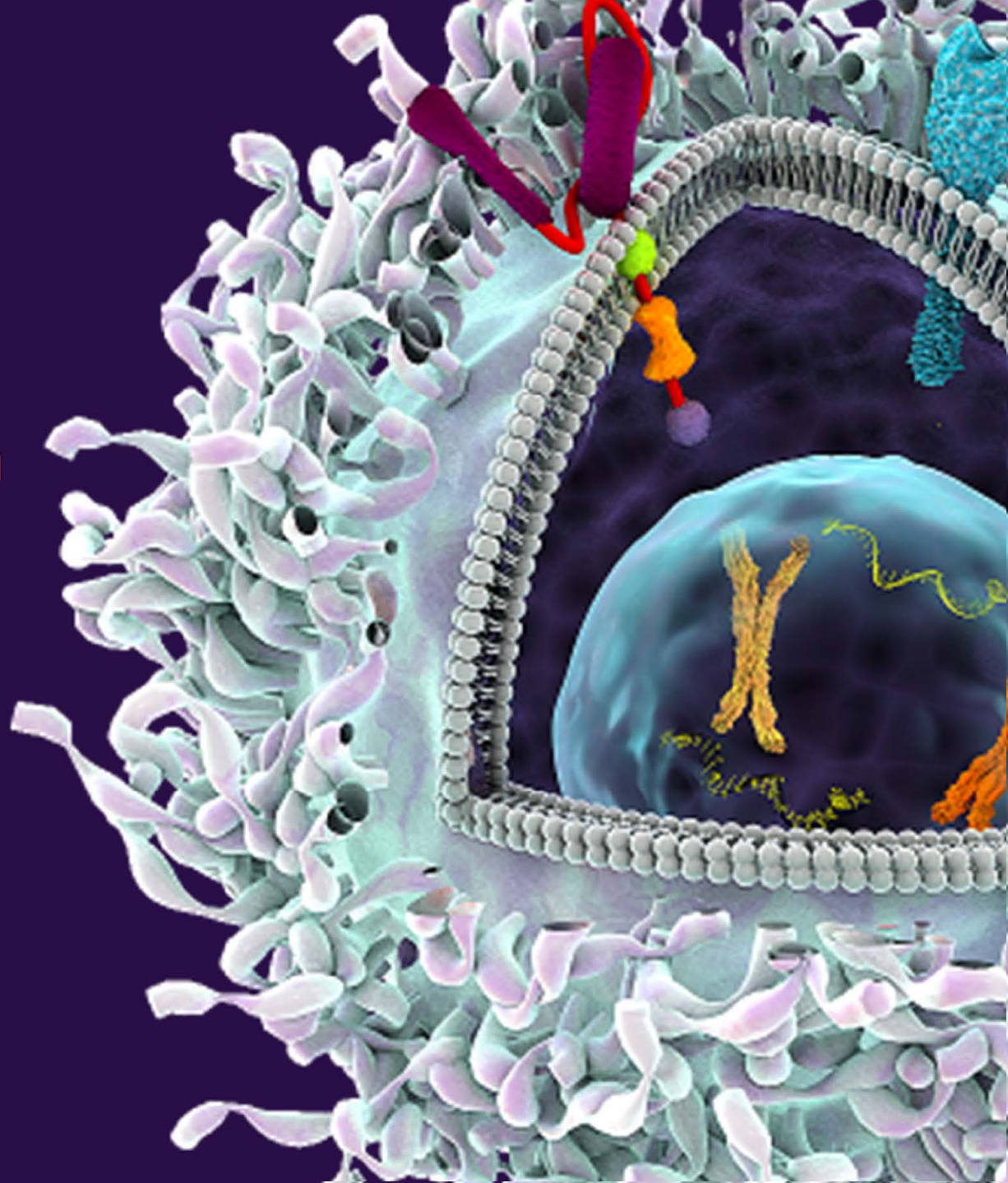
Precigen

Advancing Medicine with Precision

H.C. Wainwright & Co.
Annual Global Investment Conference

September 14, 2020



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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, potential benefits of platforms and product candidates including in comparison to competitive platforms and products, and future plans for the company's remaining non-healthcare assets. 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 our businesses, operating results, cash flows and/or financial condition, (ii) ongoing transition efforts following the company's recent divestment of several assets and businesses, (iii) Precigen's strategy and overall approach to its business model, its recent efforts to realign its business, and its ability to exercise more control and ownership over the development process and commercialization path; (iv) the ability to successfully enter new markets or develop additional products, including the expected 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, whether with its collaborators or independently; (v) the ability to successfully enter into optimal strategic relationships with its subsidiaries and operating companies that it may form in the future; (vi) the ability to hold or generate significant operating capital, including through partnering, asset sales and operating cost reductions; (vii) actual or anticipated variations in operating results; (viii) actual or anticipated fluctuations in competitors' or collaborators' operating results or changes in their respective growth rates; (ix) cash position; (x) market conditions in the company's industry; (xi) the volatility of Precigen's stock price; (xii) the ability, and the ability of collaborators, to protect Precigen's intellectual property and other proprietary rights and technologies; (xiii) the ability, and the ability of collaborators, to adapt to changes in laws or regulations and policies, including federal, state, and local government responses to the COVID-19 pandemic; (xiv) outcomes of pending and future litigation; (xv) the rate and degree of market acceptance of any products developed by Precigen, its subsidiaries, collaborations or joint ventures; (xvi) the ability to retain and recruit key personnel; (xvii) expectations related to the use of proceeds from public offerings and other financing efforts; (xviii) estimates regarding expenses, future revenue, capital requirements and needs for additional financing; and (xix) the challenges inherent in leadership transitions. 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. All information in this presentation is as of the date its cover page, and Precigen 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.

Precigen's unique platforms provide a strong foundation to realize core promise of precision medicine

CONSTRUCT
powerful gene programs to drive efficacy

- UltraVector®
- mbIL15

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

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

CONTROL
gene expression and regulation to drive safety

- RheoSwitch®
- Kill switches
- Tissue specific promoters

Robust Clinical Pipeline with Many Milestones to Drive Value

PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	STATUS/MILESTONES
AG019	ActoBiotics	Type 1 Diabetes						Interim phase 1b data released
PRGN-3005	UltraCAR-T™	Ovarian Cancer						Initial data 2H20
PRGN-3006	UltraCAR-T™	AML, MDS						Initial data 2H20
INXN-4001	Non-viral UltraVector	Heart Failure						Topline phase 1 data released
PRGN-2009	OTS AdenoVerse Immunotherapy	HPV+ Solid Tumors						Phase 1/2 initiated

Agile portfolio management with continuous evaluation of preclinical portfolio based on data to make rapid go/no go decisions

UltraCAR-T® Platform

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Precigen's UltraCAR-T® platform is designed to address major challenges of current T cell treatments

Limitations of current T cell technologies

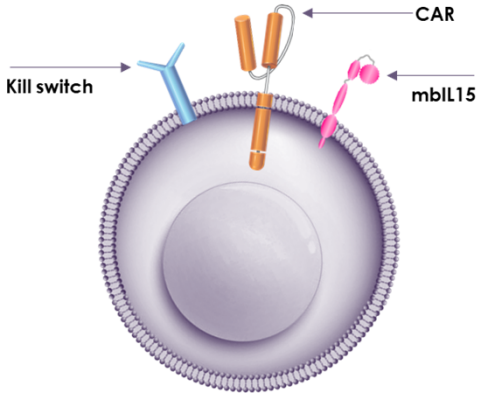
Viral-Based CAR-T

- Complex viral vector manufacturing; potential safety concerns
- Lengthy cell product manufacturing process & long delays for patients
- Less desired / more differentiated T-cell phenotype
- Major challenges in solid tumor treatments using current approaches
- Limited persistence / rejection of allogeneic CAR-T by host

Public and neoantigen TCR

- Even public antigen TCRs are applicable to only a subset of patients due to HLA polymorphism
- Long and expensive neoantigen and TCR identification process
- Need for multiple neoantigen TCRs due to tumor heterogeneity for treatment of single patient
- Potential for mispairing of endogenous and exogenous TCR chains

UltraCAR-T Advantage



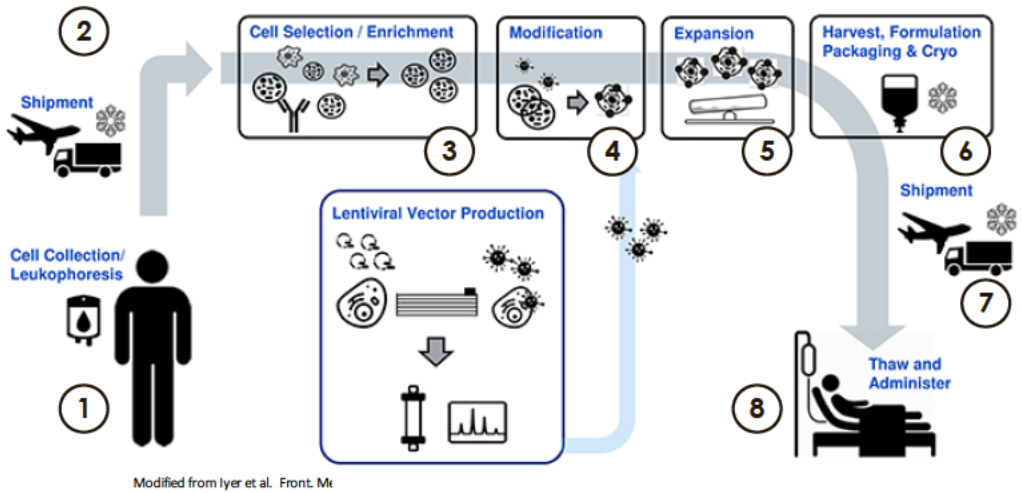
- Non-viral multi-gene delivery
- Uniform, multigenic cell product
- Stem-like T cell memory phenotype
- Higher antigen-specific expansion
- Enhanced *in vivo* persistence
- Ability to deplete with kill switch
- Overnight manufacturing process

POTENCY	SAFETY	SCALABILITY
✓ Multigenic expression	✓ Kill switch	✓ Rapid manufacturing
✓ Optimized CAR design	✓ Non-viral gene delivery	✓ Quick turnaround for patients
✓ Long-term persistence		✓ No *ex vivo* expansion
✓ Preferred T cell phenotype		✓ Decentralized manufacturing

Our UltraCAR-T® platform promises a more effective way to treat patients

Conventional CAR-T

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



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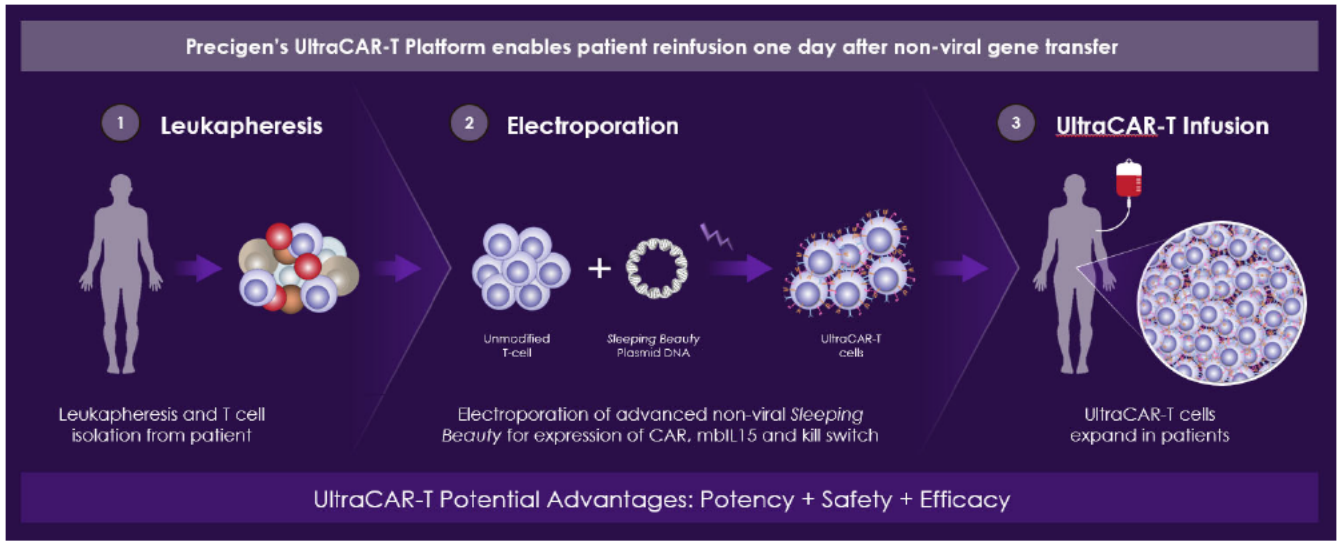
- Reliance on viral vectors
  - Complexity of manufacturing viral vectors
- Long and complex CAR-T cell manufacturing process
  - Long delays for patients
  - High cost of manufacturing
- Exhausted T cell phenotype
- Major challenges in solid tumor treatment

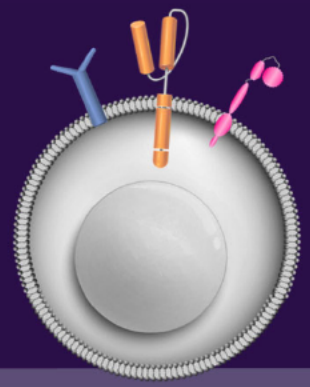
UltraCAR-T

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



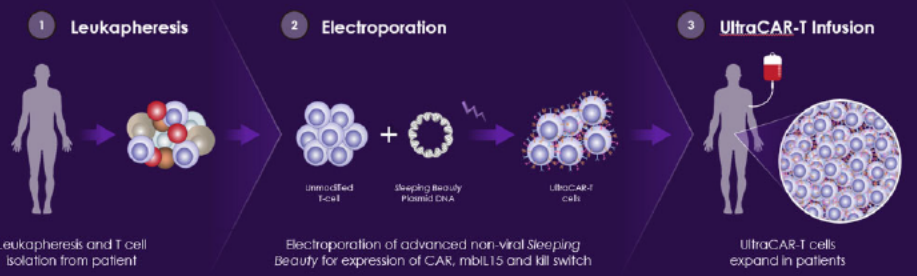
- Non-viral gene delivery
  - Simplified manufacturing of Plasmid DNA
- Overnight UltraCAR-T manufacturing process
  - No *ex vivo* expansion necessary
  - Reduced manufacturing cost
- Stem-like memory T cell phenotype
- Enhanced potential for expansion and persistence

Precigen's goal is to develop a commercially viable UltraCAR-T® platform



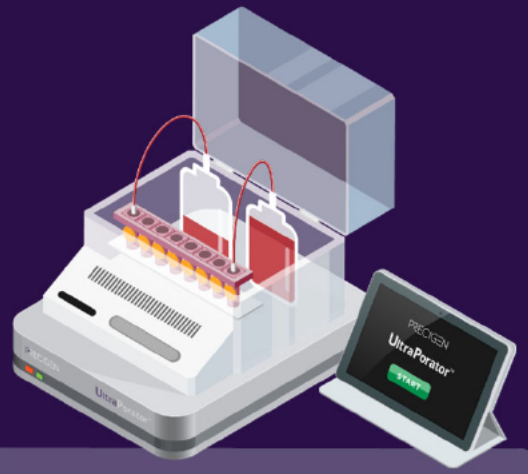
Design

- ☑ Optimized non-viral gene delivery
- ☑ Multigene expression using single transposon
- ☑ Cell product homogeneity
- ☑ Enhanced *in vivo* expansion and persistence
- ☑ Kill switch on every UltraCAR-T cell



Manufacturing

- ☑ Overnight manufacturing at medical centers
- ☑ No large, centralized facility required
- ☑ Viral vectors not required
- ☑ High cell viability
- ☑ No ex *vivo* expansion necessary



Scale-up

- ☑ Precigen's proprietary UltraPorator™
- ☑ Electroporation optimized for UltraCAR-T
- ☑ High-throughput, semi-closed system
- ☑ Minimizes manual handling
- ☑ Rapid and efficient gene transfer

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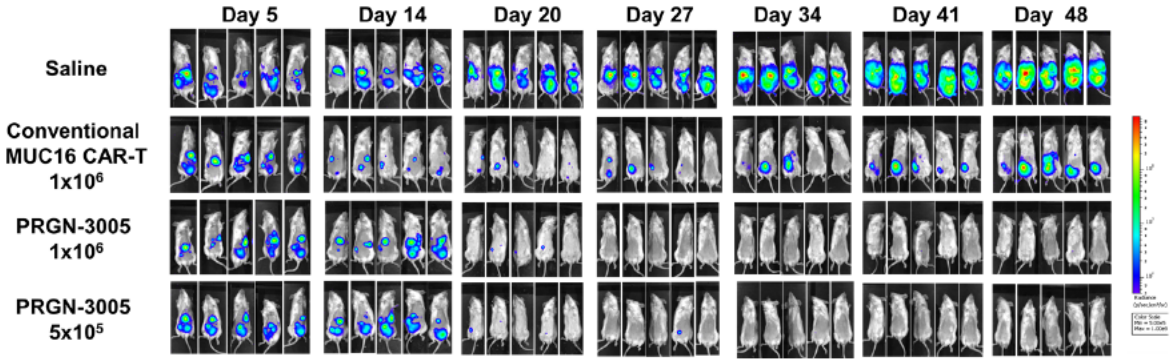
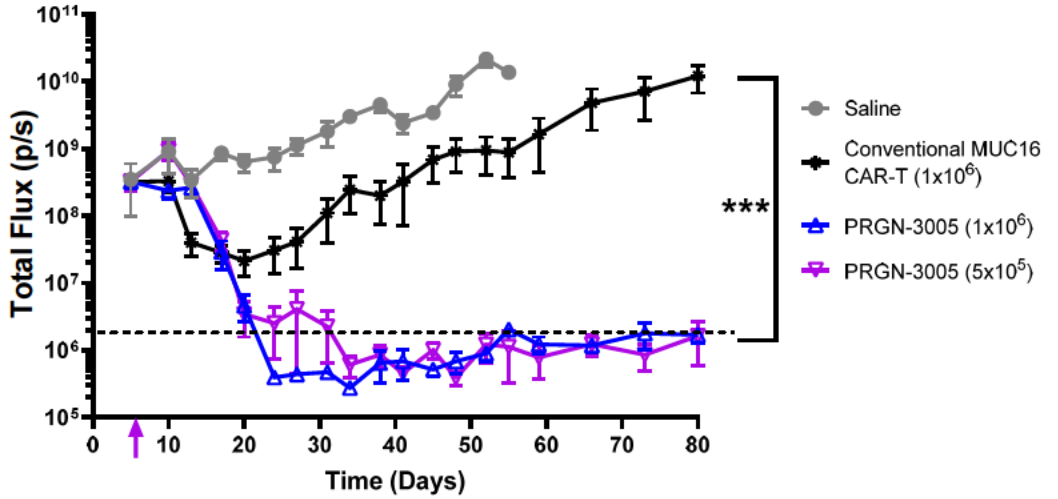
PRGN-3005 UltraCAR-T® demonstrated significantly superior efficacy compared to conventional CAR-T in an ovarian cancer model

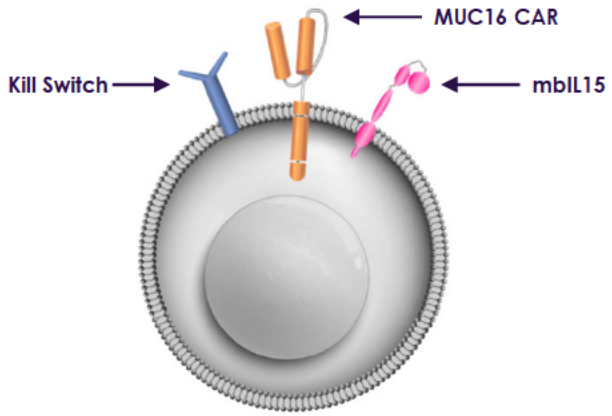
Enhanced anti-tumor effect in a xenograft mouse model of ovarian cancer





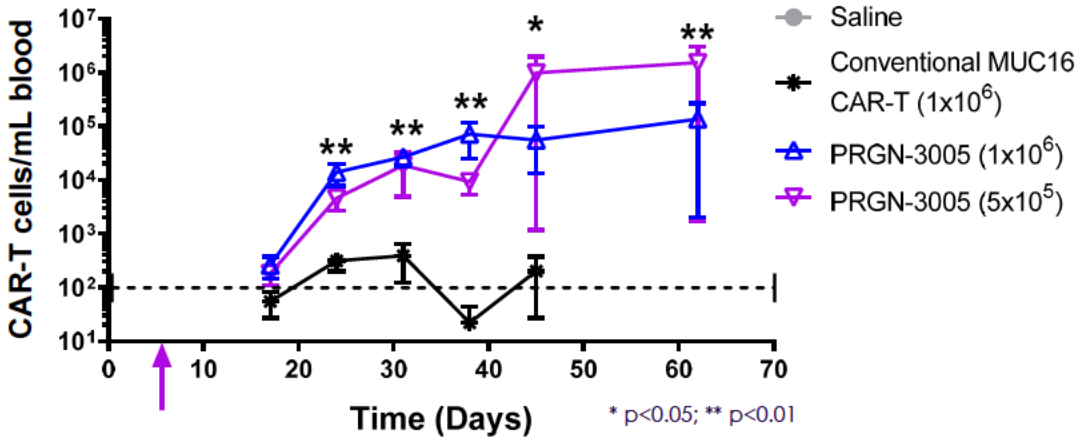
PRGN-3005 UltraCAR-T cells administered one day after gene transfer

PRGN-3005 UltraCAR-T



Non-viral system to simultaneously express CAR, mbIL15 and kill switch

Enhanced expansion & persistence *in vivo*



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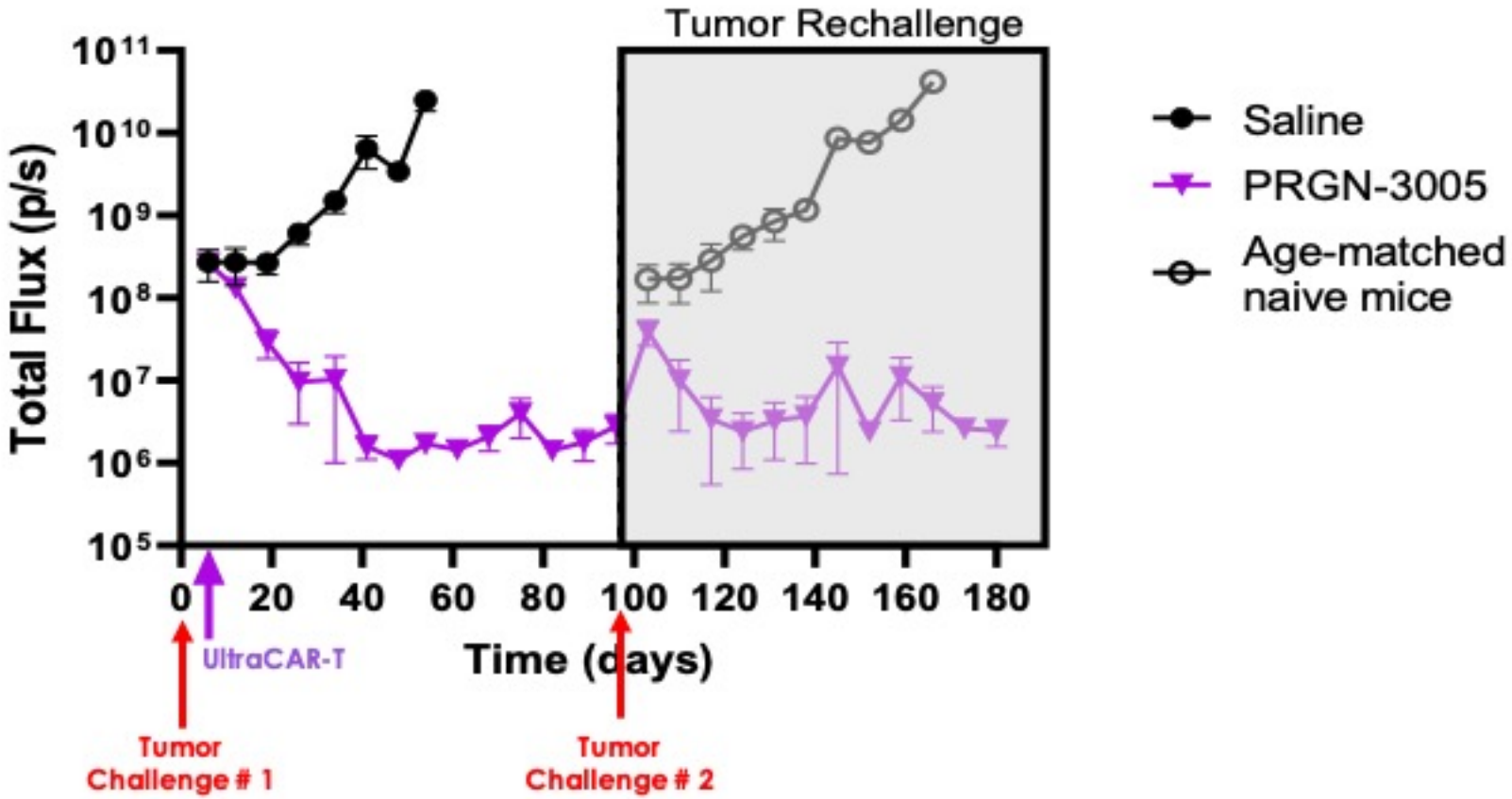
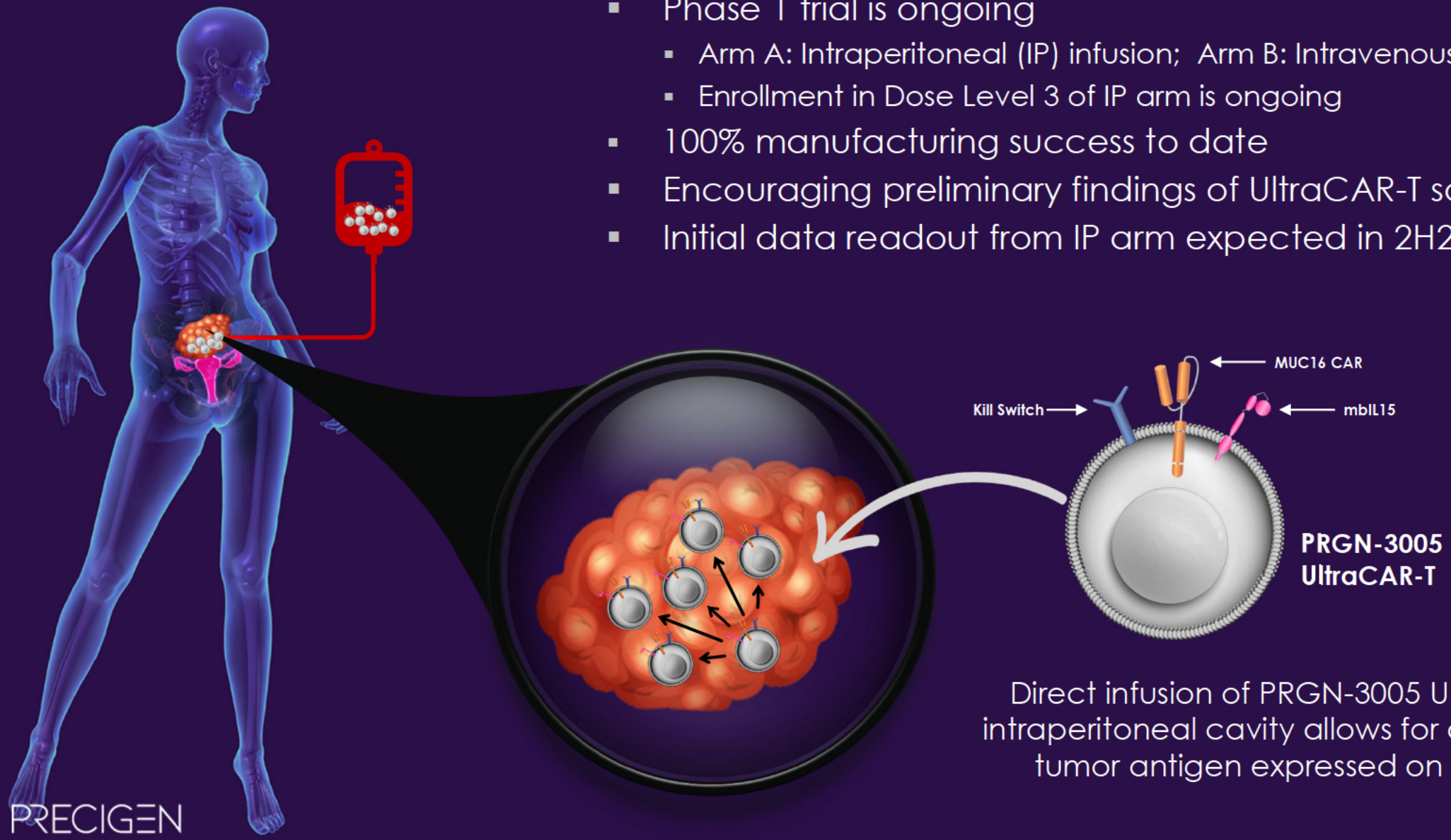
PRGN-3005 UltraCAR-T® showed durable anti-tumor response and eliminated ovarian tumors in mice following a tumor re-challenge three months later



A single administration of PRGN-3005 UltraCAR-T showed long-term persistence in mice and eliminated tumor burden for a second time upon re-challenge with ovarian tumors three months after

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

- Phase 1 trial is ongoing
  - Arm A: Intraperitoneal (IP) infusion; Arm B: Intravenous (IV) infusion
  - Enrollment in Dose Level 3 of IP arm is ongoing
- 100% manufacturing success to date
- Encouraging preliminary findings of UltraCAR-T safety & kinetics
- Initial data readout from IP arm expected in 2H20



Direct infusion of PRGN-3005 UltraCAR-T into intraperitoneal cavity allows for direct access to tumor antigen expressed on cancer cells

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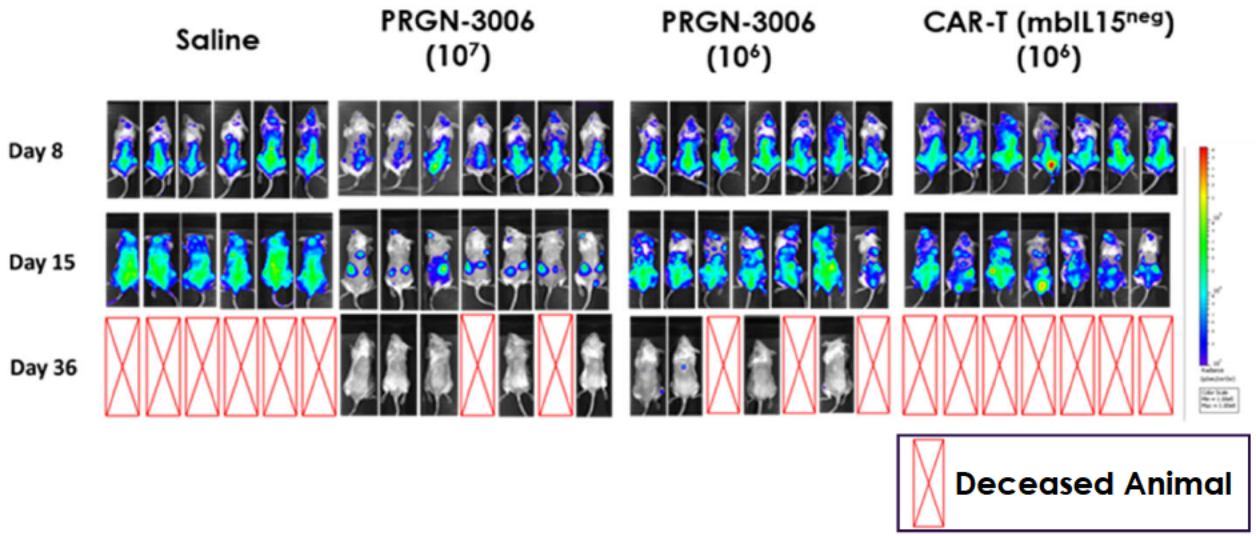
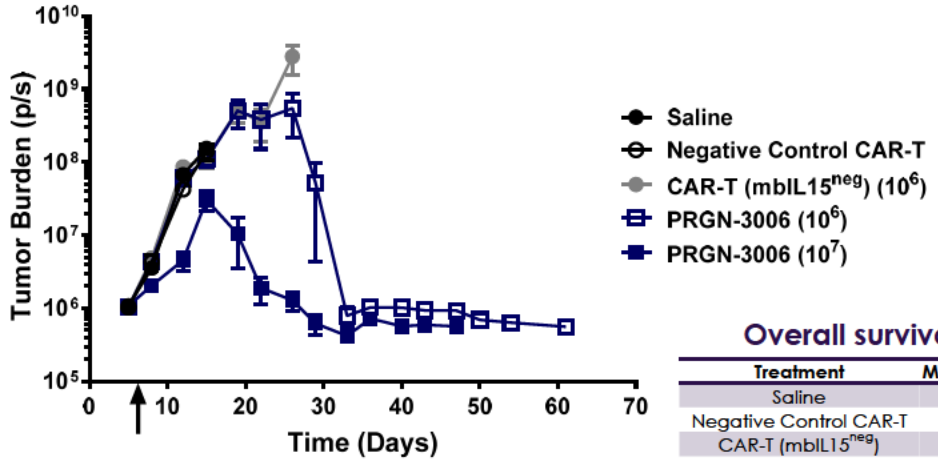
PRGN-3006 UltraCAR-T® eliminated tumor burden and improved survival in an *in vivo* model of AML

PRGN-3006 UltraCAR-T exhibit superior anti-tumor response and overall survival in murine model of AML

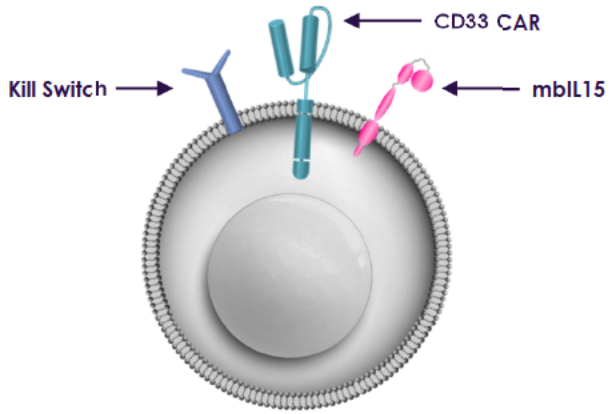




Overall survival (OS)

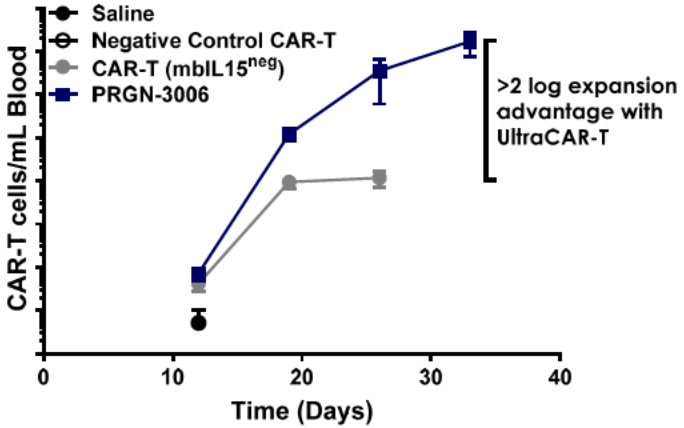
Treatment	Median OS (days)
Saline	17
Negative Control CAR-T	17
CAR-T (mbIL15^{neg})	26
PRGN-3006	**53**

PRGN-3006 UltraCAR-T



Non-viral system to simultaneously express CAR, mbIL15 and kill switch

PRGN-3006 UltraCAR-T exhibit superior *in vivo* expansion and persistence murine model of AML



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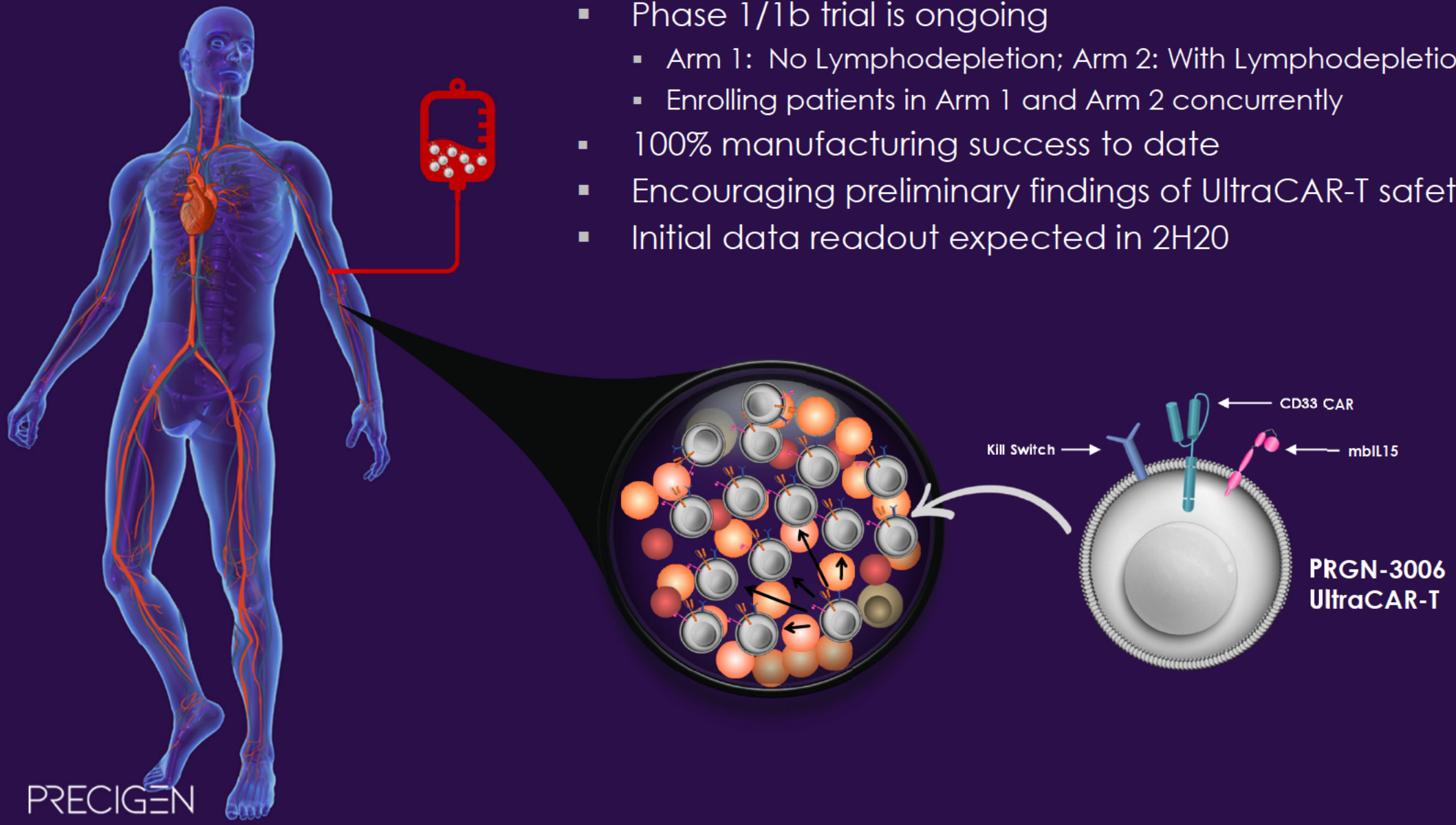
PRGN-3006 UltraCAR-T®, a first-in-class therapy in AML

- Phase 1/1b trial is ongoing
  - Arm 1: No Lymphodepletion; Arm 2: With Lymphodepletion
  - Enrolling patients in Arm 1 and Arm 2 concurrently
- 100% manufacturing success to date
- Encouraging preliminary findings of UltraCAR-T safety & kinetics
- Initial data readout expected in 2H20



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Off-the-shelf AdenoVerse™ Immunotherapy

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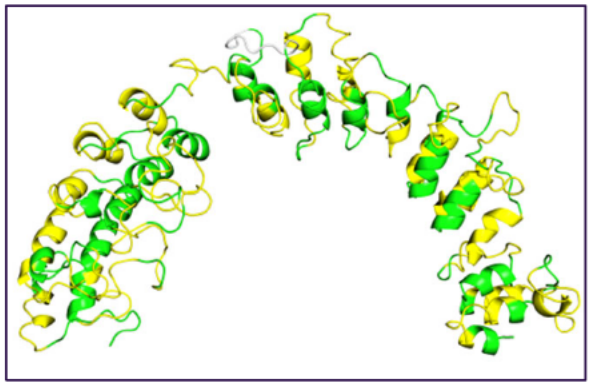
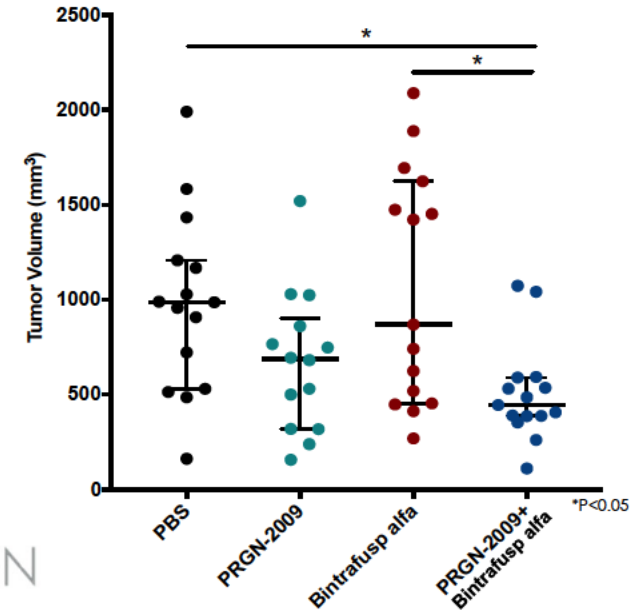
PRGN-2009 incorporates innovative multi-epitope antigen design optimized to induce a robust immune response against HPV16/18

PRGN-2009 multi-epitope antigen design targets HPV16/18



PRGN-2009 generates a robust anti-tumor response in a syngeneic mouse model of HPV⁺ cancer



PRGN-2009 design advantage

- Innovative multi-epitope antigen design
- Robust antigen specific immune response
- Broad HPV16/18 antigen coverage
- Off-the-shelf
- Ability to repeat administer
- Large genetic payload capacity

Limitations of competing approaches

Vaccines

- Limited antigen coverage
- DNA vaccines may have a relatively poor immunogenicity

TCR-T Cells

- Applicable in only a small subset of patients due to HLA polymorphism
- Target only a single antigen epitope of HPV
- Long and expensive manufacturing process
- Potential for mispairing of endogenous and exogenous TCR chains

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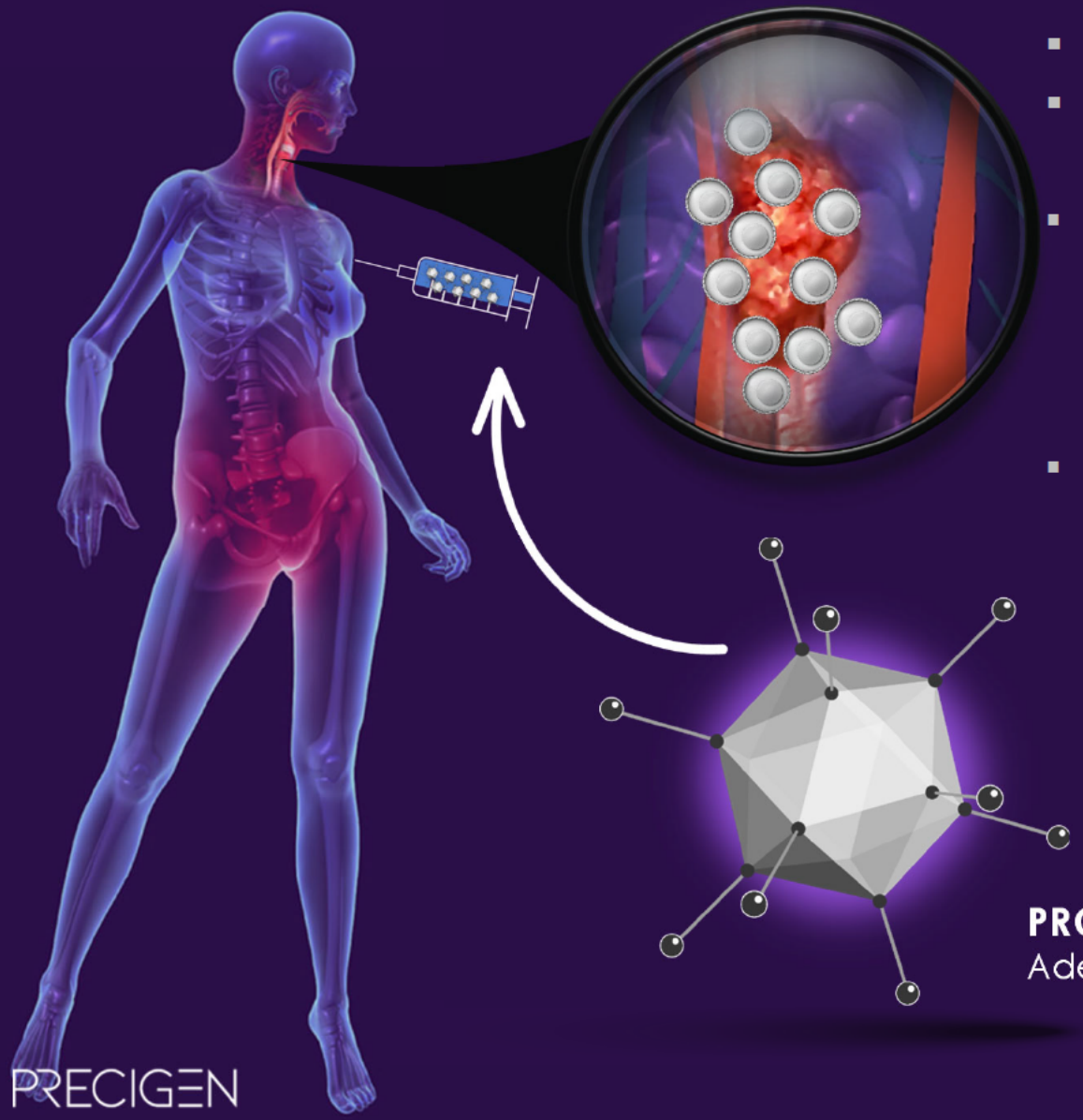
PRGN-2009, a first-in-class off-the-shelf AdenoVerse™ immunotherapy for HPV-associated cancers



- Dosing of the Phase 1/2 trial initiated August 2020
- Phase 1 to evaluate safety and response in patients with HPV-associated cancers
- Gorilla adenoviral vector, with ability for repeat injections, designed to activate immune system to recognize and target HPV+ solid tumors
  - Optimized HPV antigen design for improved immune response designed to differentiates from competition
- Development through a CRADA with NCI

PRGN-2009
AdenoVerse Immunotherapy

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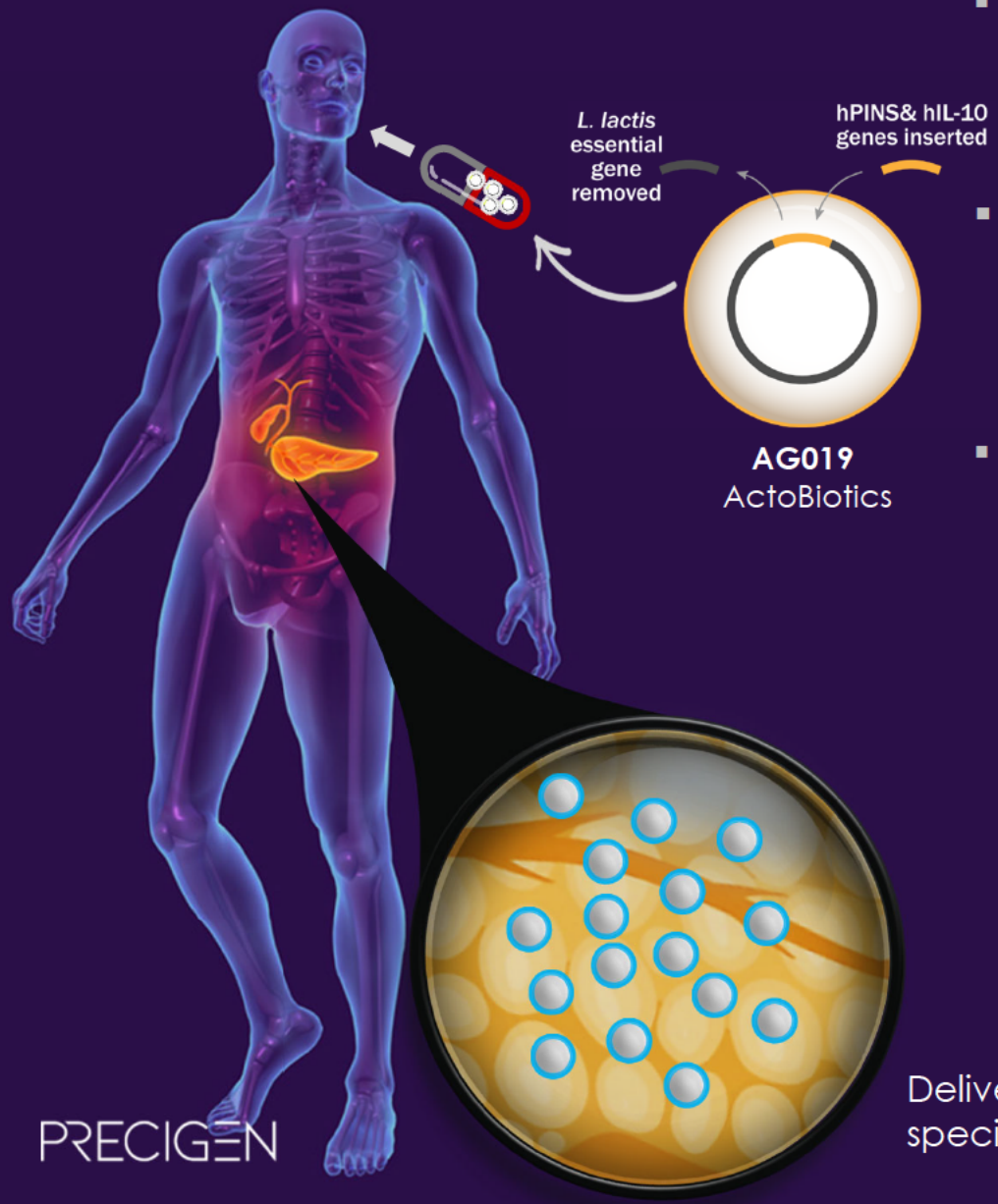
AG019 ActoBiotics™, a first-in-class therapy in Type 1 Diabetes



- Phase 1b/2a trial ongoing
  - Phase 1b: AG019 monotherapy; Phase 2a: AG019 in combination with teplizumab (anti-CD3 mAb)
  - Recent-onset T1D patients (adults and adolescent)
- AG019 is a capsule formulation to express human Proinsulin (hPINS) and human Interleukin-10 (hIL-10)
  - First-in-class disease modifying antigen-specific immunotherapy to prevent, delay or reverse T1D
- **Positive topline data from Phase 1b monotherapy arm**
  - Study met its primary endpoint demonstrating safety and tolerability. No serious or severe TEAEs were reported in any of the patients treated with AG019 monotherapy.
  - C-peptide levels, a common biomarker used to measure pancreatic beta cell function, demonstrate slower decline in C-peptide levels in 67% of adult patients receiving AG019 monotherapy with 44% of these adult patients showing stabilization at six-months after treatment initiation.
  - Patients show an increase in the frequency of islet-specific Tregs, a potential mechanistic indicator of therapeutic activity, three months after treatment initiation.

Delivery of AG019 to GALT via oral delivery induces hPINS-specific regulatory T cells which migrate to inflamed tissue

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