
**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): December 26, 2018

INTREXON CORPORATION

(Exact Name of Registrant as Specified in Charter)

Virginia
(State or Other Jurisdiction
of Incorporation)

001-36042
(Commission
File Number)

26-0084895
(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 December 26, 2018, Precigen, Inc., a wholly-owned subsidiary of Intrexon Corporation, is delivering the presentation attached to this current report as Exhibit 99.1 on a previously announced conference call with investors. The conference call can be accessed under "Investor Relations" in the Events section of the Intrexon website at investors.dna.com/events.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits.

<u>Exhibit No.</u>	<u>Description</u>
99.1	Presentation of Precigen, Inc. dated December 26, 2018

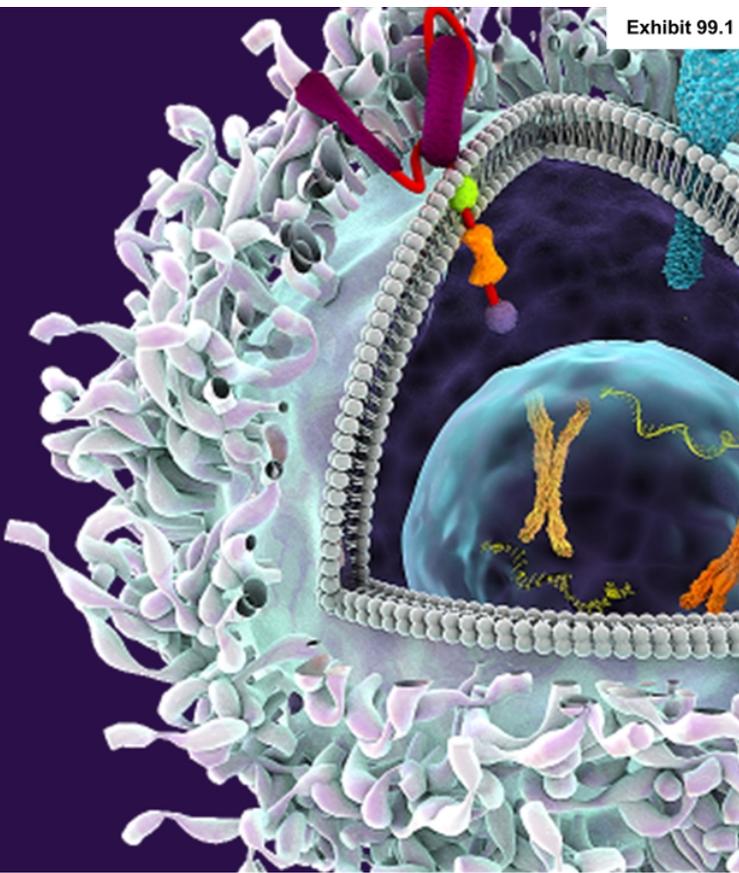
SIGNATURES

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: December 26, 2018

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



Precigen Business Update

Helen Sabzevari, PhD
President, Precigen

26 December 2018



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. These forward-looking statements are based upon our current expectations and projections about future events and generally relate to our plans, objectives and expectations for the development of our business.

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. All information in this presentation is as of the date marked on the cover page, and neither Precigen nor Intrexon undertakes any duty to update this information unless required by law.

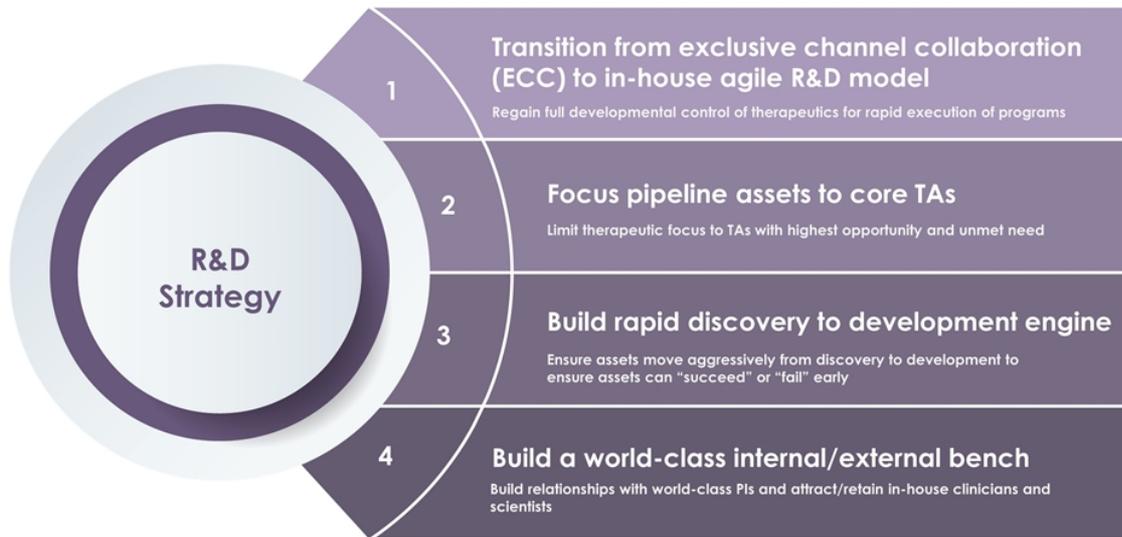
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Today's business updates

- Introduction to Precigen's near-term R&D strategies
- Precigen's transformation to an agile R&D engine
- Agreement overviews for Ziopharm and Merck KGaA
- Introduction to Precigen's transformative platform technologies, including UltraCAR-T™
- An overview of the opportunity in immunotherapies
- Overview of PRGN-3006 UltraCAR-T and AML/MDS

Precigen's near-term R&D strategy sets up company for long-term success



Ziopharm license agreement returns rights to pursue CAR targets

Agreement Overview

- Executed October 9, 2018
- Replaced existing agreements with Ziopharm

Outcome: Precigen has exclusive rights to pursue all CAR targets and Sleeping Beauty system in all tumor types (hematological and solid) subject to:

- Ziopharm rights are limited to CD19 CAR-T and the right to negotiate for a second undisclosed CAR-T target. *Sleeping Beauty* licensing to Ziopharm is limited to these two CAR-T cells and use in T-cell Receptor (TCR) therapy
- Precigen retains rights for the *Sleeping Beauty* system and membrane bound interleukin-15 (mbIL15)
- Precigen will receive milestone payments and commercial royalties for Ziopharm's use of Precigen's technology



Please refer to the 8-K filing on October 12, 2018 for additional details regarding the [agreement with Ziopharm](#)

Merck KGaA 2018 agreement assigns exclusive CAR-T development rights to Intrexon, providing Precigen with complete autonomy of its UltraCAR-T™ platform

Agreement Overview

- Expected to close this year
- Assigns and transfers all Merck KGaA CAR-T rights to Intrexon

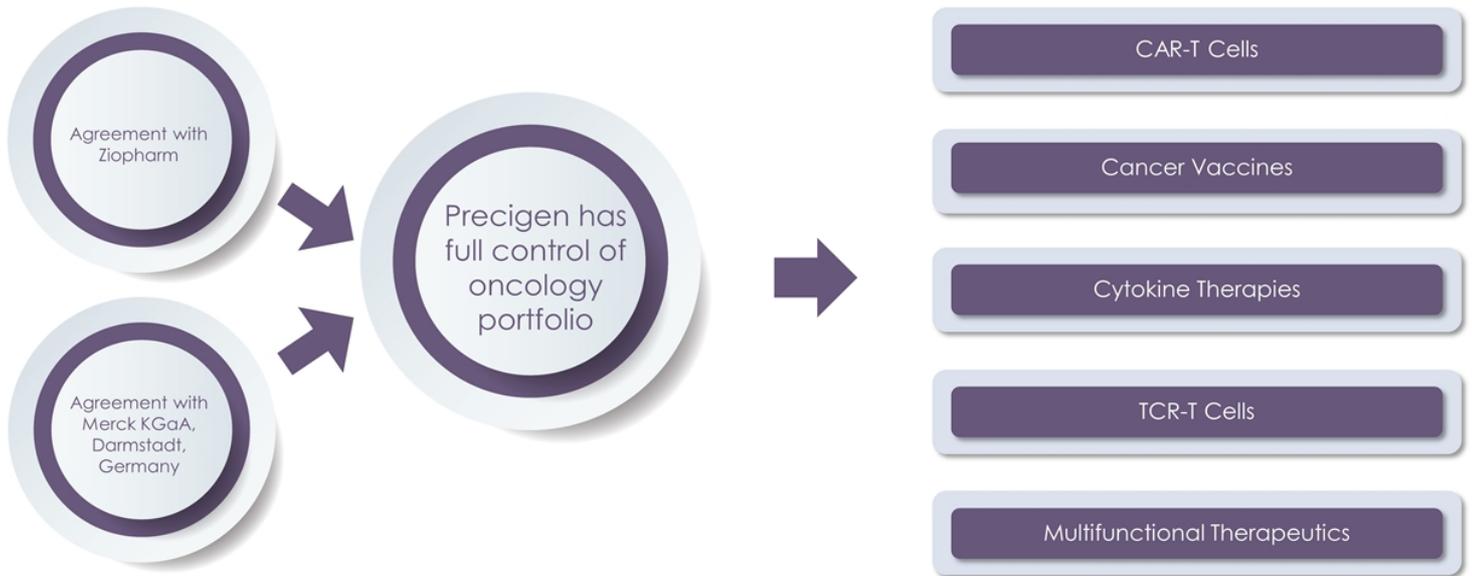
Outcome: Assigns Merck KGaA's exclusive CAR-T development rights to Intrexon

- Establishes Precigen's **complete autonomy** for its UltraCAR-T platform
- Merck KGaA will receive \$150 million in Intrexon stock and a \$25 million convertible note
- Intrexon to receive \$25 million cash investment
- Merck may receive a 10 percent royalty restricted to the two previous Merck KGaA targets, but will not receive a royalty on other CAR targets



Please refer to the 8-K filing on December 20, 2018 for additional details regarding the [agreement with Merck KGaA, Darmstadt, Germany](#)

Precigen has transitioned from an exclusive channel collaboration (ECC) model to agile R&D engine for full control of therapeutics



Please refer to the 8-K filing on October 12, 2018 for additional details regarding the [agreement with Ziopharm](#)

Please refer to the 8-K filing on December 20, 2018 for additional details regarding the [agreement with Merck KGaA, Darmstadt, Germany](#)

Current immunotherapy landscape has promise, but many drawbacks

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

Viral-Based CAR-T

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

Allogeneic

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

Precigen's platform technologies enable success through our ability to control, construct and deliver targeted gene and cell therapies



CONTROL

of gene expression and regulation drives safety

- ✓ **RheoSwitch®:** First clinically validated transcriptional gene switch
- ✓ **Kill switches:** Targeted depletion of cell therapeutics for improved safety profile
- ✓ **Tissue specific promoters:** Conditional local gene expression



CONSTRUCTION

of powerful gene programs drives efficacy

- ✓ **UltraVector®:** Design of single and multi-genic programs
- ✓ **mbIL15:** Improved T-cell expansion and persistence for enhanced therapeutic efficacy



DELIVERY

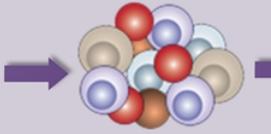
of gene programs via viral and non-viral based approaches drives lower costs

- ✓ **Sleeping Beauty:** Clinically validated non-viral platform for stable gene integration
- ✓ **AttSite™ Recombinases**
- ✓ **Adenoverse™:** Industry leading adenoviral vectors with low to no seroprevalence in the human population

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

Precigen UltraCAR-T Platform enables patient reinfusion within two days following non-viral gene transfer

1 Leukapheresis



Leukapheresis and T cell isolation from patient

2 Electroporation



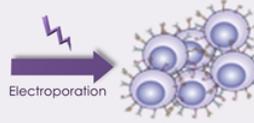
Unmodified T-cell



Sleeping Beauty Plasmid DNA

Electroporation

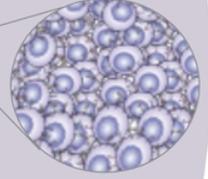
Less than two days



UltraCAR-T cells

Electroporation of non-viral *Sleeping Beauty* for expression of CAR, mbl15 and kill switch

3 UltraCAR-T Infusion



UltraCAR-T cells expand in patients

UltraCAR-T Advantages : Extended payload + Sustained persistence + T cell control + Rapid manufacturing

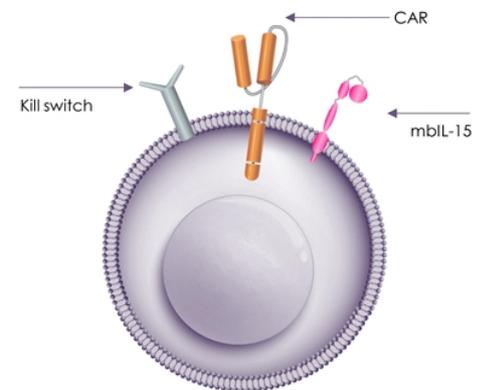
PRGN-3006 UltraCAR-T™, a first-in-class therapy in AML, received FDA clearance for IND to initiate Phase 1/1b study

Highlights and Differentiation

- Autologous T cell investigational therapy
- Non-viral *Sleeping Beauty* system to co-express CAR, mblL15 and kill switch
- Rapid manufacturing
 - No ex vivo propagation step
 - Infusion within 2 days after gene transfer
- Next generation *Sleeping Beauty* design for optimized multigenic expression
- First approved IND utilizing Precigen's UltraCAR-T platform

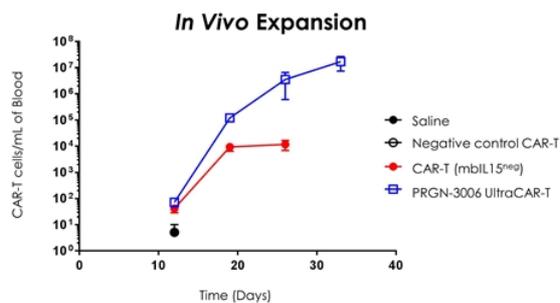
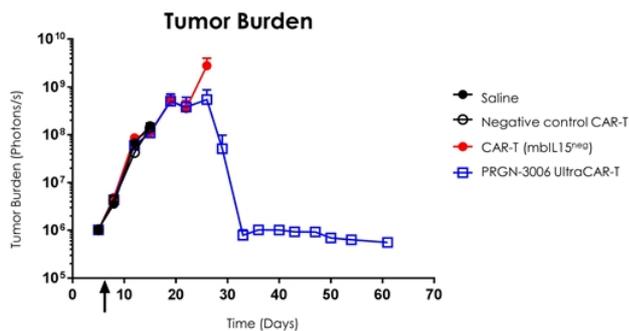
Current Status

- IND cleared by the FDA on December 20, 2018 to initiate phase 1/1b trial for patients with relapsed or refractory acute myeloid leukemia (AML) and higher risk myelodysplastic syndrome (MDS)



PRGN-3006 UltraCAR-T™ cells eliminated aggressive AML tumor in an *in vivo* mouse model

- PRGN-3006 UltraCAR-T cells administered in less than 2 days after gene transfer expand *in vivo* and persist in AML tumor bearing mice
- PRGN-3006 UltraCAR-T cells effectively eliminated AML tumor in mice in dose dependent manner
- Significant improvement in anti-tumor activity and survival by PRGN-3006 compared to mbL15^{neg} CAR-T cells
- mbL15 expression by PRGN-3006 necessary for elimination of aggressive AML tumor



PRGN-3006 UltraCAR-T™ targets AML and MDS; patient populations with significant unmet need

Acute Myeloid Leukemia (AML)

Patient Characteristics and Incidence

- ~20,000 new cases in US in 2018, mostly in adults¹
- Among most common types of leukemia in adults¹
- Uncommon before age 45¹
- Average age of diagnosis is about 68¹

Survival

- Poor prognosis with an average 5-year survival rate of ~25 percent overall²
- Less than 5 percent 5-year survival rate for patients older than 65²
- Elderly patients median survival ranges from:
 - 3.5 months for patients 65 to 74 years²
 - 1.4 months for patients ≥ 85 years²

Myelodysplastic Syndrome (MDS)

Patient Characteristics and Incidence

- Diseases of bone marrow generally found in adults in their 70s³
- Incidence in the US is not known for sure; estimates range from 10,000 each year and higher³

Survival

- IPSS-R median survival varies:
 - < one year for the "very high" IPSS-R risk group³
 - > eight years for the "very low" IPSS-R group³

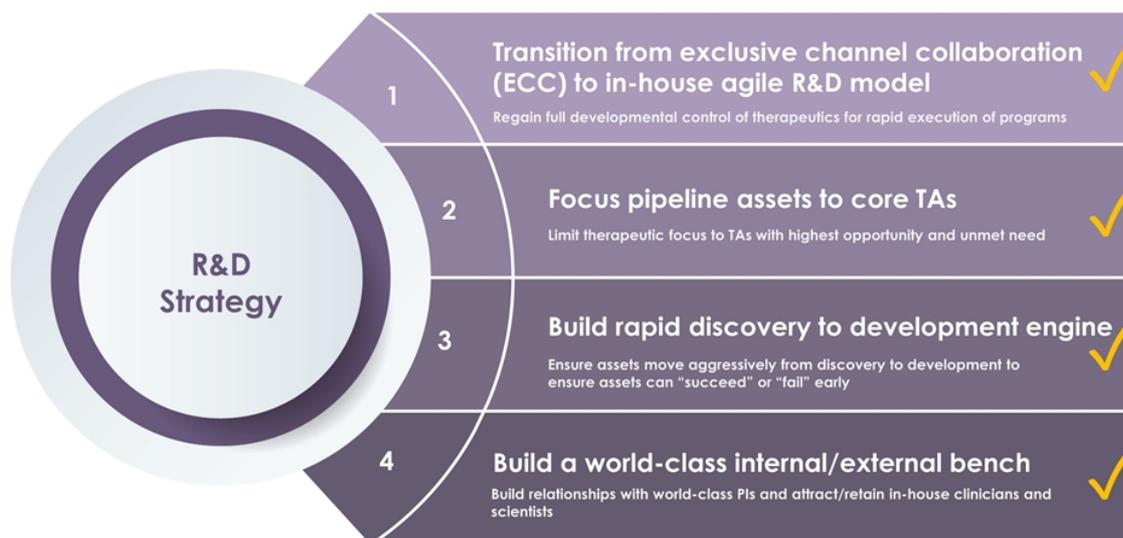


¹American Cancer Society. Key Statistics for Acute Myeloid Leukemia (AML). Accessed December 2018 via ACS website.

²Thein, M., et al., Outcome of older patients with acute myeloid leukemia: an analysis of SEER data over 3 decades. *Cancer*, 2013. 119(15): p.2720-7.

³American Cancer Society. Key Statistics for Myelodysplastic Syndromes. Accessed December 2018 via ACS website.

Precigen is well on track to achieve near-term strategies





PRECIGEN
ADVANCING MEDICINE WITH PRECISION™