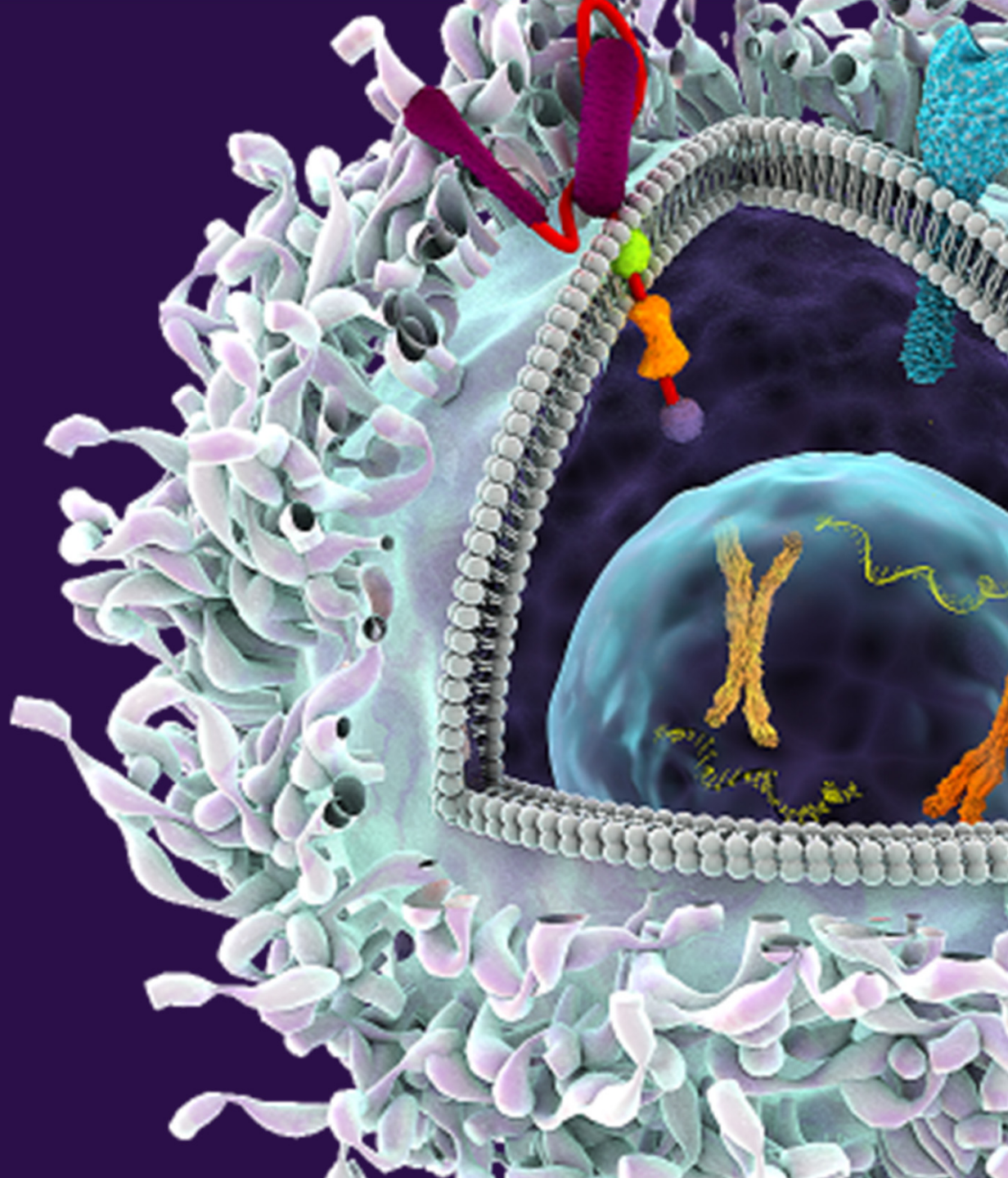
Precigen, Inc.

Helen Sabzevari, PhD
President & CEO

38th Annual J.P. Morgan Healthcare Conference

14 January 2020



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 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 platforms and product candidates including in comparison to competitive platforms and products, and the expected closing date of transactions with Third Security, the renaming of Intrexon Corporation to Precigen, Inc., 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 fulfillment of closing conditions, (ii) the distraction of management from business operations, (iii) the risks associated with separating businesses out from ongoing operations, (iv) Intrexon's strategy and overall approach to its business model, its efforts to realign its business, and its ability to exercise more control and ownership over the development process and commercialization path; (v) 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, whether with its collaborators or independently; (vi) the ability to successfully enter into optimal strategic relationships with its subsidiaries and operating companies that it may form in the future; (vii) the ability to hold or generate significant operating capital, including through partnering, asset sales and operating cost reductions; (viii) actual or anticipated variations in operating results; (ix) actual or anticipated fluctuations in competitors' or collaborators' operating results or changes in their respective growth rates; (x) cash position; (xi) market conditions in the company's industry; (xii) the volatility of Intrexon's stock price; (xiii) the ability, and the ability of collaborators, to protect Intrexon's intellectual property and other proprietary rights and technologies; (xiv) the ability, and the ability of collaborators, to adapt to changes in laws or regulations and policies; (xv) outcomes of pending and future litigation; (xvi) the rate and degree of market acceptance of any products developed by Intrexon, its subsidiaries, collaborations or joint ventures; (xvii) the ability to retain and recruit key personnel; (xviii) expectations related to the use of proceeds from public offerings and other financing efforts; (xix) estimates regarding expenses, future revenue, capital requirements and needs for additional financing; (xx) the successful completion of certain anticipated transactions, and (xxi) 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 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.

Intrexon: Becoming dedicated healthcare company operating as Precigen

Announced January 2, 2020

Increased Focus on Healthcare	• Name to be Precigen with expected stock symbol of 'PGEN' • **Assets to encompass wholly-owned subsidiaries Precigen, ActoBio Therapeutics, Exemplar Genetics and majority ownership interest in Triple-Gene**
Leadership	• **Dr. Helen Sabzevari appointed President and CEO of new Precigen** • Randal J. Kirk appointed Executive Chairman
Divestment of Non-Healthcare Assets	• **Certain non-healthcare assets* to be sold to Third Security (expected to close late Jan 2020)** • **Interest in EnviroFlight, LLC sold to Darling Ingredients, Inc.**
Financial Strength	• **Previous cash position and expected proceeds from divestments and stock purchase approximate $175M at year end** • **Significant runway with increased focus and reduced cash burn for efficient use of capital**

*Ag Biotech Division (AgBio), Intrexon Laboratories Hungary (ILH), Intrexon Produce Holdings, Inc. (owner of Okanagan Specialty Fruits), Intrexon UK Holdings, Inc. (owner of Oxitec, Ltd.), Intrexon's nominal equity interests in Oragenics and Parallel (formerly Surterra), and the internet domain name DNA.com.

Precigen: Maximizing platform technology utilization

PRECIGEN ‡

- Next generation gene and cellular therapies using precision technology
- Multiple clinical and preclinical candidates
- Initial Phase 1 data readout in 2H20

ACT BIO THERAPEUTICS™

- Microbe-based agents that deliver disease-modifying therapeutics
- Multiple clinical and preclinical candidates
- Key interim data in 2020

TRIPLEGENE

- Multigenic gene therapies focused on cardiovascular disease
- Key asset in Phase 1
- Additional Phase 1 data in 2020

EXEMPLAR GENETICS

- Market leader in genetically engineered MiniSwine models of human disease
- Potential for regenerative medicine applications

Shared focus on immuno-oncology, infectious disease, cardiovascular disease, and autoimmune disorders

‡Wholly owned subsidiary Precigen, Inc. will be renamed in connection with parent company name change.

Precigen's strategic objectives allow us to deliver on our vision for patients

PRECIGEN'S VISION FOR PATIENTS

Develop life-saving and cost-conscious therapies utilizing our cutting-edge platform technologies for patients with unmet need

RAPID EXECUTION

Focus on rapid execution of priority programs with the highest probability of success

FISCAL STRENGTH

Significant cash runway to deliver value inflection

ACTIVE PORTFOLIO MANAGEMENT

Continuous evaluation of portfolio based on data to make rapid go/no go decisions

STRATEGIC PARTNERSHIPS

Seek strategic partnerships to maximize value generation

Precigen's technology 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

Precigen has robust clinical pipeline of internal and partnered programs with important data readouts in 2020

	PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	PHASE 2	PHASE 3	STATUS / MILESTONES	PARTNER
PRECIGEN	AG019	ActoBiotics	Type 1 Diabetes						Interim data in 3Q20	
	PRGN-3005	UltraCAR-T	Ovarian Cancer						Initial data in 2H20	
	PRGN-3006	UltraCAR-T	AML, MDS						Initial data in 2H20	
	INXN-4001	Non-viral UltraVector	Heart Failure						Phase 1 data in 2020	
PARTNERED	FCX-007	Fibroblast Cell Therapy	RDEB						Pivotal Phase 3 initiated	CASTLE CREEK PHARMA Life-Changing Impact
	AG013	ActoBiotics	Oral Mucositis						Phase 2 interim data in 1H20	ORAGENICS
	CGF166	Gene Therapy	Hearing Loss						Phase 1/2 ongoing	NOVARTIS
	FCX-013	Fibroblast Cell Therapy	Localized Scleroderma						Phase 1/2 is enrolling	CASTLE CREEK PHARMA Life-Changing Impact

Precigen has robust preclinical pipeline to drive long-term value creation

TA	PRODUCT	PLATFORM	INDICATION	DISCOVERY	PRECLINICAL	PHASE 1	MILESTONES
Immuno-oncology	PRGN-2009	OTS AdenoVerse Immunotherapy	HPV$^+$ Cancers				Phase 1 initiation 2020
	PRGN-2011	AdenoVerse Cytokine Therapy	Solid Tumors				
	PRGN-5001	Multifunctional Therapeutic	Solid Tumors				IND-enabling studies 2020
	PRGN-3007	UltraCAR-T	Undisclosed				IND-enabling studies 2020
	PRGN-3008	UltraCAR-T	Undisclosed				
	PRGN-5002	Multifunctional Therapeutic	Solid Tumors				
	PRGN-2010	OTS AdenoVerse Immunotherapy	Solid Tumors				
Autoimmune Disorders	AG017	ActoBiotics	Celiac Disease				IND approved
	PRGN-3009	Undisclosed	Undisclosed				
	PRGN-3010	Undisclosed	Undisclosed				
Infectious Disease	PRGN-2012	OTS AdenoVerse Immunotherapy	Undisclosed				IND-enabling studies 2020
	PRGN-2013	OTS AdenoVerse Immunotherapy	Undisclosed				

OTS: Off-the-shelf

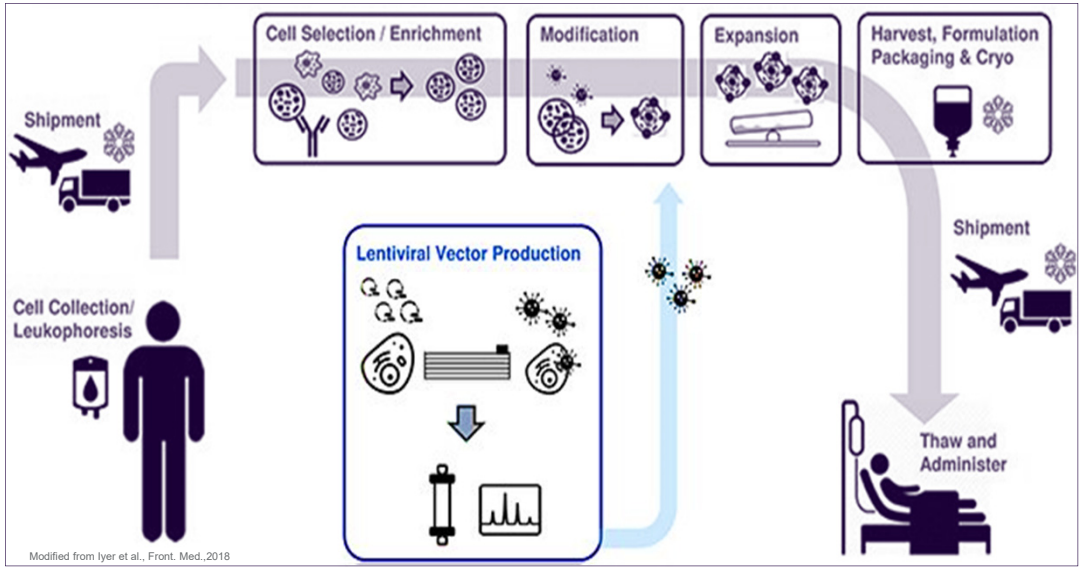
Agile portfolio management with continuous evaluation of preclinical portfolio based on data to make rapid go/no go decisions

PRECIGEN

Disrupting the market: Precigen's UltraCAR-T™ treatment is delivered to patients one day after non-viral gene transfer

Conventional CAR-T

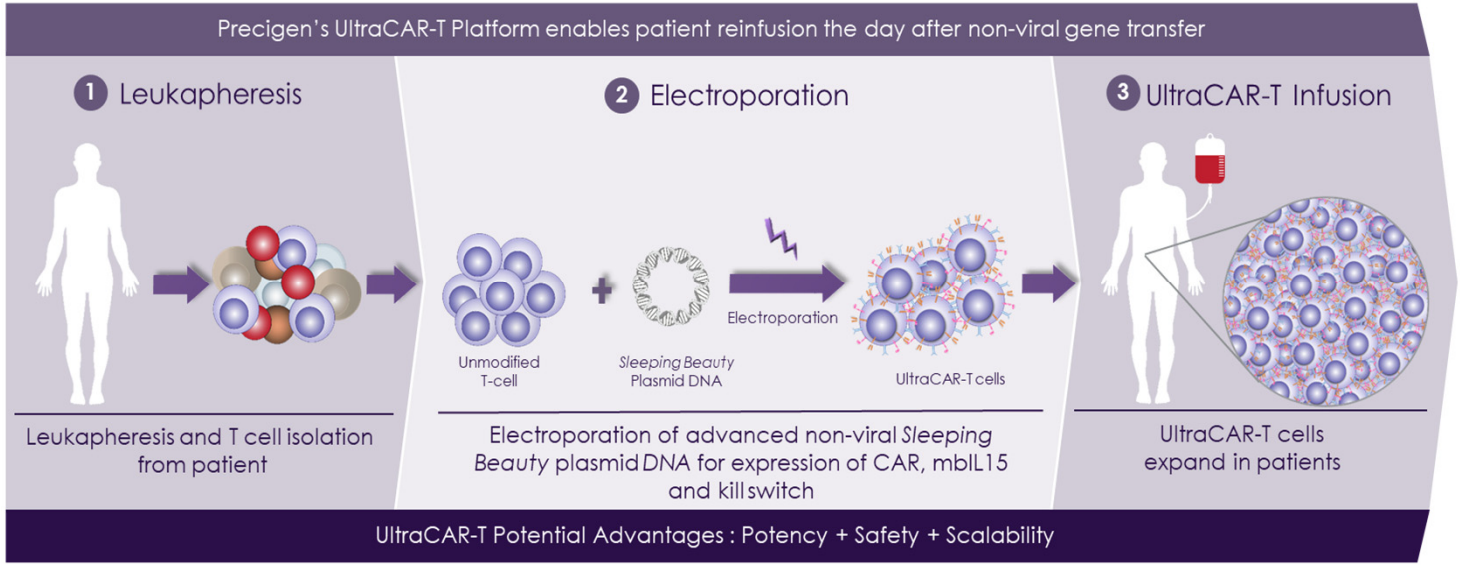
Viral vectors and *ex vivo* expansion result in long delays for patient treatment and high cost



- 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



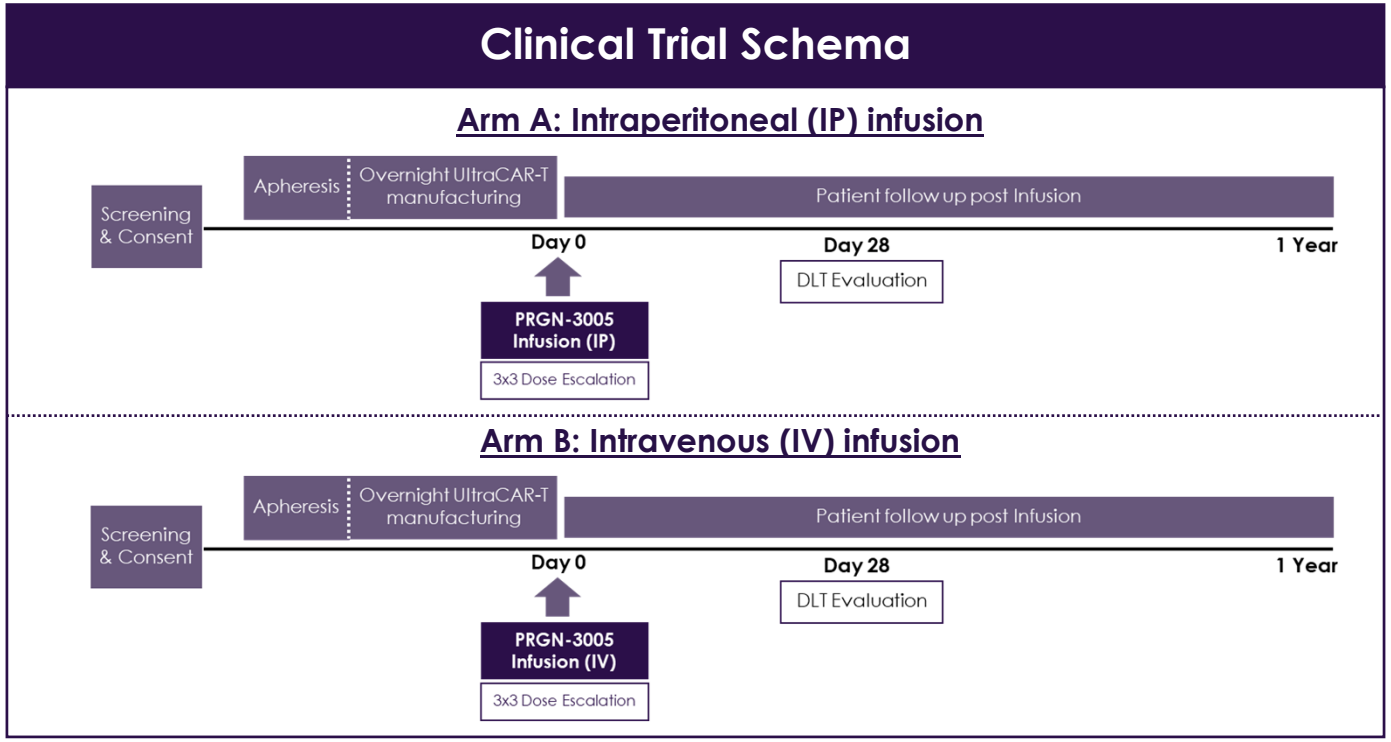
- Non-viral gene delivery
  - Simplified manufacturing of Plasmid DNA
- Overnight UltraCAR-T manufacturing process
  - No *ex vivo* expansion necessary
  - Reduced manufacturing cost
- Stem-like memory T cell phenotype
- Enhanced potential for expansion and persistence

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

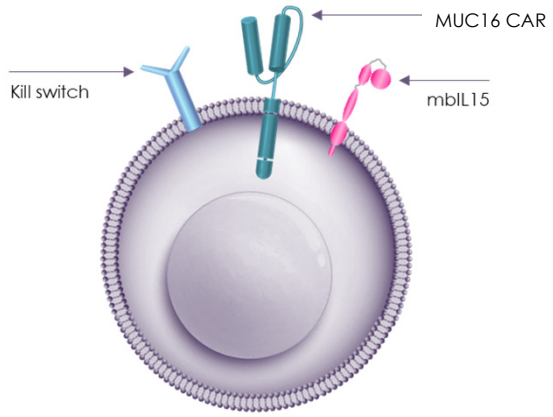
Phase 1 Clinical Trial Ongoing

- Second cohort for IP arm enrolling patients
- 100% manufacturing success to date
- Initial data readout from IP arm expected in 2H20
- Encouraging preliminary findings of UltraCAR-T kinetics

Clinical Trial Schema



Advanced non-viral *Sleeping Beauty* system to co-express MUC16 CAR, mbIL15 and kill switch



Target & Patient Population

- Preferentially targets MUC16^{+} cancer cells
  - MUC16 overexpressed on >80% of ovarian tumors
  - Limited expression found in healthy tissues
- Initial target is advanced stage platinum resistant ovarian cancer
  - 300k diagnosed annually[1]/22k in US[2]

[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.

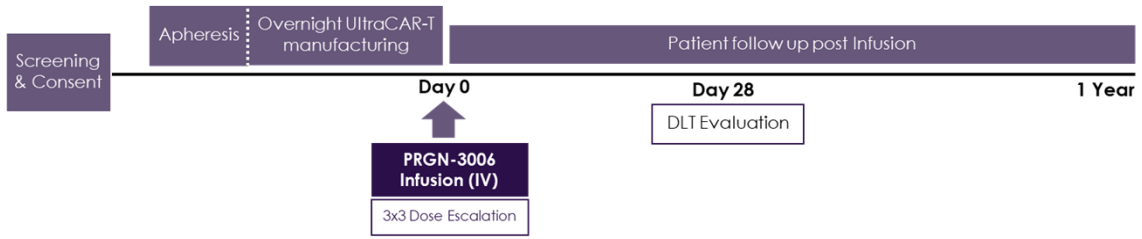
PRGN-3006 UltraCAR-T™, *a first-in-class therapy in AML*

Phase 1/1b Clinical Trial Ongoing

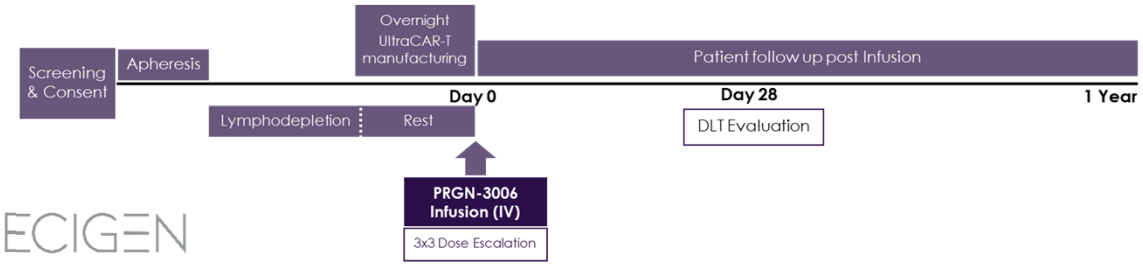
- Second cohort of no lymphodepletion arm and first cohort of lymphodepletion arm are enrolling patients
- 100% manufacturing success to date
- Initial data readout expected in 2H20
- Orphan Drug Designation recently granted by FDA
- Encouraging preliminary findings of UltraCAR-T kinetics

Clinical Trial Schema

Arm 1: No lymphodepletion prior to UltraCAR-T infusion

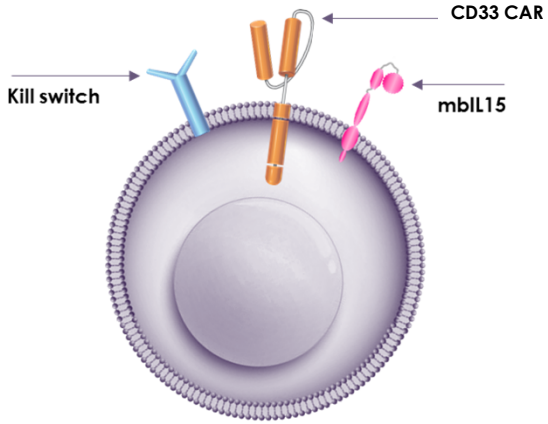


Arm 2: Lymphodepletion prior to UltraCAR-T infusion



PRECIGEN

Advanced non-viral *Sleeping Beauty* system to co-express CD33 CAR, mbIL15 and kill switch



Target & Patient Population

- CD33 is overexpressed on myeloid leukemia cells and leukemic stem cells
  - 85-90% of AML patients show expression of CD33 on blasts
- 20k diagnosed in US in 2018[1] with relapsed or refractory AML
- Higher risk myelodysplastic syndrome (MDS) has US incidence >10k per year[2]

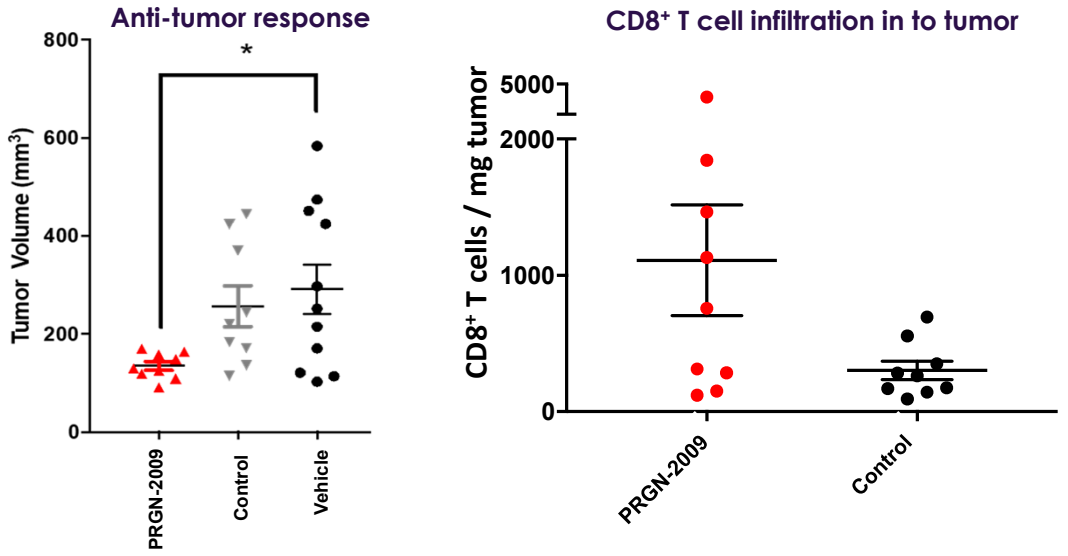
[1]American Cancer Society. Key Statistics for Acute Myeloid Leukemia (AML). Accessed December 2018 via ACS website.
[2]American Cancer Society. Key Statistics for Myelodysplastic Syndromes. Accessed December 2018 via ACS website.

PRGN-2009 off-the-shelf AdenoVerse™ immunotherapy for HPV+ cancers

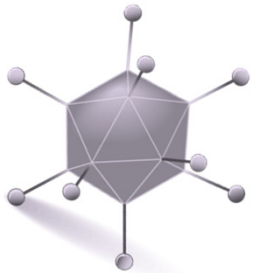
Phase 1 Clinical Trial Initiation Upcoming

- Currently under development through CRADA with Dr. Jeffrey Schlom at NCI
- **Phase 1 clinical trial initiation expected in 2020**

PRGN-2009 immunotherapy effectively controls tumor in murine model of HPV+ head & neck cancer



Gorilla adenovector with novel HPV antigen design



Target & Patient Population

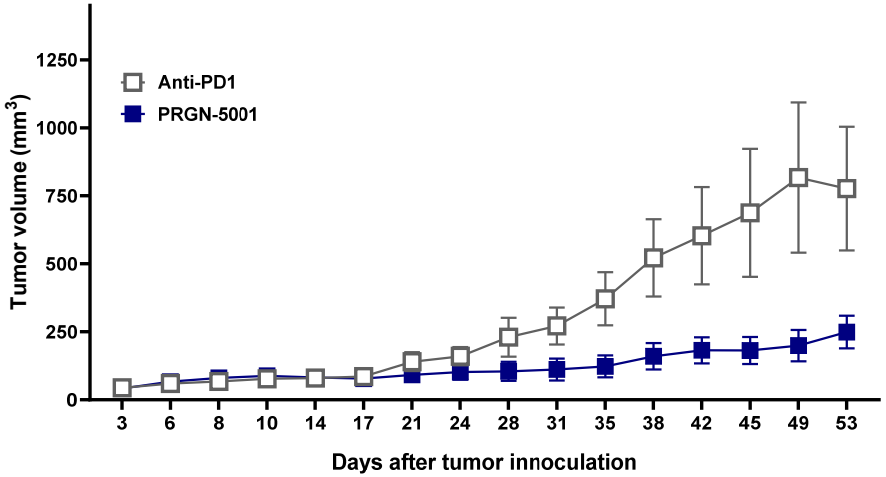
- Designed to activate immune system to recognize and target HPV+ solid tumors
  - HPV+ cancers represent significant health burden in head and neck, cervical, vaginal and anal cancer
- **Gorilla adenoviral vector with large payload capacity and ability for repeat injections**
- Optimized HPV antigen design for improved immune response differentiates from competition

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

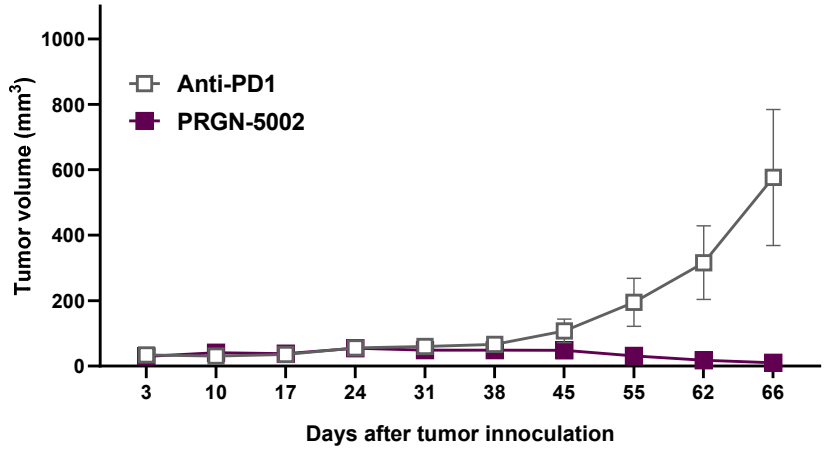
Multifunctional Therapeutic Platform

- Simultaneously targets multiple pathways to address senescence and trafficking of T lymphocytes in tumor microenvironment
- Exhibited superior anti-tumor effects compared to anti-PD1 mAbs
- Data supports potential for expansion to multiple targets
- Initiate IND enabling studies for PRGN-5001 in 2020
- Evaluating the optimal path forward for Multifunctional Therapeutic Platform including ongoing partnership discussions with multiple companies

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

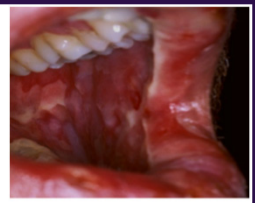


PRGN-5002 exhibits superior anti-tumor effect compared to anti-PD1 in humanized mouse model of cervical cancer



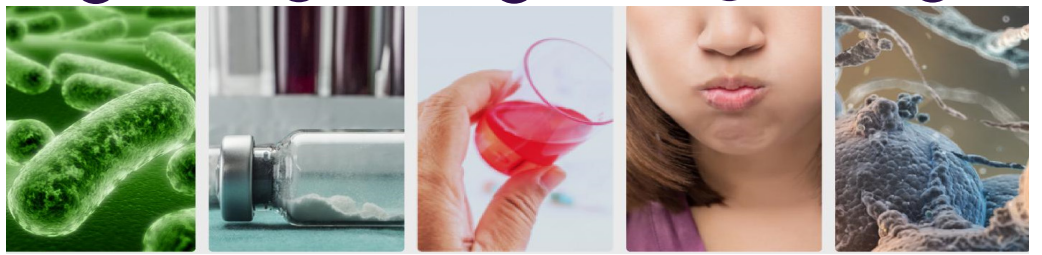
AG013 for oral mucositis (OM)

Target & Patient Population



- OM is a side effect of chemo/radiation therapy in patients treated for head & neck cancer and other solid tumors
- No drug is approved to prevent OM in the broad cancer population
- 2019 addressable population: approximately 850k†

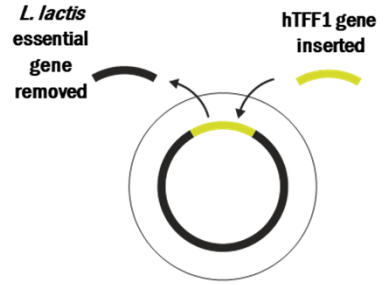
Ease of administration



Phase 2 Clinical Trial Ongoing in Head & Neck Cancer Patients

- Enrollment completed in 4Q19
- **Interim data from Phase 2 expected in 1H20**
- Orphan Drug status in European Union
- **FDA Fast Track designation**
- Development under partnership with Oragenics

AG013 is oral solution of ActoBiotics™ to deliver human Trefoil Factor 1 (hTFF1) to mucosal tissues



† Sources: http://oncolex.org/Head-and-Neck-cancer/Diagnoses/Oral-cavity/Background/Prognosis https://www.uptodate.com/contents/epidemiology-and-risk-factors-for-head-and-neck-cancer https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/cancer-treatment-and-survivorship-facts-and-figures/cancer-treatment-and-survivorship-facts-and-figures-2014-2015.pdf http://www.onclive.com/publications/oncology-live/2014/july-2014/study-finds-mouth-rinse-alleviates-oral-mucositis-symptoms-in-head-and-neck-cancers https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3662500/

AG013 Phase 1b data: Demonstrated efficacy vs placebo

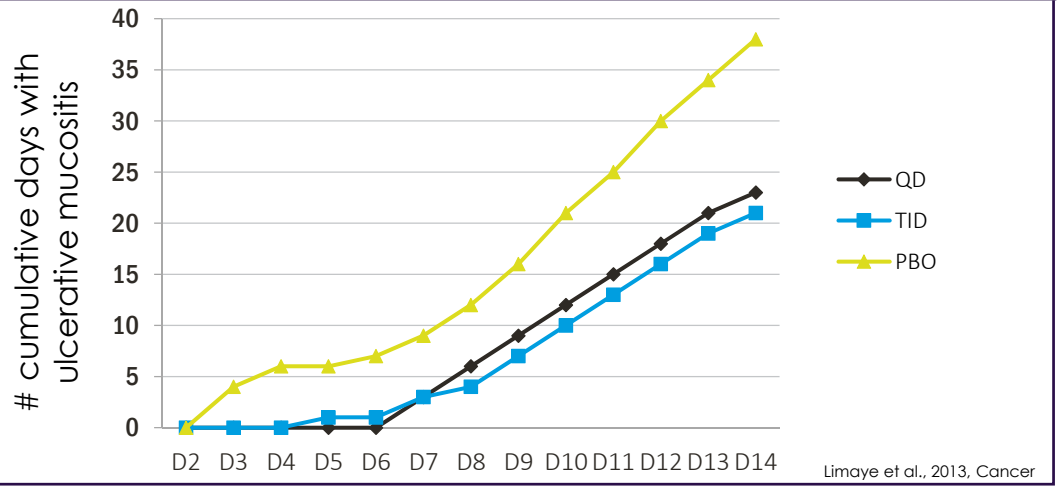
Clinical Trial Design

- Phase 1b single blind, placebo-controlled study; 6 centers in the US
- Study measured safety and tolerability of locally-applied AG013 in head and neck cancer patients receiving induction chemotherapy

Clinical Trial Data Summary

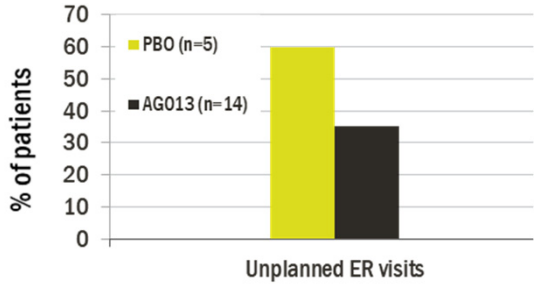
- Safe and well tolerated
- Consistent effect of active versus placebo across all dose frequencies without a dose frequency-dependent effect
- 29% of responders reported fewer than 2 days of UOM while all placebo-treated patients experienced more than two days of UOM
- 40% reduction in unscheduled office and emergency room visits compared to placebo
- 35% reduction in percentage of days with UOM compared to placebo

AG013 reduces cumulative days with UOM* vs placebo (PBO) by 35%

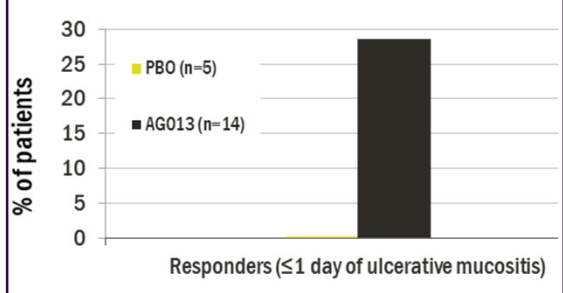


Limaye et al., 2013, Cancer

AG013 treatment reduced unplanned office & ER visits



29% of responders had ≤1 day of UOM*



* Ulcerative Oral Mucositis (UOM) : WHO score ≥ 2

PRECIGEN

AG019, a first-in-class therapy for type 1 diabetes (T1D)

Target & Patient Population

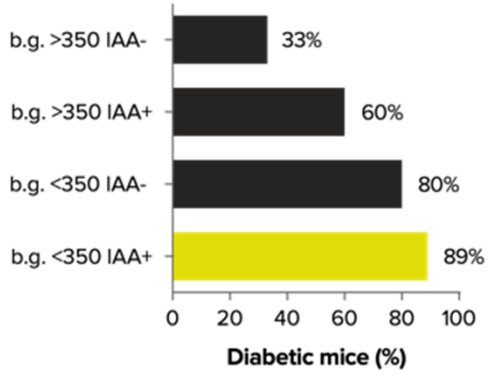
- First-in-class disease modifying antigen-specific immunotherapy to prevent, delay or reverse T1D
- Recent-onset T1D patients (children and adults) with residual functional Beta-cell mass

Phase 1b/2a Clinical Trial Ongoing

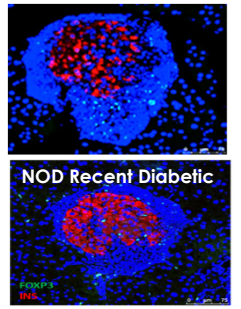
- Phase 1b/2a study to assess the safety and tolerability of different doses of AG019 administered alone (Phase 1b) or in combination with teplizumab (anti-CD3 mAb) (Phase 2a)
- Enrollment and treatment completed in Phase 1b (monotherapy); No discontinuation in treatment to date
- **Enrollment ongoing in Phase 2a (combination) cohorts; No safety issues to date**
- **Interim data readout expected in 3Q20**

AG019 + anti-CD3 treatment is highly effective in diabetic mice

89% of new-onset diabetic mice cured by AG019 + low dose anti-CD3



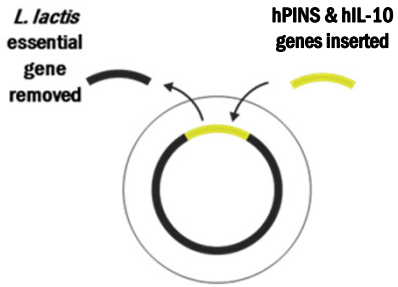
PINS-specific FoxP3+ Treg cells accumulate and proliferate in the pancreas & peripheral lymph nodes



Co-expression of KI67 and FoxP3 reveal local proliferation

Takiishi et al., 2012, JCI

AG019 is a capsule formulation of ActoBiotics™ to express human Proinsulin (hPINS) and human Interleukin-10 (hIL-10)

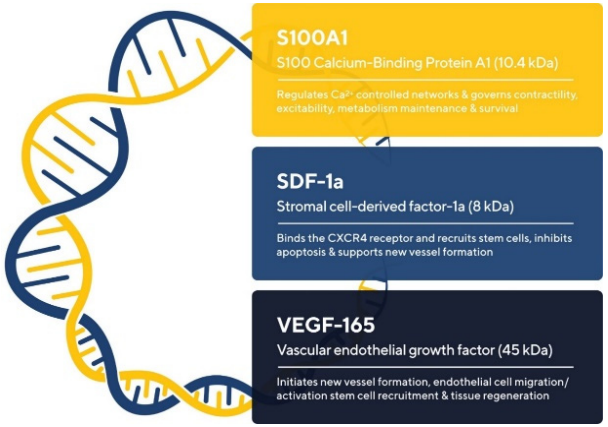


INXN-4001, novel gene therapy product for heart failure (HF)

Target & Patient Population

- Heart failure is a complex, multi-modal and progressive disease that requires targeting multiple pathways for successful outcome
- Therapeutic options for end-stage HF are limited
- Three effector genes in INXN-4001 designed to address multiple malfunctions of cardiomyocytes in patients with heart failure
- Approximately 6M adults in US have heart failure

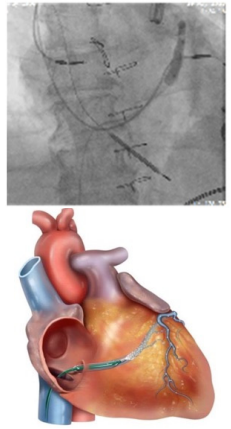
Non-viral triple effector plasmid based on UltraVector® platform to simultaneously express human S100A1, SDF-1a, and VEGF-165



Phase 1 Clinical Trial Ongoing

- Phase 1 enrollment complete
- Initial data shows improvement in cardiac function and no product related adverse events
- **Phase 1 data completion in 2020**

Retrograde Coronary Sinus Infusion (RCSI)



- Avoids wall thickness concerns, potential coronary dissection, potential ventricular perforation, electro-mapping and thrombus formation
- Is on the low pressure, venous side
- Allows for much larger dose delivery to entire ventricle

INXN-4001 Phase 1 trial: Initial data shows improvement in cardiac function and no product related adverse events

Study Design

- First-in-human, phase I, open label, safety study of INXN-4001 delivered via RCSI[1] in stable patients with implanted, outpatient LVAD[3] for mechanical support of end stage HF

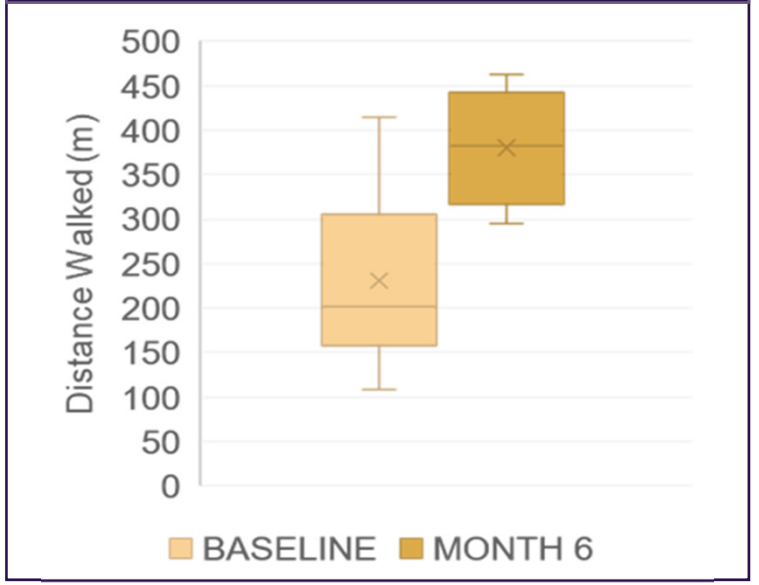
Cohort 1 (N=6) INXN-4001 80mg/ 40mL → **DSMB Review** → **Cohort 2** (N=6) INXN-4001 80mg/ 80mL

Assessments

- **Safety:** clinical labs, physical exams, ECG and medical history during clinic visits at: pretreatment, day 3, then 1, 3, 6, 9, and 12 months after dosing
- **Function:** KCCQ[2] questionnaire, 6-min walk test (6MWT) prior to and during an LVAD wean interval; Daily activity data collected throughout the study using a wearable biosensor (Actigraph)

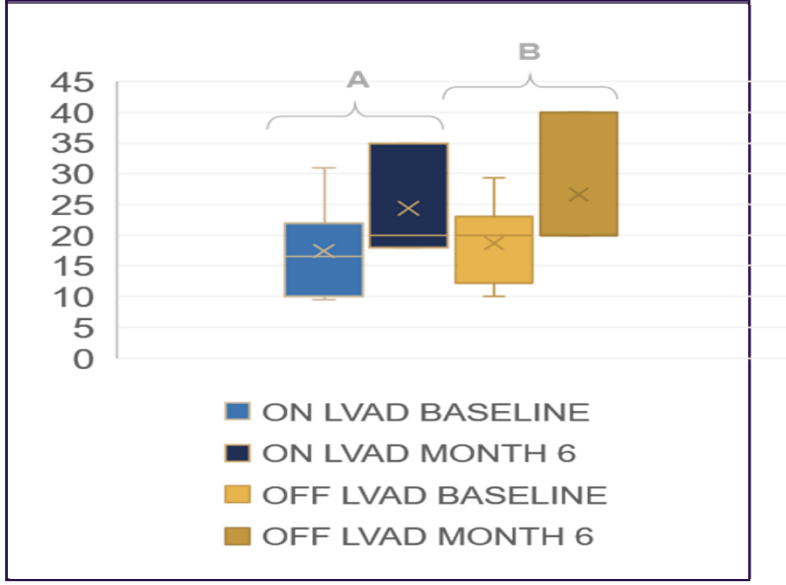
[1]RCSI: Retrograde Coronary Sinus Infusion
[2]KCCQ: The Kansas City Cardiomyopathy Questionnaire
[3]LVAD: Left Ventricular Assist Device

Six Minute Walk Test: Distance Walked on LVAD



Distance walked by patients ON LVAD support during 6MWT at baseline (n=9) and after 6 months from RCSI procedure (n=4)

Left Ventricular Ejection Fraction (LVEF)



LVEF for patients (A) ON LVAD support at baseline (n=11) vs. 6 months post RCSI (n=3) and (B) for patients OFF LVAD support after 6MWT at baseline (n=10) and after 6 months from RCSI (n=3)

No product-related adverse events observed to date

Precigen‡ in 2019: Demonstrated achievement of milestones

- ☑ 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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‡Wholly owned subsidiary Precigen, Inc. will be renamed in connection with parent company name change.

Capital allocation priorities for 2020

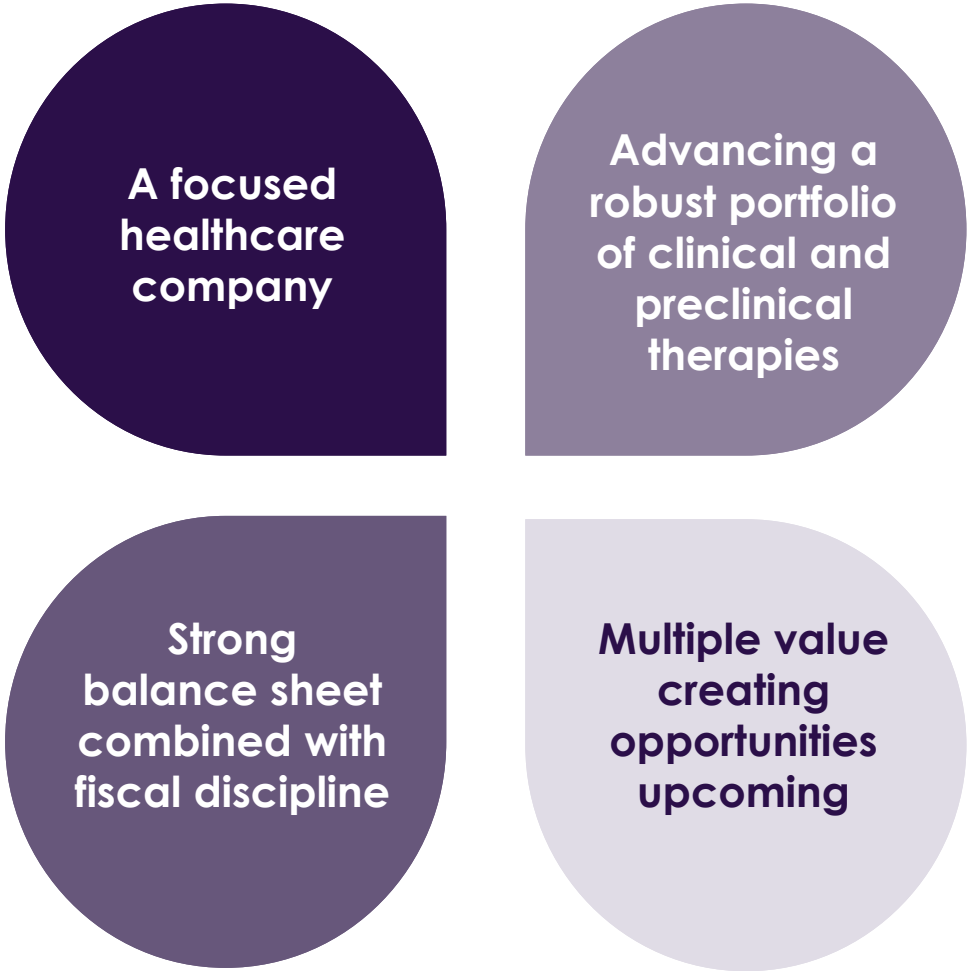
Precigen in 2020: Multiple upcoming clinical milestones for value creation

- Initial data from IP arm of PRGN-3005 UltraCAR-T™ Phase 1 trial in Ovarian Cancer
- Initial data from PRGN-3006 UltraCAR-T™ Phase 1 trial in AML and MDS
- Interim data from Phase 2 trial of AG013 in Oral Mucositis
- Interim data from Phase 1b/2a trial of AG019 in Type 1 Diabetes
- Phase 1 data completion of INXN-4001 in Heart Failure patients with LVAD
- Initiate Phase 1 trial of PRGN-2009 off-the-shelf AdenoVerse™ immunotherapy in HPV+ cancers

Precigen in 2020: Upcoming preclinical milestones to drive value creation in long-term

- Rapidly advance PRGN-2011 AdenoVerse™ cytokine therapy towards Phase 1 study
- Advance next generation UltraCAR-T™ candidate in IND-enabling studies
- Advance autoimmune disease candidate in IND-enabling studies
- Advance infectious disease candidate in IND-enabling studies
- Advance PRGN-5001 Multifunctional Therapeutic in IND-enabling studies

Precigen: World-class platform of innovative technologies and focused pipeline of precision medicines

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