UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 8-K

CURRENT REPORT
Pursuant to Section 13 or 15(d)
of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): January 7, 2019

INTREXON CORPORATION
(Exact Name of Registrant as Specified in Charter)

Virginia	**001-36042**	**26-0084895**
(State or Other Jurisdiction of Incorporation)	**(Commission File Number)**	**(I.R.S. Employer Identification No.)**

20374 Seneca Meadows Parkway, Germantown, Maryland 20876
(Address of Principal Executive Offices) (Zip Code)

(301) 556-9900
(Registrant's Telephone Number, including area code)

N/A
(Former Name or Former Address, if change since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 or Rule 12b-2 of the Securities Exchange Act of 1934.

Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

On January 7, 2019, Precigen, Inc., a wholly-owned subsidiary of Intrexon Corporation, will deliver the presentation attached to this current report as Exhibit 99.1 at the 2019 J.P. Morgan Healthcare Conference. The slides to be used during the presentation are furnished herewith as Exhibit 99.1 and are incorporated by reference into Item 7.01 of this Current Report on Form 8-K.

As provided in General Instruction B.2 of Form 8-K, the information in this Item 7.01 and the exhibit furnished hereunder will not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, nor will they be deemed to be incorporated by reference in any filing under the Securities Act of 1933, as amended, except as will be expressly set forth by specific reference in such a filing.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

Exhibit No.	Description
99.1	Presentation of Precigen, Inc. dated January 7, 2019

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Intrexon Corporation

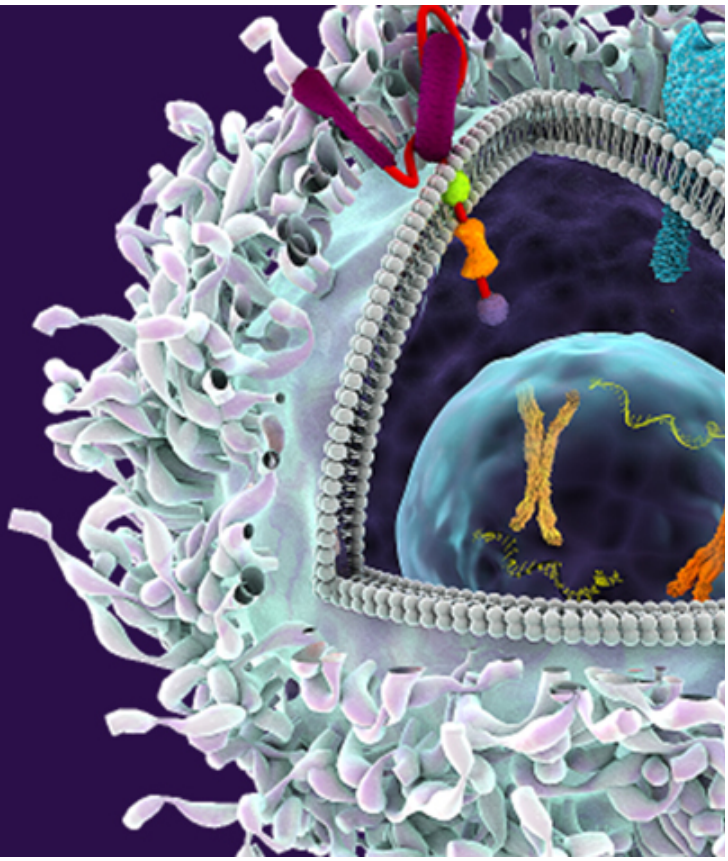
Dated: January 7, 2019

By: /s/ Donald P. Lehr
Donald P. Lehr
Chief Legal Officer

Precigen Company Update

Helen Sabzevari, PhD
President, Precigen

7 January 2019



PRECIGEN

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 that involve a number of risks and uncertainties and are 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, including the timing and progress of preclinical and clinical trials and discovery programs and Precigen's planned manufacturing facility. 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 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.

PRECIGEN

Today's agenda

- Company overview
- Technology platforms
- Therapeutic platform: UltraCAR-T™
- Preclinical and clinical portfolio
- Therapeutic areas
  - Immuno-oncology
  - Infectious diseases
  - Autoimmune disorders
- Summary
- Q&A

PRECIGEN

Company overview

- Company highlights
- Precigen's evolution
- State-of-the-art infrastructure

PRECIGEN

Company highlights – Precigen is a clinical stage company with a growing portfolio of first-in-class therapies

Precigen is a biopharmaceutical company advancing the next generation of gene and cellular therapies using precision technology to target immuno-oncology, autoimmune disorders, and infectious diseases

Diverse IP portfolio

- **Construct:** UltraVector®; mbIL15
- **Deliver:** *Sleeping Beauty* system; AttSite™ recombinases; AdenoVerse™
- **Control:** RheoSwitch®; Kill switches; tissue specific promoters

First-in-class therapies

- Three first-in-class products rapidly progressing towards clinic
  - PRGN-3006 UltraCAR-T™ for AML, MDS-IND cleared Dec '18
  - PRGN-3005 UltraCAR-T™ for solid tumors
  - PRGN-2009 AdenoVerse™ vaccine for solid tumors

Operational readiness

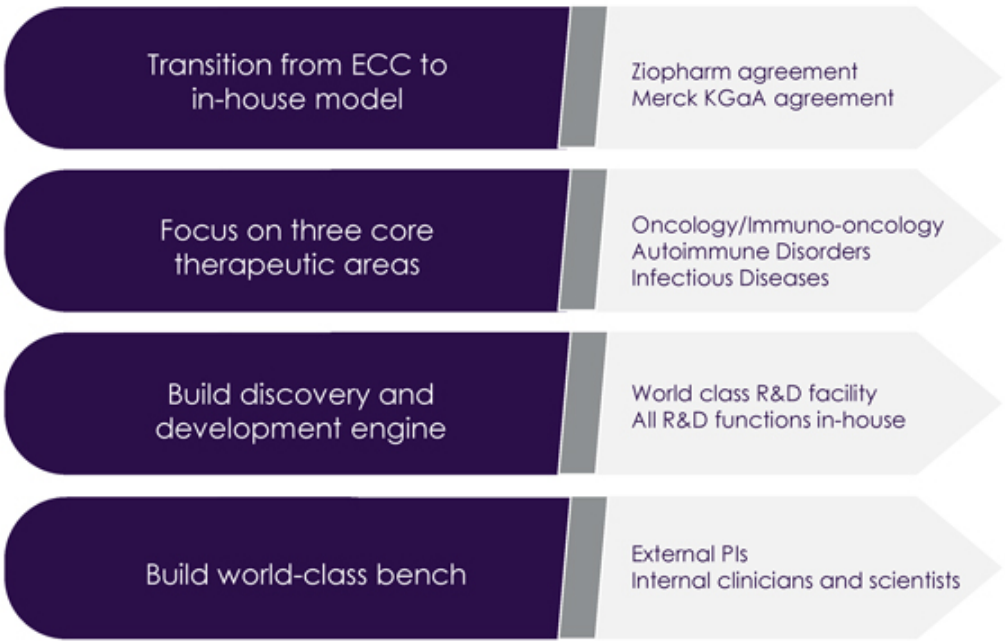
- Established R&D and development infrastructure
- State-of-the-art facilities
- 95+ clinicians, scientists and operational employees as of Dec '18

Seasoned leadership

- Experienced management team to drive discovery and development

PRECIGEN

Since our founding, Precigen has been evolving – setting the stage for rapid advancement of clinical programs



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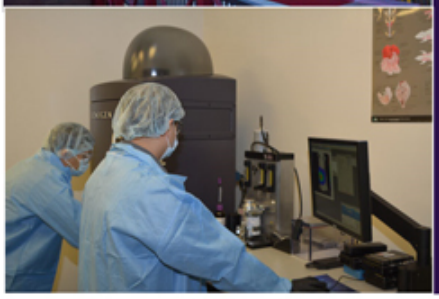
Precigen infrastructure includes state-of-the-art facilities, growing manufacturing capabilities and in-house R&D functions



Infrastructure

State-of-the-art R&D facility in Germantown, MD

Building GMP manufacturing facility. Inauguration in 2019

All R&D functions established in-house

Research
Vivarium
CMC
Regulatory
Clinical operations
Program Management

Technology platforms

- Technology platform advantages: CONSTRUCT, DELIVER, and CONTROL
- UltraVector®
- *Sleeping Beauty* system and AttSite™ recombinases
- AdenoVerse™
- RheoSwitch®
- Kill switches and tissue specific promoters

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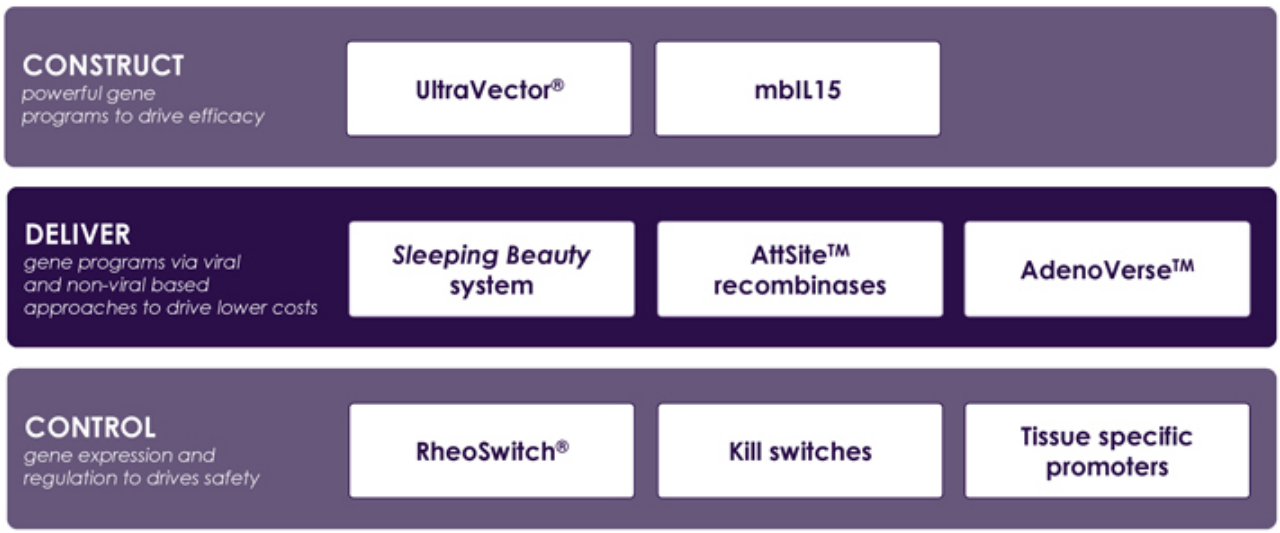
Precigen's technology platforms



PRECIGEN

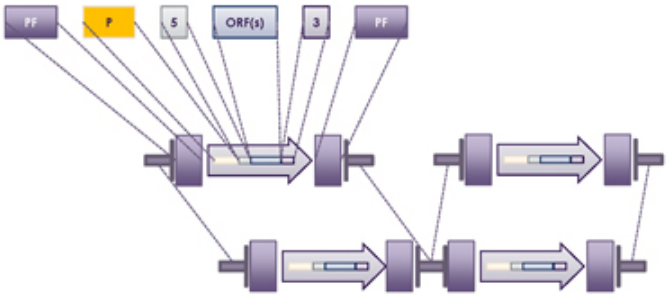
UltraVector® enables construction of powerful gene programs

CONSTRUCT

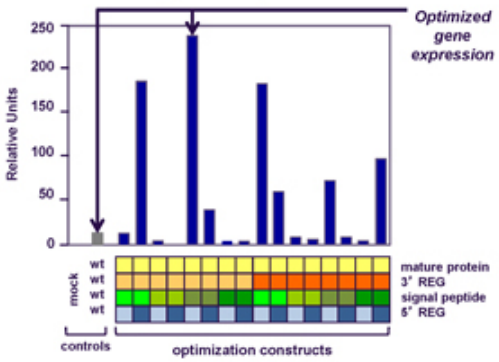
CONTROL

DELIVER

UltraVector® enabled matrices facilitate rapid identification of components and configurations for optimal expression of multiple genes



Significant improvement in gene expression



Industrialized assembly and screening of multigenic vectors

Optimized expression of multiple effector genes for precision medicine

Viral and non-viral (DNA, RNA and proteins)

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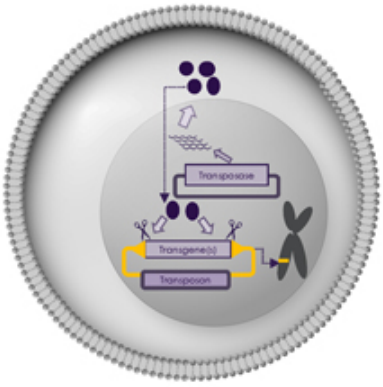
Sleeping Beauty system is the most clinically advanced non-viral delivery method for stable gene expression

CONSTRUCT

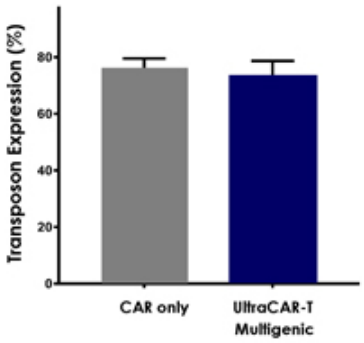
DELIVER

CONTROL

Non-viral *Sleeping Beauty* system offers a promising alternative to expensive viral vectors for cell therapy



High efficiency of gene transfer



Non-viral gene delivery platform

Random integration with no insertion bias towards potentially dangerous loci

Continuous improvements to *Sleeping Beauty* system using UltraVector® platform for optimized multigene delivery

PRECIGEN

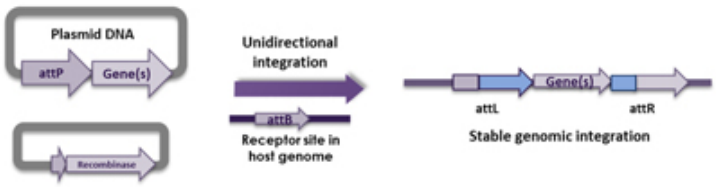
AttSite™ recombinases enable non-viral delivery for stable gene expression for variety of cell types

CONSTRUCT

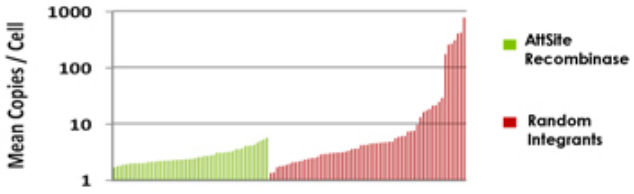
DELIVER

CONTROL

AttSite™ recombinases unidirectionally target genes to predictable pseudosites in a host cell genome



AttSite™ recombinases facilitate integration at low copy number into a finite number of pseudo AttSites



Precigen's next generation non-viral gene delivery platform

Large payload capacity

Highly site specific integration at finite number of sites in a genome

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AdenoVerse™ platform provides superior performance characteristics over Ad5 and other rare human and non-human primate adenovirus

CONSTRUCT

DELIVER

CONTROL

A library of adenoviral vectors with diverse and unique biological properties

Large payload capacity
- Multigenic expression
- Control of gene expression

Superior performance of Gorilla adenovectors
- Low to no seroprevalence in the human population
- Ability for repeat administration

High-level and durable antigen-specific immune responses

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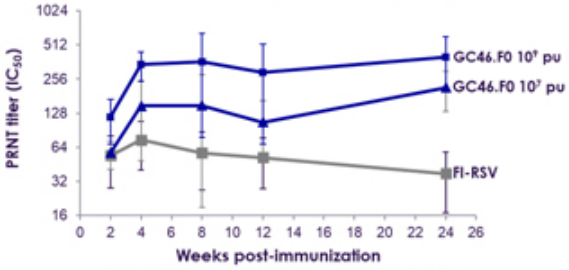
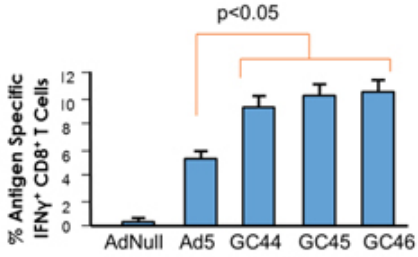
Durable neutralizing antibody response



RSV cotton rat model, single administration

Robust antigen specific T cell response



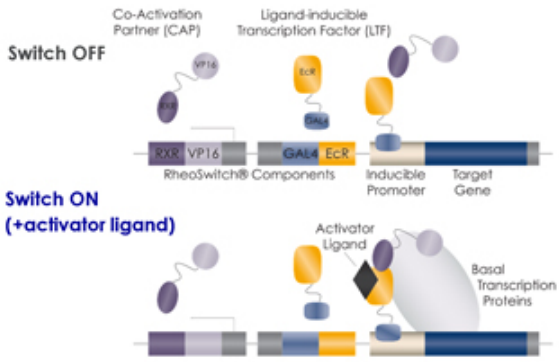
Control of gene expression *in vivo* with RheoSwitch®

CONSTRUCT

DELIVER

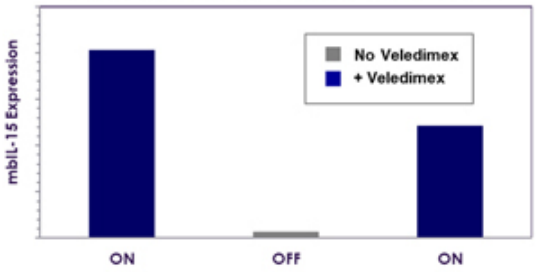
CONTROL

Most clinically-advanced gene switch platform

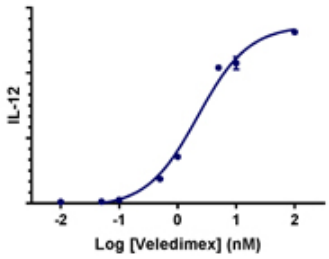


- Turn expression of genes ON and OFF repeatedly *in vivo* using oral activator ligand (e.g. veledimex)
- Highly controllable, oral ligand dose dependent gene expression
- Clinically evaluated with excellent safety profile

Repeated ability to turn expression ON and OFF



RheoSwitch® contolled cytokine expression by UltraCAR-T cells



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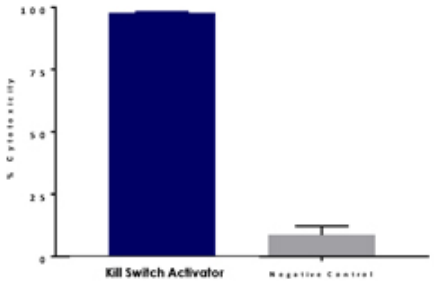
Kill switches and tissue specific promoters improve safety profile

CONSTRUCT

DELIVER

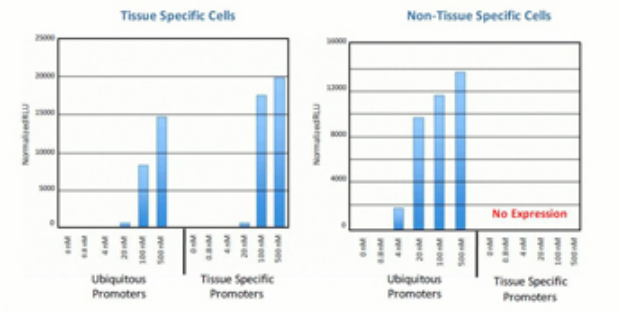
CONTROL

Kill switches



Ability to selectively deplete cell therapy products post administration to patients

Tissue specific promoters



Conditional local expression of effector genes

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Therapeutic platform: UltraCAR-T™

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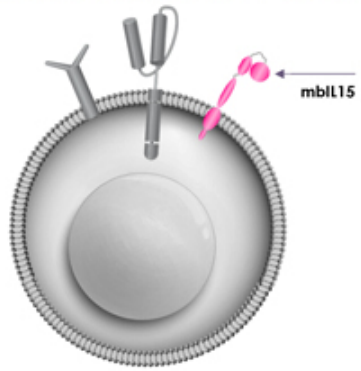
UltraCAR-T™ platform advantages: enhanced potency, safety, and scalability

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

PRECIGEN

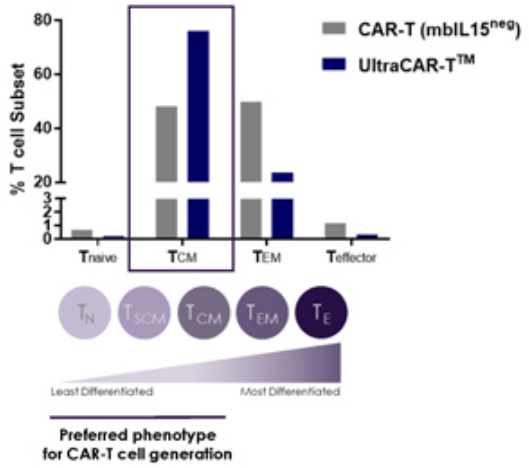
UltraCAR-T™ advantage: scalable manufacturing process with rapid turnaround time for patients

mbIL15 improves potency of UltraCAR-T



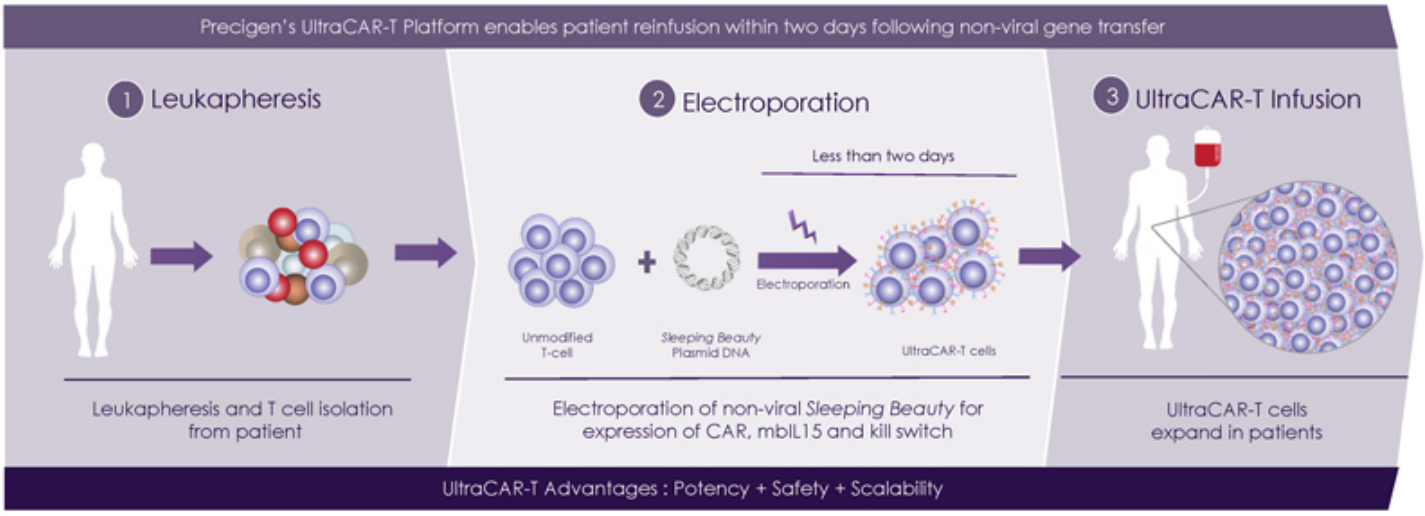
- Improved expansion and persistence of T cells
- Less differentiated, memory like T cell population
- Improved engraftment potential
- Allows for elimination of *ex vivo* expansion manufacturing step

Memory like phenotype of UltraCAR-T



PRECIGEN

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



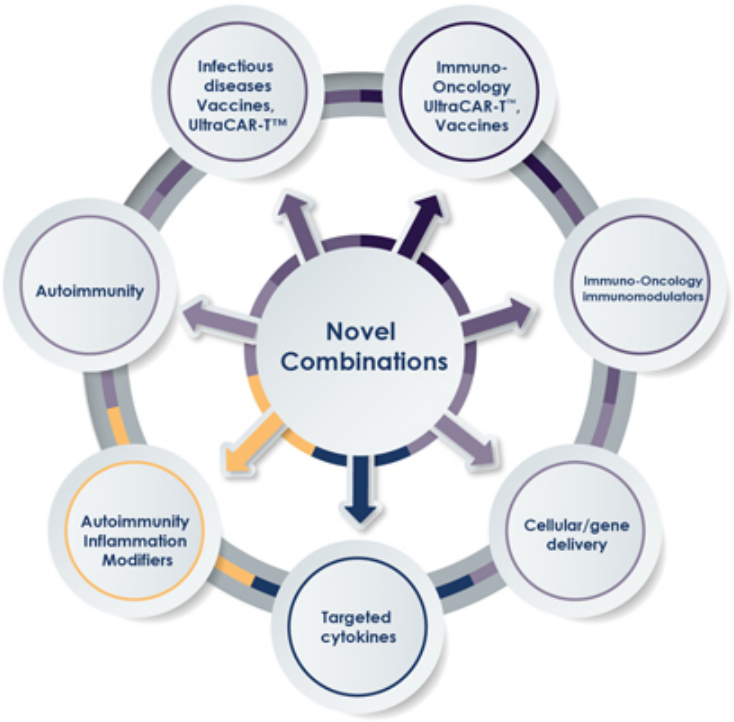
PRECIGEN

Preclinical and clinical portfolio

- Portfolio designed for novel combinations
- Current preclinical and clinical portfolio by phase

PRECIGEN

Precigen's portfolio is designed to specifically deliver novel combinations



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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-3006**	UltraCAR-T	AML, MDS			
	INXN-3004	Viral CAR-T	AML			
	PRGN-3005	UltraCAR-T	Solid Tumors			
	PRGN-3007	UltraCAR-T	Undisclosed			
	PRGN-3008	UltraCAR-T	Undisclosed			
	PRGN-2009	AdenoVerse Vaccine	Solid Tumors			
	PRGN-2010	AdenoVerse Vaccine	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**	AdenoVerse Vaccine	Undisclosed			
	PRGN-2013	AdenoVerse Vaccine	Undisclosed			
Autoimmune disorders	**PRGN-3009**	Undisclosed	Undisclosed			
	PRGN-3010	Undisclosed	Undisclosed			

Precigen pipeline as of January 2019

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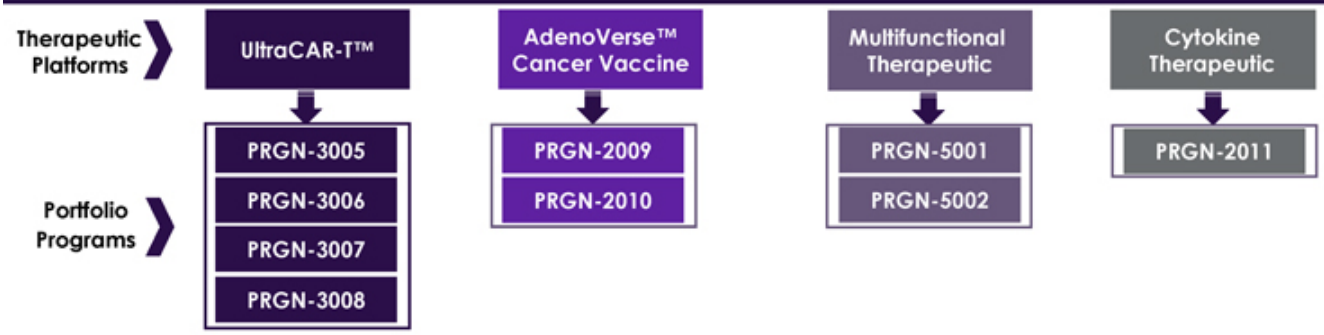
Precigen's portfolio is designed to deliver novel combinations in immuno-oncology



Novel combinations using Precigen's portfolio programs

UltraCAR-T™	UltraCAR-T™	UltraCAR-T™	AdenoVerse™ Cancer Vaccine	AdenoVerse™ Cancer Vaccine	Multifunctional Therapeutic
AdenoVerse™ Cancer Vaccine	Multifunctional Therapeutic	Cytokine Therapeutic	Multifunctional Therapeutic	Cytokine Therapeutic	Cytokine Therapeutic

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Immuno-oncology therapeutic area

- Current immunotherapy landscape
- Control of immuno-oncology technologies
- Asset highlight: PRGN-3006 UltraCAR-T™
- Asset highlight: PRGN-3005 UltraCAR-T™
- Asset highlight: AdenoVerse™ cancer vaccine
- Asset highlight: Multifunctional therapeutic

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Current immunotherapy landscape has promise, but many drawbacks

Viral-Based CAR-T

Allogeneic

- Available on-demand
- Limited persistence / rejection of allogeneic CAR-T by host
- Short treatment window may limit effectiveness for solid tumors

Autologous

- Unparalleled clinical efficacy using anti CD19-CAR-T cells for treatment of refractory B-cell malignancies
- Reliance on viral vectors: complexity of manufacturing; potential safety concerns
- More differentiated less desired T-cell phenotype
- Lengthy cell product manufacturing process
- Long delays for patients
- Major challenges in solid tumor treatments using current approaches

Checkpoint Inhibitors

- Immunotherapy with checkpoint inhibitors has revolutionized cancer treatment in recent years
- Despite the success, only a minority of patients respond; in some indications there is no response
- Relapse rates are high among responders to checkpoint inhibitors
- Combination trials with checkpoint inhibitors have yielded only incremental advances at high cost

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Focus on immuno-oncology with full control of technologies

CAR-T cells	• Full developmental control across targets • Royalty bearing license to Ziopharm for CD19 and right to negotiate for second undisclosed target • Exclusive rights to non-viral *Sleeping Beauty* system • UltraCAR-T™ platform
Cancer vaccines	• Full developmental control across targets • RheoSwitch® Therapeutic System • AdenoVerse™ platform
Multifunctional therapeutics	• Novel multi-effector therapeutics approach • Target multiple pathways for improvement over existing checkpoint inhibitors
Cytokine therapy	• Full developmental control across molecules • Royalty bearing license to Ziopharm for controlled IL-12 viral therapy • AdenoVerse™ platform and RheoSwitch® Therapeutic System
TCR T cells	• Full developmental control across "public antigen" targets • AttSite™ recombinases and viral gene delivery • mbIL15

Immuno-oncology therapeutic area

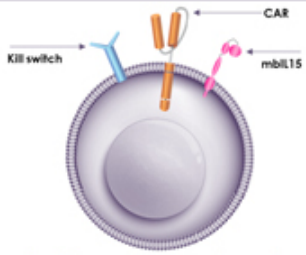
Asset highlight: PRGN-3006 UltraCAR-T™

PRECIGEN

PRGN-3006 UltraCAR-T™, *a first-in-class therapy in AML,* received FDA clearance for IND to initiate Phase 1/1b study

Highlights and Differentiation

- Autologous T cell investigational therapy
- Rapid manufacturing
  - No *ex vivo* propagation step
  - Infusion within 2 days after gene transfer
- Next generation *Sleeping Beauty* design for optimized multigenic expression



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

Status

- FDA IND clearance in Dec '18
- Phase 1/1b study to evaluate safety and maximal tolerated dose expected to initiate in 1H '19
- Study in collaboration with Moffitt Cancer Center

Patient Population

- Relapsed or refractory acute myeloid leukemia (AML)
- Higher risk myelodysplastic syndrome (MDS)

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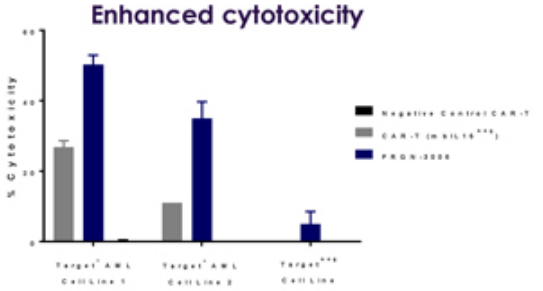
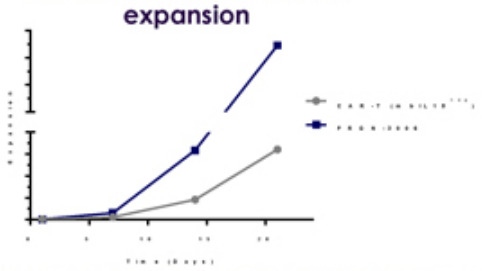
PRGN-3006 UltraCAR-T™ exhibits enhanced functional activity and safety *in vitro*

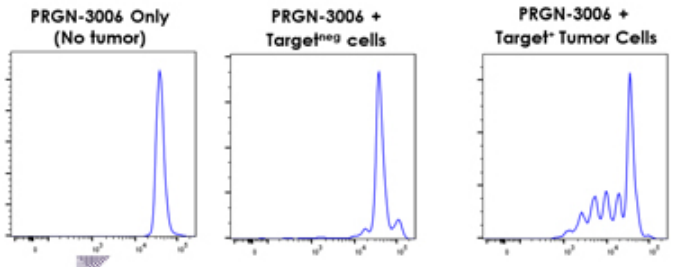
Enhanced cytotoxicity



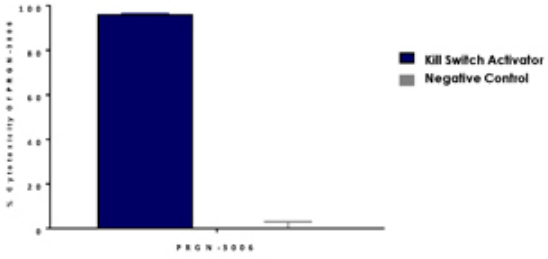
Enhanced antigen specific expansion



No bystander activation

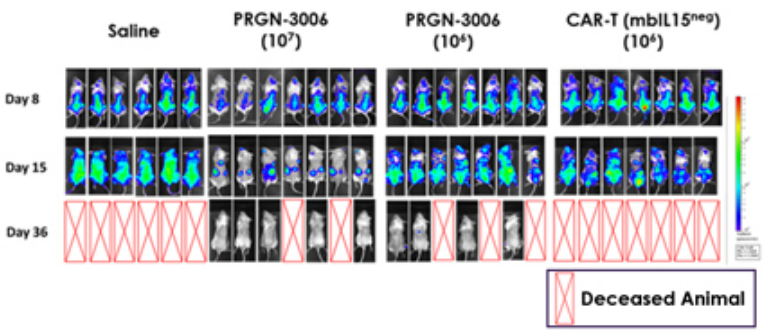


Kill switch functionality



PRECIGEN

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

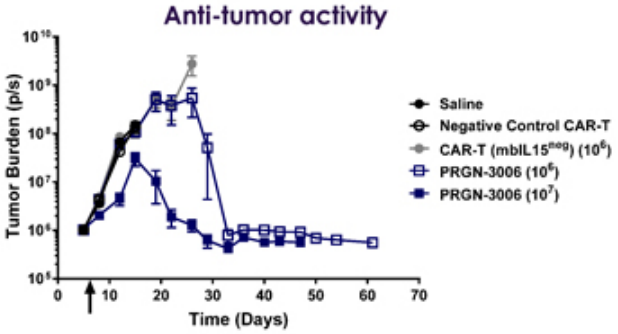


PRGN-3006 UltraCAR-T™ cells administered in less than 2 days post gene transfer effectively eliminated AML tumor in dose dependent manner

mbIL15 expression necessary for elimination of aggressive AML tumor in mice

PRECIGEN

Anti-tumor activity

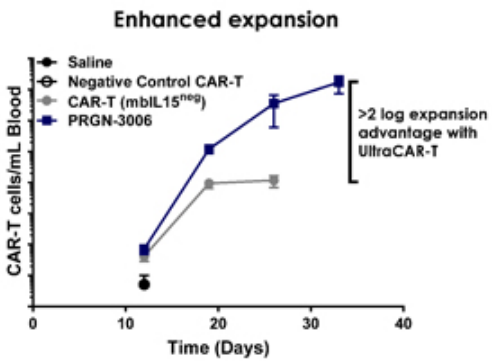


Overall survival (OS)

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

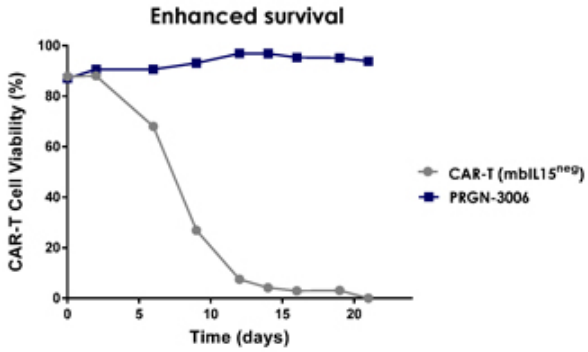
mbIL15 improves expansion and persistence of PRGN-3006 UltraCAR-T™ cells

In vivo – AML model



Superior *in vivo* expansion and persistence of PRGN-3006 UltraCAR-T™ cells in tumor bearing mice

In vitro



Expression of mbIL15 supports survival and promotes extended persistence in absence of cytokines

PRECIGEN

Immuno-oncology therapeutic area

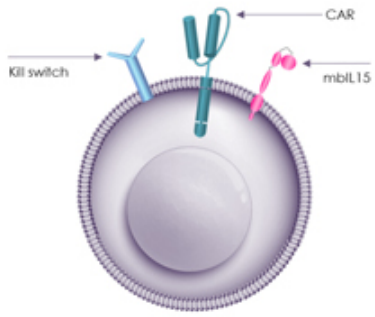
Asset highlight: PRGN-3005 UltraCAR-T™

PRECIGEN

PRGN-3005 UltraCAR-T™, *a first-in-class therapy in solid tumors*

Highlights and Differentiation

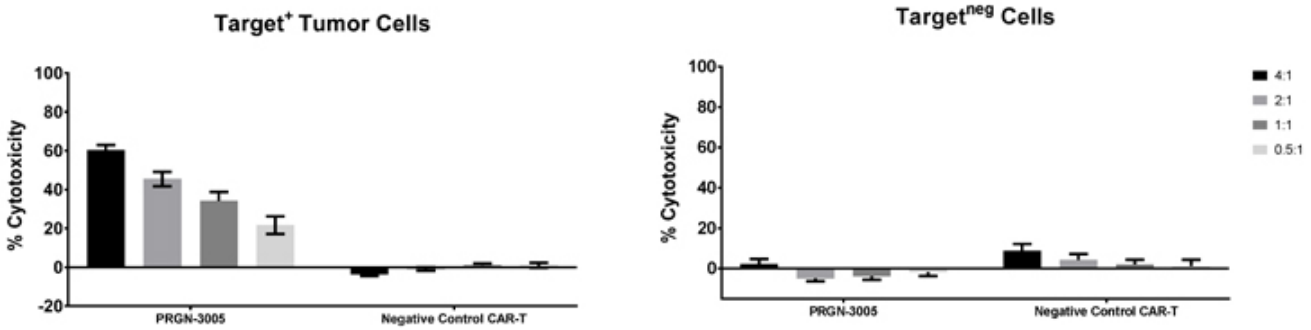
- Autologous T cell product
- Specific targeting of tumor cells via CAR, improved UltraCAR-T™ persistence due to mbIL15 and built-in safety mechanism with kill switch
- Rapid manufacturing
  - No *ex vivo* propagation step
  - Infusion within 2 days after gene transfer
- High gene transfer efficiency using optimized *Sleeping Beauty* transposon



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

PRECIGEN

PRGN-3005 UltraCAR-T™ specifically lyse tumor cells in dose dependent manner *in vitro*

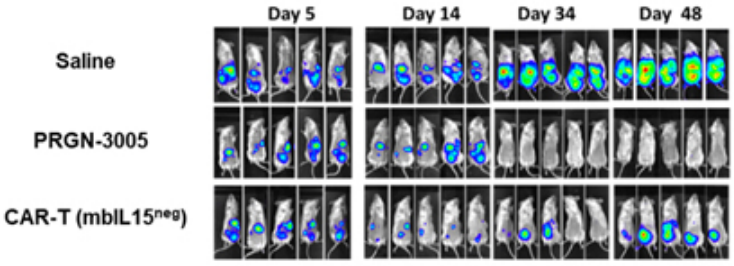


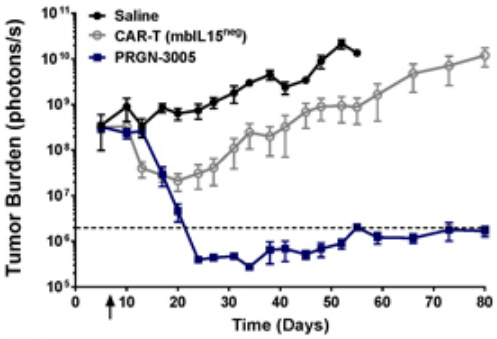
PRGN-3005 exhibits robust target specific cytotoxicity of tumor cells in dose dependent manner

PRECIGEN

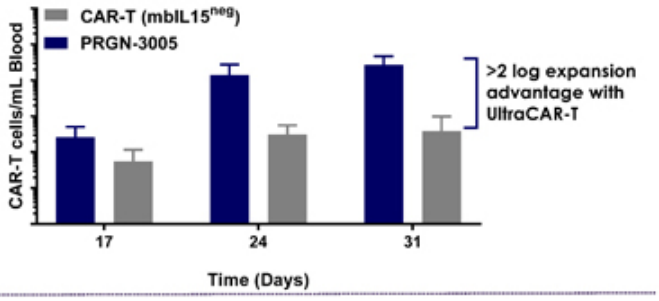
PRGN-3005 UltraCAR-T™ effectively eliminated tumor burden in mice

Enhanced anti-tumor effect





Enhanced expansion



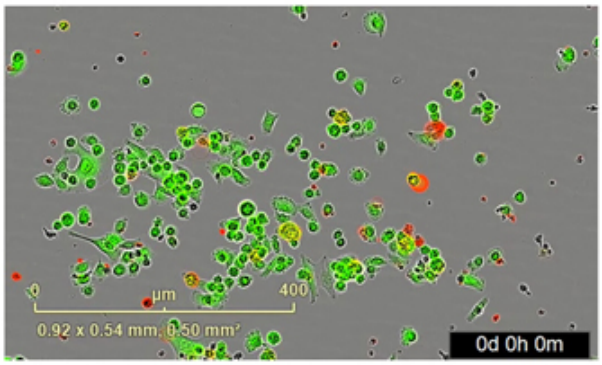
PRGN-3005 UltraCAR-T™ cells show enhanced expansion and persistence in tumor bearing mice compared to mbIL15^{neg} CAR-T cells

PRGN-3005 UltraCAR-T™ cells administered in less than 2 days post gene transfer eliminated tumor in all treated mice

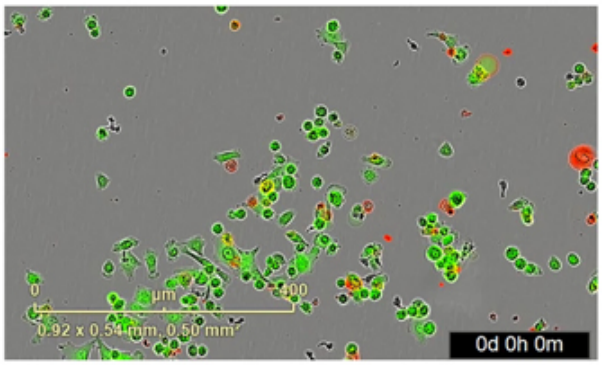
PRECIGEN

PRGN-3005 UltraCAR-T™ demonstrates enhanced anti-tumor effect

PRGN-3005



Negative control CAR-T



Tumor cells – Green; Apoptosis = Red

PRECIGEN

Plans to rapidly advance PRGN-3005 UltraCAR-T™

First in class UltraCAR-T molecule for solid tumors

- Non-viral gene transfer
- Rapid manufacturing enables quick turnaround for patients

PRGN-3005 demonstrated enhanced anti-tumor activity in mouse model

Rapidly advancing PRGN-3005 development

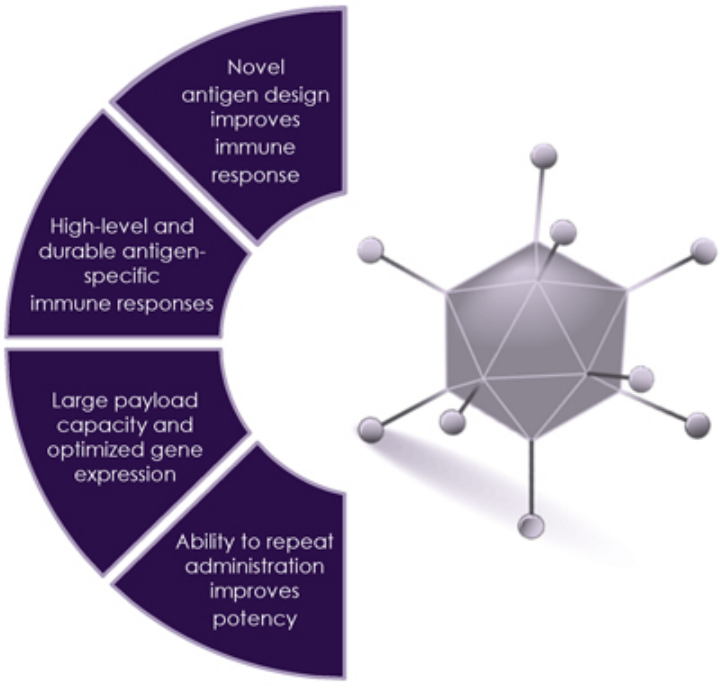
PRECIGEN

Immuno-oncology therapeutic area

Asset highlight: AdenoVerse™ cancer vaccine

PRECIGEN

AdenoVerse™ cancer vaccines



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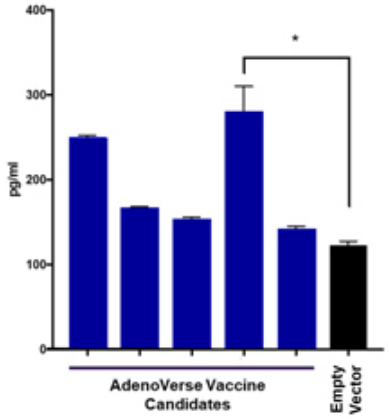
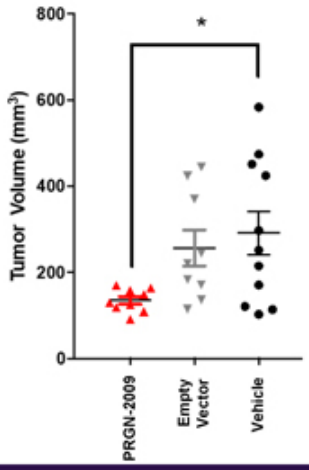
Robust antigen-specific response and anti-tumor activity by AdenoVerse™ cancer vaccine candidate *in vivo*

***In vitro* screening**



Novel antigen designs for cancer vaccine candidates produce robust antigen-specific response

Anti-tumor activity



AdenoVerse™ vaccine effectively controls tumor in mice

PRECIGEN

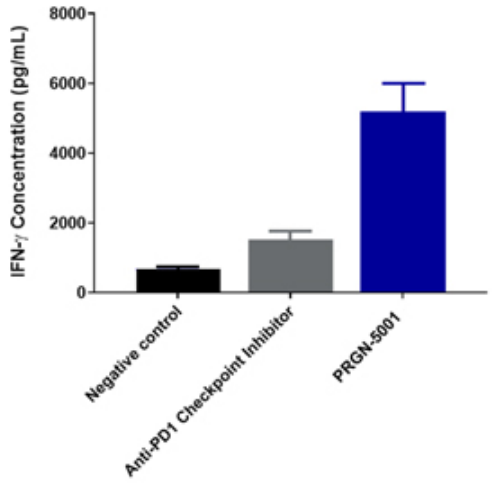
Immuno-oncology therapeutic area

Asset highlight: Multifunctional therapeutic

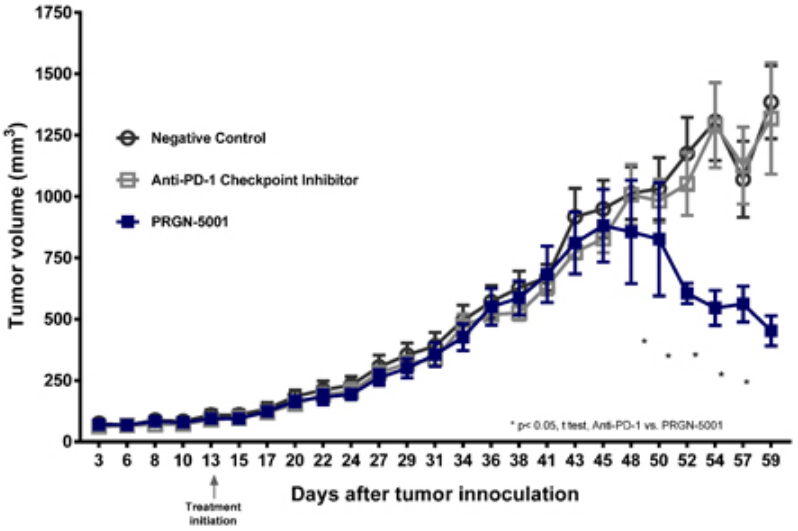
PRECIGEN

Precigen's multifunctional therapeutic candidate provides better T cell activation & anti-tumor response vs. approved anti-PD-1 checkpoint inhibitor

Improved T cell activation



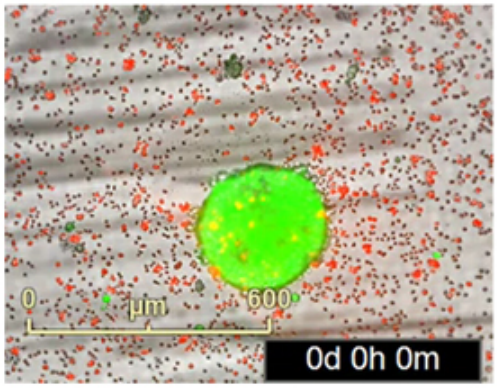
Improved anti-tumor activity



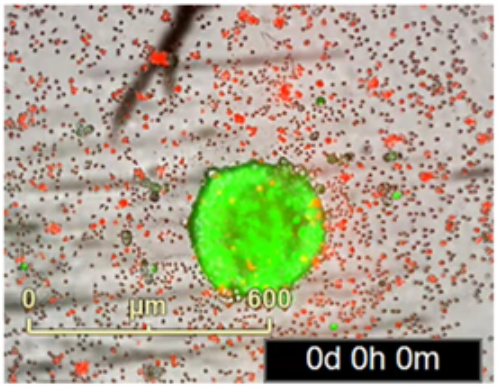
PRECIGEN

Precigen's candidate induces faster T cell infiltration into tumor spheroid compared to anti-PD1

PRGN-5001



Anti-PD1



Key: Tumor = Green PBMCs = Red Fibroblast = Unlabeled

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Infectious diseases therapeutic area

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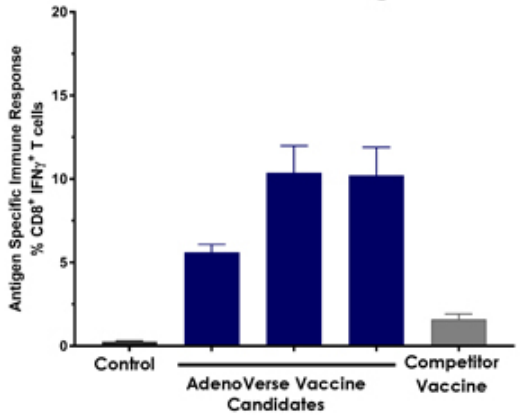
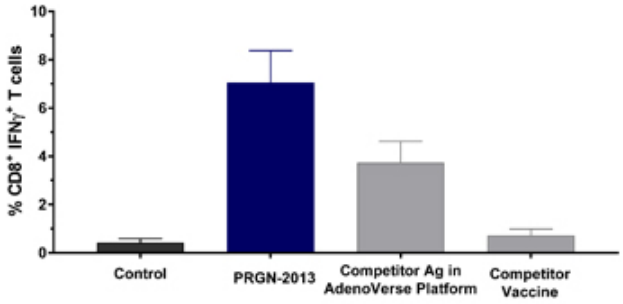
Precigen AdenoVerse™ vaccine candidates and technology platform generate superior immune responses

In vivo screening



Novel antigen designs for infectious disease vaccine candidates produce robust antigen-specific response

Antigen specific immune response



AdenoVerse™ vaccine produces superior immune response

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Autoimmune disorders therapeutic area

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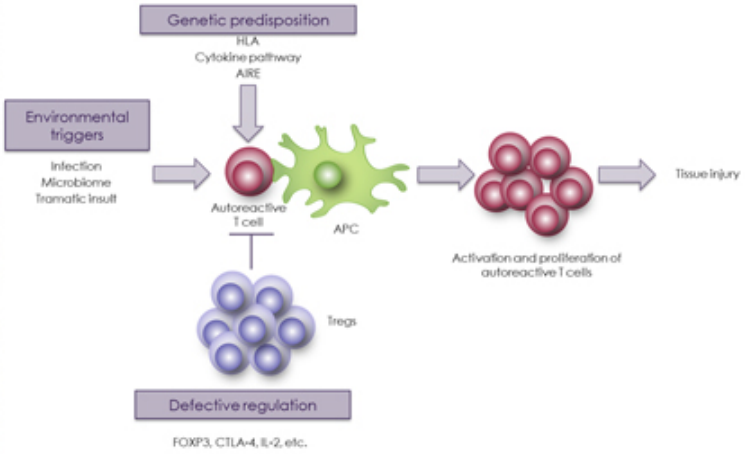
Factors involved in the initiation of autoimmunity

Genetic

- HLA
- Cytokines/receptors

Environmental

- Infection, microbiome, tissue injury
- Generate proinflammatory environment
- Activation of autoreactive lymphocytes
- Defective Tregs (either development, stability, or function)



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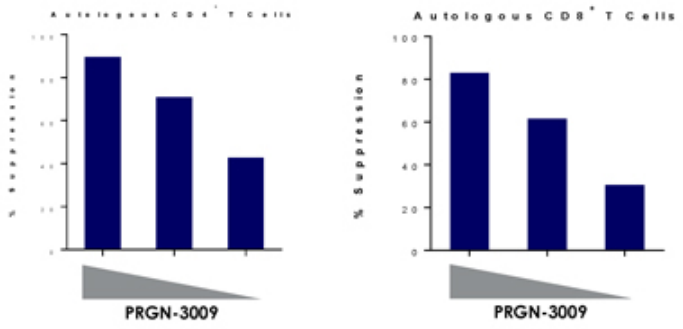
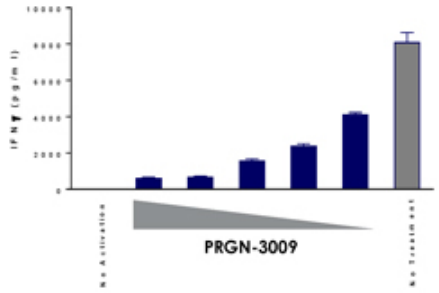
Graphic adapted from: *J Clin Invest*. 2015;125(6):2228-2233. https://doi.org/10.1172/JCI78088 (Figure 2)

Precigen's autoimmunity asset demonstrated potent suppression of effector cell function

Suppression of effector T cell proliferation



Suppression of inflammatory cytokine production



Novel multigenic approach for treatment of autoimmune disorders with unmet medical need

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Summary

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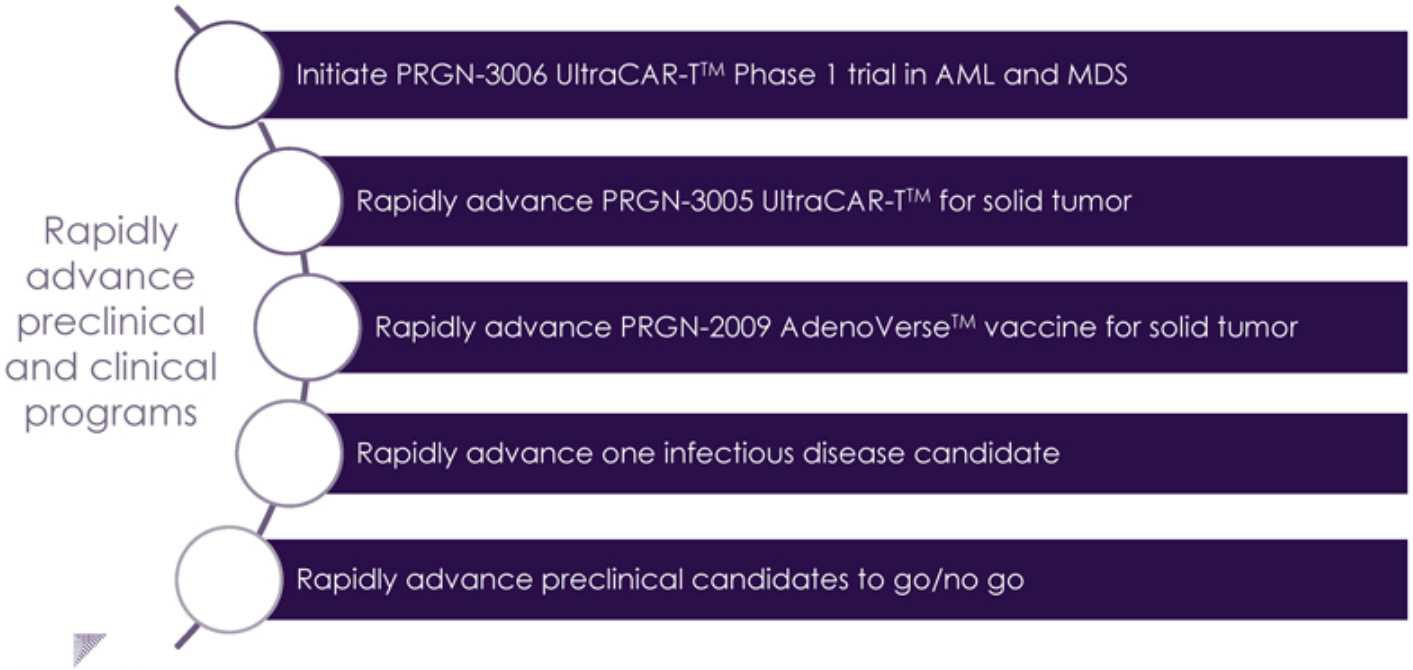
Looking ahead to 2019



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Long-term vision: Value creation through patient focus

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Q&A

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ADVANCING MEDICINE WITH PRECISION™