approach to its business model, including its ability to successfully enter into optimal strategic relationships with its subsidiaries and operating companies that Intrexon may form in the future; (ii) the ability to successfully enter new markets or develop additional products, whether with its collaborators or independently; (iii) actual or anticipated variations in operating results; (iv) actual or anticipated fluctuations in competitors' or collaborators' operating results or changes in their respective growth rates; (v) cash position; (vi) market conditions in Intrexon's and Precigen's industry; (vii) the volatility of Intrexon's stock price; (viii) the ability, and the ability of collaborators, to protect intellectual property and other proprietary rights and technologies; (ix) the ability, and the ability of collaborators, to adapt to changes in laws or regulations and policies; (x) the outcomes of pending or future litigation; (xi) the rate and degree of market acceptance of any products developed; (xii) the ability to retain and recruit key personnel; (xiii) expectations related to the use of proceeds from financing efforts; and (xiv) estimates regarding expenses, future revenue, capital requirements and needs for additional financing. 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 Intrexon's Annual Report on Form 10-K, as well as discussions of potential risks, uncertainties, and other important factors in Intrexon's subsequent filings with the Securities and Exchange Commission. All information in this presentation is as of the date its cover page, and Intrexon undertakes no duty to update this information unless required by law.

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.

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Dr. Helen Sabzevari

President of Precigen

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Precigen's technology platforms

CONSTRUCT
powerful gene programs to drive efficacy

- UltraVector®
- mbIL15

DELIVER
gene programs via viral and non-viral based approaches to drive lower costs

- *Sleeping Beauty* system
- AttSite™ recombinases
- AdenoVerse™

CONTROL
gene expression and regulation to drive safety

- RheoSwitch®
- Kill switches
- Tissue specific promoters

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Precigen's pipeline offers rapid value creation and potential for novel combinations

TA	Product	Platform	Indication	Discovery	Preclinical	Phase I
Immuno-oncology	**PRGN-3005**	UltraCAR-T	Ovarian Cancer			
	PRGN-3006	UltraCAR-T	AML, MDS			
	PRGN-2009	Off-the-shelf AdenoVerse Immunotherapy	Solid Tumors			
	PRGN-3007	UltraCAR-T	Undisclosed			
	PRGN-3008	UltraCAR-T	Undisclosed			
	PRGN-2010	Off-the-shelf AdenoVerse Immunotherapy	Solid Tumors			
	PRGN-5001	Multifunctional Therapeutic	Solid Tumors			
	PRGN-2011	AdenoVerse Cytokine Therapy	Solid Tumors			
	PRGN-5002	Multifunctional Therapeutic	Solid Tumors			
Infectious disease	**PRGN-2012**	Off-the-shelf AdenoVerse Immunotherapy	Undisclosed			
	PRGN-2013	Off-the-shelf AdenoVerse Immunotherapy	Undisclosed			
Autoimmune disorders	**PRGN-3009**	Undisclosed	Undisclosed			
	PRGN-3010	Undisclosed	Undisclosed			

Precigen pipeline as of November 2019

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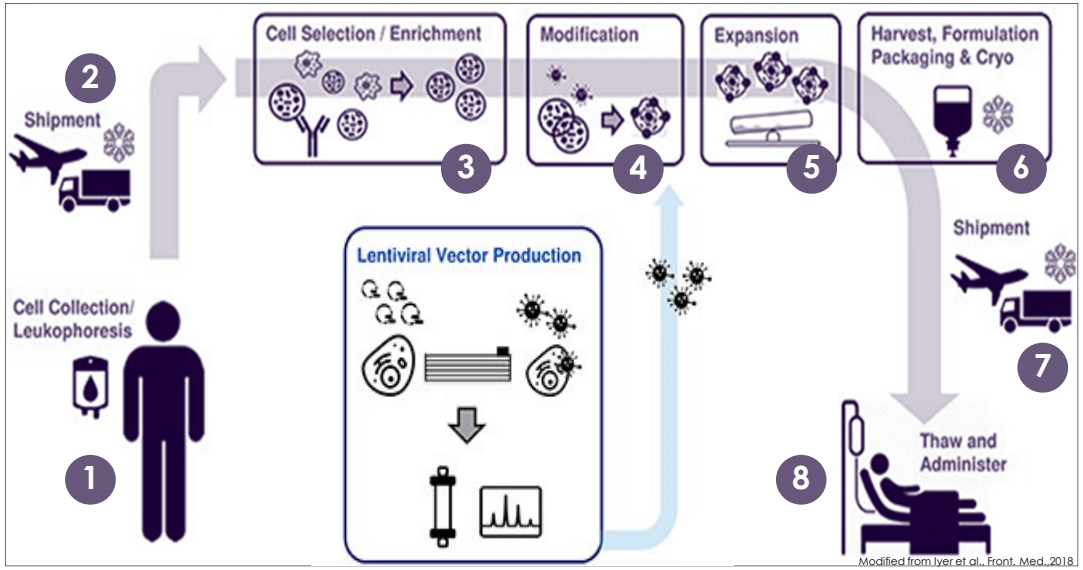
Disrupting the market: Precigen's transformative UltraCAR-T™ platform

Conventional CAR-T

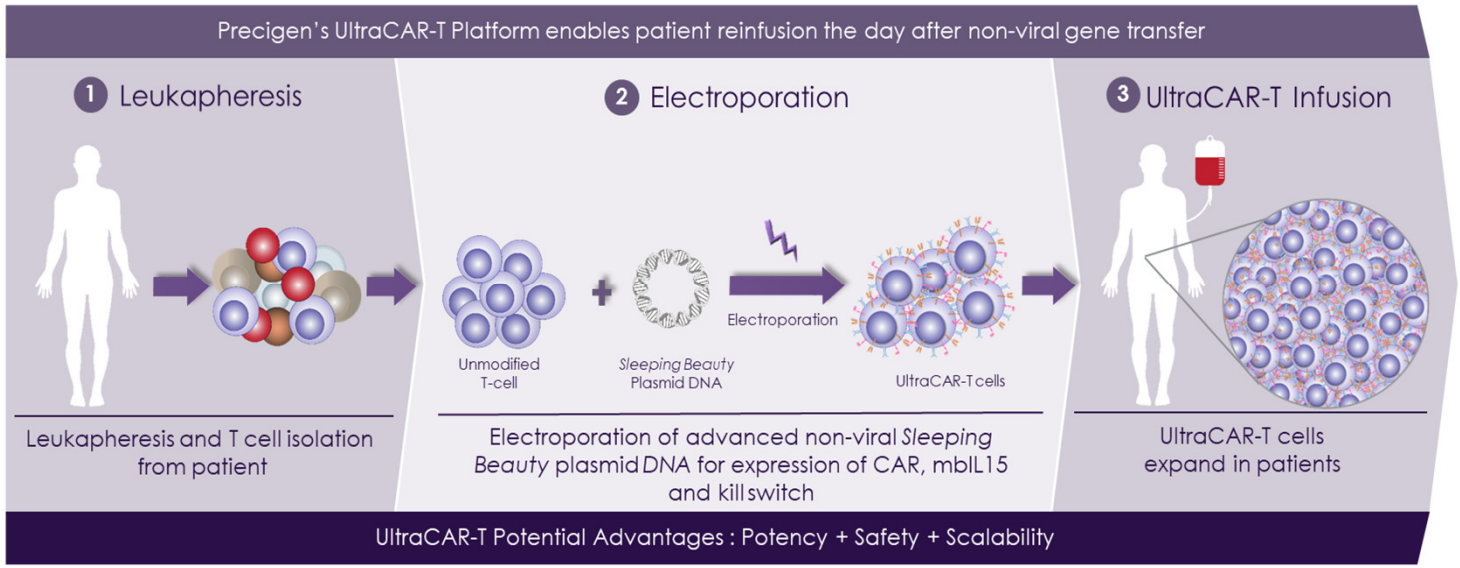
Viral vectors and *ex vivo* expansion result in long delays for patient treatment and high cost



- Reliance on viral vectors
  - Complexity of manufacturing viral vectors
- Long and complex CAR-T cell manufacturing process
  - Long delays for patients
  - High cost of manufacturing
- Exhausted T cell phenotype
- Major challenges in solid tumor treatment

UltraCAR-T™

Overnight non-viral gene transfer eliminates long delays for patient treatment and lower manufacturing cost



- Non-viral gene delivery
  - Simplified manufacturing of Plasmid DNA for large patient population
- Overnight UltraCAR-T manufacturing process
  - No *ex vivo* expansion necessary
  - Reduced manufacturing cost
- Stem-like memory T cell phenotype
- Enhanced potential for expansion and persistence

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PRGN-3005 UltraCAR-T™, *a first-in-class therapy in ovarian cancer*

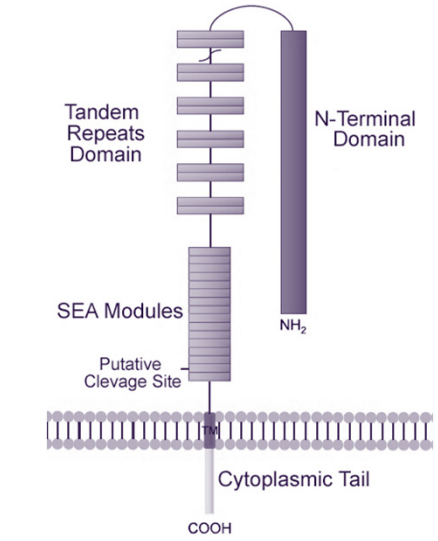
Target & Design

- Mucin 16 (MUC16) protein
- Overexpressed on greater than 80% of ovarian tumors
  - Limited expression found in healthy tissues
- PRGN-3005 optimized to preferentially target MUC16^{+} cancer cells

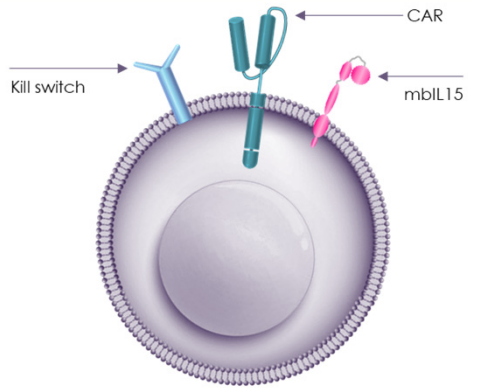
Patient Population

- Advanced stage platinum resistant ovarian cancer
  - 300k diagnosed annually[1]/22k in US[2]
  - Stage IV survival as low as 20%[3]

[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. Accessed December 2018 via WHO IARC GCO website.
[2]American Cancer Society Ovarian Cancer Special Section. Access December 2018 via ACS website.
[3]American Cancer Society. Survival Rates for Ovarian Cancer, by Stage. Accessed December 2018 via ACS website.



Piché A. et al., World J Obstet Gynecol. 2016



Advanced non-viral *Sleeping Beauty* system to co-express CAR, mbIL15 and kill switch

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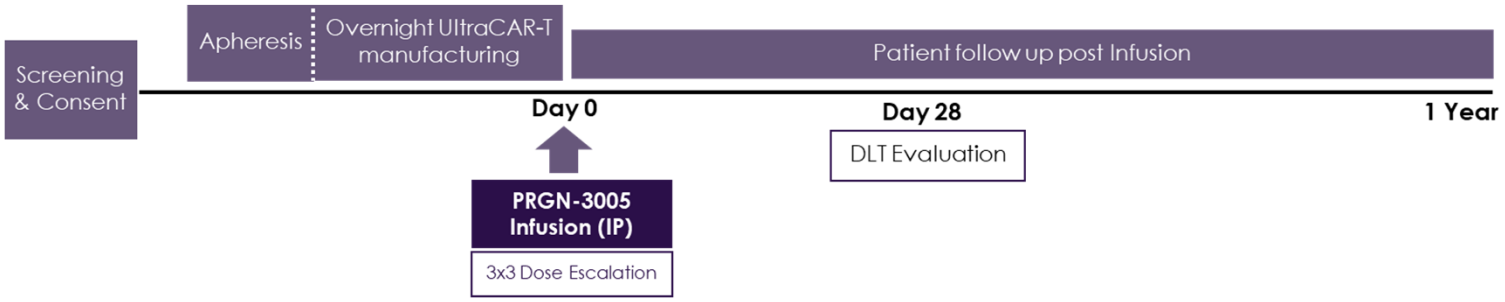
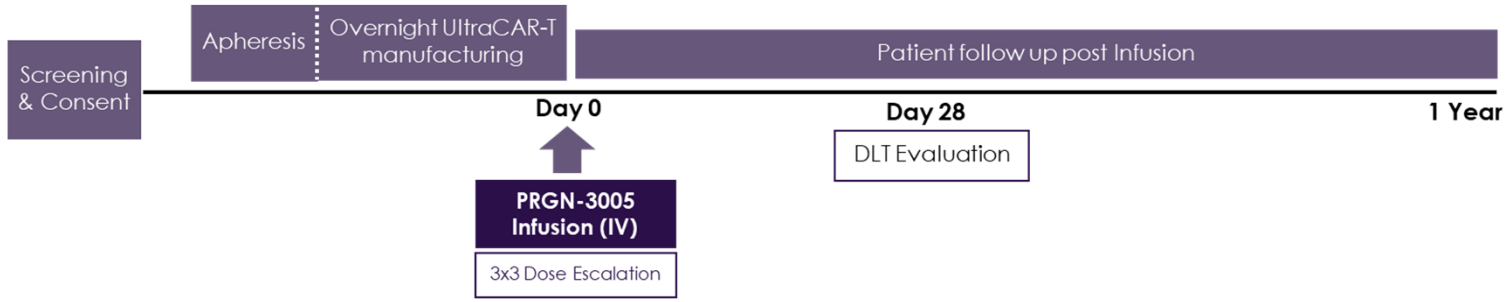
PRGN-3005 UltraCAR-T: Phase 1 trial is enrolling patients

- Clinical trial in collaboration with Uni. of WA & Fred Hutchinson Cancer Center
- Dose escalation study to determine safety and MTD
  - **Arm A: IP infusion**
  - **Arm B: IV infusion**
  - 3x3 dose escalation for IP and IV infusion arms
- **First cohort (dose level 1) for IP arm has completed enrollment**
- **Initial data readout from IP arm expected in 2H-2020**

Arm A: Intraperitoneal (IP) infusion



Arm B: Intravenous (IV) infusion



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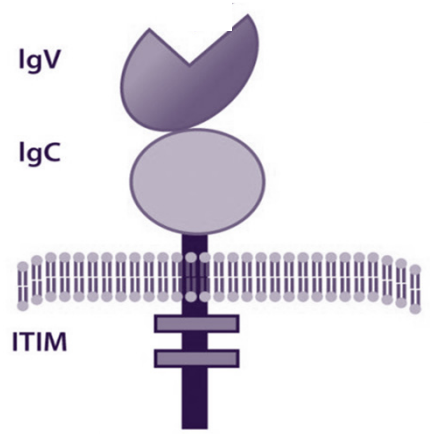
PRGN-3006 UltraCAR-T™, *a first-in-class therapy in AML*

Target & Design

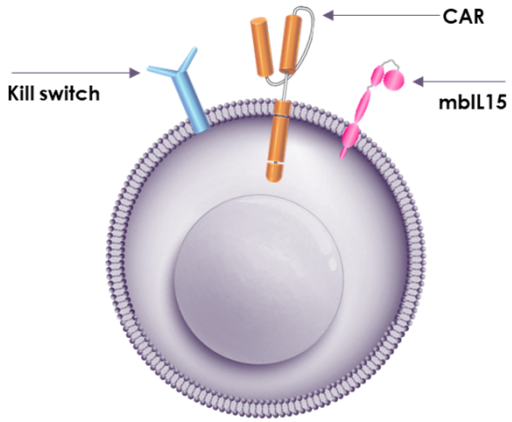
- CD33 is overexpressed on myeloid leukemia cells and leukemic stem cells
  - No expression on normal hematopoietic stem cells
- 85-90% of AML patients show expression of CD33 on blasts
- An attractive target for immunotherapy of AML



www.openaccessgovernment.org/cd33-directed-therapy

Patient Population

- Relapsed or refractory acute myeloid leukemia (AML)
  - 20k diagnosed in US in 2018[1]
- Higher risk myelodysplastic syndrome (MDS)
  - US incidence >10k per year[2]



Advanced non-viral *Sleeping Beauty* system to co-express CAR, mbIL15 and kill switch

[1]American Cancer Society. Key Statistics for Acute Myeloid Leukemia (AML). Accessed December 2018 via ACS website.
[2]American Cancer Society. Key Statistics for Myelodysplastic Syndromes. Accessed December 2018 via ACS website.

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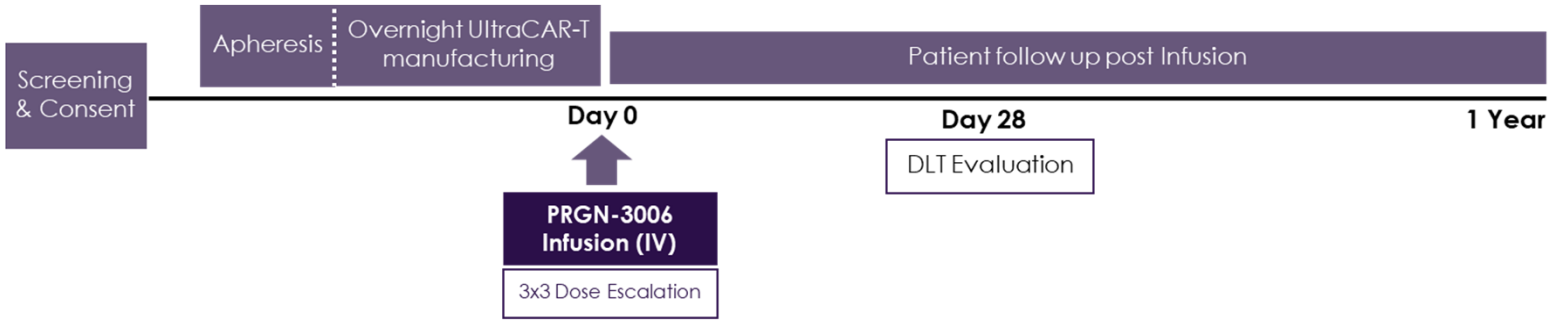
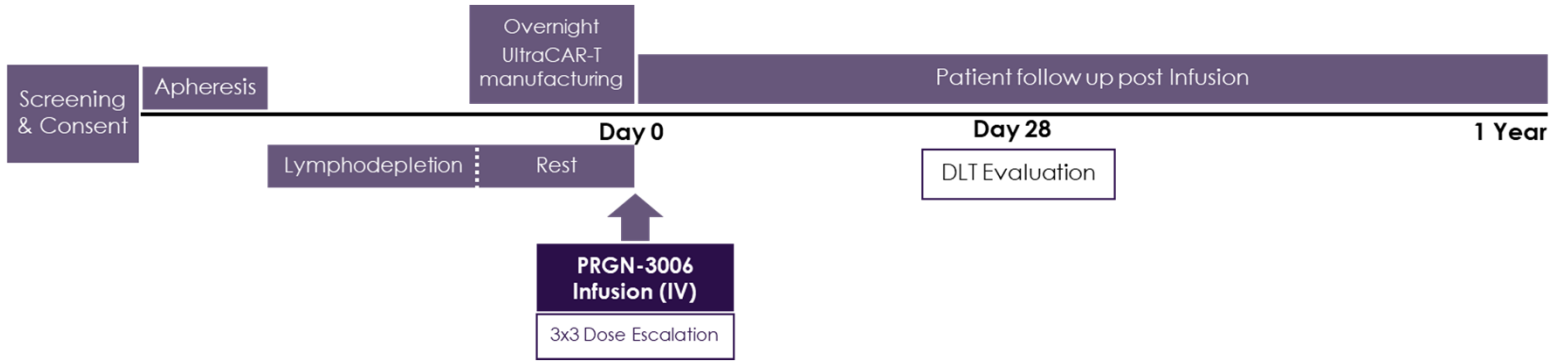
PRGN-3006 UltraCAR-T: Phase 1/1b trial is enrolling patients

- Dose escalation study to determine safety and MTD
  - **Arm 1: NO lymphodepletion**
  - **Arm 2: With lymphodepletion**
- 3x3 dose escalation design followed by dose expansion phase at MTD for each arm
- Study in collaboration with Moffitt Cancer Center
- **First cohort (dose level 1) for No lymphodepletion arm has completed enrollment**
- **Initial data readout expected in 2H-2020**

Arm 1: No lymphodepletion prior to UltraCAR-T infusion



Arm 2: Lymphodepletion prior to UltraCAR-T infusion



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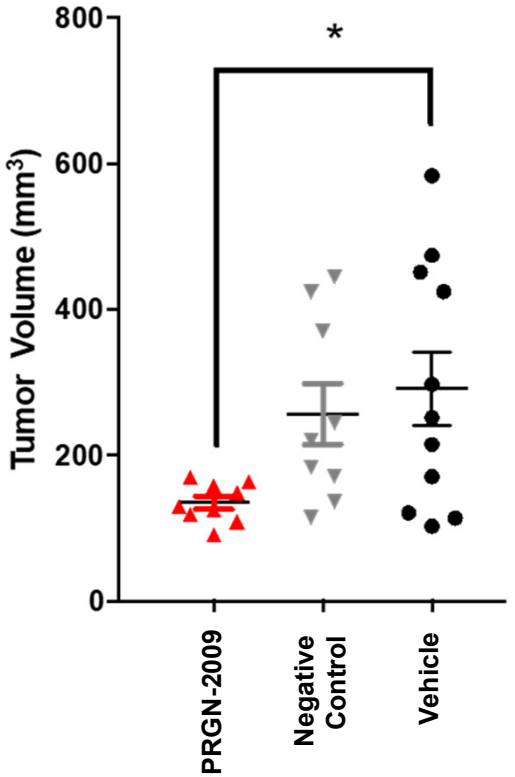
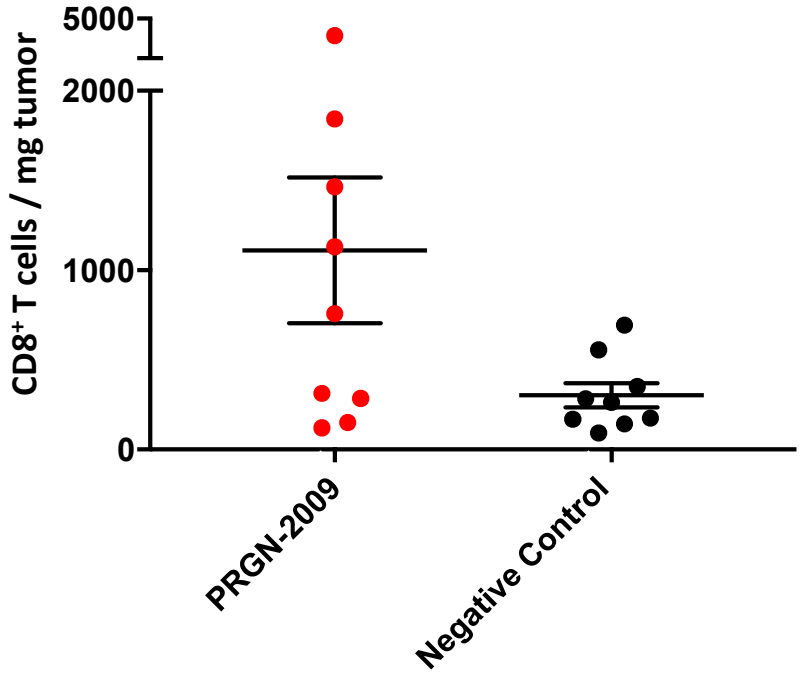
PRGN-2009 off-the-shelf AdenoVerse™ immunotherapy showed robust anti-tumor activity in humanized mouse model of HPV+ head & neck cancer

PRGN-2009 immunotherapy effectively controls HPV+ head & neck cancer in mice



Increase in CD8+ T cell infiltration in tumor after PRGN-2009 treatment in mice



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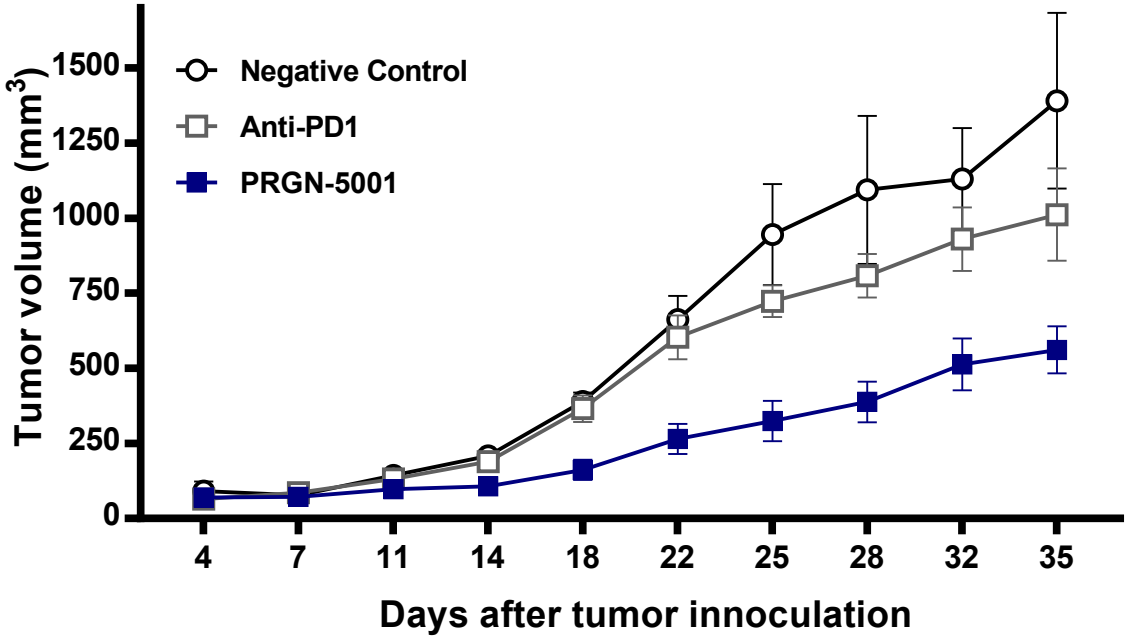
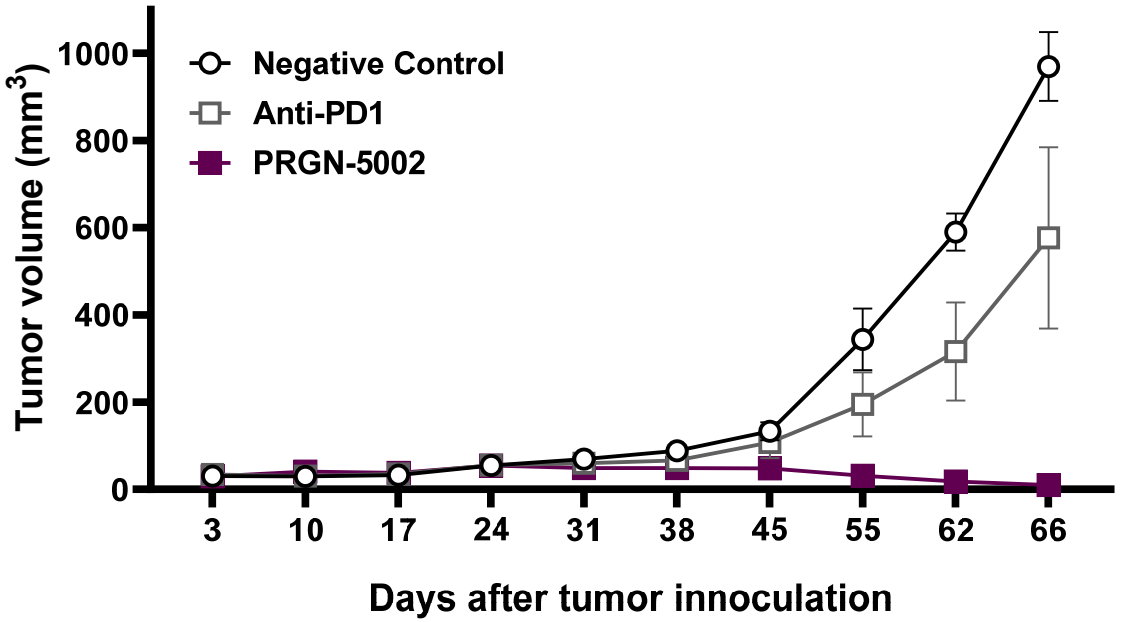
Multifunctional therapeutics overcome tumor microenvironment immunosuppression and improve T cell function compared to anti-PD1 in preclinical mouse models

PRGN-5001 exhibits superior anti-tumor effect compared to anti-PD1 in humanized mouse model of Head and Neck cancer



PRGN-5002 exhibits superior anti-tumor effect compared to anti-PD1 in humanized mouse model of Cervical cancer



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Portfolio Advancement in 2019

Rapidly advance preclinical and clinical programs

- Initiate PRGN-3006 UltraCAR-T™ Phase 1 trial in AML and MDS
- Rapidly advance PRGN-3005 UltraCAR-T™ for solid tumor
- Rapidly advance PRGN-2009 AdenoVerse™ immunotherapy for solid tumor
- Rapidly advance one infectious disease candidate
- Rapidly advance preclinical candidates to go/no go

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ADVANCING MEDICINE WITH PRECISION™